ACCOUNTS

IN

THEORY AND PRACTICE

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PRINCIPLES

BY

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To

D. V. S.
L. J. S.
M. D. S.

PREFACE

The purpose of this book is to afford a first course in the principles of accounts. Although it is intended primarily as a first semester text it is the author's hope that it will prove useful in wider fields. An attempt has been made to work out an effective combination of theoretical discussion and practical application. The author realizes that every individual has his own ideas about the proper sequence of subject matter. An attempt has therefore been made to arrange the material so that, if desirable, the order of study may be varied somewhat, and possibly some parts omitted.

For several years the author has followed the plan of having his students construct their practice sets from ordinary commercial ledger and journal paper. Such alterations in rulings can be made as may be necessary to make these blank forms conform to the requirements of the text. Such forms as are not readily obtainable should be drawn upon blank sheets of paper. This plan throws the learner upon his own resources, teaches him that forms are to be varied to meet requirements, and is at once simple and economical. All forms are shown in the text. These will serve as models in the preparation of the practice sets. The instructor should arrange to have in readiness a supply of ordinary two-column journal paper and ordinary ledger paper; also, if possible, a supply of columnar paper from which to construct columnar journals, voucher registers, and so on. For this purpose ordinary trial balance paper, which contains twenty-four columns, may be used. Accountants' analysis paper will serve equally well. Reference to practice chapters VII, VIII, XV (same set continued), XVIII, XX, and to chapter XXXIV will indicate the materials needed. Work on practice chapter VII may be begun as soon as desirable, but it is suggested that it be started after the study of chapter III has been completed (See page 21). For reference purposes a bibliography has been inserted at the end of each of the six parts of the book.

The author is planning a second volume which will treat of the more complicated aspects of general accounting procedure such as valuation, ledger analysis, consolidations, branch house accounts, and realization and liquidation. It is his belief that the further standardization of accounting courses will be along the lines followed in the present and proposed volumes, *i.e.*, that the first half-year's work should be a drill in the theory and practice of accounts with emphasis on fundamental principles, and that the second half-year's work should include a thorough study of the more complicated aspects of general procedure, such as those suggested above.

Each of the six parts of this book is of about the proper length for review and examination purposes. To facilitate review work an appendix containing a series of questions on each chapter has been added.

For suggestions and criticisms the author is under obligation to many individuals, including his students. He is especially indebted to Mr. J. D. Häuslein of Yale University and to Mr. James J. Markham, Controller of Sargent and Company, New Haven, Conn. Professor A. L. Bishop of the Sheffield Scientific School of Yale University has made useful suggestions regarding the arrangement of materials. Mr. K. J. Ralph has made certain corrections in the chapters on manufacturing accounting. The author nevertheless assumes full responsibility for any errors that still exist and he will consider it a favor to receive such corrections and criticisms as readers may wish to offer.

EARL A. SALIERS.

NEW HAVEN, CONN.,
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CHAPTER I

THE PURPOSE OF ACCOUNTS

Accounting a Branch of Economics.—Accounting is an applied branch of the science of economics. Economics treats of the production and distribution of wealth. The economist usually employs these words in a comprehensive sense, as when speaking of the production of wealth in the United States and its succeeding distribution among one hundred million or more inhabitants of the country. The economist studies the various agencies which facilitate or impede the production of wealth, the effects, for example, of legislation, legal and natural monopolies, franchises and special privileges, labor unions, government ownership of railroads, commission control, and so on. He encourages the introduction of reforms which he believes will increase productivity or lessen waste. As Adam Smith, more than one hundred years ago, pointed out the benefits of division of labor, so all economists since his time have been debating the *pros* and *cons* of those questions which relate to the productivity of wealth.

Economists attempt to discover the principles which govern the distribution of wealth among the inhabitants of the country after it has been produced. Some of it goes to the laborer, some to the capitalist, some to the landlord. Whether the present system of industry, as established by law and custom, secures the most equitable distribution of wealth is a disputed question, beyond the province of this book. Production and distribution of wealth, all will agree, require the expenditure of the energy and time of the inhabitants of a nation and consequently deserve the careful attention of those who study them and, if possible, improve them by introducing scientific methods of procedure.

Scientific methods require *adequate records.* Such records enable one to see readily what has been accomplished and supply data valuable in making future improvements.

Modern Methods of Production.—The past century has witnessed a remarkable growth in the productive capacity of most countries. This growth has been accompanied by such alterations in the organization of industry as have been necessary to cope with the new methods of production and distribution. Along with the increase in wealth made possible by machine methods, division of labor, etc., there has gone a concentration of that wealth, if not in the ownership of a comparatively few persons, at least in their control. The man who, had he lived a century ago, would have employed his limited means in constructing a workshop in which he would have become the master workman and surrounded himself with a few journeymen and apprentices, is likely, today, to become one of several hundred or several thousand stockholders or bondholders in a corporation with assets totaling millions of dollars and employees numbered in thousands.

Under the old conditions, when each capitalist was also a workman and was enabled to supervise personally all the details of his small enterprise, there was no occasion for any very complicated system of recording transactions. Markets were not as wide and competition was not as keen as they are today. The credit system, which underlies nearly all modern enterprise, was still in its infancy. Railroads, the telegraph, the telephone, the steamship, and those conveniences which, by "abridging distance," facilitate commercial intercourse over long distances, were unknown. Commercial organization was less complicated. Everything progressed at a slower pace, and there was not the pressing need for accurate information as to the results so shortly after their consummation as there is today. Merchants sent vessels on cruises lasting two or three years and awaited patiently the outcome of their ventures. Today they receive daily reports by wireless of the progress of ocean liners. They keep in hourly connection with the great markets of distant cities where prices are made and telegraphed to the whole world. They demand daily progress reports from their business managers.

The Information Needed.—These conditions make accurate and timely information essential to success. To illustrate, the manager of a department store must so systematize his affairs that he can not only tell whether his store as a whole is making a profit, but he must know also the standing of each department. A manufacturer must not merely know at the close of the year that he has made a profit; he requires specific information as to the cost of each commodity that he manufactures, not annually but monthly or weekly, if he desires to operate on an efficient basis. The president of the Bethlehem Steel Company requires a complete report on each month's operations not later than the fifth day of the succeeding month.

There are a number of features of modern business organization that make imperative the demand for accurate records. Chief among these are:

(*a*) Price making and Competition.
(*b*) The Credit System.
(*c*) Management.
(*d*) Valuation.
(*e*) Taxation.
(*f*) Investments.
(*g*) Profits—Determination and Division.

Price Making and Competition.—Price making and competition are two inseparable factors in business. Competition usually brings vigorous and healthful activity into industry and commerce. But upon some enterprises its effects are destructive, especially upon those which are without any adequate knowledge of their costs and expenses and which consequently are unable to place prices upon their products except by adopting the prices set by their competitors, or by attempting to underbid their competitors. The evils of the competitive system are greater than the benefits, for concerns so situated. If commodities are selling at only a fair profit it is dangerous policy to lower prices without compensating for the lowered selling price through economies or increased efficiency in some or all departments. When adequate accounts are kept they furnish the danger signals to the manager, showing him the limits beyond which he cannot safely go in his policy of price reduction. They also show him along what lines the greatest reductions can be made, and may suggest lines which it will be well to discontinue entirely.

With an adequate system of accounts an enterprise with an average outlook should weather the competitive stress without difficulty; much more easily indeed, than a company better favored by natural conditions but lacking an adequate system of accounts.

The Credit System.—A large percentage of business is done on a credit basis. Credit requires the reliance of one person or concern upon another person or concern. Character lies at the foundation of this system, but capacity and capital are also essential to it. Not only crimes and frauds but unintentional errors as well must be guarded against, to make the credit system most useful. Credit requires the use of various business papers, notes, drafts, acceptances, stocks, bonds, mortgages, etc., which must be properly filed and recorded and their bearing and influence shown.

Credit is subject to misuse. Some take advantage of discounts to which they are not entitled. Some overbuy. Others grant credit to those who do not merit it, and so on. There is a limit beyond which the extension of credit becomes dangerous. Such over-extensions lead to panics and commercial crises. Although accounting cannot remedy all of the evils of the credit system it aids in the correct observance of its principles, and it furnishes information which helps to ameliorate the evils mentioned.

Management.—Management begins with the promotion of an enterprise, guides its operations as a working establishment, and continues its supervision until dissolution ends its affairs. High salaries are paid to secure efficient managers. Efficient managers demand the fullest information concerning the plants they superintend. They require daily, weekly, monthly and yearly reports showing operating results in all departments. They also require comparative statements illustrating changes in costs, selling prices, profits, etc., over periods of several years' duration. These cannot be supplied unless adequate accounts are kept.

The manager makes great and constant demands upon the accounting department. The relationship which the business bears to the state, to other concerns and to individuals who do business with it, to banks, and to the purchasers of its securities, although important, is in a sense intermittent, occupying the attention of both parties occasionally, and then lapsing into a more or less static condition requiring little attention for a time. But the manager remains constantly at the helm and for his benefit above all others the accounts must be kept properly.[1]

[1] For a more detailed study of the relation of accounting to management see Chapter XL.

Valuation.—The property of a concern requires frequent valuations for various purposes, for reasons which the student will understand as he proceeds. Variations in the value of a concern's property influence definitely its financial status. Allowance for these changes must be made in the accounts. Among the chief purposes of valuations, in addition to the one mentioned, are: to aid the state in levying taxes, to determine proper charges for service rendered to the public, and to determine values for purposes of sale.

In recent years the government, federal and state, has done very extensive work along this line, both for purposes of taxation and for rate-making. Public utilities, *i.e.*, railroads, street railways, water works and other establishments which supply services to the general public on a non-competitive basis, have, in this respect, received the state's special attention. It is out of our province to attempt a complete explanation of the reasons for this innovation, except to note that the work is usually done to secure a basis for rate-making or taxation, or both. If a company has kept proper accounts the work of valuation is greatly simplified and expedited.

Taxation.—Taxation was mentioned as a purpose of valuations, but whether valuations are made or not, taxes must be paid, if not on the basis of a recent valuation then on the basis of other available data. Good accounting records are indispensible to an accurate history of the changes in the value of property.

The adoption of the income tax by the federal government and some state governments as the chief means of securing revenue has given a great impetus to the keeping of correct accounts. Nothing else has done so much to create a demand for the services of expert accountants.

Investments.—Investing is a corollary of modern large scale enterprise. Our present system of concentration of wealth under the control of a comparatively few men—officials and directors of corporations—implies that the great majority of the people who become interested in these corporations do so as investors rather than as direct participants in the management of the company. The amount of the country's wealth is constantly increasing and is being invested by individuals, trust companies, savings banks, insurance companies, and other organizations which in one way or another come into the possession of funds not required for their own immediate use.

All who invest their money in enterprises the management and control of which rest in the hands of others must have accurate reports and information concerning the financial status of these enterprises. As the science of investments becomes better understood the securities of companies which tolerate any but the most efficient methods of accounts and control will go begging for a market, while those which give to the investing public the most up-to-date and accurate information will secure additional funds with greatest ease. The admirable policy of publicity adopted by some of our largest corporations, such as the United States Steel Corporation and the International Harvester Company, is made possible only by adequate accounting systems.

Profits—Determination and Distribution.—The purpose of all business undertakings, excepting those of an eleemosynary character, is to make a profit. Profit is an increase in wealth secured through increased value given to materials through manufacture or through increased value given to commodities by transporting them to suitable points and distributing them to consumers, or by providing needed services of one kind or another. When, however, the equipment, supplies and other paraphernalia of manufacture and commerce become costly and complex it is difficult to determine what profit is made in a given period, say a month or a year. The success and justice of the modern system of production and distribution depends upon the accurate determination of profits. Without this, taxes, wages, prices, etc., are certain to be more or less prejudicial to some interests and favorable to others. The government taxes corporations on their net profits. If one corporation overstates its profits and another understates its profits, their taxes are too great and too small respectively. Prices must be fixed at such a point above costs as will allow an adequate percentage of profits. If costs and profits cannot be determined the work of pricing will be indefinite and hazardous.

Profits are usually distributed among claimants who possess varying privileges respecting them. The proportion of the profits which each claimant may receive is not usually a fixed one, but varies with the total amount of the profit. Consequently this aspect of the distribution of wealth rests directly upon sound accounting, without which injustice is certain to occur in the division of profits.

Summary.—We have shown how seven great phases of modern industrialism are directly dependent upon the science of accounting. Every student of business methods, therefore, will possess a more or less incomplete foundation for his approach to the problems that confront him unless he has first secured a mastery of the principles of this science. It is the purpose of this book to afford such knowledge of accounts as a fair amount of study should secure. Furthermore it will be our purpose to subordinate the consideration of unimportant detail and form to the consideration of those principles which, with variation as to details, apply most universally.

CHAPTER II

RECORDING FINANCIAL TRANSACTIONS

Cash and Credit Transactions.—Financial transactions are of two kinds—those based on credit and those based on cash. Credit as an aid to business has become increasingly important. At present about nineteen-twentieths of the world's trade is carried on with its aid. Cash transactions are limited largely to the retail trade. Even here credit sales tend to displace cash sales, and in many lines of retailing credit sales greatly exceed cash sales.

Advantages of Credit.—There are reasons for the increasing employment of credit. Among these are its convenience, economy, and value as a substitute for cash. Its advantages outweigh its disadvantages. Although dangerous when carelessly employed, the evil consequences of its misuse can be minimized by taking proper steps to regulate and protect the credit system.

Merchants, bankers and manufacturers employ both credit and cash and they receive and disburse cash. Cash and credit are the media of business transactions. Cash takes the form of paper money, coin, and checks. Sometimes credit has no documentary evidence; sometimes it is more or less formally represented by a variety of written or printed documents, collectively known as credit instruments.

Two Kinds of Transactions.—Cash and credit are means to an end—the harmonious transfer of commodities and services from those who provide them to those who consume them. If, when purchasing clothing, we pay cash, we employ it for an end—the satisfaction of a need. But if we do not pay immediately we accomplish the same end by a different means, namely, credit. In either case the transaction costs us a given amount; but in the one instance we assume the burden by surrendering cash, while in the other we assume the burden by pledging to pay in the future. Although unlike in form, these two classes of transactions have a like effect upon our wealth. If we pay cash our liability ceases the same instant in which we incur it and the transaction is completed. If we secure credit we incur a liability which must be paid later in cash or its equivalent.

Recording Transactions.—Transactions being thus fundamentally simple may be recorded by the application of principles equally simple. Primitive merchants kept crude records upon which they "chalked up," or charged, those who obtained credit when purchasing from them. This they did by writing the names of their customers and entering beside or below them the amount and terms of the sale. As the result of experience, the primitive forms were gradually supplanted by improved ones, until it grew customary to record every transaction by means of a double entry. Thus a sale of goods for cash, $100, was recorded as follows,

Cash....................................	$100.00	
To Sales............................		$100.00

On the other hand a sale of goods on credit to a customer, John Allen, was recorded thus,

John Allen..............................	$100.00	
To Sales............................		$100.00

By placing "cash," or the name of the person "charged," above, and a little to the left of the name of the commodity sold we secure a classification, which conveniently separates cash, or the name of the person charged, from the name of the thing sold. This form, however, is not absolute, but is adhered to only so long as it is impossible to contrive a better one. When the merchant's transactions grew sufficiently numerous to warrant further refinements a specially ruled book, the Journal, was made to receive these entries, thus,

Journal

			Debit	Credit
Date	Explanations	F	Amounts	Amounts
	Cash..............................		100.00	
	To Sales......................			100.00
	John Allen........................		100.00	
	To Sales......................			100.00

Naturally the Journal differed somewhat in form in different times and places. Probably its development into the form shown above was a slow one. Any record may vary somewhat in form, depending upon the purpose for which it is intended and the wishes of its designer.

Function of the Journal.—The Journal provides a convenient chronological record of transactions, that is, one in which they are entered as soon as convenient after their occurrence and in the order of their occurrence. Any transaction may be recorded in the Journal. Before it is recorded it must be split up into its two essential elements, one a debit or left side Journal entry, the other a credit or right side Journal entry. That element of the transaction which is placed on the left is the charge or debit element, and that element which is placed to the right is the credit element. In the first transaction entered in the Journal above, cash is charged or debited $100. In the second entry John Allen is charged $100 and merchandise or sales is credited $100.

Meaning of Debit and Credit.—As employed here the words debit and credit possess a technical meaning which must not be confused with the words debit and credit as ordinarily employed. Moreover each has a double and apparently contradictory use. Thus we say that an item is debited when it is placed to the left in the Journal. Such a debited item, however, may indicate either (*a*) wealth received, or (*b*) losses or expenses incurred. Likewise an item credited, that is, placed to the right, in the Journal, represents (*a*) debts incurred, or (*b*) wealth surrendered, or (*c*) gains made.

Debits and Credits Illustrated.—As an illustration of the foregoing propositions, consider the following journal entries:

Case I

Cash (*i.e.*, wealth received)........................	$ 100.00	
To Sales....................................		$ 100.00
To record a sale of merchandise for cash.		
Rent (*i.e.*, expense incurred)......................	$ 30.00	
To Cash....................................		$ 30.00
To record payment of rent in cash.		
Profit and Loss (*i.e.*, loss incurred)................	$ 1,000.00	
To Building (destroyed).....................		$1,000.00
To record loss resulting from destruction of building by fire.		

By reference to the debit or left hand items above we can formulate the rule, debit or charge wealth received, and expenses and losses incurred, this having become, by custom, the method of indicating these items.

Case II.

Purchases...	$200.00	
To John Allen (*i.e.*, debt incurred)...............		$200.00
To record a purchase of merchandise from John Allen.		
John Allen...	$100.00	
To Sales (*i.e.*, wealth surrendered)...............		$100.00
To record a sale of merchandise to John Allen.		

The full meaning of this last entry, assuming that the goods sold cost $90 may be expressed thus:

John Allen...	$100.00	
To Sales (*i.e.*, wealth surrendered at cost).........		$90.00
Profit and Loss (*i.e.*, gains made).............		10.00

To record sale of merchandise to John Allen, showing selling price analyzed to indicate profit.

By reference to the credit or right hand items above we can formulate the rule, credit debts incurred, wealth surrendered and profits made, this having become, by custom, the mode of showing these items.

Rules for Debits and Credits.—The foregoing will help us to comprehend that the results of every transaction resolve themselves into two or more of the following:

$$\left.\begin{array}{l}\text{1. Wealth received}\\ \text{2. Expenses incurred}\\ \text{3. Loss incurred}\end{array}\right\}\text{ which are debits.}$$

$$\left.\begin{array}{l}\text{4. Debts incurred}\\ \text{5. Wealth surrendered}\\ \text{6. Profit made}\end{array}\right\}\text{ which are credits.}$$

Therefore, recognizing the real nature of transactions, we can formulate the rules for debit and credit. These are for debits:

1. Debit wealth received by us.
2. Debit expenses incurred by us.
3. Debit losses incurred by us.

and for credits:

4. Credit wealth surrendered by us.
5. Credit debts incurred by us.
6. Credit profits made by us.

Illustrations of Rules for Debits and Credits.—To illustrate the application of these rules let us assume that L. Gordon begins business with a cash investment of $3,000, and during the first week proceeds as follows:

Buys merchandise, $400, on credit, from Meyer & Co.
Sells merchandise which cost $90 for $100, receiving cash in payment.
Sells merchandise which cost $50 for $40, receiving cash in payment.
Incurs loss of $100 on merchandise, due to fire.
Sells to O. Rollo, on credit, merchandise which cost $100 for $150.
Pays rent for week $15.

These transactions comprise the six possible kinds of transactions, as a study of the following entries recording them will show:

Purchases (wealth received—Rule 1)	$400.00	
To Meyer & Co. (debt incurred—Rule 5)		$400.00
To record purchase on credit.		
Cash (wealth received—Rule 1)	$100.00	
To Sales (wealth surrendered—Rule 4)		$ 90.00
Profit and Loss (profits made—Rule 6)		10.00
To record sale, showing profit made.		
Cash (wealth received—Rule 1)	$ 40.00	
Profit and Loss (loss incurred—Rule 3)	10.00	
To Sales (wealth surrendered—Rule 4)		$ 50.00
To record sale, showing loss incurred.		
Profit and Loss (loss incurred—Rule 3)	$100.00	
To Purchases (wealth surrendered—Rule 4)		$100.00
To record loss by fire of goods purchased.		
O. Rollo (wealth received—Rule 1)	$150.00	
To Sales (wealth surrendered—Rule 4)		$100.00
Profit and Loss (gains made—Rule 6)		50.00
To record sale, and profit made.		
Profit and Loss (expense incurred—Rule 2)	$ 15.00	
To Cash (wealth surrendered—Rule 4)		$ 15.00
To record rent payment, or expense incurred.		

These entries require some elucidation. It is customary to adopt terms which signify the uses to which they are put. Thus when merchandise is purchased, "purchases" is debited, and when merchandise is sold, "sales" is credited. When a loss is incurred "loss" might be debited and when a profit is made "profit" might be credited, or, following custom, the two terms may be united as "profit and loss" to which losses are charged and profits credited, as shown above. If desirable to specialize on losses and profits, showing the different kinds, special terms may be used to indicate different kinds of losses, expenses, and profits. Thus in the last entry the debit might have been made to "rent expense," or simply "rent," the word "expense" being implied.

Losses and Expenses Distinguished.—Although the phrase "profit and loss" does not distinguish between losses and expenses, both being comprehended under the single word "loss," it is well for the beginner to make the distinction in his own mind at least. Expenses are incurred in order that profits may be made. For this reason outlays are made for advertising, heat, light, and so on. When losses occur they in no way give rise to profits, unless indirectly, but usually not at all. A loss is sustained when merchandise is sold below cost. An expense is incurred when a building is rented. Losses remain uncompensated; expenses do not. Losses are avoided as far as possible. Their diminution is a favorable indication. Expenses are to be avoided only when they turn out to be losses, failing to pay for themselves through increased profits.

CHAPTER III

RECORDING FINANCIAL TRANSACTIONS—(*Continued*)

Subdivision of the Journal.—We have found that transactions are made on either a cash or a credit basis. Acting according to this twofold classification it is desirable to make a subdivision of the Journal into two parts, one part to be employed exclusively for cash transactions and the other part for all other transactions. We can best secure an understanding of the functions of these subdivisions by first making a threefold classification of journal entries as,

1. Those in which cash does not enter.
2. Those in which cash enters as a receipt.
3. Those in which cash enters as a disbursement.

Classifying the journal entries given above (page 12) on this threefold basis, we have:

1. Those in which cash does not enter:		
Purchases	$400.00	
To Meyer & Co.		$400.00
Profit and Loss	$100.00	
To Sales		$100 00
O. Rollo	$150.00	
To Sales		$100.00
Profit and Loss		50.00
2. Those in which cash enters as a receipt:		
Cash	$100.00	
To Sales		$ 90.00
Profit and loss		10.00
Cash	$ 40.00	
Profit and Loss	10.00	
To Sales		$ 50.00
3. Those in which cash enters as a disbursement:		
Profit and Loss	$ 15.00	
To Cash		$ 15.00

The Cash Journal or Book.—The integration here shown is the one which has really occurred in the evolution of accounts. However, instead of having three Journals, as the above classification suggests, the two possible Cash Journals are usually united in one book which may be termed either the Cash Journal or the Cash Book. We shall use the former term in this book. When this is done the two pages of the Cash Journal facing each other, right and left, respectively are in reality the cash receipts and cash payments Journals, although the plural title is not used.

Cash Journal (or Book)

Month	Day	Explanation	F	Amt.	Month	Day	Explanations	F	Amt.
		Sales		100			Expense		15
		Sales		40					

The entries are the same as those shown on page 12, but note that each transaction occupies but one line in the Cash Journal, whereas in the General Journal (the term "general" being used to distinguish this Journal from the Cash Journal) two lines were occupied, the upper for the debit item and the lower for the credit item. This economizing of space and work is possible because the entries on the left page in the Cash Journal are exclusively those representing cash receipts or debits, while the entries on the right hand page are exclusively those representing cash payments or credits. Consequently the total debit and the total credit to cash can be found at any time by adding the columns on the left and right pages of the Cash Journal.

How Losses and Gains are Accounted for.—Although the entries in the Cash Journal represent the same transactions as those given on page 12, there exist certain discrepancies between them. The charges and credits to Profit and Loss do not appear in the Cash Journal while sales is credited \$100 and \$40, respectively. Both methods are correct, but it is not usual to show the amount to be charged or credited to Profit and Loss each time entry is made for a transaction. This procedure was followed on page 12 to illustrate two of the six rules of debit and credit. In practice it is easier to let such losses and gains go unaccounted for until the close of the accounting period, which is usually a month or a year. To look up the cost of goods sold each time a sale is consummated entails too much work. It is better to enter the credit to Sales at the selling price. Then at the end of the accounting period, by a process explained later on in this book, the cost of all goods sold during the accounting period is ascertained—thus arriving at the same result, namely, the loss or gain made on their sale, with much less labor. Had we followed this plan in making the journal entry on page 12, in which a loss of $10 is incurred on a sale of $40, it would have appeared,

Cash	$40.00	
To Sales (selling price)		$40.00

instead of,

Cash	$40.00	
Profit and Loss	10.00	
To Sales (cost price)		$50.00

When we follow the usual custom of entering a sale of goods at selling price, whether that be above or below cost, our work remains incomplete because the loss or gain, represented by the difference between cost and selling price, is not shown. This incompleteness is a sacrifice made to save labor. The Cash Journal might easily be arranged to indicate separately the loss or gain on each sale, were it practicable to find it.

Function of the Journals.—The word "journal" is an adaptation from the French, *journal*, meaning daily. As its name implies the Journal is a daily record. The Journals as described in this chapter are called books of original entry. In them records of transactions are entered chronologically, as soon as possible after the transactions are made. But in addition to a chronological record, which is based primarily on time of occurrence of transactions, there is needed another record based, not on time, but on the character and meaning of the transactions. The books of original entry, chronologically compiled, serve as a trustworthy source of information; but as information is arranged therein it is unsystematic and difficult to interpret. With but one exception, cash, the items in the General and Cash Journals require analyzing on the basis of function; that is, these various items representing exchanges of wealth, and losses, expense and gains need classifying on the basis of the "account" which they affect.

"Account" Defined.—An "account" is a statement showing the various items, in dollars and cents, which affect the value of any thing or class of things owned—which are termed assets—or any sum owed—which is a liability—or of any expense, or profit, or loss, or any class of these.

Function of the Ledger.—To provide a record in which transactions may be grouped according to their influence on accounts, is the purpose of the Ledger. In the Ledger are kept accounts for such assets, liabilities, expenses, losses and gains as the requirements of business make desirable. The extent to which accounts for these ought to be subdivided and consequently the number of the accounts is a question to be decided by the requirements of individual cases.

Functional Classification of Accounts.—After John Allen has completed his January transactions he possesses cash, merchandise, and the obligation of O. Rollo to pay him $150. He has as liabilities, an obligation to Meyer & Co., for $400. He has also incurred expenses and losses and made some gains. We learn these facts from a glance at the journal entries on page 12. If we rearrange these transactions on the basis of accounts affected, thus securing a functional classification, we have:

	Debited	Credited
Cash	$100.00	$ 15.00
	40.00	
Purchases	400.00	100.00
	....	50.00
Sales (at cost)	....	100.00
	....	90.00
Meyer & Co.	....	400.00
	10.00	10.00
Profit and Loss	100.00	50.00
	15.00	
O. Rollo	150.00	
Totals	$815.00	$815.00

Here we have the transactions classified on the basis of function. Note that in debiting Profit and Loss no distinction is made between expenses and losses. This defect might be obviated by setting up several accounts and thus subdividing the Profit and Loss account, which is here made sufficiently inclusive to cover all expenses, losses, and gains. The subdivisions may be as follows:

	Debited	Credited
General Expense	$ 15.00	
Losses	100.00	
	10.00	
Gains	....	$10.00
	....	50.00

Two Classes of Accounts.—After this manner accounts permit of as great subdivision and classification as may be desirable. A study of the above classifications of accounts will make obvious certain facts. One of these facts is the fundamental distinction which exists between those accounts that record assets and liabilities and those that record expenses, losses, and gains. The asset and liability accounts represent actual possessions and actual responsibilities. The expense, loss, and gain accounts, on the contrary, merely measure the changes in values that the assets and liabilities have undergone. Note that expenses and losses aggregate $125, and gains $60, making a net debit of $125 − $60, or $65. The following table shows that this loss has taken the form of changes in values of assets and liabilities as shown below:

Liabilities increased:		
1. Meyer & Co.	$400.00	
Assets decreased:		
None	00.00	
Total decrease of proprietorship		$400.00
Liabilities decreased:		
None	$ 00.00	
Assets increased:		
1. Cash	125.00	
2. Merchandise[1]	60.00	
3. O. Rollo	150.00	
Total increase of proprietorship		$335.00
Net decrease of proprietorship		$ 65.00

"Real" and "Nominal."—Thus we see that the loss or gain made in business may be discovered without keeping a record of the expenses, losses, and gains. However, it is necessary to keep accounts for these if we wish to know just how the loss or gain occurs. It is only by referring to the Profit and Loss items that the names and character of the losses, expenses and gains which give rise to the net decrease of wealth, amounting to $65, can be learned. The adjective "real" is used to designate those accounts which record assets and liabilities, and the adjective "nominal" to refer to those accounts which record the changes which the real accounts undergo during an accounting period. Therefore real accounts record assets and liabilities, and nominal

[1] Found by deducting cost of goods sold and destroyed from purchases.

accounts record expenses, losses, and gains. In one form of bookkeeping, called single entry, nominal accounts are not kept, and the profit or loss for a period must be ascertained by finding the net result of the increases and decreases which have occurred in the assets and liabilities, or real accounts, during the period. Such a system is incomplete because it gives the results as shown in the alteration in the assets and liabilities but does not show how these changes occurred. In double entry bookkeeping these changes are analyzed and recorded in the nominal accounts.

Significance of Real and Nominal Accounts.—The distinction between real and nominal accounts must be thoroughly grasped. Every item entered in the Journals finds its way into an account of one kind or the other, or else into one which contains both nominal and real elements, which is properly termed a mixed account. To illustrate the meaning of mixed accounts, assume that O. Rollo, whose account stands charged with $150, is able to pay only $100, in settlement. The remaining $50 is loss, but it stands in an account which also records an asset of $100. We have both a real or asset item of $100 and a nominal or loss item of $50 in the same account, so that such an account is rightly termed "mixed." When this condition arises it is necessary to divide the account into its real and nominal elements in order to obtain that classification of all accounts into nominal and real which is essential to the work of making an accurate statement of losses, expenses, and gains, and another of assets and liabilities.

The Ledger Form Illustrated.—We have shown the transactions grouped chronologically in the Journals. We have rearranged these transactions according to function on page 17. We have learned that the book in which the transactions are classified according to function is called the Ledger. We have also shown the transactions classified as to function, but in non-technical form, on page 17. Below, these same accounts (functional) are entered in the Ledger in regular form:

	Dr.	Ledger		Cr.
F		Cash	F	
	100.00			15.00
	40.00			
		Purchases		
	400.00			100.00
		Sales		50.00
				100.00
				90.00
		Meyer & Co.		400.00
		Profit and Loss		
	10.00			10.00
	100.00			50.00
	15.00			
		O. Rollo		
	150.00			

Chronological or Functional Records.—We have now shown the mode of recording transactions which has been evolved in accordance with the character and meaning of the transactions themselves. We have seen that these transactions can be recorded by either of two fundamental principles, (*a*) time of occurrence, and (*b*) financial effect or function. Both principles must be applied, for it is first ncessary to make a chronological record from which, in turn, the information can be secured for the compilation of a record based on the function of transactions. The Journals, general and cash, are the chronological records and the Ledger is the functional record.

Variation in Forms of Records.—The specific form which these records must be given depends upon convenience and utility. Simple and widely accepted forms of Journals and Ledger have been shown. Some variations from these will be considered later.

"**Posting**" **Defined.**—Since the functional record, the Ledger, is compiled from information recorded in the chronological records—the Journals, it is desirable to follow a definite procedure in transferring this information from the Journals to the Ledger. This procedure is called "posting." In posting it is not only necessary to make a rearrangement of the items in order to form the functional record, but it is necessary to make such notations in both the chronological and the functional records, *i.e.*, the Journal and Ledger, respectively, that the page from which they are derived in the Journals will be shown in the Ledger and also that the page to which they are posted in the Ledger will be shown in the Journals. This result is secured by providing folio (meaning *page*) columns in both Journals and Ledger for the purpose of receiving figures designating the page of the complementary record to which or from which, as the case may be, the postings are made.

The "Folio" Column.—The location of the folio column, again, is a matter of convenience. In the Ledger, however, it should be placed as near as possible to the column which receives the item posted from the Journal. Likewise in the Journals its proximity to the money columns is desirable. In the forms shown in the following chapter the folio columns are indicated by an "F." An examination of these forms will indicate the interrelation established, and its convenience for purpose of reference, between the Journals and Ledger.

NOTE.—At this point work should be started on practice Chapter VII and pursued in connection with the study of Chapters IV, V and VI.

CHAPTER IV

THE FUNCTIONAL CLASSIFICATION OF TRANSACTIONS

Work of Interpretation.—Financial records, the construction of which was discussed in the preceding chapter, are the means to an end. After they are constructed, chronologically and functionally, they require interpretation. If we care to fix arbitrarily a point at which bookkeeping ends and accounting begins it might well be said to be where recording ends and interpretation begins. We use the word recording in the narrow sense of routine operations. It does not include the work of contriving the records, which precedes their use. Thus accounting precedes and follows bookkeeping. Acting synthetically or constructively, it plans records best adapted to the conditions. Then bookkeeping fills out the record. Finally, accounting, operating analytically, interprets the record, making it useful in proportion to the accuracy, skill and judgment employed throughout the process.

Value of Interpretation.—The value of an interpretation of financial records is dependent upon two factors, (*a*) the thoroughness and accuracy with which the original or chronological records are kept, and (*b*) the judgment and care employed in arranging the transactions according to function when they are posted to the Ledger. An outline of transactions based on their functions was presented in Chapter III. It was there shown that a debit means one or more of three things, (1) wealth received, (2) expense incurred, and (3) loss incurred. It was also shown that a credit means one or more of three things, (1) debt incurred, (2) wealth surrendered, and (3) profit made. We have found that debits and credits may result in any of four ultimate consequences:

1. Liabilities increased.
2. Liabilities decreased.
3. Assets increased.
4. Assets decreased.

Significance of Losses, Expenses and Gains.—It follows that the significance of "expenses incurred," of "losses incurred," and of "profits made" lies ultimately in the increase or decrease of assets and liabilities. Expenses, losses, and profits merely measure the amount of the change in the assets and liabilities and indicate the manner of its occurrence. They may be compared to the gauge on a tank, which indicates the changing level of the water. But they do more than merely record changes in assets and liabilities. They also show the character and amount of both increases and decreases in assets and liabilities.

Two Classes of Ledger Accounts.—The foregoing suggests the principle which governs the functional classification of accounts, *i.e.*, that there must appear in the Ledger two distinct kinds of accounts: first, accounts whose titles are the names of the sundry assets and liabilities, which are collectively known as "real" accounts; and, secondly, accounts whose titles are the names of the sundry expenses, losses, and profits, which are collectively known as "nominal" accounts. Since losses, expenses and profits result from transactions, there are none until transactions have occurred. Hence there appear only real accounts in the Ledger until after transactions occur which involve expenses, losses, and profits.

Capital Defined.—So one about to engage in business opens ledger accounts for his sundry assets, and liabilities, if there are any of the latter. If there are liabilities the proprietor's interest in the assets is diminished to that extent. If, for example, the assets are worth $10,000 and liabilities amount to $5,000, the proprietor's interest in the assets is one-half of their value. We then say that his net worth, or capital, is $5,000. But if one begins business with $10,000 in assets and no liabilities, his interest is the total value of the assets—which figure also expresses his net worth or capital. Capital or net worth is the excess of the value of the assets over the liabilities. This may be expressed in the form of an equation, thus:

$$\begin{aligned}
&\text{Assets} - \text{Liabilities} = \text{Capital} \\
\text{or } &\text{Assets} = \text{Capital} + \text{Liabilities} \\
\text{or } &\text{Liabilities} = \text{Assets} - \text{Capital} \\
\text{or } &\text{Capital} = \text{Assets} - \text{Liabilities}
\end{aligned}$$

If assets equal $10,000 and liabilities equal $5,000, the equation becomes:

Assets, \$10,000—Liabilities, \$5,000 = Capital, \$5,000 or any other of the arrangements suggested above may be followed. If assets are \$10,000 and there are no liabilities, then,

Assets, \$10,000 = Capital, \$10,000

Statement of Assets, Liabilities and Capital.—Before opening a set of books it is necessary to make a statement showing assets, liabilities, and capital. The simplest condition is that in which cash is the only asset and there are no liabilities. Thus if Grant Atkins invests \$8,000 cash, and has no liabilities, his statement appears as follows:

Statement of Assets, Liabilities, and Capital, Grant Atkins, as at July 2, 1917

Assets		Liabilities and Capital	
Cash	\$8,000	Capital	\$8,000
	\$8,000		\$8,000

But if, in addition to cash, \$8,000, Atkins possesses merchandise, \$5,000, store and lot, \$9,000, furniture and fixtures, \$500, the statement reads:

Statement of Assets, Liabilities, and Capital, Grant Atkins, as at July 2, 1917

Assets		Liabilities	
Cash	\$ 8,000	None	\$00,000
Inventory	5,000		
Store and Lot	9,000	Capital	
Furniture & Fixtures	500	Grant Atkins	22,500
	\$22,500		\$22,500

Opening Journal Entry.—Note that this is a functional classification of transactions, not a chronological one; also that all of these accounts are real accounts. No nominal accounts appear. This is so because no losses or expenses have been incurred and no profits made. These are the accounts which ought to appear in the Ledger before any transactions are made. They might be entered directly in the Ledger. However, it is customary to enter them first in the Journal by means of an "opening entry," as follows:

Journal, Grant Atkins

			F		
		July 2, 1917 Grant Atkins this day begins business as a retail grocer with assets, liabilities, and capital, as follows:			
		Cash	2	8,000.00	
		Inventory	3	5,000.00	
		Store and Lot	4	9,000.00	
		Furniture and Fixtures	5	500.00	
		To Grant Atkins, Capital	1		22,500.00

Arrangement of Accounts in the Ledger.—From the Journal these items are posted to the Ledger, where the arrangement must be made as convenient as possible. In actual practice it is best to enter but one account on a ledger page, placing it at the top, and thus leaving the whole page for additional entries to the account as time passes. For illustrative purposes, however, two or more accounts may be entered on the same page. The arrangement of the asset and liability accounts according to some plan is customary. This, however, is a matter of detail. Usually the proprietor's capital account occupies the first page. This may be followed by the assets and liabilities in the order in which they are shown in the opening journal entry. Possibly a different arrangement may be preferable. When business gets under way various personal accounts, both receivable and payable, will be opened; also nominal accounts, to record expenses, losses, and profits. The Ledger must be sufficiently large to contain these accounts and make possible a reasonable amount of expansion in the number of the various kinds of accounts, especially of the personal accounts receivable and accounts payable, which increase rapidly in number with the growth of business.

The Ledger Illustrated.—When the items in the opening entry, shown above, are posted to the Ledger of Grant Atkins, one account to a page, the ledger accounts, with cross references placed in the folio columns, appear as follows:[1]

[1] The word Sundries, which appears in the explanation column of the capital account of Grant Atkins, is used because sundry items were charged in the opening journal entry.

Ledger, Grant Atkins

Grant Atkins, Capital page 1

1917			F						F		
				Capi-tal		July	2	Sundries	J1	22,500	00

Cash page 2

1917			F								
July	2	Capital, Grant Atkins	J1	8,000	00						

Merchandise page 3

1917			F						F		
July	2	Capital, Grant Atkins	J1	5,000	00						

Store and Lot page 4

1917			F						F		
July	2	Capital, Grant Atkins	J1	9,000	00						

Furniture and Fixtures page 5

1917									F		
July	2	Capital, Grant Atkins	J1	500	00						

"Cash" in the Opening Entry.—Although all cash transactions are ordinarily brought into the cash journal, it is best to bring the cash invested into the opening journal entry with the other assets. It may also be entered in the Cash Journal, if desirable. Where this is done it is necessary to check (✓) this item either in the General Journal or the Cash Journal to avoid posting it twice. If it is entered in the Cash Journal but posted from the General Journal, the left side of the Cash Journal should appear thus, after the item is checked off:

Cash Journal, Grant Atkins

1917			F		
July	2	Capital, Grant Atkins......................	✓	8,000	00

The (✓) in the folio column shows that this item is not to be posted. If, on the other hand, it is thought best to post the item from the Cash Journal it may be checked off in the General Journal also.

Entries for Routine Transactions.—All entries in the Journals having been posted or checked off, the books now await the entries which arise from the ordinary routine of business. These will record chiefly purchases, sales, losses, profits and expenses. It is therefore necessary to reserve one section of the Ledger for the reception of creditor's accounts, *i.e.*, the accounts of those from whom we purchase on credit; another section of the Ledger for the reception of debtor's accounts, *i.e.*, the accounts of those to whom we sell on credit; and another section for the reception of nominal accounts, *i.e.*, those which record losses, expenses, and profits.

Accounts Payable and Accounts Receivable.—The accounts with creditors are collectively called "accounts payable." The accounts with debtors are collectively called "accounts receivable." The number of these two classes of accounts lies largely beyond control, it being dependent upon the character and growth of the business. The number of the nominal accounts is ordinarily a voluntary matter. It would even be possible to have one general nominal account called "profit and loss," or more logically, "profit, loss, and expense," into which all nominal debits and credits would be posted from the Journals. The sole recommendation of this plan is its simplicity. By lumping together all of the nominal items the account becomes heterogeneous and unintelligible; thus the Ledger's purpose, which is to furnish a functional classification, is to that extent negatived.

Analysis of Losses, Expenses and Profits.—We must know not merely the net effect of losses, expenses, and profits; we must also learn definitely the causes or conditions leading to it. If a proprietor sustains a net loss of $1,000 in a month, he seeks to discover the causes of that loss. To do this he analyzes his expenses, losses, and profits. Thus he is enabled to find where increases and decreases have occurred during the preceding month or months and to take steps necessary to remedy the evil. With the above considerations in mind, study the following subdivision of the profit and loss account:

Expenses and Losses:

Rent Expense
Wages Expense
Stable Expense
Heat and Light Expense
Miscellaneous Expenses and Losses

Profits:

Merchandise (on Sales)
Miscellaneous

Subdivision of Accounts.—The subdivision of accounts is an endless process. It is limited, however, by practical considerations. A small concern naturally demands a less minute subdivision of accounts than a large one having a great variety of expenses and many sources of profit. Ledger accounts may be opened for as many separate kinds of nominal items as it is desirable to keep separately recorded. Separate accounts should be opened for the more important nominal factors, the smaller and less significant ones being grouped together under "miscellaneous" or "general expense." Accounts must supply information required by the manager; the classification must be adapted to that end.

CHAPTER V

FUNCTIONAL CLASSIFICATION OF TRANSACTIONS ILLUSTRATED

Accounting Procedure.—Let us assume that during the month of July, 1917, Grant Atkins carries on business as follows:

July 2. Buys merchandise on account from Baxter and Company, $400. Pays rent for month, $35. Sells merchandise on account to Mr. Buckley, $15, and to Aaron Cole, $17. Buys stable supplies sufficient to last 2 months, $40, cash.

(3) Buys merchandise on account from Baker Wholesale Company, $725.00.

(6) Pays for stationery and printing, $3.10, cash. Sells on account to L. Laurens, $23.00.

(7) Cash sales for week, $348.47. Sells on account to Mr. Buckley, $12.20, and to S. Sherman, $17.00.

(10) Pays Baxter & Co. Bill of July 2, $400. Buys on account from the Milton Company, merchandise, $370.

(11) Mr. Buckley pays account in full, $27.30.

(12) Sells on account to James Whittlesey, $27.20.

(14) Pays wages for 2 weeks: bookkeeper, $30; clerk, $25; delivery boy, $15.

(16) Pays for advertising, $10. Cash sales for week, $360.92.

(17) S. Sherman pays $10 on account.

(18) Buys from Armstrong Supply Co., merchandise $55.00, on account.

(21) Cash sales for week, $335.20.

(23) Miscellaneous expense, cash, $3.27. Sells on account to Oscar Morgan, merchandise, $14.00.

(24) Pays Baker Wholesale Co. bill of $725.30.

(27) Sells on account to James Whittlesey, $14.20.

(31) Pays wages: bookkeeper, $30; clerk, $25; delivery boy, $15. Pays light bill for month, $5.60. Miscellaneous expense, cash, $6.20. Cash sales for week, $397.20. One-half of stable supplies are consumed during the month.

The cash sales are given weekly, the daily cash sales having been kept on subordinate records to avoid making daily entries for this item in the Cash Journal. Below are shown the Journals and Ledger of Grant Atkins as they appear at the close of business July 31, 1917, after all transactions are entered and posted:

General Journal, Grant Atkins

	July 2, 1917			
	Grant Atkins this day begins business as a retail grocer, with assets, liabilities and capital, as follows:			
	Cash		8,000 00	
	Inventory	3	5,000 00	
	Store and Lot	4	9,000 00	
	Furniture and Fixtures	5	500 00	
	Grant Atkins, Capital	1		22,500 00
	Purchases	3	400 00	
	To Baxter & Company	40		400 00
	Purchase on credit.			
	Mr. Buckley	80	15 00	
	To Sales	3		15 00
	Aaron Cole	81	17 00	
	To Sales	3		17 00
	July 3			
	Purchases	3	725 30	
	To Baker Wholesale Co.	41		725 30
	July 6			
	L. Laurens	82	23 00	
	To Sales	3		23 00
	July 7			
	M. Buckley	80	12 20	
	To Sales	3		12 20
	S. Sherman	83	17 00	
	To Sales			17 00
	July 10			
	Purchases	3	370 00	
	To Milton Company	42		370 00
	July 12			
	James Whittlesey	84	27 00	
	To Sales	3		27 00
	July 18			
	Purchases	3	55 00	
	To Armstrong Supply Co.	43		55 00
	July 23			
	Oscar Morgan	85	14 00	
	To Sales	3		14 00
	July 27			
	James Whittlesey	84	14 20	
	To Sales	3		14 20

Cash Journal, Grant Atkins

Cash Dr. Cash Cr.

1917			F			1917			F		
July	2	Sundries..........		8,000	00	July	2	Rent expense, for mo.	100	35	00
	7	Sales (cash)........	3	348	47		2	Stable supplies.......	8	40	00
	11	M. Buckley (in full)	80	27	20		6	Miscellaneous expense			
	16	Sales (cash)........	3	360	92			(Sta. & Print.......	101	3	10
	17	S. Sherman (on ac-					10	Baxter & Co. bill,			
		count)...........	83	10	00			July 2.............	40	400	00
	21	Sales (cash)........	3	335	20		14	Wages: Bookpr.. 30	112		
	31	Sales (cash)........	3	397	20			Clerk.... 25			
								Delivery boy 15			
								—		70	00
							16	Miscellaneous expense			
								(advertising)........	101	10	00
							23	Misc. expense........	102	3	27
							24	Baker Wholesale Co.			
								bill July 3..........	41	725	30
							31	Wages: Bookpr.. 30	102		
								Clerk.... 25			
								Delivery boy 15			
								—		70	00
								Fuel & light (light for			
								mo.)...............	101	5	60
								Misc. exp...........	101	6	20
		Cash Dr..........	2	9,478	99			Cash Cr............	2	1,368	47
								Balance.............		8,110	52
										9,478	99
Aug.	1	Balance...........		8,110	52						

Ledger, Grant Atkins page 1

REAL ACCOUNTS DIVISION OF LEDGER

Capital—Grant Atkins

						1917					
						July	1	By Sundries......	J1	22,500	00

page 2

Cash

1917						1917					
July	2	To Sundries	C.J.1	9,478	99	July	31	By Sundries	C.J.1	1,368	47
	31	8,100.52									

page 3

Inventory

1917											
July	2	To Sundries......	J1	5,000	00						

page 3

Purchases

1917											
July	2	To Baxter & Co..	J1	400	00						
	3	To Baker Wholesale Co..........	J1	725	30						
	10	To Milton Co.....	J1	370	00						
	18	To Armstrong Supply Co. 1,550.30	J1	55	00						

page 3

Sales

						1917					
						July	2	By M. Buckley...	J1	15	00
							2	By Aaron Cole...	J1	17	00
								By L. Laurens....	J1	23	00
							7	By Cash.........	C.J.1	348	47
								By M. Buckley...	J1	12	20
								By S. S. Sherman.	J1	17	00
							12	By J. Whittlesey..	J1	27	00
							16	By Cash.........	C.J.1	360	92
							21	By Cash.........	C.J.1	335	20
							23	By O. Morgan....	J2	14	00
							27	By J. Whittlesey..	J2	14	20
							31	By Cash.........	J2	397	20
								1,581.19			

Ledger, Grant Atkins

Nominal Accounts Division of Ledger

page 100

Rent Expense

1917				
July	2	To Cash....	C.J.1	35.00

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Miscellaneous Expense

1917				
July	6	To Cash....	C.J.1	3.10
	16	To Cash....	C.J.1	10.00
	23	To Cash....	C.J.1	3.27
	31	To Cash....	C.J.1	6.20
		22.57		

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Wages Expense

1917				
July	14	To Cash....	C.J.1	70.00
	31	To Cash....	C.J.1	70.00
		140.00		

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Fuel and Light Expense

1917				
July	31	To Cash....	C.J.1	5.60

Ledger, Grant Atkins

Accounts Payable Division of Ledger

page 40

Baxter & Co.

1917					1917				
July	10	To Cash....	C.J.1	400.00	July	2	By Purchases.	J.1	400.00

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Baker Wholesale Co.

1917					1917				
July	24	To Cash....	C.J.1	725.30	July	3	By Purchases.	J.1	725.30

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Milton Co.

					1917				
					July	10	By Purchases.	J.1	370.00

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Armstrong Supply Co.

					1917				
					July	18	By Purchases.	J.1	55.00

Ledger, Grant Atkins

Accounts Receivable Division of Ledger

page 80

M. Buckley

1917					1917				
July	2	To Sales......	J.1	15.00	July	11	By Cash....	C.J.1	27.20
	7	To Sales......	J.1	12.20					

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Aaron Cole

1917								
July 2	To Sales......	J.1	17.00					

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L. Laurens

1917								
July 6	To Sales......	J.1	23.00					

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S. Sherman

1917				1917				
July 7	To Sales......	J.1	17.00	July 17	By Cash....	C.J.1	10.00	
	7.00							

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James Whittlesey

1917								
July 12	To Sales......	J.1	27.00					
27	To Sales......	J.2	14.20					
	41.20							

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Oscar Morgan

1917								
July 23	To Sales......	J.2	14.00					

CHAPTER VI

INTERPRETATION OF LEDGER ACCOUNTS

Grouping Ledger Accounts.—The ledger accounts shown in the preceding chapter require some study. They represent the functional classification of the transactions which were recorded chronologically in the Journals. They have been grouped into classes in the Ledger, on the basis of similarity—accounts receivable in one section of the Ledger, accounts payable in another, and so on. Strictly speaking, the nominal accounts cannot be entirely isolated, because some of the accounts in other sections are sometimes mixed, and so contain nominal elements.

Interpretation of Accounts—The Trial Balance.—Recording ends when the ledger accounts are set up and all transactions are posted to them. At this point the work of interpretation begins. First, however, it is necessary to "take a trial balance" of the Ledger. The purpose of the trial balance is to prove the correctness of the recording, within certain limits, and to supply a statement which can be made the basis of the work of interpretation. A trial balance consists of a schedule of the balances of the various ledger accounts, listed in two columns, debit and credit, accordingly as the balances are debit or credit balances. An account has a debit balance when the amount charged to it exceeds the amount credited to it. It has a credit balance when the amount credited to it exceeds the amount charged to it. When it is desirable to indicate what the balance of an account is it may be written in small figures on the proper side of the account, as shown in the ledger accounts in the preceding chapter. A trial balance made up of these balances is given below.

Nature of the Trial Balance.—The balances are grouped here to correspond with the classification of the ledger accounts, although this is not necessary, and in practice such a grouping is not usually followed. Perhaps the most striking feature of the trial balance is the equality of the two columns. This fact is an outgrowth of the nature of the entries made in the Journals,

Trial Balance, Grant Atkins, as at July 31, 1917

1	Capital—Grant Atkins		$22,500.00
	Cash	8,110.52	
	Store and Lot	9,000.00	
	Furniture and Fixtures	500.00	
	Stable Supplies	40.00	
2	Rent Expense	35.00	
	Purchases	1,550.30	
	Sales		1,581.19
	Miscellaneous Expense	22.57	
	Inventory, July 2, 1917	5,000.00	
	Wages Expense	140.00	
	Fuel and Light Expense	5.60	
3	Milton Co.		370.00
	Armstrong Supply Co.		55.00
4	Aaron Cole	17.00	
	L. Laurens	23.00	
	S. Sherman	7.00	
	James Whittlesey	41.20	
	Oscar Morgan	14.00	
		$24,506.19	$24,506.19

namely, the equality of debits and credits. This equality persists in the Ledger, for all debits in the Journals become debits in the Ledger, and all credits in the Journals become credits in the Ledger. Although we take only the balances of the ledger accounts into the trial balance, these are sufficient because the total of the debit balances will equal the total of the credit balances if the posting is done correctly and no omissions are made. The balances of the two accounts are the uncancelled portions. Since the cancelled parts of the accounts are equal, debit for credit, it follows that the sum of the debit balances must equal the sum of the credit balances.

Consequently it is sufficient to include in the trial balance merely the balances of the ledger accounts. However, a trial balance may be made up of the total charges and credits in the ledger—an unnecessary increase of work over the usual method. It would require the inclusion of all accounts, even though some stand debited and credited with equal amounts. When balances only are taken into the trial balance these latter are conveniently ignored.

An examination of the trial balance affords interesting results. The first of the four divisions consists of the balances of miscellaneous real and mixed accounts, but excludes accounts receivable and accounts payable. The first and second divisions are balances of impersonal accounts. The third and fourth divisions are balances of personal accounts. The first division is composed of the real accounts. The balances in divisions three and four are real with the possible exception of nominal elements in section three, resulting from uncollectible accounts.

Two Chief Purposes of the Trial Balance.—The trial balance checks up work done and serves as a basis for an interpretation of the Ledger from which it is taken. It contains most of the information needed for such an interpretation, which is the next step in accounting procedure.

Mixed Accounts.—As already shown, nominal accounts record expenses, losses, and profits. From an examination of section 2 of the trial balance one might therefore conclude that expenses and losses are far in excess of gains since the nominal debit balances make a total of $6,753.47 while the single nominal credit balance, "sales," is but $1,581.19. The secret of the matter lies in the balances of the "Purchases" and "Inventory July 2" accounts. These are in reality mixed accounts because not all of the merchandise on hand at the beginning of the month and purchased during the month has been sold. Assume that an actual tabulation shows that merchandise on hand amounts to $5,400, cost price. This means that the actual total of the nominal debit balances is $6,753,47—$5,400, or $1,353.47, for it is only by extracting the real item of $5,400 from the mixed debit balances that we secure the purely nominal elements. The inventory for July 2 is the old or nominal inventory. The inventory, $5,400, for July 31, is the new or real inventory. The operation required may be simply illustrated as follows. Assume that we have 2 bushels of wheat which cost $1 per bushel. We buy 2 additional bushels at the same price. We sell 2 bushels at $1.50 per bushel. We then have remaining, as an inventory should show, 2 bushels of wheat, cost, $2. Placing these transactions and facts in technical form we have:

Inventory (old)

To Sundries................ 2.00

Purchases

To Cash.................... 2.00

Sales

By Cash.................... 3.00

Here we have debits amounting to $4.00 and credits amounting to $3.00. It is only by remembering that only one-half of our wheat is sold, and that therefore one-half of the debits, or $2, is real, that we can account for the profit made, $1.00, which is represented by the excess of the nominal credit items, $3, over the nominal debit items, $2. The result can best be shown by closing the old inventory, purchases, and sales accounts into a single profit and loss account, which should also be credited with the amount of the new inventory and a "new" inventory account charged. This is best done by means of journal entries, thus:[1]

Profit and Loss	$2.00	
To Inventory (old)		$2.00
Profit and Loss	$2.00	
To Purchases		$2.00
Sales	$3.00	
To Profit and Loss		$3.00
Inventory (new)	$2.00	
To Profit and Loss		$2.00

When these entries are posted to the Ledger, the old inventory purchases, and sales accounts are closed and new accounts opened as follows:

Profit and Loss

To Inventory (old)	2.00	By Sales	3.00
To Purchases	2.00	By Inventory (new)	2.00

Inventory (new)

To Profit and Loss	2.00

The profit and loss account now contains a purely nominal balance, which is a credit of $1, representing profit made. The new inventory account is real, showing the worth of the wheat still on hand. Had there been any expenses incurred in connection with the purchase and sale of the wheat these would appear in suitable nominal accounts and should likewise be closed into the profit and loss account by suitable journal entries, thus reducing the credit balance to the actual profit made, or possibly showing a net debit balance, therefore a loss.

The entries required to close all the nominal accounts shown

[1] Sometimes the inventory, purchases and sales accounts are carried to "merchandise" and the balance of merchandise to profit and loss. The net result is the same by either method.

in the trial balance of Grant Atkins into profit and loss are as follows:

Profit and Loss	$1,550.30	
To Purchases		$1,550.30
Sales	$1,581.19	
To Profit and Loss		$1,581.19
Profit and Loss	$5,000.00	
To Inventory (old)		$5,000.00
Inventory (new)	$5,400.00	
To Profit and Loss		$5,400.00
Profit and Loss	$ 223.17	
To Stable Supplies		$ 20.00
Rent Expense		35.00
Miscellaneous Expense		22.57
Wages		140.00
Fuel and Light		5.60

Closing the Nominal Accounts.—When these entries are posted to the proper ledger accounts all the nominal accounts balance and may be closed by adding up to the two sides and underlining the totals, or if there is but one item on each side, by merely underlining each item, debit and credit, respectively. Thus the purchases account will appear as follows:

Purchases

			F					F	
1917 July	2	To Baxter & Co.	J1	400 00	1917 July	31	By Profit and Loss	J?	1,550 30
	3	To Baker Whsl Co.	J1	725 30					
	10	To Milton Co.	J1	370 00					
	18	To Armstrong Supply Co.	J1	55 00					
				1,550 30					1,550 30

and the rent expense account as follows:

Rent Expense

			F					F	
1917 July	2	To Cash	C.J.1	35 00	1917 July	31	By Profit and Loss		35 00

The Profit and Loss Account.—There now remain open in the Ledger only the real accounts, with the possible exception of the profit and loss account, which stands debited and credited with the various nominal items that have been closed into it. It may or may not appear in the Ledger. It might not be desirable to open this account in the Ledger because of the important information which it contains. For illustrative purposes it may be opened in the Ledger. The profit and loss account appears thus after the closing entries are posted:

Profit and Loss

			F						F		
1917						1917					
July	31	To Purchases..		1,550	30	July	31	By Sales......		1,581	19
		To Inventory (Old)........		5,000	00			By Inventory (New).......		5,400	00
		To Stable Supplies.........		20	00						
		To Rent Expense........		35	00						
		To Misc. Expense........		22	57						
		To Wages Expense........		140	00						
		To Fuel and Light Expense		5	60						
		Balance, Net Profit Carried to Capital...		207	72						
				6,981	19					6,981	19

Disposition of Net Profit.—The account shows a credit balance of $207.72, which is the net profit made by Grant Atkins during the month of July. This means that his net worth or capital has been increased by that amount. It is customary to show the increased or decreased capital by carrying the balance of the profit and loss account to the proprietor's capital account. This may be done by a final closing entry, as follows:

Profit and Loss....................................	$207.72	
To Grant Atkins Capital........................		$207.72
To transfer profit for month to capital account.		

When this entry is posted the profit and loss account is closed, as shown above, and the capital account of Grant Atkins becomes:

Grant Atkins—Capital

		1917	
		By Sundries......... J1	22,500.00
		By Profit and Loss.. J(?)	207.72

This capital account may be permitted to stand as above or, if desirable, it may be ruled off and the balance brought down as shown below:

Grant Atkins—Capital

1917		1917	
July 31, To Balance,		July 1, By Sundries11...	22,500.00
Net Capital........	22,707.72	July 31, Profit and Loss J(?)	207.72
	22,707.27		22.707.72
	Aug. 1,	By Balance, Net Capital,	22,707.72

The Final Trial Balance.—Another trial balance should now be taken of the Ledger. This is known as the final trial balance. The final trial balance shows the amount of the assets, liabilities and capital after a period's transactions—in this case one month. All open accounts shown in the final trial balance are real accounts. Sometimes the final trial balance is termed the "balance sheet," but it is better to apply this expression to a rearrangement of the items listed in the final trial balance. In this rearranged statement items of like character are listed under suitable subheads, as shown below:

Balance Sheet, Grant Atkins, as at July 31, 1917

Assets		Liabilities and Capital	
Fixed Assets		Fixed Liabilities	
Store and Lot........	$ 9,000.00	None............... $	00.00
Furniture and Fixtures...........	500.00		
Current Assets		Current Liabilities	
Cash................	8,110.52	Accounts Payable....	425.00
Accounts Receivable..	102.20		
Inventory, July 31...	5,400.00		
Deferred Charges		Capital	
Stable Supplies.......	20.00	Grant Atkins........	22,707.72
	$23,132.72		$23,132.72

The profit and loss account may also be put into a form more intelligible to the individual unacquainted with accounts. It is then termed "profit and loss statement," or "income statement." Below is shown a profit and loss statement for the business of Grant Atkins for the month ending July 31, 1917. This should be carefully compared with the profit and loss accounts given above, and the rearrangement of the items noted.

Profit and Loss Statement, Grant Atkins, for the Month Ending July 31, 1917

Sales for Month		$1,581.19
Deduct Cost of Goods Sold:		
Inventory, July 1	$5,000.00	
Purchases During Month	1,550.30	
	$6,550.30	
Less: Inventory July 31	5,400.00	$1,150.30
Gross Profit on Sales		$ 430.89
Deduct Expenses of Operation:		
Rent	$ 35.00	
Wages	140.00	
Fuel and Light	5.60	
Stable Supplies	20.00	
Miscellaneous	22.57	$ 223.17
Net Profit for Month		$ 207.72

Process of Ledger Interpretation.—Thus we find that the interpretation of the Ledger includes six distinct steps:

1. Taking the trial balance.
2. Entering the closing journal entries and posting them, thus closing the nominal accounts and setting up the profit and loss account.
3. Closing the balance of the profit and loss account (net profit) into the capital account.
4. Taking the final trial balance.
5. Rearranging the profit and loss account into the profit and loss statement.
6. Rearranging the final trial balance into the balance sheet.

The Financial Statements.—The profit and loss statement and the balance sheet are the ends toward which all preceding work is the means. They interpret the ledger, each performing a distinct part of that work. The profit and loss statement details the expenses, losses, and profits. The balance sheet shows the amount of all assets and liabilities and the net worth or proprietorship. It indicates the financial condition of an enterprise at a given instant of time, presenting a kind of cross-sectional view of it.

The profit and loss statement and the balance sheet are the two most essential documents issued to afford material for the study of the history and progress of an enterprise. Unincorporated concerns, such as sole proprietorships, do not usually publish these statements but keep the information they supply more or less private. Their value is largely comparative. That is, if a system of accounts is continued for several years, useful comparative statements can be constructed, showing changes and tendencies, and thus affording checks to extravagant and misdirected projects. The usefulness of the information supplied by the Ledger is conditioned largely upon its timeliness. Next to accuracy of results timeliness is the most important requirement.

The Month as the Accounting Period.—Formerly, and even today in some instances, the nominal accounts were closed out at irregular and infrequent intervals. Modern conditions require the customary financial statements frequently, regularly, and promptly. The month has become the most popular period of time upon which to base these statements. It is not so long but that any unfavorable tendencies can be discovered before much injury results from them. It is sufficiently long to allow influences and tendencies to materialize considerably, to make an interpretation of them reliable, and yet not interfere too much with daily office routine by the additional labor entailed.

CHAPTER VII

RECORDING FINANCIAL TRANSACTIONS—PRACTICE

Purpose of Practice Chapters.—If the student has grasped thoroughly the contents of the preceding chapters he is now prepared to confirm these fundamental principles and fix them in mind by the exercises that follow in this chapter. The performance of these problems in a careful and thoroughgoing manner is as necessary to the successful study of accounting as is a study of the theory that underlies them. It is for this reason that separate practice chapters have been given equal emphasis along with those that are given over to an exposition of principles.

Character of Practice Work.—If this practice work is to do the greatest possible good the student must be self-reliant, attempting at every stage to catch the full significance of all transactions and to apply the principles explained in the chapters treating of the theory. In no instance will practice problems anticipate theory; but in every instance there will be found in preceding chapters an exposition adequate to enable the student to proceed intelligently with the problem. Practice problems found in later practice chapters illustrate not only the chapter on theory immediately preceding but will frequently be found to be dependent on earlier theory chapters, thus affording continuous review exercises.

Materials Required—Construction of Books.—The student should supply himself with a small quantity of ordinary journal and ledger paper. For the exercises in this chapter two double sheets of ledger paper and two double sheets of journal paper will suffice. As more will be needed it will be best to buy it in quantities of not less than six sheets of each. He is now ready to construct the General Journal, Cash Journal and Ledger. On the first page of journal paper make the notations shown in the following diagram:

Page 1.

General Journal, A. B. Gray

Date		Explanation	F	Dr.		Cr.	
1919							

Note the page number, location in center of page of the title "General Journal," the date, "1919," and the designations "Dr." and "Cr." at the top of the first and second money columns respectively. If the column headed "F" is lacking it should be supplied by the student.

Next construct a Cash Journal by opening a sheet of Journal Paper and making therein the notations shown in the following diagram:

Page 1		Cash Journal, A. B. Gray					Page 1
	Cash Dr.				Cash Cr.		
Date	Explanation	F	Amt. Columns	Date	Explanation	F	Amt. Columns
1919				1919			

Note that "Page 1" is entered on both sides of the double page. Note also the location of the "F" or folio columns, which should be supplied if lacking.

Lastly, take a double sheet of ledger paper and on the first page enter the following notations:

Page 1

Ledger, A. B. Gray

Date	Explanation	F	Amt.	Date	Explanation	F	Amt.

Having finished the first page of the Ledger open the sheet and make the same notations on the inner left hand page, then on the inner right hand page, and finally on the outer or fourth page, but paging them respectively "Page 2," "Page 3," and "Page 4."

You are now ready to enter the transactions of A. B. Gray for the month of September, as follows:

Diary of Events—A. B. Gray—Sept., 1919.

Sept. 1, 1919. A. B. Gray enters the retail grocery business, investing $4,000 in cash. Pays Sept. rent $50.00. He pays $400.00 for a horse and delivery wagon, and engages Andy Smith as a delivery boy at $30.00 per month. He also engages a clerk at $50.00 per month and a bookkeeper at $60.00. These persons begin work as of Sept. 1, and are to receive payment semi-monthly.

Note.—The opening entry should be made in both Journal and Cash Book. Ordinarily cash items do not appear in the Journal and it would not be wrong in this instance to enter the $4,000.00, original investment, in the Cash Journal and omit it from the General Journal. Since, however, it is customary to show the original investment entry in the Journal it is best to enter it in both General Journal and Cash Journal but checked thus(✓) in the General Journal folio column to indicate that it is to be posted from the Cash Journal. This entry then appears thus in General Journal and Cash Journal:

General Journal

Date		Explanation	F	Dr.		Cr.	
1919							
Sept	1	A. B. Gray this day enters the retail grocery business with assets and capital as follows					
		Cash..................................	✓	4,000	00		
		A. B. Gray, Capital.................				4,000	00

Cash Journal (left page)

Date		Explanation	F	Amt. columns			
1919							
Sept.	1	A. B. Gray, Capital.....................				4,000	00

The payments of $50. Sept. rent and $400 for horse and wagon are next made on the right side of the Cash Book, thus:

Cash Journal (right page)

Date		Explanation	F	Amt. columns			
1919							
Sept.	1	Expense—Sept. rent.....................		50	00		
		Delivery Equipment—horse and wagon....		400	00		

The remainder of the data for Sept. 1 is mere memoranda and should not be entered in the books.

Sept. 2. Buys from Cloverdale Wholesale Co. mdse. $500.00, on account, 30 days.

Note.—Make this entry in the Journal immediately below the one for Sept. 1, as follows:

Sept. 2	Purchases................................	$500.00	
	Cloverdale Wholesale Co...............		$500.00
	On acct. 30 da.		

Sept. 3. Sells to T. M. Phillips, on account, mdse. $8.75, and to Andrew Fry, on account, mdse., $11.43.

Note.—These entries are made in the General Journal, as follows:

Sept. 3	T. M. Phillips	$8.75	
	Sales		$8.75
	Andrew Fry	$11.43	
	Sales		$11.43

Since all transactions on account appear in the General Journal and since time of credit granted is not given no explanation need be appended to these entries.

Sept. 5. He buys a display case for his store window from the Oldmore Manufacturing Co., on account, 10 days, $50.00.

Note.—This is a General Journal entry. Why? Charge "Furniture and Fixtures" and credit "Oldmore Manufacturing Co.," making an explanation, beneath the entry, of the nature of the transaction, thus:

Furniture and Fixtures	$50.00	
Oldmore Manufacturing Co.		$50.00
For display case bought on acct. 10 da.		

The student will learn that accountants possess a variety of stereotyped phrases which conveniently express classes of assets, liabilities, losses, etc. Among these are Furniture and Fixtures, Delivery Equipment, Supplies, Accounts Receivable, Accounts Payable, Profit and Loss, and so on. The full significance of these will appear as we proceed.

Sept. 6. Sells mdse. for cash $15.22, and to S. Thomas, on account, mdse., $7.27.

The cash sale is entered on the left side of the Cash Journal thus:

Sept. 6 Sales..$15.22

The amount should appear in the first money column.

For S. Thomas, see transactions on Sept. 3.

Sept. 8. Cash sales $10.03. Buys 2 tons hay for delivery horse, $30.00, cash.

For the first transaction see Sept. 6. For 2 tons hay bought make following entry on right side of Cash Journal:

Sept. 8 Supplies—2 tons hay.............................. $30.00

Sept. 9. Cash sales, $22.11. Sells on account, mdse., to T. M. Phillips $6.42; to R. T. Myers, $7.00; and to B. L. McLoughlin, $3.25. (See entries of Sept. 3 and 6.) T. M. Phillips pays bill of Sept. 3, $8.75.

The sales on account will be understood by turning to the entries referred to in parentheses. Hereafter when entries similar to those already made are met with the only explanation will be the reference to the preceding entry. The entry for T. M. Phillips is made on the left side of the Cash Journal thus:

Sept. 9 T. M. Phillips—bill of Sept. 3........................ $8.75

Sept. 10. Gray pays telephone bill for Sept., $3.00 (see Sept. 1). Sells to J. J. Tiery, on account, mdse., $6.00 (see Sept. 9). Buys mdse., on account, 30 days, from Cloverdale Wholesale Co., $400.00 (see Sept. 2). Cash sales, $22.35 (see Sept. 8).

Sept. 11. Pays Oldmore Manufacturing Co. bill of Sept. 5, $50.00. Cash sales, $24.00 (see Sept. 9). Pays $10.00 for advertising and $5.00 for sign painting on store. (See entry for rent, Sept. 1.)

Note.—The payment to Oldmore Mfgr. Co. is entered on the right side of the Cash Journal, thus:

Sept. 11 Oldmore Manufacturing Co. bill Sept. 5............. $50.00

Sept. 12. Cash sales, $30.00 (see Sept. 11).

Sept. 13. S. Thomas pays bill Sept. 6, $7.27. (See Sept. 9.) R. T. Myers pays bill of Sept. 9, $7.00 (see Sept. 9). Pays assistants their first half-month's salaries as follows:

Delivery boy..................................	$15.00
Clerk..................................	25.00
Bookkeeper..................................	30.00

He also withdraws $40.00 for personal use.

Note.—Enter payment of salaries on right side of Cash Journal thus:

Sept. 13 Expense	Delivery boy............	$15.00	
	Clerk....................	25.00	
	Bookkeeper............	30.00	$70.00

The salaries are itemized in the explanation column and the total extended into the first money column.

Enter withdrawal of cash on right side of Cash Journal thus:

Sept. 13 A. B. Gray, Withdrawals.......................... $40.00

Sept. 15. Cash sales, $35.00 (see Sept. 12). Andrew Fry pays bill of Sept. 3, $11.43 (see Sept. 9).

Sept. 16. Cash sales, $40.00 (see Sept. 15). Sells on account to S. Thomas, $14.00; to T. M. Phillips, $8.00; to R. T. Myers, $5.20 (see Sept. 10).

Sept. 17. Buys mdse. from Cloverdale Wholesale Co., $150.00, on account, 2% 10 days, net 30 days (see Sept. 10). Cash sales, $37.70. (See Sept. 16.)

Sept. 18. T. M. Phillips gives note, due in 10 days, in payment of bill of Sept. 9. Cash sales, $40.00 (see Sept. 17). Pays $10.00 for repairs on store (see Sept. 11).

NOTE.—Notes are sometimes given in payment of an account. When this is done the personal account of the giver is credited and "Notes Receivable" charged. This entry is made in the General Journal thus:

Sept. 18.	Notes Receivable	$6.42	
	T. M. Phillips		$6.42
	Note due in 10 da. in payment of bill of Sept. 9.		

Sept. 19. Sells on account to D. Hathaway, mdse. $7.20; to R. T. Myers, $3.20 (see Sept. 16). Buys 6 chairs for store, cash, $30.00 (see Sept. 5).

Sept. 20. Cash sales, $45.00 (see Sept. 18). Buys mdse. from Cloverdale Wholesale Co., $600.00, 2% 10 days, net 30 days (see Sept. 17).

Sept. 22. Sells mdse. to S. Adams, $15.00. Adams gives note for 30 days for purchases. Cash sales, $28.50 (see Sept. 20). Miscellaneous expense, $4.25 (see Sept. 11). Stationery and postage, $9.50 (see Sept. 11).

NOTE.—Charge S. Adams and credit Sales as in any charge account. Then in the General Journal charge Notes Receivable and credit S. Adams, thus:

S. Adams	$15.00	
Sales		$15.00
Notes Receivable	$15.00	
S. Adams		$15.00
Note due in 30 da.		

Sept. 23. Cash sales, $33.20 (see Sept. 22). B. L. McLoughlin pays bill of Sept. 9, $3.25 (see Sept. 15). Takes $10.00 from cash drawer for personal use (see Sept. 13). Sells on account to B. Ward, mdse., $5.00; D. Hathaway, mdse., $11.60; R. T. Myers, $15.00 (see Sept. 19).

Sept. 24. Cash sales, $30.27 (see Sept. 23).

Sept. 25. Cash sales, $33.15 (see Sept. 24).

Sept. 27. Pays Cloverdale Wholesale Co. bill of Sept. 17, less discount. Cash sales, $40.00 (see Sept. 25).

NOTE.—Enter the net cash payment on the right side of the Cash Journal, thus:

Cloverdale Wholesale Co. (—) bill Sept. 17 .... $147.00

In the Journal charge Cloverdale Wholesale Co. and credit Discount on Purchases thus:

Cloverdale Wholesale Co.	$3.00	
To Discount on Purchases		$3.00
For discount taken.		

Sept. 28. T. M. Phillips pays note due today. Cash sales, $43.77 (see Sept. 27).

NOTE.—Charge cash and credit Notes Receivable on the left side of the Cash Book thus:

Sept. 28. Notes Receivable—T. M. Phillips.............. $6.42

Sept. 30. Cash sales, $35.00 (see Sept. 28). Pays assistants as follows: (see Sept. 13)

Delivery boy	$15.00
Clerk	25.00
Bookkeeper	30.00

D. Hathaway pays his account in full (see Sept. 23). Mr. Gray, wishing to know the results of the month's transactions, takes inventory, finding that it amounts to $513.00. You are instructed to draw up a statement showing profit or loss for the month.

NOTE.—First, however, it will be necessary to post from the General Journal and Cash Journal to the Ledger. Ordinarily this posting is done day by day. Here we have first made all entries in the General Journal and Cash Journal. Two double sheets of ledger paper will suffice for the Ledger. Page it 1, 2, 3, 4, and so on. Open accounts as follows:

Page 1:
- Line 1 A. B. Gray, Capital
- Line 6 A. B. Gray, Withdrawals
- Line 20 Cash

Page 2:
- Line 1 Purchases
- Line 9 Sales

Page 3:
- Line 1 T. M. Phillips
- Line 10 Andrew Frey
- Line 20 S. Thomas
- Line 30 R. T. Myers

Page 4:
- Line 1 B. D. McLaughlin
- Line 10 J. J. Tiery
- Line 20 D. Hathaway
- Line 30 S. Adams
- Line 35 B. Ward

Page 5:
- Line 1 Cloverdale Wholesale Co.
- Line 10 Oldmore Manufacturing Co.

Page 6:
- Line 1 Discount on Purchases
- Line 10 Wages and Salaries
- Line 20 Expense
- Line 30 Supplies

Page 7:
Line 1 Furniture and Fixtures
Line 10 Notes Receivable
Line 20 Delivery Equipment

Page 8:
Line 1 Profit and Loss

Following the principles and illustrations in Chapter VI, post from the General Journal and Cash Journal to the Ledger. Note that items appearing on the debit side of the Cash Journal are posted to the credit side of the Ledger and *vice versa*. This is because items appearing on the left side are credits to the account appearing in the explanation columns and a charge to cash. Cash, however, is posted only in total at the end of the month. Similarly, accounts appearing in the explanation column on the credit side are to be charged while the cash credit is posted in total at the end of the month.

When all postings are made see that all cross references have been inserted in the folio columns. Next prepare a trial balance of the Ledger. This should agree with the following:

Trial Balance—A. B. Gray—as at Sept. 30, 1910

A. B. Gray, Capital		$4,000.00
Purchases	$1,650.00	
Sales		699.62
Cash	3,689.47	
T. M. Phillips	8.00	
S. Thomas	14.00	
R. T. Myers	23.40	
J. J. Tiery	6.00	
B. Ward	5.00	
Cloverdale Wholesale Co.		1,500.00
Discount on Purchases		3.00
Wages and Salaries	140.00	
Expense	91.75	
Supplies	30.00	
Furniture and Fixtures	80.00	
Notes Receivable	15.00	
Delivery Equipment	400.00	
A. B. Gray, Withdrawals	50.00	
	$6,202.62	$6,202.62

Assume that ¼ of the supplies have been consumed. Make closing entries in the General Journal and carry net profit or loss to A. B. Gray's withdrawal account and the balance of withdrawals to capital. Note that there is no old inventory as in case of Grant Atkins explained in Chapter V. Bring down balance of A. B. Gray's capital account as of Oct. 1. Set up balance sheet and profit and loss statement. Gray's capital as of Oct. 1 should be $3,326.37.

CHAPTER VIII

RECORDING FINANCIAL TRANSACTIONS—PRACTICE

Dairy of Events—A. B. Gray—Oct. 1919.

Oct. 1. Begin month by opening new books—General Journal, Cash Journal and Ledger. The Journal should contain 8 pages, the Cash Journal two double pages (composed of 2 double sheets of journal paper), and the Ledger 24 pages (composed of 6 double sheets of ledger paper). Page these books. Accounts should be opened in the Ledger as follows: p. 1—at top, A. B. Gray, Capital; p. 2—at top, Furniture and Fixtures; at middle, Delivery Equipment; p. 3—at top, Purchases; at middle, Sales; p. 4—at top, Cash; at middle, Notes Receivable; p. 5—at top, notes Payable; p. 13—at top, T. M. Phillips; at middle, S. Thomas; p. 14—at top, R. T. Myers; at middle, J. J. Tiery; p. 15—at top, B. Ward; p. 20—at top, Cloverdale Wholesale Co.

Using the balance sheet of A. B. Gray as at Sept. 30, 1919, as a basis, make the opening Journal entry for Oct. 1, 1919, in the new Journal, making the proper preliminary explanation in the Journal, to the effect that A. B. Gray opens new books with assets, liabilities and capital brought from the old books, as shown.

Note.—In the Cash Journal designate the two debit columns "Sales" and "Sundries," respectively, and the two credit columns "General Expense" and "Sundries," respectively.

Cash sales $47.20. Advertising paid in advance for month, $15.00 (charge to Expense, opening account in Ledger page 5, at middle). Pays Cloverdale Wholesale Co. bill of Sept. 2, $500.00.

Note.—Charge Purchases account for all purchases of merchandise made and credit Sales account for all sales of merchandise. To enter "Cash sales $47.20" in the Cash Journal write "Sales" in the explanation column and enter the amount, $47.20, in the "Sales" column. All cash sales should be similarly entered. For advertising paid, charge "Advertising Expense" and enter the amount $15.00, in the "General Expense" column. Hereafter enter all expense items in the "General Expense" column unless a special account is required, as in case of "Insurance" paid for on Oct. 6 (see below), in which case it should be taken into "Sundries" column.

Oct. 2. Cash sales, \$43.00. Sells mdse. on account to M. Harris, \$19.30 (Ledger p. 15), to S. Thomas, on account, \$10.00. Pays rent for October, \$50.00 (General Expense).

Oct. 3. Buys from Cloverdale Wholesale Co., on account, mdse. \$500, 2% 10 days, net 30 days. Cash sales \$53.20.

Oct. 4. Takes out insurance on merchandise, paying premium for 1 year, \$12.00 (Insurance, Ledger, p. 6, top). Cash sales, \$43.47.

Oct. 6. Mr. Gray purchases the store in which he is located for \$5,000.00. The rent paid for Oct. is to be counted in part payment. Cash is paid amounting to \$1,950, and a mortgage at 6%, interest payable annually, is given for the balance. (Store and Lot, p. 6, middle; Mtge., p. 7, top.) Cash sales, \$40.00.

NOTE.—In the Cash Journal charge Store and Lot for \$1,950, and in the General Journal charge Store and Lot \$3,050, crediting Expense, \$50, and Mortgage, \$3,000. Make proper explanation following the entry, covering the expense adjustment, the mortgage, and the terms thereof.

Oct. 7. Mr. Gray makes a loan of \$1,000 to B. Arthur, receiving therefor Mr. B. Arthur's note for 20 days, with interest at 6%. Cash sales \$42.00. Sold to J. J. Tiery, on acct., mdse. \$12.10.

NOTE.—For the loan to B. Arthur charge "Notes Receivable" indicating "from B. Arthur" in the explanation column in the Cash Journal, thus:

Notes Receivable—from B. Arthur........................ \$1,000

putting the amount in the "Sundries" column, right side of the Cash Book.

Oct. 8. R. T. Myers, one of Mr. Gray's customers, has made an assignment in bankruptcy, and after his business has been liquidated he has paid his unsecured creditors at the rate of 67 cents on the dollar. Mr. Myers owes Mr. Gray \$23.40. Mr. Gray receives cash from Mr. Myers on above basis (Bad Debts, p. 7, middle). Cash sales, \$45.00.

NOTE.—In the Cash Journal credit R. T. Myers with the amount he is able to pay. In the General Journal charge Bad Debts and credit R. T. Myers for the loss resulting from bankruptcy.

Oct. 9. Mr. Gray buys a barn and storage house for \$2,000. He gives a mortgage for \$1,000, at 6%, for 4 yrs., interest payable annually, and pays the balance in cash. As he has not sufficient cash on hand to make the payment, he discounts his note, payable in 30 days, at a bank; face \$200; proceeds \$198. (Interest, p. 8, at top.) Cash sales, \$40.00. B. Ward pays his account in full. J. J. Tiery pays his account in full.

Note.—Enter the mortgage in the General Journal, crediting "Mortgage" and charging "Barn and Storage House" (Ledger, p. 8). The discounted note may be handled in either of two ways:

(*a*) By charging Cash and crediting Notes Payable for $200 on the receipt side of the Cash Journal and then charging Interest and crediting Cash on the payments side for $2; or,

(*b*) By charging Cash and crediting Notes Payable for $198 in the receipts side of the Cash Journal and by charging Interest and crediting Notes Payable in the General Journal.

It is suggested that the latter method be followed here.

Oct. 10. Cash sales, $40.50. Pays Cloverdale Wholesale Co. bill of Sept. 10.

Oct. 11. Sells on acct. to M. Arnold, mdse., $14.00; to T. M. Phillips, $5.20; to S. Thomas, $7.33. Cash sales, $43.15. Pays telephone bill for Oct., $3.00.

Oct. 13. Pays Cloverdale Wholesale Co. bill of Oct. 3, less discount (Disct. on Purchases, p. 8, middle). Cash sales, $38.50. Sells on acct., mdse. to L. Floyd, $13.73 (p. 15); to S. Smith, $2.11 (p. 16); to B. Ward, $3.33; to the Brighton Club, $14.00 (p. 16).

Oct. 14. Cash sales, $63.50. Pays assistants as follows:

Delivery boy	$18.00
Clerk	30.00
Bookkeeper	40.00

Withdrew for personal use $40.00 (A. B. Gray, Withdrawals, p. 1, middle). Charge wages of help to "Expense."

Oct. 15. Repairs on store, $32.30 (Repairs, p. 9, top).

Oct. 16. Cash sales, $70.00. Owing to increasing business Mr. Gray buys another horse and wagon, paying $40 for the wagon and $150 for the horse. He pays for the wagon in cash, and gives a note payable in 10 days for the horse, to the seller, N. Norton (p. 21, top). He engages another delivery boy at $30 per month.

Note.—For the purchase of the horse charge Delivery Equipment and credit N. Norton in the General Journal; then in another Journal entry charge N. Norton and credit Notes Payable. Reference to the additional delivery boy requires no entry.

Oct. 17. Cash sales, $75.00.

Oct. 18. B. Ward pays acct. in full. Cash sales $76.73.

Oct. 20. Cash sales, $79.00. Buys mdse. of Cloverdale Wholesale Co., 2/10, n/30, $400.00. Pays Cloverdale Wholesale Co. bill of Sept. 20, $600.00.

Oct. 21. Buys grain for stable, $40.00, cash. This is sufficient to last

4 mo. (Stable Supplies, p. 9, middle). Cash sales, $83.00. Pays membership fee in Cloverdale Merchants' Association, $6.00 (Exp.).

Oct. 22. S. Adams pays note due today. Cash sales, $90.00. On acct. to T. M. Phillips, $20.00; to R. Story, $3.40 (p. 17).

Oct. 23. Mr. Gray has electric and gas combination fixtures placed throughout his store at a total cost of $175.00. The old fixtures which originally cost $50.00 and were taken at this figure when the store was bought are sold for $10 cash. Cash sales, $95.00.

Note.—Charge Store and Lot for the new fixtures. Why not charge Furniture and Fixtures? Credit Store and Lot for sale of old fixtures. In the General Journal charge Expense and credit Store and Lot for loss incurred on old fixtures.

Oct. 24. Cash sales, $83.00.

Oct. 25. Sells on acct. to R. Story, $5.40; to D. Hathaway, $3.17. Cash sales, $88.73.

Oct. 27. B. Arthur pays note today, with interest (20/365 of 1 yr. for int.). Cash sales, $87.20. Pays note due N. Norton.

Note.—Make separate entries for "Notes Receivable" and "Interest" when B. Arthur pays.

Oct. 28. Cash sales, $90.30.

Oct. 29. T. M. Phillips pays acct. in full. Cash sales $89.00.

Oct. 30. Cash sales $95.00. Pays Cloverdale Wholesale Co. bill Oct. 20, less disc't. Discounts note at bank, face $300; proceeds $298. (15 days.)

Oct. 31. Cash sales $100.00. Pays assistants:

Delivery boy No. 1	$18.00
Delivery boy No. 2	15.00
Clerk	30.00
Bookkeeper	40.00

A. B. Gray, desirous of knowing the results of the month's trading, requests you to present him with a profit and loss account, also a profit and loss statement, and a balance sheet, after taking a trial balance and making the closing journal entries.

Inventory Oct. 31—$1500. Of the Supplies $15 have been consumed.

Note.—A. B. Gray's capital account as of Nov. 1 should be $4,978.24. Interest accrued on the mortgages must be taken into the books before making closing entries. Charge "Interest" and credit "Interest Accrued" in the General Journal. "Interest" is a nominal account while "Interest Accrued" is a real account, representing a deferred liability.

Preserve the books of A. B. Gray. They will be used to record the diary of events in Chapter XV.

CHAPTER IX

THE THEORY OF ACCRUALS AND OF DEFERRED CHARGES

There are certain kinds of expenses which, although incurred daily, are paid for in cash only at certain, sometimes distant, intervals. There are also certain kinds of expenses which must be paid for in advance of the time when they are actually incurred. These two classes of expenses give rise to two special problems in accounting which may be treated under the subjects, "accruals" and "deferred charges," respectively.

Interest.—Interest is an expense incurred for the use of borrowed money. It sometimes represents a very permanent and fixed charge, as when it is paid for the use of funds borrowed on mortgage security. Sometimes it is a temporary expense, as when it is incurred on overdue accounts payable, notes discounted at the bank to secure temporary advances of money, etc. When money is borrowed on a mortgage the mortgage or creditor thereby secures a lien on the real estate of the mortgagor or borrower. In case the mortgagor is unable to pay the interest on the loan the mortgagee may foreclose the mortgage and sell the mortgaged property for the satisfaction of both interest and debt.

Interest Periods Differ from Accounting Periods.—Interest is reckoned as a percentage per annum on the amount loaned and normally ranges from 3 to 7 per cent, depending on the safety of the principal. When interest exceeds the legal rate it is termed usury. Interest is paid at regular intervals which are usually determined upon in advance when the loan is made. On mortgage indebtedness interest is generally paid semiannually, at the end of six-month intervals. When money is borrowed at a bank the loan is customarily made for one month with a renewal privilege; consequently interest is then paid monthly. It is readily seen, therefore, that interest periods and accounting periods will be co-terminous only in exceptional cases. If the nominal accounts are closed at the end of each month while interest payments are made semi-annually, it follows, that if half a year's interest is debited to profit and loss as an expense in that month in which it happens to fall due and be paid, then that month bears a burden which ought to be distributed over a period of six months.

To illustrate, assume that on January 1 a merchant borrows $6000 for a term of years, agreeing to pay 5 per cent interest thereon, payable semi-annually on December 31 and June 30. Interest will amount to $300 yearly, and each semi-annual instalment will amount to $150. Furthermore, suppose that the merchant makes no entry in his books for interest until the first half year's instalment falls due, when he credits cash, $150, in the Cash Journal, and at the same time charges "interest expense," or merely "interest," for the same amount. "Interest" is a nominal or expense item, and is closed into the profit and loss account for the month ending June 30. Clearly the profit and loss account for June is thus debited with interest which should have been pro-rated over the first six months of the year. The profit and loss accounts for the preceding five months have not been charged with their proportion of the interest expense.

The "Accrued" Account.—To distribute properly such expenses over the periods to which they are incident we must have recourse to a device known as the "accrued" account. In the instance cited above the interest incident to each month is one-twelfth of $300, or $25. Before making the closing journal entries an adjustment entry should be made in the General Journal to show the expense incurred in form of interest and the corresponding liability arising therefrom, thus:

Interest	$25.00	
To Interest Accrued		$25.00

When this is posted to the Ledger, "interest" is charged with the month's due proportion of this expense; and "interest accrued," which is a real account, records the concern's liability incurred on interest but as yet not payable because not due until June 30. Since "interest" is a nominal account, it is closed into profit and loss and does not appear in the balance sheet. "Interest accrued," being a real account, appears in the balance sheet as a liability.

At the end of February another entry is made in the Journal identical with the one shown above. "Interest" is again charged to profit and loss and the "interest accrued" account shows a liability for two months' interest, or $50. This process is continued until the half year has passed and interest for that time falls due and is paid. The sixth month's interest may or may not be credited to "interest accrued." If it is credited to "interest accrued" through a journal entry, then when the interest is paid the following entry is required in the Cash Journal (here written in general journal form):

Interest Accrued..................................	$150.00	
To Cash..................................		$150.00

If the sixth month's interest is not credited to "interest accrued," then the entry in the Cash Journal is:

Interest..................................	$ 25.00	
Interest Accrued..................................	125.00	
To Cash..................................		$150.00

Whichever method is followed, the result is the same. If the first plan is pursued "interest" for the last month is charged in the General Journal. If the second plan is followed "interest" is charged in the Cash Journal for the sixth month. In either case "interest accrued" is closed out by being charged from the Cash Journal with the full amount of the items which have accumulated to its credit during the preceding months. If the last month's interest is charged in the Journal and credited to "interest accrued," then when the "interest accrued" account is finally closed by being charged with the cash paid out, it appears thus:

Interest Accrued

June 30	To Cash........	$150.00	Jan. 31	By Interest......	$25.00
			Feb. 28	By Interest......	25.00
			Mar. 31	By Interest......	25.00
			Apr. 30	By Interest......	25.00
			May 31	By Interest......	25.00
			June 30	By Interest......	25.00
		$150.00			$150.00

If, on the other hand, the sixth month's interest is charged in the Cash Journal, the "interest accrued" account, when finally closed, shows total credits, "by interest," of $125, and a charge "to cash" for the same amount. Through this procedure the profit and loss account for each month is debited with its proper proportion of interest expense and the balance sheet as at the close of each month shows what the liability on interest accrued but not due is. If there is more than one liability upon which interest is incurred, the same principle applies to all. The interest accrued upon them may be kept in separate ledger accounts and be shown as separate liabilities in the balance sheet, or it may be entered in one interest accrued account and shown as one item in the balance sheet.

Wages and Salaries.—Wages and salaries sometimes require the same treatment as interest. Salaries are customarily paid monthly, and consequently they may be charged to a "salaries expense" account when they are paid in cash. By so doing the month's proper burden of this expense is charged to profit and loss. It is only when the time of payment of salaries is not monthly that the theory of accruals applies. Wages are usually paid weekly or semi-monthly, and since the month-ends do not, as a rule, correspond with week-ends, there occurs an overlapping of wages expense in a weekly or semi-monthly period which extend from one month into the next one. The wages expense for such a period must be accurately pro-rated over the months to which they apply.

Wages Accrued Illustrated.—One illustration will suffice. A merchant pays his assistants semi-monthly. A certain payday falls on the seventh of June. The profit and loss account for May must be charged with the wages accruing during the last week of May even though they are not due until June 7. If one week's wages amount to $40 the adjustment can be made in the General Journal, thus:

May 31

Wages Expense....................................	$40.00	
To Wages Accrued..............................		$40.00

"Wages expense" is carried to the profit and loss account and "wages accrued" enters the balance sheet as of May 31 as a liability. This "wages accrued" account will be closed when wages are paid, June 7, as follows (Cash Journal):

Wages..	$40.00	
Wages Accrued....................................	40.00	
To Cash..		$80.00

Miscellaneous Accruals.—The same principle applies to all other expenses which accrue over an accounting period, but for which payment is delayed to a day in some succeeding period for some reason. Taxes are usually of this character. Theoretically some very small expenses ought to be similarly distributed. But the error may be so slight in charging them entirely to profit and loss in the month in which they occur that the work required to make a distribution is not worth while. Association dues of small amount and similar items may be thus cared for.

Deferred Charges.—As some expenses cannot be paid until after the period to which they are incident is closed, so other expenses must be paid in advance of the period to which they are incident. Perhaps the most important class of such expenses are those incurred by a new enterprise. When a concern is in this stage of its development it is frequently compelled to spend large amounts of money on advertising, exploiting, and general development work, of which the benefits are likely to continue for several years to come. Take an iron mine. Before the ores can be worked it is necessary to strip the ore beds of the overlying strata. To charge the cost of ore-stripping, calculated to suffice for, say, five years, to profit and loss during one year would unjustly burden it with expenses really applicable to a period of five years. It is better to charge such unusual expenses to "deferred charges," or "deferred assets," or "deferred charges to profit and loss," these phrases being used synonymously. Then at the end of each accounting period this account is credited with the amount applicable to that period and a corresponding charge is made to profit and loss.

Deferred Charges Illustrated.—George Warren invests \$100,000 cash in a mine which he is about to develop. He pays \$50,000 for the land which the mineral deposits underly and invests \$25,000 in plant and machinery. His condition before beginning operations is shown by the following balance sheet:

Balance Sheet, George Warren

Land	\$ 50,000	Capital—George Warren	\$100,000
Plant and Machinery	25,000		
Cash	25,000		
	\$100,000		\$100,000

He now spends \$14,400 in stripping the ores of overlying strata, thus uncovering enough ore bed to last for a period of six years. His balance sheet becomes:

Balance Sheet, George Warren

Land	$ 50,000	Capital—George Warren	$100,000
Plant and Machinery	25,000		
Cash	10,600		
Deferred Charges	14,400		
	$100,000		$100.000

During the first year one-sixth of the amount originally debited to "deferred charges" should be written off by monthy entries as follows:

Profit and Loss	$200.00	
To Deferred Charges		$200.00

In this way the monthly profit and loss account is charged with its proper proportion of the cost of ore-stripping, and at the end of the sixth year the entire amount of the cost of stripping, $14,400, will be charged off.

Wider Application of Theory of Deferred Charges.—In a broader sense the theory of deferred charges applies to all assets which diminish in value as time passes. These comprise buildings, machinery, tools, furniture and fixtures—in short, nearly all classes of so-called fixed assets, land usually being an exception to this rule. Investments in such assets are in reality expenses of future production, and it is quite as essential to accurate accounting that proper allowance be made in the profit and loss account for costs occasioned by the depreciation of the more permanent assets as it is to take into consideration those expenses which are paid for a shorter time in advance, as well as those which are paid for during the accounting period to which they are incident. It is best to consider depreciation as a distinct topic since the accounting procedure required is somewhat different.

CHAPTER X

ACCRUALS AND DEFERRED CHARGES—PRACTICE

Problem 1.—A merchant, Oliver Matthews, mortgages his store and lot in order to secure funds with which to make certain improvements. The transaction by which the money is secured occurs on June 12, 1920, the following being the entry in the merchant's Cash Journal put in form of a General Journal entry:

June 12, 1920

Cash	$4,000.00	
Mortgage		$4,000.00
For loan secured by mortgage, interest at 6 per cent. , payable semi-annually.		

Mr. Matthews employs help which he pays at the end of each two weeks' period. The last pay day occurred June 19 and the one preceding that on June 5. The next one will occur on July 3 for 2 weeks to and including July 3. The amount of wages at each pay day is $327.32. The disbursement on June 5 was charged thus:

Wages Accrued	$210.42	
Wages	116.90	
Cash		$327.32
For payment of accrued wages, 2 weeks.		

Mr. Matthews' annual salary is $2,400 which he draws quarterly, Jan. 31, April 31, July 31, and so on for the preceding quarter.

Mr. Matthews has engaged in an extensive advertising campaign during the preceding months of the present calendar year, the disbursements on that account amounting to the following sums:

January	$300.00
February	216.00
March	300.00
April	348.00
May	192.00
June	324.00

It is calculated that the amount expended thus each month represents a deferred charge which may be equitably charged to profit and loss over a period of 12 months. Thus of the $300 spent in January, $\frac{1}{12}$, or $25, is a proper charge to expense in January, $\frac{1}{12}$ in March, and so on.

The trial balance of the Ledger taken on June 30 is as follows:

Trial Balance, Oliver Matthews, as at June 30, 1920:

Oliver Matthews—Capital		$25,000.00
Store and Lot	$16,000.00	
Furniture and Fixtures	840.00	
Delivery Equipment	900.00	
Inventory, May 31	10,181.00	
Merchandise		2,000.00
Accounts Receivable	3,400.00	
Notes Receivable	500.00	
Supplies	300.00	
Wages	444.22	
Salaries Accrued—Oliver Matthews		400.00
Expense	620.00	
Cash	800.00	
Mortgage		4,000.00
Accounts Payable		2,320.12
Notes Payable		200.00
Discount on Purchases		65.10
	$33,985.22	$33,985.22

The inventory on June 30 is $9,940.00. After making such Journal entries as are necessary to adjust the interest accrued on mortgage, wages accrued, and salaries accrued, draw up a trial balance showing these adjustments.

These adjustment entries should be in the following form:

Interest	———	
Interest Accrued		———
To bring into the books the expense of interest accrued to date on mortgage and to show the liability therefor.		
Wages	———	
Wages Accrued		———
To bring into the books the expense of wages accrued to date and to show the liability therefor.		
Salaries	———	
Salaries Accrued		———
To bring into the books the expense of salaries accrued to date and to show the liability therefor.		

In finding interest accrued reckon it on $4,000 for 18 days (3/5 of 1 mo.), and for wages accrued reckon 11 days.

Sometimes all adjustments are made before taking the trial balance. Here, however, it becomes necessary to draw up a second trial balance. The footings of this trial balance should be $34,454.40.

The accounts, "Interest Accrued," "Wages Accrued," and "Salaries Accrued" are real accounts while the corresponding debit accounts, "Interest," "Wages" and "Salaries" are nominal. When these do not appear in the trial balance submitted they must be supplied in the trial balance drawn up to show effects of adjustments. From the revised trial balance and other information presented set up the closing Journal entries and present a profit and loss *statement* and a balance sheet.

Problem 2.—A. G. Williams is a merchant engaged in the retail business. Before making adjustments for certain accruals and deferred charges he takes a trial balance as at Dec. 31, 1919, which is as follows:

Trial Balance, A. G. Williams, as at Dec. 31, 1919:

A. G. Williams—Capital		$ 50,000.00
Real Estate	$ 25,000.00	
Delivery Equipment	2,500.00	
Inventory, June 30, 1919	30,000.00	
Furniture and Fixtures	3,000.00	
Purchases	57,300.00	
Sales		63,350.00
Accounts Receivable	4,520.00	
Wages	1,900.00	
Supplies on Hand, June 30, 1919	620.00	
Supplies Purchased	300.00	
Interest	350.00	
Salaries	1,500.00	
Miscellaneous Expense	420.00	
Cash	2,000.00	
Notes Payable		10,000.00
Accounts Payable		5,960.00
Rent of Delivery Equipment		100.00
	$129,410.00	$129,410.00

Wages were last paid on Dec. 27, so that 4 days' wages accrued are not shown. These amount to $127.50. Interest on Notes Payable is paid semi-annually March 1, and Sept. 1, respectively, at the rate of 6 % per annum. Salaries, totaling $3,000.00, are paid to the proprietor quarterly, Mar. 31, June 30, Sept. 30, and Dec. 31. There are on hand supplies valued at $500.00.

After making all necessary adjustments set up a revised trial balance, entries to close, and a profit and loss account and balance sheet.

CHAPTER XI

DEPRECIATION, BAD DEBTS, AND VALUATION RESERVES

Nearly every business enterprise incurs unavoidable expenses due to the deterioration of material assets and the uncollectible character of some of its accounts receivable. These two classes of losses, although in no way related to each other, can best be considered together because of the similarity in the accounting methods required to record and interpret them.

Meaning of Depreciation.—In a wide sense, depreciation losses include bad debts. But for practical purposes it is better to limit the application of the word to the deterioration of physical assets. Even when the application of the word is thus limited it has three distinct uses which may be discussed under the threefold terminology of

1. Wear and tear
2. Inadequacy
3. Obsolescence

Nature of Depreciation.—Depreciation from wear and tear occurs when a material structure undergoes physical deterioration due to weathering or usage, or both. Depreciation from inadequacy occurs when a material structure undergoes deterioration in value, due to its failure to perform the functions which increasing demands and changing conditions impose upon it. Depreciation from obsolescence occurs when a material structure undergoes deterioration in value, due to the invention of devices better adapted to perform the same work.

Nature of Invested Capital.—Failure to make adequate allowance for depreciation costs is a prolific source of financial embarrassment. This truth is a corollary of a fundamental principle of accounts, viz., that the original investment must be kept intact. To prosper, a concern must be supported by an invested capital large enough to meet the various demands made by the productive and distributive processes. Some of these demands are for fixed capital,[1] *i.e.*, capital invested in buildings, equipment, and so on. Other demands are for working capital, *i.e.*, capital in the form of cash, accounts receivable, acceptances receivable, merchandise, and so on. In a general way the fixed assets counterbalance the fixed liabilities while working assets counterbalance current liabilities and provide the means for temporarily increasing the volume of the transactions, when desirable, and of paying wages and liquidating other current costs.

Anything which diminishes the amount of the working capital creates a stringency in the funds available for purchasing commodities and for paying the usual running expenses as they fall due. Such a stringency is very quickly perceived and therefore usually remedied before it is too late. The diminution of the fixed capital, however, in the form of depreciation of physical plant, is an evil which may continue for a much longer time without creating alarm of an apparent shortage of any kind, but which for this very reason is liable, ultimately, to leave a concern in a very much depleted condition. Only when it becomes necessary to make replacements or extensive repairs—which must generally be met by drawing heavily on working capital—does a situation of apparent difficulty arise. But it may then be too late to recoup the long-accruing losses which have insidiously consumed the value of the fixed assets, at the same time retaining sufficient funds to meet running expenses which cannot be delayed. In such cases the only recourse left is to borrow money to pay a part of the expenses, thus saddling the enterprise with increased indebtedness and larger interest burdens without increasing its productive capacity—a procedure which alleviates but does not cure the difficulty.

Effects of Depreciation Illustrated.—Lawrence Oliver begins business with cash, \$200,000, \$190,000 of which he invests in plant, etc., reserving \$10,000 in cash for current needs. His condition is then as shown in the following balance sheet:

[1] The word "capital" is here employed in the economic sense as referring to wealth employed to produce wealth. In this book the word is more frequently employed in the accounting sense as indicating net worth or proprietorship.

Balance Sheet, Lawrence Oliver

Land	$ 20,000	Capital—Lawrence Oliver	$200,000
Buildings	100,000		
Fixtures	30,000		
Inventory	40,000		
Cash	10,000		
	$200,000		$200,000

The buildings will not last forever. They will depreciate in value with the passing of time. The fixtures also will depreciate. Nevertheless it will be possible for Oliver to do business for a considerable number of years without in any way being inconvenienced by the depreciation of his assets. He makes no allowance for this lessening of asset values. At the end of the first year the profit and loss account for the year appears thus:

Profit and Loss, Lawrence Oliver

Inventory (old)	$ 40,000	Inventory (new)	$ 44,000
Purchases	300,000	Sales	330,000
Expenses	10,000		
Balance, Net Profit	24,000		
	$374,000		$374,000

Proceeding on the assumption that he has made a net profit of $24,000, Oliver withdraws that amount from the business, in cash, and spends it for private purposes. He continues doing the same for twenty years, making no allowance for depreciation of buildings and fixtures in the profit and loss account, and withdrawing and spending as much as the balance of the profit and loss account indicates to be net profit. His balance sheet at the end of the twentieth year is as follows:

Balance Sheet, Lawrence Oliver

Land	$ 20,000	Capital—Lawrence Oliver	$200,000
Buildings	100,000	Accounts Payable	18,000
Fixtures	30,000	Acceptances Payable	10,000
Inventory	43,000		
Accounts Receivable	20,000		
Cash	15,000		
	$228,000		$228,000

Oliver now discovers that his fixtures are practically worn out and that his buildings are becoming obsolete and inadequate to meet modern requirements. A fair valuation shows the fixtures to be worth $5,000, and the buildings $25,000. During the twenty years the fixtures have depreciated $25,000, or $1,250 per year, on an average. During the same period the buildings have depreciated $75,000, or $3,750 per year, on an average. This means that each year of twenty Oliver incurred a depreciation expense of $5,000 which he entirely overlooked, making no charge for it in the profit and loss account, and consequently spending each year $5,000 of capital, thinking it to be profit. As a result he has diminished his actual capital by exactly one-half, as the following balance sheet, revised to show actual values, indicates:

Balance Sheet, Lawrence Oliver

Land	$ 20,000	Capital—Lawrence Oliver	$100,000
Buildings	25,000	Accounts Payable	18,000
Fixtures	5,000	Acceptances Payable	10,000
Inventory	43,000		
Accounts Receivable	20,000		
Cash	15,000		
	$128,000		$128,000

This shows a serious condition of affairs, yet one which has many analogies in real life. Oliver, by spending more than he makes, because of erroneous accounting, has greatly depleted his net worth. Buildings and fixtures must soon be replaced. Where are the replacement funds to be secured? For this purpose $100,000 will be required. There is $15,000 cash on hand, and the accounts receivable, if all are collectible, will bring in an additional $20,000. But most of this cash will be needed to liquidate the acceptances and accounts payable as they mature. Together these amount to $28,000, which leaves only $7,000 in cash free for other purposes. Oliver must get the money outside the business. Unless he can fall back on his own private fortune, he must borrow.

Assume that Oliver borrows the required amount, $100,000, at 6 per cent interest, by giving a mortgage on all real estate including the newly constructed buildings. The old buildings and fixtures are disposed of for $30,000, cash. This with the $100,000 borrowed furnishes the amount required to pay for the new buildings. If other accounts than those directly affected by the sale of the old fixtures and buildings and the construction and purchase of the new ones remain unchanged, the balance sheet becomes:

Balance Sheet, Lawrence Oliver

Land	$ 20,000	Capital—Lawrence Oliver	$100,000
Buildings	100,000	Mortgage	100,000
Fixtures	30,000	Accounts Payable	18,000
Inventory	43,000	Acceptances Payable	10,000
Accounts Receivable	20,000		
Cash	15,000		
	$228,000		$228,000

As a consequence of erroneous accounting, Oliver has reduced his interest in the business to one-half its original amount. He has, for all purposes, shared it half and half with the mortgagee who loaned him $100,000. Interest on the mortgage amounts to $6,000 per annum, which is an addition to the fixed charges or expenses of the business. If Oliver continues for another twenty years in the same manner as during the past twenty years, his net worth will be reduced to nothing and the creditors will become the owners of the enterprise.

Depreciation a Cause of Bankruptcy.—Although, in actual business, conditions do not recur with unchanging regularity, the situation described above has many prototypes. Their similarity to our illustration is sometimes obscured by the multiplicity of detail surrounding them. The failure to understand the true nature of depreciation, namely, that it is an expense, is a prolific source of financial embarrassment and bankruptcy. Sometimes the failure to make sufficient allowance for depreciation is willful, being a recourse to show favorable profits when they are not favorable in reality. Many expenses, such as labor, interest, and taxes, must be paid within a short period after they are incurred. Therefore it is natural that depreciation be sometimes neglected in the presence of more pressing claims—only too frequently with the result that in the end it presents a problem much more serious than those whose solution was aided by ignoring it.

Valuation Reserves.—Depreciation expense or burden may be distributed equitably by a simple accounting procedure. It makes use of "valuation reserves." Suppose that Oliver had determined to make due allowance for depreciation instead of neglecting it. This he could have done by making the following entry in the General Journal:

Profit and Loss..................................	$5,000.00	
To Reserve for Depreciation of Fixtures.......		$1,250.00
Reserve for Depreciation of Building.......		3,750.00
To charge profit and loss for the amount of depreciation expense for the year ending ———.		

The reserves credited in this entry are termed valuation reserves. They perform an important and unique function. Accounts are opened in the Ledger entitled "Reserve for Depreciation of Fixtures" and "Reserve for Depreciation of Building." When the above entry is posted these reserve accounts will be credited with the amounts indicated. These reserves are real accounts and remain open in the Ledger. Although they have credit balances they represent neither liabilities nor capital, as do most real accounts having credit balances. They are in a distinct class, because their usefulness arises out of the complementary relationship which exists between them and the asset accounts, "Fixtures" and "Buildings." They evaluate, *i.e.*, give a valuation to, fixtures and buildings. They record the accrued depreciation on these assets. The present value of fixtures and buildings cannot be found from an examination of the fixtures and buildings accounts because these accounts stand charged with the original cost of these assets. It is quite essential to keep this original cost figure unchanged. This in itself justifies the use of complementary valuation reserves. Otherwise accounting requirements would be satisfied by substituting for the above entry the following:

Profit and Loss..............................	$5,000.00	
To Buildings...............................		$3,750.00
Fixtures...............................		1,250.00

So far as the profit and loss account is concerned this entry has the same effect as the preceding. But it leaves the asset accounts in the Ledger in a different condition. Instead of permitting "Buildings" and "Fixtures" to remain charged with $100,000 and $30,000, respectively, and creating depreciation reserve accounts for both with credit balances of $3,750 and

$1,250, respectively, it diminishes the "Buildings" and "Fixtures" accounts by these amounts. Technically, either method is correct. But when the depreciation allowance is credited directly to the asset account to which it applies, the balances of those accounts no longer show original cost. A thorough comprehension of the advantages of opening valuation reserve accounts will be secured as we proceed.

Valuation Reserves Illustrated.—If, each month, Oliver had charged profit and loss and credited the proper valuation reserve accounts to cover the depreciation of buildings and fixtures, his balance sheet at the end of the twentieth year would have been essentially as follows:

Balance Sheet, Lawrence Oliver

Land	$ 20,000	Capital—Lawrence Oliver	$200,000
Buildings	100,000	Reserve for Depreciation of	
Fixtures	30,000	Buildings	75,000
Inventory	43,000	Reserve for Depreciation of	
Accounts Receivable	20,000	Fixtures	25,000
Cash	115,000	Accounts Payable	18,000
		Acceptances Payable	10,000
	$328,000		$328,000

This balance sheet shows assets $100,000 in excess of those shown in the balance sheet on page 73. The buildings and fixtures are not worth the amount shown, but $25,000 and $5,000, respectively. To show the condition even better it is proper to show the depreciation reserves deducted from their complementary asset accounts, as below:

Balance Sheet, Lawrence Oliver

Land		$ 20,000	Capital—Lawrence Oliver	$200,000
Buildings	$100,000			
Less: Reserve for Depreciation	75,000	25,000	Accounts Payable	18,000
Fixtures	$30,000			
Less: Reserve for Depreciation	25,000	5,000	Acceptances Payable	10,000
Inventory		43,000		
Accounts Receivable		20,000		
Cash		115,000		
		$228,000		$228,000

Employment of Reserves.—By charging the profit and loss account each year with the amount of the depreciation, $5,000, "paper" profits are diminished by that amount. Consequently Oliver would withdraw that much less cash from the business, a sum which in twenty years would amount to $100,000. In the balance sheet given above this is shown as an addition to cash. It is not necessary, however, that the amount thus reserved be kept in the form of cash. The essential step is to keep it. Ordinarily it can best be employed in the usual channels of business as a part of working or fixed capital, or both. When the time comes to make the replacement of the buildings and fixtures, this wealth will be found "on duty," either in the form of cash or of wealth which will serve as security in obtaining a loan of cash. Even if cash is borrowed the proprietor's net worth is not diminished. He still possesses his original capital and any money he may borrow will be to increase the amount invested in the business, not to take the place of funds improperly withdrawn under the guise of profits.

Growth of Depreciation Reserves.—The depreciation reserve grows at a rate which presumably corresponds with the rate of decrease in the value of the corresponding asset. It is quite improbable, of course, that the amount of the depreciation reserve at the end of any accounting period will exactly equal the decrease in value of the corresponding asset. An approximation is the best that can be expected. Estimates of the lifetime of buildings may require revision from time to time. Unexpected changes, inventions, etc., may cut down the usefulness of a machine very greatly, causing it to be scrapped long before it is worn out. Continuation in use of inadequate or obsolete machinery may become a positive source of loss, making early replacement almost compulsory.[1] Various disturbing elements enter which make the depreciation problem one of the most difficult with which the accountant is confronted.

The Reserve as a Clearing Account.—One additional function of the depreciation reserve requires discussion here. This is its use as a clearing account when replacements are made. We have seen that the asset accounts remain charged with the original cost price, while the depreciation is shown in the credit balance of the depreciation reserve account. It follows that if the

[1] See Saliers: *Principles of Depreciation*, p. 30.

reserve account reflects accurately the amount of the depreciation, it will be equal to the amount charged (original cost) to the asset account, when the asset is entirely worn out or useless. Or if the asset possesses a scrap value or possibly a second hand value, then theoretically the depreciation reserve should equal the amount represented by the difference between original cost and scrap or second hand value. Thus if a merchant begins business with affairs as shown in the following balance sheet,

Balance Sheet

Buildings	$20,000	Capital	$30,000
Other Assets	10,000		
	$30,000		$30,000

and his buildings, during a period of forty years, depreciate in value to zero, his balance sheet will then show,

Balance Sheet

Buildings	$20,000		Capital	$30,000
Less: Reserve for Depreciation	20,000			
Other Assets		$30,000		
		$30,000		$30,000

assuming that there have been no changes except in the valuation account which indicates the amount reserved to take the place of the decreased value of buildings, and in the asset accounts which contain this reservation. When the time arrives to make the replacement of the buildings the old building account is closed by charging it to the depreciation reserve account through the following journal entry:

Reserve for Depreciation	$20,000.00	
To Buildings		$20,000.00

after which the balance sheet becomes:

Balance Sheet

Other Assets	$30,000	Capital	$30,000
	$30,000		$30,000

and after the replacement is made:

Balance Sheet

Buildings	$20,000	Capital	$30,000
Other Assets	10,000		
	$30,000		$30 000

Average Normal Depreciation.—In practice it is customary to set up a single depreciation reserve to cover a number of assets having varying terms of longevity. In this case the reserve never entirely disappears from the balance sheet, but at the end of any accounting period its amount reflects, theoretically, the total accrued depreciation of existing assets. When buildings, etc., are new, the reserve grows rapidly in amount, but as replacements begin to be made and the original cost of assets replaced is charged to it, its growth becomes less rapid. Finally, when the plant arrives at a normal condition replacements, on an average from year to year, equal depreciation, and the reserve tends to remain stationary. Its average credit balance then indicates the extent to which depreciation unavoidably exists among the assets, owing to the fact that there are always some assets which are in a condition of greater or less depreciation. When a plant arrives at that stage where the depreciation reserve remains about the same year after year, it may be said to have reached a state of average normal depreciation.

Efficiency vs. Depreciation.—This does not necessarily mean that the efficiency and earning power of the assets are impaired. On the contrary they are likely to be greater than when the plant was new. Nor does it mean that the total value of the assets is any less than when the plant was new, for it is not. It simply means that the value of certain of the assets is less because a portion of their useful lifetime has expired, and that whatever has been lost in this way has been compensated for by reservations in some other form of assets—possibly by an increase in the cash account, or more likely by an enhancement in value of some of the fixed assets or the purchase of additional ones.

Bad Debts Losses an Estimate.—The accounting procedure employed to care for depreciation may be used to care for losses in the form of uncollectible accounts receivable. The amount of the loss arising from this source depends upon the character of the business and the diligence employed in selecting customers and in collecting outstanding accounts. The amount of the loss from this source sustained during any particular accounting period is necessarily a matter of estimate, because at least a part of the accounts receivable originating during such period cannot be liquidated within the period. It is customary to make this estimate upon the basis of past losses, and by a journal entry to charge the amounts thus estimated to profit and loss, at the same time crediting a reserve for bad debts thus:

Profit and Loss	———	
To Reserve for Bad Debts		———
To charge profit and loss and credit reserve for bad debts for the estimated loss on uncollectible accounts for the period ending ——.		

Accounting for Actual Losses.—When an individual account receivable is found to be worthless it is charged to the reserve for bad debts, thus:

Reserve for Bad Debts	———	
To Accounts Receivable (name of Party)		———

Below is the balance sheet of a merchant after the reserve for bad debts for his estimated losses on uncollectible accounts is set up:

Balance Sheet

Accounts Receivable	$100,000	Capital	$399,500
Less: Reserve for Bad Debts	500		
	$ 99,500		
Other Assets	$300,000		
	$399,500		$399,500

During the next accounting period all accounts receivable which originated during the preceding period are collected, with the exception of the following, which are found to be worthless:

The Imperial Company	$200.00
Arthur Morris	233.60
Harper and Jones	23.10
Total	$456.70

The following journal entries are in order at the time each account, respectively, is found worthless:

Reserve for Bad Debts	$200.00	
To the Imperial Company		$200.00
Reserve for Bad Debts	233.60	
To Arthur Morris		233.60
Reserve for Bad Debts	23.10	
To Harper and Jones		23.10

These entries close the worthless accounts receivable and reduce the reserve for bad debts to a credit balance of $43.40. This amount measures the excess of the allowance made for bad debts over the actual loss from that source. The allowance for the next period might therefore be somewhat smaller. Enough should be charged to profit and loss and credited to the reserve for bad debts, each period, to equal, on an average, the loss from that source. If the reserve gradually grows larger it is an indication that an excessive allowance is being made—more than is necessary to cover losses.

CHAPTER XII

DEPRECIATION, BAD DEBTS, AND VALUATION RESERVES—PRACTICE

Problem 1.—Following is the trial balance of the Ledger of James Andrews as at December 31, 1919:

James Andrews, Capital		$ 40,000.00
James Andrews, Withdrawals	$ 200.00	
Delivery Equipment	5,560.00	
Store and Lot	15,000.00	
Furniture and Fixtures	600.00	
Purchases	50,000.00	
Sales		60,000.00
Inventory, Dec. 31, 1918	10,000.00	
Accounts Receivable	15,000.00	
Accounts Payable		6,000.00
Cash	3,000.00	
Reserve for Depreciation of Store Building		250.00
Reserve for Depreciation of Delivery Equipment		500.00
Reserve for Depreciation of Furniture and Fixtures		60.00
Wages	6,000.00	
Interest	200.00	
General Expense	700.00	
Advertising	250.00	
Insurance	300.00	
	$106,810.00	$106,810.00

The following additional data is given. The inventory as of Dec. 31, 1919, is $15,000; advertising includes $100 paid in advance; while $200 of the insurance is prepaid. The store building cost $11,000, and has an estimated life of 40 years and an estimated residual value of $1,000. One year's depreciation has already been written off. The delivery equipment is written down at the rate of $500 per annum and the furniture and fixtures at the yearly rate of 10 per cent on cost.

Submit (*a*) adjustment and closing journal entries, (*b*) a profit and loss account, and (*c*) a balance sheet.

Note.—In making entries for depreciation, charge depreciation and credit the proper depreciation reserve. This depreciation account is a nominal account and is closed into profit and loss. When this method is pursued the entry charging depreciation and crediting the reserve is strictly an adjustment entry and may be made before taking a trial balance. Similarly the adjustments for advertising and insurance might be made before taking a trial balance. This, of course, is impossible here because the trial balance given above was taken before making the adjustments.

The capital account of James Andrews as at Jan. 1, 1920, should be $46,840.00.

In setting up the balance sheet show the depreciation reserves as deductions from the asset accounts to which they are supplementary, thus:

	(*a*)	(*b*)
Store and Lot..................................	———	
Less: Depreciation Reserve......................	———	———

The deductions should be made in interior column (*a*) and the net result shown in column (*b*). Also classify the assets as fixed, current, and deferred, and the liabilities as fixed (if any), current, and capital account.

The accounting period here is one year. It is customary to close books monthly, however, and when that is done it is necessary to enter all accruals and set up all reserves on a monthly instead of a yearly basis. Even then, however, in case of corporations, a yearly statement is necessary in order to report to the government for income tax purposes, and in any case to show in proper form the results of the fiscal year's business. This consists of a profit and loss statement compiled from the monthly statements, and a balance sheet as of the close of the fiscal year. The balance sheet is the same whether the books are closed monthly or not.

Problem 2.—The following is the trial balance of the Ledger of Amos Baldwin as at Dec. 31, 1918:

Amos Baldwin, Capital		$25,000.00
Interest Accrued		56.40
Accounts Receivable	$ 4,056.00	
Accounts Payable		5,000.00
Reserve for Bad Debts		55.00
Store Building and Land	15,500.00	
Rent of Delivery Equipment	1,500.00	
Purchases	10,000.00	
Sales		12,500.00
Inventory, Nov. 30, 1918	15,600.40	
Cash	700.00	
Furniture and Fixtures	500.00	
Reserve for Depreciation of Store Building		690.00
Reserve for Depreciation of Furniture and Fixtures		115.00
Expenses	1,200.00	
Mortgage		5,640.00
	$49,056.40	$49,056.40

Additional data: The inventory as of Dec. 31, 1918, is $16,000.00. Write off for bad debts for December an amount equivalent to ½ of 1 per cent of the total of accounts receivable. The store building cost $14,000 and has an estimated residual value of $2,000.00. Write off depreciation for the month on the basis of an assumed useful life of 48 years. Write off depreciation on furniture and fixtures at the yearly rate of 12% on cost. The mortgage bears interest at the rate of 6% payable semi-annually, September 30 and March 31.

Submit (*a*) adjustment and closing entries, and (*b*) a profit and loss account, and (*c*) a balance sheet.

NOTE.—In this problem the accounting period is one month, and the adjustment for the interest on the mortgage must be made on this basis. In bringing into the books the charge for bad debts, by means of a journal entry, either the Bad Debts account or the Profit and Loss account may be charged when the Reserve for Bad Debts accounts is credited. It is suggested that the first method be followed, the entry being an adjustment preliminary to closing.

The purpose of the adjustment entry charging Bad Debts and setting up a Reserve for Bad Debts is to enable us to charge Profit and Loss with the current period's due burden of expense arising from uncollectible debts. Experience proves that we may expect a loss of this kind, which will vary with different lines of business, but which in a given line and under given conditions remains fairly uniform from month to month. The advantages of charging Bad Debts and crediting a reserve are two: (*a*) the current period is charged with its due burden, whereas it would be deferred if we waited until we can learn what accounts are bad; (*b*) the burden is evenly distributed from month to month. When individual accounts are ascertained to be bad, they are charged against the bad debts reserve. Should experience prove that the credits to this reserve are greater than the charges against it of the uncollectible accounts, it would be an indication that too much is being charged periodically to Bad Debts and credited to the reserve. The amount reserved should then be lessened by a suitable amount.

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PART II

PARTNERSHIP ACCOUNTING

CHAPTER XIII

THE PARTNERSHIP—SPECIAL CONSIDERATIONS

Value of the Partnership Form.—Partnerships afford a variety of legal problems which influence accounting procedure. The student should make his consideration of them a preliminary to his study of partnership accounting. Although the corporation has superceded the partnership in many fields there are many kinds of enterprise to which the partnership is well adapted.

If it is necessary to appeal to a large number of investors to secure necessary funds the corporation is ordinarily best suited for the purpose. However, there is a very considerable class of undertakings which depend to a great degree upon personal or professional qualifications. These take the form of partnerships or of "personal service corporations." The Income Tax Law of 1918, for purposes of taxation, places the personal service corporation in the same class with partnerships and defines such a corporation as one "whose income is to be ascribed primarily to the activities of the principal owners or stockholders who are themselves regularly engaged in the active conduct of the affairs of the corporation and in which capital (whether invested or borrowed) is not a material income-producing factor."

Partnerships Classified.—For certain purposes it is best to consider personal service corporations as partnerships. Thus under the Income Tax Act of 1918 the personal service corporation is taxed upon the same plan as the partnership, that is, the tax is levied upon the individual members and not upon the corporation as such. We have, therefore:

1. Common law partnerships
2. Limited partnerships
3. Personal service corporations

Common Law Partnerships.—When reference is made to partnerships without limitations or qualification it may be assumed that common law partnerships are meant. These are governed, not by statute, but by the common law, which is simply the common law as developed in England by the courts and which now serves as the basis of our legal system. The common law may be modified by statute. There are certain fundamental principles applicable to common law partnerships, the most important being the unlimited liability of the partners. According to this principle a partner is liable for the debts of the partnership to the full amount of his private fortune.

Limited Partnerships.—Practically all states have passed laws making it possible for partnerships to place restrictions on the liability of some of the partners by following out a prescribed procedure. Those partners who are limited in liability to their investments are known as "special" partners while those who retain unlimited liability are known as general partners. For these the law usually requires that a certificate be deposited in a public office stating:

1. Name of the firm.
2. Name and residence of each partner, and whether special or general.
3. Character of the business.
4. Amount invested by each partner.
5. Amount of the capital.
6. Duration of partnership.

In Pennsylvania and a few other states the law authorizes the formation of partnerships with limited liability for all partners, provides for the transfer of partnership shares, and permits the holding of real estate and the bringing of suit in the common name. Such partnerships resemble corporations more than they do ordinary partnerships. The more common plan, however, as typified in the New York laws, is to provide limited liability for the special partners only, leaving the general partners in the status of common law partners, by making death or attempted transfer of the interest of a general partner a basis of dissolution, and by making the holding of real estate or suing in the partnership name impossible. Limited partnerships in Michigan and Illinois and special partnerships in California are in this class. Partnership associations in Michigan and in Virginia are corporate in nature.

Personal Service Corporations.—The Bureau of Internal Revenue defines a personal service corporation as one "the income of which is derived from a profession or business (*a*) which consists principally of rendering personal service, (*b*) the earnings of which are to be ascribed primarily to the activities of the principal owners or stockholders, and (*c*) in which the employment of capital is not necessary or is only incidental."[1] Whether any given corporation is a personal service corporation or not can be determined only by examination. It is sufficient for our purpose to know that for most accounting purposes the personal service corporation is not different from other corporations. The distinction has been made chiefly for purposes of taxation.

General Definitions.—The English Partnership Act of 1890 defined a partnership as "the relation which subsists between persons carrying on a business with a view of profit."

The New York law says that "a partnership as between the members thereof is the association, not incorporated, of two or more persons who have agreed to combine their labor, property and skill, or some of them, for the purpose of engaging in any lawful trade or business and sharing the profits and losses as well between them."

Articles of Agreement.—It is customary for prospective partners to form a covenant wherein they agree upon the manner in which their enterprise shall be managed. Unforeseen discrepancies frequently arise due to the failure to put into the articles of agreement adequate provision against future contingencies. In addition to the name, address, purpose and duration of the partnership there should appear in the articles of agreement specific information as to:

1. *Capital to be invested by the Individual Partners.*—Not only should the proportions and amounts of the contributions be stated but also the proportions in which it is to be distributed at dissolution. Full provision should be made here for the admission of new partners and for such adjustments of goodwill as may be necessary at that time. It should be remembered that if there is no agreement to the contrary the excess of the assets over capital, after creditors are satisfied, is divisible on the same basis as profits on the theory that such excess represents accumulated profits.

[1] Regulations 45, Art. 1523.

2. Provision regarding interest to be allowed on capital invested by partners.

3. Provision regarding the division of profits and losses among partners. In the absence of provision to the contrary these are allocated equally to the partners.

4. Treatment of withdrawals.

5. *Regulations for Admission of New Partners.*—It is often desirable as a preliminary to adjust book values so that they will agree with real values, especially when goodwill exists.

6. Provision should be made regarding the keeping of the records, preferably by double entry, and periodical audits by expert accountants should be provided for.

7. *Rules to Govern Dissolution.*—Unless there is provision to the contrary any excess of assets over capital, after creditors are satisfied, will be divided equally among the partners, on the theory that such excess represents accumulated profits.

Other Provisions in the Agreement.—The provisions made in the articles of agreement need not be limited to the above and in any case special conditions arising from individual circumstances may make special clauses desirable. Dicksee suggests that the name of the auditor be inserted in the agreement so that a substitute auditor could be secured only with the unanimous consent of the partners—such consent being always necessary to change the articles of agreement. This would prevent changes being made by a majority of partners to the prejudice of a minority—a not unlikely occurrence in view of the delicate questions that may arise in partnership adjustments. It may also be desirable to enter in the agreement provision to the effect that the accounts be kept by double entry and that questions involving accounting principles be submitted to the auditor for settlement.

The agreement ought to enter into sufficient detail regarding the interest question to prevent possible future misunderstanding. This involves the question of drawings. It may be desirable to establish a prescribed limit to drawings, interest being charged on any excess over the prescribed amount and credited on any excess of the amount prescribed and that actually withdrawn.

Provision to Avoid Dissolution.—Since the partnership is a strictly personal arrangement any occurrence which interrupts such arrangement is sufficient cause for dissolution, no provision occurring to the contrary in the agreement. This is a common law dictum. Such events are apt to occur at times when to make an accounting by closing the books would cause inconvenience. If profits do not fluctuate greatly provision should be made to the effect that the outgoing partner or his estate be compensated on the basis of the preceding year's profits. It will perhaps be preferable to make such payment on the instalment plan to avoid the disbursement of too great an amount at one time.

Causes of Dissolution.—A partnership may be dissolved (*a*) by arrival of a time predetermined by agreement, (*b*) by unanimous consent of the partners, (*c*) by the illegality of its purpose or the impossibility of accomplishing it, (*d*) by assignment of a partner's interest without the consent of the other partners, (*e*) by death of a partner, and (*f*) by anything which incapacitates a partner for his duties, as insanity, bankruptcy, drunkenness, and so on.

Distribution of Assets at Dissolution.—At the dissolution of a partnership the interested parties are satisfied in the following order:

1. Creditors.
2. Loans from partners.
3. Capital of partners.
4. Residue distributed among partners in the profit and loss sharing ratio.

CHAPTER XIV

THEORY OF PARTNERSHIP ACCOUNTING

Peculiarities of Partnership Accounting.—In general, partnership accounting follows the principles which we have already discussed. The chief variations from the procedure followed in case of sole proprietors arise in connection with the treatment of capital investments and the allocation of the net profits among the partners. We have considered some of the common law principles that govern partnerships and also certain of the variations therefrom prescribed by statute. We are now prepared to study the accounting procedure peculiar to partnerships. These may be considered under the following heads:

1. Opening entries.
2. Interest on investments.
3. Closing entries.
4. Dissolution.
5. Admission of partners.

Opening Entries.—Opening entries for partnerships should express clearly the contribution made by each partner. For example, two individuals enter into a partnership with the following assets and liabilities:

L. Gordon	
Assets:	
Cash	$ 1,000.00
Merchandise	4,000.00
Store and Lot	7,000.00
Accounts Receivable	2,000.00
Furniture and Fixtures	500.00
Notes Receivable	3,000.00
	$17,500.00
Liabilities:	
Accounts Payable	$ 1,500.00
Mortgage	3,000.00
	$ 4,500.00
R. Tarrant	
Assets:	
Cash	$10,000.00
Liabilities:	
None	

The student should note that the question of valuation (*i.e.*, determination of value or worth) has been introduced in connection with such items as merchandise, store and lot, and goodwill. Perhaps the records of the cost of merchandise and of store and lot are incomplete, untrustworthy, or lost. Their value in dollars and cents must therefore be fixed, also that of the goodwill, which is not the result of a purchase but of general business ability and foresight.

It may be agreed that Tarrant's investment is to entitle him to half the profits and an interest in the total investment proportionate to his contribution. Or it may be agreed that his contribution entitles him to a half interest in the assets, in which case it is necessary to adjust the capital accounts of the partners so that they will be equal. If we accept the interpretation that his interest in the total investment is to be proportionate to his contribution the opening entry is:

L. Gordon and R. Tarrant this day enter into a partnership under the firm name of Gordon and Tarrant, with assets, liabilities and capital as follows:

Cash	$ 1,000.00	
Merchandise	4,000.00	
Store and Lot	7,000.00	
Accounts Receivable	2,000.00	
Furniture and Fixtures	500.00	
Notes Receivable	3,000.00	
To Accounts Payable		$ 1,500.00
Mortgage		3,000.00
L. Gordon, Capital		13,000.00
Investments of L. Gordon in firm of Gordon & Tarrant.		
Cash	$10,000.00	
To R. Tarrant, Capital		$10,000.00
Investment of R. Tarrant in firm of Gordon & Tarrant.		

If nothing to the contrary appears in the agreement Gordon and Tarrant will share equally in the profits although their investments stand as 13 and 10. If, however, it is desired that Tarrant receive a half interest in the business it will be necessary to adjust his capital account either (*a*) by charging Gordon's capital and crediting Tarrant's capital account with one-half the difference between them, viz., $1,500, or (*b*) by bringing in goodwill at $3,000 as a part of Tarrant's investment. In case of (*a*) the adjusting entry is:

L. Gordon, Capital	$1,500	
To R. Tarrant, Capital		$1,500
To equalize the partners' capital accounts.		

while in case of (*b*) the original entry for Tarrant, instead of the above, would be:

Cash	$10,000	
Goodwill	3,000	
To R Tarrant, Capital		$13,000
Investment of R. Tarrant in firm of Gordon & Tarrant.		

In the same manner the capital accounts of the two partners may be established in any desired ratio to each other, either by bringing goodwill into the books, or by making adjustments between the capital accounts of the partners. There is no objection to bringing goodwill into the books if it is done to represent a real condition, that is, if the partner whose account is increased by the amount charged to goodwill really brings into the business connections of value equal to that ascribed to goodwill. If, however, the proper ratio between the partners' capital accounts cannot be thus secured it should be done by adjustments made between the capital accounts.

Interest on Investments.—The interest question arises in two ways in partnership accounting: (*a*) as a means of adjusting profits and (*b*) as a charge or credit in connection with withdrawals by the partners. Thus when interest is employed to adjust profits it is done with a view to granting something more than the rule of equal division of profits would give to the partner whose investment is greater than the average and something less than that rule would give to the partner whose investment is below the average. For example, if A, B, and C invest $50,000, $75,000 and $100,000, respectively, the average investment is $75,000, and if each partner is credited with 6% on his capital account, (*i.e.*, this interest is to be carried to Profit and Loss) then the accounts of the partners will be credited with the following amounts for interest:

A	$ 3,000
B	4,500
C	6,000
Total interest	$13,500

The $13,500 will be charged to Profit and Loss with the result that each partner will bear ⅓ of its cost, or $4,500. We see that B, whose investment was just equal to the average investment of the partners, or $75,000, neither gains nor loses by the procedure, and that A secures $1,500 less and C $1,500 more than would be the case were the partners not credited with interest on their capital accounts. This net result might have been accomplished by the following adjustment:

A	$1,500	
C		$1,500

This avoids carrying the interest to the Profit and Loss account and since the effect is merely an adjustment of profits as between partners it appears to be more logical than to credit each partner's account with 6% of its amount, and charge it with 1/3 of the total interest, thus bringing it into the Profit and Loss account.

When profits are distributed to partners in proportion to investments, the only object is to distinguish between interest on the amounts invested and profits beyond that, since each partner will be credited with the same amount as if interest were not considered at all. In this case it is necessary to carry interest to Profit and Loss.

If the agreement provides for allowing interest on the average investment of the partners, then any withdrawals or contributions made during the year by the partners must be taken into consideration together with the time during which they are withdrawn or invested. If two partners, A and B, respectively, invest $5,000 and $10,000 on January 1st and make the following withdrawals and additional investments:

Withdrawals:		
A	March 31st	$100.00
	Sept. 30th	200.00
B	April 30th	$ 50.00
	July 31st	75.00
	Oct. 31st	90.00
Additional Investments:		
A	June 30th	$1,000.00
B	March 31st	2,000.00

then at the end of the year A has invested:

$5,000 for 12 mo.	or	$60,000 for 1 mo.
1,000 for 6 mo.	or	6,000 for 1 mo.
	or	$66,000 for 1 mo.

He has withdrawn:

$100 for 9 mo. or	$900 for 1 mo.
200 for 3 mo. or	600 for 1 mo.
or	$1,500 for 1 mo.

Therefore his investment is $66,000 − $1,500, or $64,500 for 1 month, or an average investment of (64,500 ÷ 12) $5,375. Similarly at the end of the year B has invested:

$10,000 for 12 mo. or	$120,000 for 1 mo.
2,000 for 9 mo. or	18,000 for 1 mo.
or	$138,000 for 1 mo.

He has withdrawn:

$50 for 8 mo. or	$400 for 1 mo.
75 for 5 mo. or	375 for 1 mo.
90 for 2 mo. or	180 for 1 mo.
or	$955 for 1 mo.

and his investment is $138,000 − $955, or $137,045 for 1 month, or an average investment of (137,045 ÷ 12) $11,420.42. Interest will then be calculated on A's average investment of $5,375 and on B's average investment of $11,420.42.

Closing Entries.—In general the closing entries for a partnership are not essentially different from those of a single proprietor. Before they can be made, however, all requirements regarding interest on investments must be met because it may be necessary, as shown above, to carry this interest through the Profit and Loss account. Whether or not this is done the balance of Profit and Loss must be transferred to the capital accounts according to an accepted ratio, or, in the absence of an agreement, it is divided equally. The balances in the withdrawal accounts are not carried to the Profit and Loss account because they do not represent disbursements made for the business but for the benefit of the partners personally. They must therefore be carried to the partners' capital accounts. The usual plan is to bring the net profits into the withdrawal accounts and then carry the balance to capital. Thus if A, B, and C are partners sharing equally in profits, if the balance indicating net profits in the Profit and Loss account is $15,000, and if A, B, and C are charged $100, $200 and $300, respectively in their withdrawal account, then the entries to carry profits to the withdrawal accounts and thence to the capital accounts are:

Profit and Loss	$15,000	
To A, Withdrawals		$5,000
B, Withdrawals		5,000
C, Withdrawals		5,000
To carry profits to partners' withdrawal accounts.		
A, Withdrawals	$ 4,900	
To A, Capital		$4,900
B, Withdrawals	$ 4,800	
To B, Capital		$4,800
C, Withdrawals	$ 4,700	
To C, Capital		$4,700
To carry net profits retained in the business to the partners' capital accounts.		

The partner's withdrawal accounts now appear thus:

A, Withdrawals

To Cash	$ 100.00	By Profit and Loss	$5,000.00
To A, Capital	4,900.00		
	$5,000.00		$5,000.00

B, Withdrawals

To Cash	$ 200.00	By Profit and Loss	$5,000.00
To B, Capital	4,800.00		
	$5,000.00		$5,000.00

C, Withdrawals

To Cash	$ 300.00	By Profit and Loss	$5,000.00
To C, Capital	4,700.00		
	$5,000.00		$5,000.00

Dissolution.—In the preceding chapter we have seen that the same principle that governs distribution of profits does not govern the distribution of assets in case of dissolution. In theory capital invested is returned to the partners at dissolution in the same ratio in which it was invested. Any increase in the value of the investment over the contributions by the partners represents accumulated profits and is governed by the rule for distribution of profits and losses. Likewise a deficit represents accumulated losses and is governed by the same rule. Consequently the first step in the distribution of funds is to divide the accumulated profits or the deficit among the partners according to the rule governing division of losses and gains, after which remaining values are distributed to partners in proportion to their capital accounts. In case of a deficit the ratio of the partners' capital accounts will be changed, except when profits or losses are distributed in the ratio of the investments, because they will be reduced by amounts whose ratio to one another is the basis of profit distribution.

Assume that the balance sheet of A and B is as follows:

Balance Sheet—A and B—as at—

Assets	$50,000	Capital, A	$50,000
Deficit	20,000	Capital, B	20,000
	$70,000		$70,000

If profits are distributed equally the deficit will be charged ½ to A and ½ to B and the balance sheet becomes:

Balance Sheet—A and B—as at—

Assets	$50,000	Capital, A	$40,000
		Capital, B	10,000
	$50,000		$50,000

and the distribution of the assets will be made to A and B in the ratio of 4 to 1, not of 5 to 2, the ratio of the original investments.

It is quite possible that the distribution of the deficit to the partners' capital accounts on the profit and loss sharing ratio will change the capital account of a partner to a deficit account, in which case the other partners have a claim against him for the amount of the deficit. Thus when the following balance sheet, showing a deficit of $60,000:

Balance Sheet of A, B, C, and D, as at—

Assets	$ 40,000	A, Capital	$ 50,000
Deficit	60,000	B, Capital	10,000
		C, Capital	20,000
		D, Capital	20,000
	$100,000		$100,000

is altered to show the distribution of the deficit equally among the partners it becomes:

Balance Sheet of A, B, C, and D, as at—

Assets....................	$40,000	A, Capital................	$35,000
B, Capital...............	5,000	C, Capital................	5,000
		D, Capital................	5,000
	$45,000		$45,000

If B makes good the claim against him for $5,000 the other partners will receive the assets in distribution as shown by their capital accounts. If he fails, however, this loss must in turn be distributed among A, C and D equally, each bearing $1,666.67 of the loss, after which the distribution will be made on the basis of the capital account balances then remaining.

Admission of Partners.—When a new partner is admitted his contribution entitles him to share equally with the other partners in profits no matter what the amount of his investment, unless there is an agreement to the contrary. If it is specifically agreed that he is to share equally with the other partners in proprietorship then it may be necessary to make adjustments to establish the desired ratio among the capital accounts. Thus if the following is the balance sheet of A and B:

Balance Sheet of A and B, as at—

Cash....................	$ 1,000	A, Capital................	$ 5,500
Other assets..............	10,000	B, Capital................	5,500
	$11,000		$11,000

and they agree to admit C to the partnership, giving him a ⅓ interest on condition that he invest $7,000, then it is necessary either,

(*a*) to bring goodwill into the books, according to some agreement between A and B, or

(*b*) to make an adjustment among the capital accounts without introducing goodwill.

If the plan suggested in (*a*) above is followed the following Journal entry is necessary to bring goodwill into the books:

Goodwill	$3,000	
To A, Capital		$1,500
B, Capital		1,500
To bring goodwill into the books, etc.		

The capital accounts of A and B are both increased to $7,000 and when C contributes his share the capital accounts of each of the three partners will stand at that amount.

If the plan suggested in (*b*) above is followed the following entry made after C invests his $7,000 will equalize the capital accounts of A, B and C:

C, Capital	$1,000	
To A, Capital		$500
B, Capital		500
As per agreement, etc.		

A different problem arises when a party buys an interest in a partnership without contributing anything to the partnership. Here entrance to the partnership is secured by a transfer of interest to the new partner, not by the investment of new money. Thus if the following is the balance sheet of A and B:

Balance Sheet of A and B, as at—

Assets	$100,000	A, Capital	$ 60,000
		B, Capital	40,000
	$100,000		$100,000

and A sells one-half of his interest to C, the following entry is necessary to make the adjustment,

A, Capital	$30,000	
To C, Capital		$30,000

and the balance sheet becomes:

Balance Sheet of A and B, as at—

Assets	$100,000	A, Capital	$ 30,000
		B, Capital	40,000
		C, Capital	30,000
	$100,000		$100,000

Note that the investment has not been increased and that the only change has been to transfer one-half of A's capital account to C's capital account. The only transfer of funds has been from C to A, personally.

CHAPTER XV

PARTNERSHIP ACCOUNTING-PRACTICE

Diary of Events—November.—A. B. Gray, owing to increasing business, and the need for more capital, has concluded to take for a partner Mr. J. A. Smith. On condition of payment, by Mr. Smith, into the business of $4,000.00 in cash, J. A. Smith is to become a partner, under the firm name of Gray and Smith. According to the partnership agreement, each partner is to be credited with 5% interest on his investment before distribution of profits. Profits and losses are to be shared equally. Use same books as for the October diary of events.

Nov. 1. Make entry in Cash Journal for Smith's investment (J. A. Smith, Capital, p. 1, below A. B. Gray, Capital). If desirable, a formal entry may also be made in the General Journal for Smith. This, both debit and credit, should be checked (✓) in the folio column to show that it is posted from the Cash Journal. Such a formal journal entry is especially desirable when it is desired to enter considerable explanatory matter relating to the partnership organization. As all petty cash payments are to be made on the Imprest System (see note below), a check is written out for $50 and charged to Petty Cash Account (p. 10). It is calculated that this will be more than sufficient for all petty disbursements for 2 weeks. By petty cash disbursements is meant $5.00 or less. Any payment over $5.00 will be made by check. On a sheet of blank paper rule up a page of the Petty Cash Book, with the following columns: Remarks; Telegrams; Stationery & Printing; Advertising; Telephone; A. B. Gray, Withdrawals; J. A. Smith, Withdrawals; General Expense; Freight; Totals. Cash sales $97.00.

Cash sales will be given hereafter for each week at the close to save labor.

Additional furniture for store is ordered from Anderson & Co.

NOTE. For description of the Imprest System of cash payment see Chapter XVII.

Nov. 3. Some contemplated improvements are carried out. The horses and wagons are sold at their book value and an automobile delivery wagon is purchased for $1,500, cash. An adjoining building is purchased for $2,000 for a storage house; $1,500 is paid in cash, and a note given for the balance payable in 30 days with interest at 6%. A contractor is secured to make some improvements on this building at a cost of $500, one-half to be paid on Nov. 15, and the balance on completion of the work.

NOTE.—Make entries in Cash Journal for purchases and sales of delivery equipment. Charge "Storage House No. 2" for the new one purchased. This requires two entries, one in the Cash Journal and one in the General Journal. The information regarding the contract requires no entry.

Nov. 4. Purchase mdse. from Cloverdale Wholesale Co., 2/10, n/30, \$975.00. Telegrams, \$4.20. Stationary and Printing \$3.10. Sell on account to T. M. Phillips, \$16.00; to D. Hathaway, \$5.00. M. Arnold pays his account in full.

Nov. 5. Pay telephone bill for mo., \$3.00. Rent second floor of store to the X. Y. Z. Club, at monthly rental of \$30.00. Accept \$25 cash for rent in advance for balance of month (Rents, p. 10). Sell on account to S. Smith, \$7.87; to T. Bradford (new) \$11.00.

Nov. 6. General Expense \$3.35; telegram, \$1.00. Sell on account to T. M. Phillips, \$7.30.

Nov. 7. Note is received from bank that bill of lading with sight draft for \$175.00 attached has been received from Anderson & Co. Draft is paid and bill of lading secured. Freight on shipment, \$4.00, paid in cash.

NOTE.—Charge Furniture and Fixtures and credit cash when sight draft is paid.

Nov. 8. Cash sales for week, \$632.14. L. Floyd pays \$10.00 on account. Pay note of \$200 due at bank.

Nov. 10. T. Bradford returns defective goods purchased Nov. 5 and receives credit for \$5.00. General expense, \$3.50. Sell on account, to S. Smith, \$5.00.

Nov. 11. Purchase of the Townsend Supply Company, 2% 30 days, net 60 days, mdse. \$432.00.

Nov. 12. Owing to a defective chimney the store takes fire and damage is done to the extent of \$540., as determined by a board of appraisers. This amount is paid over by the insurance company, in which A. B. Gray had insured his store. Make proper entries in books. Arrangements are at once made with a contractor for necessary repairs, to be paid for on completion of the work. (Charge Cash and credit Store & Lot.)

Nov. 13. Donate \$5.00 to Salvation Army and give \$10.00 to Society for Prevention of Tuberculosis. (Charge General Exp.) Pay \$3.00 for advertising in local papers. Sell on account to S. Thomas, \$11.10; to T. M. Phillips \$7.00.

Nov. 14. Pay Cloverdale Wholesale Company bill of Nov. 4, less discount.

Nov. 15. Pay contractor \$250 in part payment for improvements on store, as per agreement. Cash sales for week, \$651.13. Write out check for proper amount to replenish petty cash, charging proper accounts. Pay assistants same as on previous pay day. Sell on account to B. Ward, \$27.32. T. M. Phillips and S. Thomas pay their accounts in full.

NOTE.—Charge Store and Lot for payment to contractor.

Nov. 17. Sell on account to R. Ritter (new) \$17.00. Return defective goods to Cloverdale Wholesale Co., receiving credit for $23.00; and to Townsend Supply Co., credit $13.40.

NOTE.—For mdse. returned debit Sales and credit Cloverdale Wholesale Co.

Nov. 18. Purchase mdse. from Armour and Co., 2/10, n/30, $200.00. From Cresca Company $48.70, net 30 days. From Park and Tilford, $77.00, 2/10, n/30. Open accounts in the accounts payable division of the Ledger. General expense $4.00, stationery and printing, $3.50, telegrams, $2.30. A. B. Gray withdraws $3.00 from petty cash for personal use.

Nov. 20. Sell on account to R. Ritter $3.00; to B. Ward, $7.00; to O. Freeborn, $8.00. Buy from Arbogast and Bastian mdse., $40.00, 2/20, n/30. They accept our note payable in 19 days for purchase of Nov. 20, less discount. Make note for $40 less 2%. Make proper Journal entry for note and for discount. As Arbogast and Bastian desire payment we offer to discount our own note to them at 6% interest.. They surrender the note and we pay them its face less discount. Reckon interest for 19/365 of a year, at 6%. Make proper entries. J. A. Smith withdraws $25 for personal use. Cash sales for week, $695.00.

NOTE.—For purchase from Arbogast and Bastian make entry in General Journal, charging Purchases and crediting Arbogast and Bastian. Then make entry for note thus:

Arbogast and Bastian	$40.00	
To Notes Payable		$39.20
Discount on Purchases		.80

Next make entry for discount on their note. The discount is $0.12. In the Cash Journal charge Notes Payable and credit Cash $39.08. In the General Journal charge Notes Payable and credit Interest $0.08.

Nov. 23. B. Ward pays account in full.

Nov. 24. General expense, $3.00; telegrams, $1.00.

Nov. 25. Sell on acct. to D. Hathaway, $5.00; to M. Arnold, $20.00: to L. Floyd, $40.00.

Nov. 26. L. Floyd gives note for $40 for 1 mo., Int. at 6%, for purchase of Nov. 25.

Nov. 28. Armour & Co. accept out note; payable in 30 days, Int. at 6%; for purchase of Nov. 18, less discount.

Nov. 29. Sells on account to T. M. Phillips mdse. $30.00. Mr. Phillips gives note for his account in full due in 20 das., Int. at 6% (20/365 of one year).

Nov. 30. Pay assistants as on preceding pay-day. Cash sales for week, $702.03. Telegrams, $4.00. Draw check to replenish petty cash fund.

(*a*) Take a trial balance.

(*b*) Make closing journal entries, among them being those for charging interest and crediting partners' accounts, at 5%.

(*c*) Set up profit and loss account.
(*d*) Balance sheet.

Inventory, Nov. 30	$1,200

Carry profits to the withdrawal accounts, then close latter into the capital accounts of the partners.

The capital accounts as of Dec. 1 should stand with credit balances as follows:

A. B. Gray	$5,251.31
J. A. Smith	4,336.99

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PART III

EXPANSION OF ACCOUNTING RECORDS

CHAPTER XVI

SUBORDINATE LEDGERS AND CONTROLLING ACCOUNTS

Records must be Adaptable.—Accounting records must be correct in principle; they must also be adapted to actual conditions. This latter consideration necessitates the introduction of such alterations and additions to the records as will make them at all times adequate and satisfactory. As a concern's market widens its customers and creditors become more numerous, and the sources of profit as well as of expenses and losses increase correspondingly. Under such conditions the very simple arrangement which consists of the General and Cash Journals and the Ledger becomes inadequate. The General Journal is crowded with a multiplicity of entries, of which many, probably the great majority, record purchases and sales on credit.

Controlling Accounts and Columnar Journals.—As far as cash is concerned the Cash Journal remains an adequate record; nevertheless even here improvements for the handling of certain classes of receipts and disbursements become desirable. The growing number of accounts receivable and payable encumber the Ledger, making errors difficult to avoid and equally difficult to locate after they occur. The work of taking the trial balance is greatly increased. With only two Journals and one Ledger a proper subdivision of work among clerks grows constantly more difficult. General inadequacy of the system results.

As a remedy for such a situation, the ingenuity of accountants has succeeded in obtaining not merely a further subdivision of the Journal, but also a subdivision of the Ledger through the application of the principle of controlling accounts and columnar Journals. Briefly, controlling accounts are accounts kept in the General Ledger ("general" being the word used to distinguish the main Ledger from the "subordinate" Ledgers) to which are posted, from the Journals, the totals of the debits and credits which are posted in detail to the subordinate Ledgers which these controlling accounts "control." The subordinate Ledger is frequently known by the same name as its controlling account. Thus if all accounts receivable are kept in a subordinate Ledger, that Ledger may be called the Accounts Receivable Ledger and its controlling account in the General Ledger the Accounts Receivable Controlling Account. Similarly if the accounts payable are kept in a subordinate Ledger, that Ledger may be called the Accounts Payable Ledger and its controlling account the Accounts Payable Controlling Account.

Controlling accounts and subordinate Ledgers require a certain amount of specialization, in the forms of the Journals, beyond that which we have already described. First, it is desirable to take out of the General Journal those entries which affect accounts in the subordinate Ledgers, as far as possible, or else provide special columns in the General Journal for their reception. In the Cash Journal, also, special columns must be provided for the reception of these entries. By providing either (*a*) special Journals, or (*b*) special columns in the General and Cash Journals, or both, for the reception of those items which are to be posted in detail to subordinate Ledgers, it is possible to post the totals of the items entered in the special Journals and in the special columns in the General and Cash Journals to the controlling accounts, thus fulfilling the requirement mentioned of carrying to the controlling accounts the totals of the debits and credits which are posted in detail to the subordinate Ledgers.

Controlling Accounts Provide Elasticity.—The principle of controlling accounts permits of the greatest freedom and elasticity in the construction of accounting records. The extent of its application is limited only by the nature and magnitude of the business to which it is applied. There may be as many special Journals, and as many special columns in the General and Cash Journals, and as many subordinate Ledgers, as circumstances require.

Specialized Journals Illustrated.—To clarify this matter, let us assume that a merchant, Marion Smith, has in operation a system of accounts consisting of the General and Cash Journals and a Ledger. With the growth of his business he experiences certain difficulties with his accounts. His General Journal is crowded with an excessive number of entries owing to his numerous purchases and sales. For various reasons it would be better if purchases and sales could be segregated in special Purchases and Sales Journals. This would not only remove a large volume of detail from the General Journal, but it would also make easy a subdivision of labor among the office force, hitherto impossible. When purchases and sales are entered in the General Journal all entries must either be made therein by one person, or the General Journal must be shifted inconveniently from one person to another. The subdivision of the General Journal into three Journals, one becoming the Sales Journal, one the Purchases Journal, and one remaining the General Journal, obviates this difficulty by making it easy for one clerk to specialize on the Sales Journal, one on the Purchases Journal, and so on.

Below are shown forms for Sales and Purchases Journals:

Sales Journal, Marion Smith

Date		Name of Customer	L.F.	Amount	
Jan.	3	A. L. Grant		50	00
	3	L. O. McDonald		25	00
	12	O. O. Stout		72	00
		Accounts Receivable, Dr. / Sales, Cr.		147	00

Purchases Journal, Marion Smith

Date		Name of Creditor	L.F.	Amount	
Jan.	1	Atlas Company		200	00
	2	Fuller Supply Co.		100	00
	11	Oregon & Sons		150	00
	16	Atlas Co.		125	00
	17	Newton Company		98	00
		Accounts Payable, Cr. / Purchases, Dr.		673	00

In these specialized Journals it is necessary to use but one line for a double entry. The customer is charged in the Sales

Journal. The party from whom a purchase is made is credited in the Purchases Journal. When a sale is made the credit to Sales need not be shown separately in the Sales Journal, since the total sales for the month can be obtained by adding the items entered in the amount column. This total may then be posted to the credit of the sales account. Likewise in the Purchases Journal it is unnecessary to write the word Purchases each time an entry is made, since the total of the column containing the amounts of the purchases can be posted to the purchases account in the General Ledger at the month's end.

Specialized Ledgers.—If, because of the number of customers and creditors, it is necessary to provide special Journals for them, it will also be well to supply subordinate ledgers for the purpose of keeping the accounts with these customers and creditors. These are the Sales Ledger and the Purchases Ledger, respectively. In the Sales Ledger are kept only the accounts with customers *i.e.*, the accounts receivable. In the Purchases Ledger are kept only the accounts with creditors, *i.e.*, the accounts payable. In place of the individual accounts receivable and payable in the General Ledger there appear the accounts receivable and payable controlling accounts, which are charged at the end of each month with the total amount of the detailed charges made to the corresponding accounts in the subordinate ledgers and credited with the total amount of detailed credits made to the corresponding accounts in the subordinate Ledgers. In this way the controlling accounts are charged and credited with the same amounts, *in toto,* as the subordinate ledgers are charged and credited with, *in detail.*

Special Columns in Journals Illustrated.—To complete the system it is necessary to introduce special columns in the General and Cash Journals for the reception of items representing charges or credits to be posted to the subordinate ledgers. Thus, since cash receipts are entered on the left hand page of the Cash Journal, a column should be provided there for Accounts Receivable, and since accounts paid are entered on the right hand page of the Cash Journal, a column should be provided there for Accounts Payable. Sometimes open accounts are settled by note, draft, or trade acceptance. When this occurs entry must be made in the General Journal, and a debit column should be provided therein for Accounts Payable and a credit column for Accounts Receivable. These will also be useful in making adjustments for returned purchases and returned sales when no special journals are provided for recording them. When these special columns are provided, the individual items can be posted to the proper accounts in the subordinate ledgers, while the totals of the columns can be carried each month to the proper controlling accounts. Forms of Cash and General Journals with special accounts receivable and payable columns are shown below:

Cash Journal, Marion Smith (left side)

Date		Explanation	F	Accounts Rec.		General	
Jan.	18	A. L. Grant..............		50	00		
		L. O. McDonald..........		25	00		
		Accounts Receivable, Cr. / Cash, Dr.		75	00		

Cash Journal, Marion Smith (right side)

Date		Explanation	F	Accounts Pay		General	
Jan.	9	Atlas Company...........		200	00		
	19	Oregon & Sons...........		150	00		
	22	Newton & Company......		98	00		
		Accounts Payable, Dr. / Cash, Cr.		448	00		

General Journal, Marion Smith

	Explanation	F	Dr. Accts. Pay	Dr. General	Cr. Accts. Rec.	Cr. General
	Jan. 10					
	Fuller Supply Co..........		100 00			
	To Notes Payable.......					100 00
	Note due in 1 mo., int. at 6%.					
	Jan. 20					
	Notes Receivable.........			72 00		
	To O. O. Stout.........				72 00	
	Due in 1 mo., int. at 6%.					
	Jan. 21					
	Atlas Company...........		125 00			
	To Notes Payable.......					125 00
	Due in 1 mo., int. at 6%.					
	Accounts Payable, Dr....		225 00			
	Accounts Receivable, Cr.				72 00	

A variation in the form of the General Journal is shown below:

General Journal, Marion Smith

Accts. Pay Dr.	General Dr.	F	Explanation	F	General Cr.	Accts. Rec. Cr.

Diary of Events.—The specimen entries shown are the following:

Jan. 1. Smith buys of Atlas Company, mdse., $200, on account.
Jan. 2. Smith buys of Fuller Supply Co., mdse., $100, on account.
Jan. 3. Smith sells to A. L. Grant, mdse., $50.00, on account, and to L. O. McDonald, $25.00 on account.
Jan. 9. Smith pays Atlas Company, bill Jan. 1, $200.00.
Jan. 10. Smith gives note, due in one mo., interest at 6%, to Fuller Supply Co., in payment of bill of Jan. 2, $100.
Jan. 11. Smith buys of Oregon & Son, mdse., $150, on account.
Jan. 12. Sells to O. O. Stout, mdse., on account, $72.00.
Jan. 16. Buys mdse. from Atlas Co., $125, on account.
Jan. 17. Buys mdse. of the Newton Co., $98, on account.
Jan. 18. A. L. Grant pays account, $50; L. O. McDonald pays account, $25.00.
Jan. 19. Pays Oregon & Son, bill Jan. 11, $150, cash.
Jan. 20. O. O. Stout gives note due in one mo. in settlement of account, interest at 6%.
Jan. 21. Pays Atlas Co. bill of Jan. 16, with note due in 1 mo., at 6%.
Jan. 22. Pays Newton & Co. bill of Jan. 17, Cash, $98.

Postings Explained.—The postings of the totals of the details in these special columns are carried to the subordinate ledgers. Thus from the Sales Journal the individual accounts receivable are debited in the subordinate Accounts Receivable Ledger, while the total of sales is charged to the Accounts Receivable controlling account and credited to the Sales account in the General Ledger. From the Purchases Journal the individual accounts payable are credited in the subordinate Accounts Payable Ledger, while the total of purchases is charged to Purchases account and credited to the Accounts Payable controlling account in the General Ledger. From the left side of the Cash Journal the individual accounts receivable are credited in the subordinate Accounts Receivable Ledger, while the total amount of the accounts receivable column is posted to the credit side of the accounts receivable controlling account in the General

Ledger. From the right side of the Cash Journal the individual accounts payable are debited in the subordinate Accounts Payable Ledger, while the total amount of the accounts payable column is posted to the debit side of the accounts payable controlling account in the General Ledger. From the accounts payable column in the General Journal the individual accounts payable in the subordinate Accounts Payable Ledger are debited, while the total of the column is posted to the debit side of the accounts payable controlling account in the General Ledger. From the accounts receivable column in the General Journal the individual accounts receivable in the subordinate Accounts Receivable Ledger are credited, while the total of the column is posted to the credit side of the accounts receivable controlling account in the General Ledger. As a result of these postings the two controlling accounts appear thus:

Accounts Receivable

Jan. 31	To sales.......	147.00	Jan. 31	By Cash.........	75.00
			31	By Notes Receivable...........	72.00

Accounts Payable

Jan. 31	To Cash........	448.00	Jan. 31	By Purchases....	673.00
31	To Notes Payable	225.00			

As it happens, all accounts, both receivable and payable, are settled, so that no balance occurs in either controlling account. Likewise, if the subordinate ledgers were shown, all individual accounts therein would appear balanced. Ordinarily some accounts payable and some accounts receivable will remain unpaid, in which case the balance of the controlling account should equal the total of the balances of the subordinate ledger which it controls. Thus if the Accounts Receivable account in the General Ledger shows a balance of $227.10, then the total of the debit balances in the subordinate Accounts Receivable Ledger should equal $227.10, and so on.

Location of Errors Facilitated.—The specialization possible under the principle of controlling accounts and subordinate ledgers is limited only by the requirements of the business. Note that the number of accounts in the General Ledger is greatly diminished by the removal of the individual accounts receivable and payable. This facilitates taking the trial balance and locating errors. If, when all postings have been made, a subordinate ledger is not in agreement with its controlling account, the error is thus localized and search for it can be made within a limited field.

Notes Receivable and Payable Journals.—When the number of notes receivable and payable become large enough to warrant, special journals should be introduced to receive them. These journals should be given some such titles as Notes Receivable Journal and Notes Payable Journal. It is not customary, however, to post these to subordinate ledgers similarly named, as is done with accounts receivable and accounts payable. This is because notes receivable and payable are usually given in settlement of personal accounts receivable and payable and consequently are posted to the subordinate ledgers which contain these personal accounts. The journals serve as detailed records of the notes. Since notes receivable are received in satisfaction of accounts receivable, postings from the Notes Receivable Journal will be made in detail to the Accounts Receivable Ledger, while the total of the Notes Receivable entered for the month is posted to the credit of the accounts receivable controlling accounts and to the debit of the notes receivable account in the General Ledger. Since notes payable are given in payment of accounts payable, postings from the Notes Payable Journal will be made in detail to the Accounts Payable Ledger, while the total of the notes payable entered for the month is posted to the debit of the accounts payable controlling account and to the credit of the notes payable account in the General Ledger.

Returned Sales and Purchases.—When the returned sales and purchases are not numerous they may be recorded in the General Journal, either by providing special columns for their reception, or by entering them in the general or sundries column and posting them individually to "returned sales" and "returned purchases" accounts in the General Ledger. If, however, either or both of these classes of transactions become numerous, it is then necessary to provide special journals for them. These are known respectively, as the Returned Sales Journal and the Returned Purchases Journal. They differ in no way from the ordinary form of journal. In the Returned Sales Journal the name of the party credited is entered in the explanation column, and the amount of his credit is posted to the credit of his account in the Accounts Receivable Ledger. At the end of the month the total of the returned sales is posted to the debit of the "returned sales" account and to the credit of the "accounts receivable" controlling account in the General Ledger.

In the Returned Purchases Journal the name of the party charged is likewise entered in the explanation column and the amount is posted to the debit side of his account in the Purchases Ledger. At the month's end the total of returned purchases is posted to two accounts in the General Ledger—to the debit of the Accounts Payable controlling account and to the credit of the Returned Purchases account.

NOTE.—At this point work should be started or the practical exercises given in Chapter XVIII and pursued together with the study of Chapter XVII.

CHAPTER XVII

ACCOUNTING FOR PETTY CASH PAYMENTS

The Bank Account.—A problem which arises in the daily routine of business consists in efficiently paying out small sums of cash. It is customary for nearly every proprietor, firm, and company to keep an account at one or more banks. Banks furnish many conveniences. It is through them that the plan of making payment by means of checks becomes possible. Banks possess facilities for collection, credit granting, etc., which make them indispensable aids in modern business. An account is opened at a bank by making an initial deposit of money for which the depositor receives a receipt in the form of a pass book with the amount of the deposit inserted. He also receives a check book which contains blank checks. These he fills out and signs when making a payment by check.

Petty Cash Disbursements.—Checks are the best medium of payment for all except relatively small sums. These small payments are usually best made in coin, and in order to secure an adequate supervision and control over such disbursements the imprest system of handling petty cash has been widely adopted. A little reflection will show that if all cash receipts are entered in the Cash Journal and also deposited in the bank, and that if all cash payments are entered in the Cash Journal and drawn out of the bank by check, then the balance of the Cash Journal should agree with the balance of the check book, and also with the balance shown by the bank pass book, or report, outstanding checks being taken into consideration. It would be a simple procedure to deposit the total receipts of each day on the day following were it not for the fact that certain small cash disbursements (not by check) are being made continually. When these petty disbursements of cash are being made out of the cash receipts for the day, the full amount of the cash receipts cannot be deposited on the following day. As a consequence, the day's receipts, as shown by the Cash Journal, do not correspond in amount with the deposit for that day. Moreover, the cash payments, as shown by the right side of the Cash Journal, are in excess of the checks drawn by the amount of the disbursements made directly from the cash drawer.

The Imprest System.—This leads to confusion and makes it difficult to explain discrepancies which arise between the Cash Journal on the one hand and the check book and pass book on the other.[1] This trouble may be avoided by drawing a check, to "cash," upon the bank for a sum sufficient to make all petty cash payments for a given period—a week, or possibly two weeks. In the Cash Journal this check should be charged to "petty cash," thus:

Petty Cash..................................	———	
To Cash		———

The amount thus drawn is called the petty cash fund, and from it all disbursements other than those by check should be made. These small disbursements of cash should not be entered directly in the Cash Journal, but a specially ruled book known as the Petty Cash Book should be provided. The Petty Cash Book should contain as many columns as are needed in order to charge each disbursement to the proper account. Blank columns should also be provided for the reception of more unusual charges, or at least a "miscellaneous" column should be provided. If expense accounts are kept in the General Ledger for Stationery and Printing, General Expense, Telegrams, Withdrawals (proprietor's), Purchases, and Advertising, charges to which accounts frequently result from the direct disbursement of cash, in addition to those made by check, then the following ruling shows a suitable form of Petty Cash Book (page 116).

Suppose that $100 is sufficient to make all petty cash disbursements for one week, and that sum is drawn by check as suggested above. When this is posted to the Ledger an account is opened for petty cash, thus:

Petty Cash

Jan. 1.	To Cash..........	$100.00

From the petty cash fund the following disbursements are made during the week and entered in the Petty Cash Book, as shown above:

[1] The pass book is being displaced by the monthly statement, which lists checks drawn and deposits made.

Petty Cash Book, Marion Smith

Date		Stationery & Printing	General Expense	Telegrams	Withdrawals	Purchases	Advertisements	Miscellaneous	
								Account	Amounts
June	1	2 20		3 00		10 00			
	2				5 00	5 00	3 00		
	3					10 20			
	5		10		5 00			Interest	10 00
	6		2 50			12 00			
	7		1 00	4 00		15 00	1 00		
		2 20	3 60	7 00	10 00	52 20	4 00		

June 1. Stationery and printing, $2.20; telegrams, $3.00; purchases, $10.00.
2. Withdrawals, $5.00; advertising, $3.00; purchases, $5.00.
3. Purchases, $10.20.
5. General expense, $0.10; interest, $10.00.
6. Withdrawals, $5.00; general expense, $2.50; purchases, $12.00.
7. General expense, $1.00; telegrams, $4.00; advertising, $1.00; purchases, $15.00.

At the end of the week the total of each column shows how much has been disbursed for each account, while the total petty cash disbursements represent the amount paid out of the petty cash fund. This total is found by listing the totals of the special columns and any items that may appear in the miscellaneous column, thus:

Stationery and Printing	$ 2.20
General Expense	3.60
Telegrams	7.00
Withdrawals	10.00
Purchases	52.20
Advertising	4.00
Interest	10.00
Total	$89.00

Consequently there should remain $11 in the petty cash fund. It is next in order to replenish the petty cash fund by drawing a check for $89, at the same time charging, in the Cash Journal, the various accounts for which the money was paid out.

Whether any particular account ought to be paid by check or out of petty cash is a matter of convenience. Usually the question must be decided by the amount—if large, the check is better; if small, direct cash payment may be better. Every petty cash disbursement should be receipted for to prevent the possibility of improper withdrawals from the petty cash fund.

Advantages of Imprest System.—The petty cash fund s ould be kept separate from the daily cash receipts. Its introduction makes it easy to deposit as one sum the total of the day's receipts. The amount of such deposit is also entered in the check book and in the bank pass book, thus making uniform the record of receipts in Cash Journal, check book, and pass book. Moreover, all disbursements are made either directly or indirectly by check, since the petty cash fund is replenished only by drawing a check for the amount of the petty cash disbursements. Hence the disbursements side of the Cash Journal should also be in agreement with the check book and bank statement, when outstanding checks are considered. Correct accounting for cash is greatly simplified through the use of the imprest system.

CHAPTER XVIII

CONTROLLING ACCOUNTS AND IMPREST SYSTEM PRACTICE

Diary of Events.—A. J. Allen and R. T. Goodloe, partners engaged in the general retail business, decide to open new books as of Jan. 1, 1919 Previously to this hey have kept a General Journal, Cash Journal and Ledger, and small cash disbursements have been made from cash on hand, no attempt being made to deposit all receipts in bank. The constantly increasing number of customers and creditors has filled the Ledger with a large number of accounts, making it difficult to take a trial balance and to subdivide the clerical work among the office force.

Having consulted public accountants, Allen and Goodloe decide to install a new system of accounts requiring the use of the following books:

1. Cash Journal.
2. General Journal.
3. Sales Journal.
3a. Purchases Journal.
4. Accounts Receivable Ledger.
5. Accounts Payable Ledger.
6. Petty Cash Book.
7. Returned Sales Journal.
8. Returned Purchases Journal.
9. General Ledger.

After closing the old books the accountants make an analysis of the accounts and submit the following balance sheet of Allen and Goodloe:

Balance Sheet, Allen and Goodloe, as at January 1, 1919:

Assets		*Liabilities and Capital*	
Buildings and Land	$22,500	Capital—A. J. Allen	$15,500
Inventory 1/1/19	10,310	Capital—R. T. Goodloe	14,300
Accounts Receivable (Schedule I)	4,312	Accounts Payable (Schedule II)	3,317
Insurance Prepaid	200	Mortgage on Buildings	9,055
Furniture and Fixtures	900		
Notes Receivable	500		
Cash	3,200		
Salaries Prepaid	250		
	$42,172		$42,172

Schedule I

List of Accounts Receivable, Allen and Goodloe, as at January 1, 1919:

J. M. Ogden	$ 217.40
L. B. Brewer	100.00
S. K. Cortland	27.12
O. D. Dunn	328.05
R. R. Rutherford	10.40
A. K. Cornwall	813.50
The Wildwood Club	1,400.00
N. N. Smith	310.00
B. A. Barton	43.10
L. D. Donovan	77.11
A. A. Alden	350.50
G. J. Winters	43.70
M. S. Gates	15.70
K. N. Brown	11.75
D. F. Swift	73.10
L. O. Dent	112.00
S. S. Sutherland	200.00
J. J. Oliver	3.12
S. K. Cousin	175.45
Total Accounts Receivable	$4,312.00

Schedule II

List of Accounts Payable, Allen and Goodloe, as at January 1, 1919:

Burton and Fitch	$ 213.00
Clyde Manufacturing Co.	275.40
Wholesale Grocery Co.	635.00
Atkins and Jones	127.00
L. O. March	23.00
Johnson and Company	378.60
S. Sisson & Sons	380.00
Allen and Allen	320.00
S. Tompkins & Sons	140.00
J. Loomis	600.00
Gordon and Smith	225.00
Total Accounts Payable	$3,317.00

NOTE.—These schedules contain fewer accounts than would originally be found in practice. The number is purposely limited to avoid bringing unnecessary details into the problem.

We must now determine the form and arrangement of the required books. The General Ledger and the Accounts Receivable and Accounts Payable Ledgers should contain twelve pages each of ordinary ledger paper. For the Sales Journal, Returned Sales Journal, Purchases Journal, and Returned Purchases Journal use ordinary journal paper. one single sheet for each. Page these books and head the money columns of each of the four journals "Extensions" and "Totals," respectively. Write in the title of each book, "General Ledger," "Sales Journal," and so on.

Make the Cash Journal from a double sheet of four column journal paper, heading the columns on the left side, respectively, 'Accounts Receivable," "Discount on Sales," "Sundries," and "Net." Head the columns on the right side "Accounts Payable," "Discount on Purchases," "Sundries" and "Net." The form is shown below (page 122).

Note.—The columns in the Petty Cash Book should be such as are found by experience to be necessary; that is, they are for such accounts as receive charges most frequently from small cash payments where checks are not used. The more unusual items can be cared for in the "Sundries" column.

To construct the General Journal use a sheet of six-column journal paper and head the first three, or debit, columns, respectively, "Accounts Payable," "Notes Receivable," and Sundries," and the last three, or credit, columns, respectively, "Accounts Receivable " "Notes Payable," and "Sundries."

Next open this new set of books with an entry in the General Journal charging the assets invested and crediting liabilities and the partners' capital accounts. Enter the debits (as listed in the balance sheet) in the "Sundries" debit column and the credits (as listed in the balance sheet) in the "Sundries" credit column in the General Journal. Check Cash (√) in the General Journal and enter it in the Cash Journal, writing "Balance" in the explanation column and placing the amount in the "Net" column. Post these (except Cash, which will be posted from the Cash Journal) to the General Ledger, opening accounts therein as follows:

Capital—A. J. Allen	page 1, top
Capital—R. T. Goodloe	page 1, middle
Buildings	page 2, top
Inventory	page 2, middle
Insurance Prepaid	page 3, top
Furniture and Fixtures	page 3, middle
Notes Receivable	page 4, top
Cash	page 4, middle
Salaries Prepaid	page 5, top
Accounts Payable	page 6, top
Accounts Receivable	page 6, middle
Mortgage on Buildings	page 7, top

Cash Journal—Allen and Goodloe

Dr. | Cr.

Date	Explanation	F	Accounts Receivable	Discount on sales	Sundries	Net	Date	Explanation	F	Accounts Payable	Discount on Purchase	Sundries	Net

For the Petty Cash Book rule up a blank sheet of paper with the columns arranged and headed as shown below:

Petty Cash Book—Allen and Goodloe

Date	Amount	Stationery and Printing	General Expense	Withdrawals Allen	Withdrawals Goodloe	Purchases	Advertising	Sundries	
								Account	Amount

As occasion arises additional accounts should be opened where convenient in the General Ledger. Next enter the individual accounts receivable and the individual accounts payable in the Accounts Receivable Ledger and the Accounts Payable Ledger, respectively, two to a page, and in the order given in Schedules I and II. In the explanation column in these ledgers write, for each account, the word "Balance," together with the date.

Diary of Events, Allen and Goodloe, January, 1919

Jan. 1. Establish a Petty Cash fund of $100. Pay the DailyNews Co. with check, $10.00, for current advertising. Sell on account to B. A. Barton, mdse., $15.20 and to G. J. Winters $61.75. Pay from petty cash $0.75 for a telegram (charge General Expense) and $1.20 for stationery.

NOTE.—Enter the charge for advertising in the Cash Journal, charging "Advertising," and entering the amount in the "Sundries" column. Enter the sale to B. A. Barton in the Sales Journal, putting the amount in the "Totals" column. This entry differs from an entry in the General Journal in that but one line is required for the entry proper, thus:

	Totals
B. A. Barton....................................	$15.20

Also make the entry for G. J. Winters. Before making the payment from petty cash it is necessary to establish a petty cash fund. This is done by drawing a check for the required amount, here 100., cashing it, and keeping the fund on hand for all disbursements not made by check. Charge "Petty Cash" in Cash Journal, entering the amount in the "Sundries" column.

Next enter the payment from petty cash in the Petty Cash Book under the date of "Jan 1," placing the total ($1.95) in the "Amount" column and making the distributions, "General Expense," $0.75, and "Stationery & Printing," $1.20.

Jan. 2. Pay Johnson & Co. in full of account, $378.60, taking a discount on that amount of 2%

Enter this in the Cash Journal, charging Johnson & Co., with $378.60 in the "Accounts Payable" column, entering the d scount in the "Discount on Purchases" column, and the net amount paid in the "Net" column.

Jan. 3. Sell on account to O. D. Dunn, $120.15, and to L. O. Donovan, $62.30. G. J. Winters pays account in full. Petty cash payments for General Expense, $8.40.

Jan. 4. Pay Atkins and Jones in full of account, taking the discount of 1%.

Jan. 6. Pay the Wholesale Grocery Co. in full of account, taking the discount of 2%.

Jan. 7. Cash sales for week $920.16. Purchase from the Wholesale Grocery Co. mdse., $147.30, 2%, 10 days, net 30. Petty cash disbursements: purchases, $11.40; advertising, $8.30; general expense, $5.12. Sell on account to J. M. Ogden, $19.00; to K. N. Brown, $50.00; to A. A. Alden, $10.40. The Wildwood Club and A. A. Alden pay in full to date.

NOTE.—Enter cash sales in the "Net" column of the Cash Journal. Enter the purchase from the Wholesale Grocery Co. in the Purchases Journal, "Totals" column, ndicating terms in the "Explanation' column, thus:

	Totals
Wholesa'e Grocery Co., 2/10, n/30................	$147.30

Jan. 8. Purchase from Allen and Allen show case, $50.00 net, and mdse., $100, terms 2/10, net 30.

NOTE.—It is necessary to make two entries for this purchase. Enter the purchase of $100, mdse., in the Purchases Journal, and the purchase of show case in the General Journal, charging Furniture and Fixtures in the debit "Sundries" column and crediting Allen and Allen in the credit "Sundries" column. In posting this credit to Allen and Allen carry it to both the credit side of the Allen and Allen account in the Accounts Payable Ledger and to the credit side of the Accounts Payable controlling account in the General Ledger. This is an unusual procedure and if many items of purchases other than mdse. occurred it would be desirable to supply one or more special columns in the Purchases Journal for purchases other than mdse. Another plan would be to provide an "Accounts Payable" credit column in the General Journal.

Jan. 9. Pay Burton & Fitch $213 in full of account; also Clyde Manufacturing Co. $275.40. Petty Cash payments: purchases $11.40; general expense, $6.37.

Jan. 13. Purchase from Gordon & Smith, mdse., $110.00, net 15 days. Pay Gordon & Smith bill of $225.00, net.

Jan. 14. Purchase from J. Loomis, furniture for store, $75.00 net 15 days. Sell on account to R. R. Rutherford, mdse.; $115.00. Pay help for 2 weeks, $350.00. Draw check for amount of petty cash disbursements charging proper account in Cash Journal. Cash sales for week, $872.41.

NOTE.—Enter purchases of furniture similarly to that made on Jan. 8.

Jan. 15. Mr. Allen withdraws $5 from petty cash for personal use. Sell mdse. on account to N. N. Smith, $38.20.

Jan. 16. Pay Wholesale Grocery Co. bill of Jan. 7, $147.30, less discount. Petty cash disbursements: general expense, $14.60; purchases, $18.92.

Jan. 17. Pay Allen and Allen bill of Jan. 8, $148 net.

Jan. 18. R. R. Rutherford returns goods, receiving credit, $10.20. A. K. Cornwall pays account in full, $813.50.

NOTE.—Enter the returned sales transaction in the Returned Sales Journal, writing "A. K. Cornwall" in the explanation column, and placing the amount in the "Totals" column. Post to credit of Cornwall's account.

Jan. 20. Petty cash payments: R. T. Goodloe, withdrawals, $11.00; purchases $8.40; general expense $5.10. Pay L. O. March, $23.00; also S. Tompkins & Son, $140.00.

Jan. 21. Cash sales for week, $1315.42. Pay Gordon & Smith $110.00 net.

Jan. 22. B. A. Barton returns goods, $5.00.

Jan. 23. Purchase mdse. from Wholesale Grocery Co., 2/10, net 30, $127.00.

Jan. 24. Return mdse. purchased to Wholesale Grocery Co., $55, and to S. Sisson and Sons, $25.50. Petty cash payments: general expense, $2.13; purchases, $18.00.

Jan. 25. Sell on account to Wildwood Club, $40.

Jan. 27. Pay J. Loomis bill of $75 net.

Jan. 28. R. R. Rutherford pays account in full, $115.20.

Jan. 31. O. D. Dunn gives note due in 2 mo. int. at 6% in payment in full of his account. Pay help, $378.00. Cash sales since Jan. 21, $1140. Draw check to replenish petty cash, making proper entry. Purchase adjoining building from A. A. Smith for $4000, paying $1000 cash and giving note due in 6 mo. for balance, $3000.

Take a trial balance, make adjustment and closing entries and set up profit and loss account and balance sheet. Interest on the mortgage is at 6% payable semi-annually, June 30 and Dec. 31. Make entry for accrued interest on mortgage in the General Journal. The inventory as at Jan. 31 is $8,000.

CHAPTER XIX

THE VOUCHER REGISTER

The Voucher Register is an evolution of the Purchases Journal brought about by the suggestion that the Purchases Journal might be made to serve the purpose of both the Purchases Journal and the Accounts Payable Ledger. It is a book provided with columns for the creditors' names and for the proper distribution of the charge or purchase. There is an endless variety of forms of the Voucher Register, of which the following is one illustration (page 127).

The Voucher System.—With the Voucher Register it is customary to inaugurate a more or less comprehensive system of vouchers. Vouchers are documents printed uniformly in pads, numbered consecutively, and so arranged that the distribution of charges on one or more invoices (as many as it may be desirable to pay with one check) can be indicated thereon. Before an invoice is vouchered it should be checked up with the goods received. If the goods are as invoiced, it is authorized for payment, the voucher is attached to it, and the charge distributed properly thereon.[1] It now becomes a voucher payable and an entry should be made in the Voucher Register, the charges being distributed in the proper columns. As many columns may be provided for the distribution of the charges as may be desirable. In the Voucher Register shown above there are but two distribution columns. These might be expanded to ten, or more, if necessary. If there is a charge for which no special column is provided, it must be entered in the "sundries" column. The number of the voucher is entered in the column headed "No.," and the facts with reference to the invoice are entered in the columns headed "Invoice." The amount of the voucher is entered in the "Vouchers Payable" column, the total of which

[1] Sometimes the invoice is not sent to the receiving department to be checked up with goods received. Instead, a duplicate of the purchasing order, with the items omitted, is sent to the receiving department to be filled in by the receiving clerk. This is then compared with the invoice. In this way carelessness in checking the invoice is prevented.

is posted monthly to the credit of the vouchers payable account in the General Ledger. This account takes the place of the accounts payable controlling account.

The voucher with invoice attached is now filed in an Unpaid Vouchers' File, where the arrangement may be made alphabetically, or according to time of payment. When a check is issued in payment of the voucher note to that effect is entered in the column headed "Check No.," by inserting the number of the check. The voucher is then filed in a Paid Vouchers file which is frequently indexed by a card index system to facilitate the location of all vouchers applicable to any account. The two voucher files then correspond to the Accounts Payable Ledger, the amount of the unpaid vouchers being equal to the credit balance of the Vouchers Payable account in the General Ledger after all entries are posted. The Cash Journal should contain a Vouchers Payable column from which the total should be charged to the Vouchers Payable account at the end of the month. In the General Ledger the Vouchers Payable account takes the place of the Accounts Payable account.

When the check is mailed in payment of a voucher the invoice may be sent with it for the purpose of having it receipted. The chief objection to this procedure is that the invoice may not be promptly returned, or possibly not at all. For this reason the check is sometimes

Voucher Register

Invoice			Voucher No.	Check No.	Creditor	Distribution		L F	Vouchers Payable
Date	Terms	Due				Purchases	Sundries		
Jan. 4	2/10 N/30	Feb. 3	320	402	A. Orton	200 00			200 00
4	2/10 N/30	Feb. 3	321	403	R. Buens	100 00	Repairs 50 00	3	150 00

sent without the invoice and when returned through the bank it is attached to the voucher and invoice. Ordinarily this will afford a sufficient receipt. The demand for a more specific and definite receipt in the form of an endorsed check has led to the adoption of the voucher check. Essentially a voucher check consists of an ordinary check form with the addition of a space for an itemized statement of the charge for which payment is made. When such a voucher check is cashed it automatically becomes a receipt. When returned it may be filed with the invoice for which it was issued in payment.

The voucher system may be employed to handle only the ordinary liabilities that arise from the purchase of merchandise, or it may be made more inclusive so that the Voucher Register becomes the medium or making practically all charges, other than adjustments, including wages, expense, and all other charges involving the incurrence of expense or liabilities.

CHAPTER XX

THE VOUCHER REGISTER—PRACTICE

The exercise given in Chapter XVIII is repeated in the following pages to show the variations necessary when the Voucher Register is employed. The transactions are identical, with only some changes in the wording of the diary of events.

Diary of Events.—A. J. Allen and R. T. Goodloe, partners engaged in the general retail business, decide to open new books as of January 1, 1919. Previously to this they have kept a General Journal, Cash Journal, and Ledger, and small cash disbursements have been made from cash on hand, no attempt being made to deposit all receipts in bank. The constantly increasing number of customers and creditors has filled the Ledger with a large number of accounts, making it difficult to take a trial balance and to divide the work of keeping the accounts among the office force.

Having consulted public accountants, Allen and Goodloe decide to install a new system of accounts to consist of the following books:

1. Cash Journal.
2. General Journal.
3. Sales Journal.
4. Accounts Receivable Ledger.
5. Voucher Register.
6. Petty Cash Book.
7. Returned Sales Journal.
8. General Ledger.

After closing the old books the accountants make an analysis of the accounts and submit the following balance sheet of Allen and Goodloe:

Balance Sheet, Allen and Goodloe, as at January 1, 1919:

Assets		*Liabilities and Capital*	
Buildings and Land..	$22,500.00	Capital—A. J. Allen....	$15,500.00
Inventory, 1/1/19....	10,310.00	Capital—R. T. Goodloe.	14,300.00
Accounts Receivable (Schedule I)....	4,312.00	Vouchers Payable (Schedule II).......	3,317.00
Insurance Prepaid.....	200.00	Mortgage on Buildings	9,055.00
Furniture and Fixtures	900.00		
Notes Receivable.....	500.00		
Cash................	3,200.00		
Salaries Prepaid......	250.00		
	$42,172.00		$42,172.00

Schedule I

Lists of Accounts Receivable, Allen and Goodloe, as at January 1, 1919:

Name	Amount
J. M. Odgen	$ 217.40
L. B. Brewer	100.00
S. K. Cortland	27.12
O. D. Dunn	328.05
R. R. Rutherford	10.40
A. K. Cornwall	813.50
The Wildwood Club	1400.00
N. N. Smith	310.00
B. A. Burton	43.10
L. D. Donovan	77.11
A. A. Alden	350.50
G. J. Winters	43.70
M. S. Gates	15.70
K. N. Brown	11.75
D. F. Swift	73.10
L. O. Dent	112.00
S. S. Sutherland	200.00
J. J. Oliver	3.12
S. K. Cousin	175.45
Total Accounts Receivable	$4312.00

Schedule II

List of Vouchers Payable, Allen and Goodloe, as at January 1, 1919:

Name	Terms	Amount (net)	Discount
Burton & Fitch	net	$ 213.00	none
The Clyde Manufacturing Co.	net	275.40	none
Wholesale Grocery Co.	2% off to and including Jan. 7		$2.70
Atkins & Jones	1% off to and including Jan. 5	622.30 125.73	1.27
L. O. March	net	23.00	none
Johnson and Company	2% off to and including Jan. 2	371.03	7.57
S. Sisson & Sons	net	380.00	none
Allen & Allen	net	320.00	none
S. Tompkins & Son	net	140.00	none
J. Loomis	net	600.00	none
Gordon & Smith	net	225.00	none
Total Vouchers Payable		$3295.46	

NOTE.—These schedules contain fewer accounts than would ordinarily be the case in practice. The number is purposely limited to avoid bringing unnecessary details into the problem.

The term Vouchers Payable is used in anticipation of the opening of the new books. In reality the Accounts Payable do not become Vouchers Payable until put through the routine required by the voucher system.

The next step is to contrive the form and arrangement of the required books. The General Ledger and the Accounts Receivable Ledger should contain twelve pages each, of ordinary ledger paper. For the Sales Journal and the Returned Sales Journal use ordinary journal paper, one single sheet for each. Page these books and in the Sales Journal write "Extensions" and "Totals" at the head of the first and second money columns, respectively. Head the columns of the Returned Sales Journal likewise.

The Cash Journal may be constructed of ordinary journal paper, one sheet (double) being sufficient for this exercise. Head the two columns on the left side, Accounts Receivable and Sundries, respectively, and on the right side, Vouchers Payable and Sundries, respectively.

For the Petty Cash Book rule up a blank sheet of paper with the columns arranged and headed as shown below:

Petty Cash Book, Allen and Goodloe

Date	Stationery and Printing	General Expense	Withdrawals	Purchases	Advertising	Sundries	
						Account	Amount

Note.—The columns in the Petty Cash Book must be such as are shown by experience to be necessary. Special columns should be provided for the accounts which receive charges frequently on account of petty cash disbursements, while those made infrequently can be provided for in the Sundries column.

To construct the General Journal use a sheet of six-column journal paper, heading the first three columns, respectively, Vouchers Payable, Notes Receivable, and Sundries, and the last three columns, respectively, Accounts Receivable, Notes Payable, and Sundries. The first three columns are debit columns and the last three columns are credit columns.

To construct the Voucher Register use a single sheet of twelve-column journal paper. Head the columns as shown below, making such alterations and additions as may be necessary to bring it into conformity with the following outline (page 134).

It is possible, when the Voucher Register is properly constructed, to make most charges through it; consequently the credit side of the Cash Journal is used exclusively for charging Vouchers Payable when payment is made.

In practice it is customary to have vouchers printed in pads. Upon the face of the voucher is space for the following information:

Name of concern.
Name of creditor.
Voucher No.
Check No.
Details of items purchased.
Approval of proper officials.
Receipt of creditor.

Upon the reverse side are listed the various accounts to which charges may be made for items listed in the voucher, with money columns for the amounts. It is from this distribution that entry is made in the Voucher Register.

Numerous variations from the arrangement suggested above may be found. Sometimes voucher and check are combined and called the "voucher check." This plan makes certain the return of the voucher properly receipted.

The next step is to open the new books of Allen and Goodloe with an entry in the General Journal charging the assets invested and crediting liabilities and the partners' capital accounts. Enter the debits in the Sundries debit column and the credits in the Sundries credit column. Check cash (✓) in the General Journal and enter it in the Cash Journal, writing "Balance" in the explanation column and placing the amount in the Sundries column. Post these to the General Ledger, opening the accounts therein as follows:

Capital—A. J. Allen....................	page 1, top.
Capital—R. T. Goodloe..................	page 1, middle.
Buildings..............................	page 2, top.
Inventory..............................	page 2, middle.

Insurance Prepaid........................	page 3, top.
Furniture and Fixtures	page 3, middle.
Notes Receivable	page 4, top.
Cash.....................................	page 4, middle.
Salaries Prepaid.........................	page 5, top.
Vouchers Payable.........................	page 6, top.
Mortgage on Building.....................	page 6, middle.

Next enter the individual accounts receivable in the Accounts Receivable Ledger, two to a page, and in the order shown in Schedule 1. For explanation write in the explanation column in the Accounts Receivable Ledger the word Balance. Also enter the individual vouchers payable in the Voucher Register, numbering them in the Vo. No. column, 1, 2, 3, and so on, entering the amounts in the vouchers payable column, and placing a check mark (✓) beside each amount to indicate that it has already been carried to the General Ledger through the opening journal entry. Total the vouchers payable and the discount on purchases columns and under the totals draw double lines. The totals should be $3295.46 and $21.54, respectively.

In practice the unpaid vouchers are filed in an Unpaid Vouchers' Tickler. When paid they are transferred to a Paid Vouchers' File. Sometimes the practice is followed of attaching the returned check to the paid voucher; sometimes the returned checks are filed separately.

Following are the transactions of Allen and Goodloe for the month of January:

Jan. 1. Pay the Daily News Co. with check, $10 for current advertising. Sell on account to B. A. Barton, mdse., $15.20, and to G. J. Winters $61 .75. Pay from petty cash, $0.75 for a telegram (General Expense) and $1.20 for stationery.

NOTE.—Enter the charge for advertising in the Voucher Register, writing the name of the creditor—The Daily News Co. —in the Customer column, and then place the amount in the column headed Advertising. Place "1/1" in the Date column under Payment, and "Ck. #1" in the How Pd. column. Charge Vouchers Payable in the Cash Journal, $10.00. Enter the sale to B. A. Barton in the Sales Journal, placing the amount in the Totals column. This entry differs from an entry in the General Journal in that but one line is required, thus:

	Extensions	Totals
B. A. Barton		15.20

Also make the entry for G. J. Winters.

Voucher Register, Allen and Goodloe

Date	Name of Customer, etc.	Vo. No.	Terms	Vouchers Payable	Discount on Purchases	Purchases	General Expense	Advertising	Wages	Sundries		Payment		Vouchers Unpaid
										Account	Amount	Date	How Pd.	

Before making the payment from petty cash it will be necessary to establish a petty cash fund. Like other disbursements this should be charged in the Voucher Register. Write "Cash" in the explanation column, "13" in the Vo. No. column, the amount (make it \$100) in the Vouchers Payable column and also in the Sundries amount column, writing "Petty Cash" in the column headed Account. Since this is paid at once by drawing a check to cash, place "1/1" in the Date column under Payment and "Ck. #2" in the How Pd. column. In the Cash Book write "Cash" in the explanation column and carry the amount into the Vouchers Payable column.

The payment from Petty Cash should next be entered in the Petty Cash Book under date of Jan. 1, and extended into the General Expense column (\$0.75) and the Stationery and Printing column (\$1.20).

The Petty Cash Book may be handled in different ways. Thus each payment may be entered separately, or the petty cash disbursements for the day may be combined and the distribution of the total made to the proper columns. As explained in the preceding chapter its purpose is to avoid drawing checks in payment of small amounts and at the same time permit the deposit of all cash receipts in the bank; which means that all disbursements are ultimately represented by checks.

Jan. 2. Pay Johnson & Co. in full of account, \$378.60, taking a discount on that amount of 2%.

This illustrates one of the several complications likely to arise in connection with the use of the Voucher Register. If it is known at the time of opening the new books that the discounts will be all taken, then the voucher should be made out for the net amount and the discount shown in the discount on purchases column. If, for purposes of illustration, we assume that this was not known, it now becomes necessary to adjust the credit to vouchers payable, which was placed at $378.60. This adjustment may be made in different ways. One way is to provide a Discount on Purchases column in the Cash Journal and when making the disbursement charge vouchers payable for the full amount and enter the discount in the Discount on Purchases column. This is the best method except when there is certainty of making all discounts, in which case the voucher should be made out for the net amount and the discount entered in the Discount on Purchases column in the Voucher Register. Follow this plan, as all discounts will be taken. Make entry in the Cash Journal entering the net amount in the Vouchers Payable column and writing the name of the payee in the explanation column.

Jan. 3. Sell on account to O. D. Dunn, $120.15, and to L. O. Donovan, $62.30. G. J. Winters pays account in full. Petty cash payments for General Expense, $8.40.

Jan. 4. Pay Atkins and Jones in full of account, taking the discount of 1%.

Jan. 6. Pay the Wholesale Grocery Co. in full of account, taking the discount of 2%.

NOTE.—In both cases charge Vouchers Payable for the net amount in the Cash Journal.

Jan. 7. Cash sales for week, $920.16. Receive invoice from the Wholesale Grocery Co. for mdse., $147.30, 2% 10 days, net 30 days. Petty cash disbursements: purchases, $11.40; advertising, $8.30; general expense, $5.12. Sell on account to J. M. Ogden, $19.00; to K. W. Brown, $50.00; to A. A. Alden, $10.40. The Wildwood Club and A. A. Alden pay in full to date. Enter cash sales in the Sundries column in the Cash Journal.

NOTE.—Since it is the policy of the firm to take all cash discounts, enter the purchase from the Wholesale Grocery Co. in the Vouchers Payable column in the Voucher Register for net, the discount in the Discount on Purchases column, and the total in the Purchases column. In practice, the voucher would now be placed in the Vouchers Payable Tickler for the discount day.

Jan. 8. Receive invoice from Allen and Allen for show case, $50.00 net, and mdse., $100, terms 2/10, net 30.

NOTE.—Enter this in the Voucher Register, $148 in the Vouchers Payable column, $2.00 in the Discount on Purchases column, $100 in the Purchases column and $50., under Sundries, writing "Fur. & Fixt." in the Account column and the amount in the Amount column. Had it been desirable to pay this item in parts on different days separate vouchers should have been made out.

Jan. 9. Pay Burton and Fitch voucher payable no. 1 for $213.00; also Clyde Manufacturing Co. voucher payable no. 2, $275.40. Petty cash payments: purchases, $11.40; general expense, $6.37.

Jan. 13. Receive invoice from Gordon & Smith, mdse., $110.00, net 15 days. Pay Gordon & Smith voucher payable no. 11, $225.00.

Jan 14. Receive invoice from J. Loomis, for furniture for store, $75.00, net 15 days. Sell on account to R. R. Rutherford, mdse., $15.00. Pay help for two weeks, $350.00. Enter voucher for petty cash payments made and draw check to replenish the fund. Cash sales for week, $872.41.

NOTE.—The voucher is made out for the full amount of the wages and entered in the Voucher Register. Write "Cash for wages" in the explanation column. Next make entry in the Cash Journal for check drawn for that amount. From this cash fund the individual wage earners are paid.

In entering the voucher for petty cash in the Voucher Register, write, "Cash for petty cash, 2 wks." in the explanation column and distribute the amount properly in the distribution columns. These are first determined by totaling the distribution columns of the Petty Cash Book and ruling it up to indicate that a voucher is being drawn to reimburse the petty cash fund. When the check is cashed and the amount turned into petty cash the fund again stands at $100.

Jan. 15. Mr. Allen withdraws $5.00 from petty cash for personal use. Sell mdse. on account to N. N. Smith, $38.20.

Jan. 16. Pay Wholesale Grocery Co. voucher no. 14 of Jan. 7, $147.30, less discount. Petty cash disbursements: general expense, $14.60; purchases $18.92.

Jan. 17. Pay Allen and Allen voucher no. 15, of Jan. 8, $148.00.

Jan. 18. R. R. Rutherford returns goods, receiving credit, $10.20; A. K. Cornwall pays account in full, $813.50.

NOTE.—Enter the returned sales transaction in the Returned Sales Journal, writing A. K. Cornwall in the explanation column and placing the amount in the Totals column. Post to the credit of Cornwall's account in the Accounts Receivable Ledger.

Jan. 20. Petty cash payments: R. T. Goodloe, withdrawals, $11.00; purchases, $8.40; general expense, $5.10. Pay L. O. March voucher payable no. 5, $23.00; also S. Tompkins & Son, voucher payable no. 9, $140.00.

Jan. 21. Cash sales for week, $1315.42. Pay Gordon & Smith voucher payable no. 16, $110.00.

Jan. 22. B. A. Barton returns goods, $5.00.

Jan. 23. Receive invoice of mdse. from Wholesale Grocery Co., 2/10, net 30, $127.00.

Jan. 24. Return mdse, purchased to Wholesale Grocery Co. $55.00, and to S. Sisson & Sons, $25.50. Petty cash payments: general expense, $2.13; purchases, $18.00.

Note.—The returns of merchandise to the Wholesale Grocery Co. and to S. Sisson & Sons illustrate some of the possible complications that arise when the voucher register is used. If the vouchers have not been paid the best procedure is to cancel the original vouchers and make out new ones for the amount less returns. In the case of S. Sisson & Sons, it will necessitate changing the total of unpaid vouchers. Make an entry in the General Journal charging Vouchers Payable and crediting Inventory for $25.50. Charge Vouchers Payable in the debit Sundries column and credit Inventory in the credit Sundries column. Make proper changes in amounts in the voucher Register. In the case of the Wholesale Grocery Co. the entry in the Voucher Register should be canceled by drawing a line through it and a new voucher (No. 21) made out. The discount is of course reduced from $2.54 to $1.44, and the amount charged in the Purchases column is reduced fom $127.00 to $72.00. An alternative method is to leave the original figures uncanceled, entering the reductions in amounts in red ink just above the original amounts. These must then be deducted when the columns are added. When this method is followed the original voucher may be canceled and a new one made out (in which case the number of the vouchers in the Vouchers No. column must be changed), or a "charge voucher," usually of different colored paper, may be attached to the original voucher, indicating the changes to be made in the Voucher Register.

Jan. 25. Sell on account to the Wildwood Club, $40.00.

Jan. 27. Pay J. Loomis, voucher payable no. 17, $75.00 net.

Jan. 28. R. R. Rutherford pays account in full, $115.20.

Jan. 31. O. D. Dunn gives note due in 2 mo. interest at 6% in payment in full of his account. Pay help $378.00. Cash sales since Jan. 21, $1140.-00. Draw check to replenish petty cash, making proper entry. Purchase adjoining building from A. A. Smith for $4000.00, paying $1000.00 cash and giving note due in 6 mo. for balance.

NOTE.—The entry for the purchase of the building will be entered in the Voucher Register as voucher no. 23. Write "Cash and Note" in the Terms column, $4,000 in the Vouchers Payable column and extend it into the Amount column under Sundries, writing "Buildings and Land" in the Account column. In the Payment columns, write "1/31" under Date and "Ck #18 & Note" under How Pd.

All entries being made, draw a line under the various amount columns in the Voucher Register and bring the totals of all columns below it. The totals of the credit columns, Vouchers Payable, and Discount on Purchases, when added together ($5,483.39) should equal the totals of the distribution columns.

Next post the total of the Vouchers Payable column to the credit side of the Vouchers Payable Account in the General Ledger, the total of the Discount on Purchases column to the credit of the Discount on Purchases account in the General Ledger, and the totals of the distribution columns to the debit of the proper accounts in the General Ledger, excepting the Sundries column from which the items must be posted separately to Furniture and Fixtures, $50.00 and $75.00, A. J. Allen, withdrawals, $5.00, R. T. Goodloe, withdrawals, $11.00, and Buildings and Land, $4,000.00. Check (✓) each item as it is posted to avoid posting it twice. Use the abbreviation "V.R.1." in the General Ledger folio column. Post all other books. Interest on the mortgage on Buildings is at 6%, payable semi-annually June 30 and Dec. 31. Make entry for interest accrued on the mortgage in the General Journal. Take a trial balance of the General Ledger. Submit a Profit and Loss Account and a Balance Sheet. The inventory as at Jan. 31 is $8,000.

CHAPTER XXI

THE PRIVATE LEDGER

Use of the Private Ledger.—Sometimes it is desirable to keep certain ledger accounts, particularly those relating to proprietorship, in a Private Ledger, where they are subject to inspection by none except the manager or a trusted employee. The accounts thus protected from the common observation may be few or many, as required. Generally they are few in number and of a character requiring only infrequent changes through postings. Corresponding to the Private Ledger there should be kept a Private Journal in which all entries affecting Private Ledger accounts are kept. To illustrate the method of setting up a Private Ledger, assume that the following is the final trial balance of the General Ledger of Allen Graham, as at December 31, 1916:

Balance Sheet Allen Graham, as at Dec. 31, 1916:

Allen Graham—Capital		$10,000
Real Estate	$ 8,000	
Inventory, Dec. 31, 1916	5,000	
Cash	800	
Accounts Receivable	3,000	
Accounts Payable		2,000
Mortgage		4,800
	$16,800	$16,800

If, now, Graham desires to transfer his capital account and the accounts for Mortgage and Real Estate to a Private Ledger, it is necessary to close these accounts in the General Ledger by the following entry in the General Journal:

Allen Graham—Capital	$10,000	
Mortgage	4,800	
To Real Estate		$8,000
Private Ledger		6,800

After this entry is posted a trial balance of the General Ledger appears:

Inventory, Dec. 31, 1916	$5,000	
Private Ledger		$6,800
Cash	800	
Cash	800	
Accounts Receivable	3,000	
Accounts Payable		2,000
	$8,800	$8,800

In the Private Journal the following entry is made:

General Ledger	$6,800	
Real Estate	8,000	
To Allen Graham—Capital		$10,000
Mortgage		4,800

After this entry is posted to the Private Ledger a trial balance taken from that ledger appears thus:

General Ledger	$ 6,800	
Real Estate	8,000	
Allen Graham—Capital		$10,000
Mortgage		4,800
	$14,800	$14,800

It is only when a transaction occurs which affects accounts in both the Private and General Ledgers that the balancing accounts, Private Ledger and General Ledger, are affected. To illustrate, if cash is received in payment of an account receivable the entry is made in the Cash Journal and posted to the debit of cash and to the credit of accounts receivable, both of which accounts are in the General Ledger. If, on the other hand a parcel of real estate is sold for $2,000, one account in the Private Ledger and one account in the General Ledger will be affected, namely, Real Estate and Cash. Therefore instead of crediting Real Estate in the Cash Journal, Private Ledger is credited, thus:

Cash	$2,000.00	
To Private Ledger		$2,000.00

and in the Private Journal the following entry is required:

General Ledger	2000.00	
To Real Estate		2000.00

In this way any accounts, real or nominal, may be kept in the Private Ledger. It is entirely feasible to set up the Profit and Loss account in the Private Ledger by closing out the debit and credit nominal accounts into the Private Ledger account in the General Ledger, and then in the Private Journal, charging the debit nominal balances to profit and loss and crediting General Ledger account, and crediting the credit nominal items to profit and loss, at the same time charging General Ledger account.

CHAPTER XXII

THE PRIVATE LEDGER—PRACTICE

Problem 1.—Following is the balance sheet of Amos Chandler, as at Dec. 31, 1919:

Amos Chandler, Capital		$18,500
Buildings and Real Estate	$ 8,400	
Cash	900	
Accounts Receivable	2,700	
Notes Receivable	400	
Inventory, 1/1, '19	6,000	
Mortgage on Buildings		2,000
Supplies	200	
Furniture and Fixture	400	
Accounts Payable		100
Investments	2,500	
	$21,500	$21,500

Chandler desires to set up a Private Ledger to contain accounts for capital, investments, and mortgage on buildings. Show entries necessary in the General and Private Journals and submit trial balances for the General and Private Ledgers after these entries have been posted.

Solution, Problem 1.—The entry in the General Journal is as follows:

Amos Chandler, Capital	$18,500	
Mortgage on Buildings	2,000	
To Investments		$2,500
Private Ledger		18,000
To transfer accounts to Private Ledger of Amos Chandler.		

The entry in the Private Journal is as follows:

General Ledger	$18,000	
Investments	2,500	
To Amos Chandler, Capital		18,500
Mortgage on Buildings		2,000
To bring accounts into the Private Ledger of Amos Chandler.		

Trial Balance, General Ledger:

Buildings and Real Estate	$8,400	
Cash	900	
Accounts Receivable	2,700	
Notes Receivable	400	
Inventory, 1/1, '19	6,000	
Supplies	200	
Furniture and Fixtures	400	
Accounts Payable		$ 1,000
Private Ledger		18,000
	$19,000	$19,000

Trial Balance, Private Ledger:

General Ledger	$18,000	
Investments	2,500	
Amos Chandler, Capital		$18,500
Mortgage on Buildings		2,000
	$20,500	$20,500

Problem 2.—Amos Chandler, on Jan. 15, 1920, sells $2,000 of his investments at cost ($2,000). Make proper entries.

On Jan. 31, he pays $1,000 cash on the mortgage on buildings. Make proper entries.

Problem 3.—The trial balance of the General Ledger of Amos Chandler as at Dec. 31, 1920, is as follows:

Buildings and Real Estate	$8,400	
Cash	3,000	
Accounts Receivable	2,800	
Notes Receivable	400	
Inventory, 1/1, 1920	6,000	
General Expense	700	
Purchases	13,700	
Sales		$15,000
Supplies (consumed)	300	
Furniture and Fixtures	400	
Accounts Payable		1,200
Private Ledger		19,500
	$35,700	$35,700

The inventory as of Dec. 31, 1920, is $7,000. Interest has accrued from July 1, 1920, on the mortgage which stands at $1,000 and bears interest at 6%. This interest accrued has not been brought into the accounts. Close the books, setting up the Profit and Loss Account in the Private Ledger. Submit balance sheet as at Dec. 31, 1920.

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PART IV

CORPORATION ACCOUNTING

CHAPTER XXIII

THE CORPORATION—SPECIAL CONSIDERATIONS

Corporation Defined.—The corporation is a form of organization possessing certain features which commend it to most enterprises carried out on a fairly large scale. It affords certain advantages which neither the sole proprietorship nor the partnership enjoys. On the other hand certain requirements are imposed upon the corporation from which the other two forms of organization are free. A corporation, according to the definition given by Chief Justice John Marshall, in the Dartmouth College Case, is "an artificial being, invisible, intangible and existing only in contemplation of law." Consequently the corporation is an offspring of the law, exists only by consent of the law, and may be dissolved by the law.

Limitations of the Partnership.—With the growth of their capital and the extension of their markets, in brief, with the development of their interests generally, the limitations of the primitive forms of organization become apparent. The sole proprietor frequently lacks ability or capital, or both, to enlarge his plant to meet growing needs. He may supply the defect by accepting one or more partners, but the growth of partnerships is quite restricted beyond a certain point. When there are only a few partners the usual operations of the organization will ordinarily proceed without friction. When, however, to obtain an increase of capital, or for other reason, the number of partners is increased, the point is soon reached when the number of the partners is an impediment. Recalling the causes of partnership dissolution will indicate this.

Advantages of Incorporation.—Perhaps the two most important considerations that lead to incorporation are (*a*) the need for limited liability, and (*b*) unlimited possibilities of growth of the corporation.

Limited Liability.—A partner's liability for the debts of his partnership are not limited to his investment therein, but his private fortune as well may be confiscated for their payment, if necessary. Naturally, this fact serves as a deterrent to those who are considering the advisability of becoming partners in any enterprise. The corporate form of organization obviates this difficulty by placing a specific limitation to the capitalist's liability. What this limitation is is determined by the statutes of the state in which the corporation is chartered. Usually one's liability is limited to his actual investment in a corporation, but to this rule there are some exceptions, notably in case of national banks where one is liable for twice the amount of his investment. In two states, moreover, the statutes make exceptional provisions. In Minnesota a stockholder's liability is but partly limited, while in California a stockholder's liability is unlimited, except that it must be prorated on the basis of holdings.

Possibilities of Growth.—Provision for future expansion is an important consideration. Sometimes this growth is more, sometimes less rapid, than anticipated. It is not always possible, therefore, and rarely desirable, to provide capital at organization time for distant future development. But there should remain avenues through which such capital can be secured without great difficulty when it is needed. The corporation is well adapted to meet this requirement. The readiness with which it permits the expansion of its capital, and the manner in which the ownership of that capital may be transferred from party to party are two corporate essentials.

The units into which the capital of a corporation may be divided are called stocks. When there exists a sum total of capital which exceeds the par value of the stocks it is called surplus. The amount of the stock which a corporation is authorized to issue is specifically stated in the charter. The amount of the stock which, at any time after incorporation, is outstanding, that is, which has been sold to secure capital, is the issued stock. Usually the amount of the authorized stock is placed at a considerably higher figure than the amount which the corporation will care to issue for a considerable time; thus a portion of the authorized stock is held in reserve to be issued when, in future, more capital is required. Moreover, the number of shares of stock is usually so large that the worth of a single share is not usually very much. Each share is generally given an arbitrary or par value, usually $100, but sometimes much less, possibly $5 or $10. This par value, or face value, must not be confused with the market price of a share of stock, for the par value is wholly arbitrary while the selling price is determined by the equity, that is the actual value, which underlies the share. The selling price may be either below or above par.

Status of Stockholder.—The relatively small value of a share of stock makes it possible for the corporation to appeal to a very wide range of people who have money to invest. Moreover, the ownership of any number of shares is readily transferable from party to party without in any way influencing the routine activities of the corporation. Although the control of the corporation rests ultimately in the stockholders, their influence makes itself felt indirectly through the board of directors, which is elected by the stockholders, and to which the stockholders delegate nearly all, if not all, of the actual work of management and supervision. Where the burden is thus placed upon the shoulders of a few—for the board of directors rarely consists of more than twenty men—the interest of the stockholder in the current affairs of the company is often slight, frequently too slight for his own good. However that may be, the relationship existing between stockholders is not personal in the sense that partners are related to one another. Hence there is no need of terminating the company's existence when a stockholder dies, or is mentally incapacitated, or does any of the things which cause the dissolution of partnerships.

When a partner dies, unless some agreement has been previously made, modifying the common law, the partnership must be dissolved and its assets sold to satisfy creditors, any balance remaining being distributed among the living partners and the estate of the deceased partner. When a stockholder dies the corporation is usually not affected in any way, except perhaps through its loss of his services, if he happens to have been an official or director. His stock will pass to his heirs according to the laws of personal property. The recipients of it will continue to hold it and exercise any rights and privileges which were accorded to the original holder.

Close and Open Corporations.—A corporation may be close or open. In case of a close corporation the stock is usually held by a comparatively few persons, sometimes practically all by one person, and consequently transfers of its stock take place but infrequently. In case of an open corporation there are usually a considerable number of stockholders and many transfers of stock are made from sellers to purchasers. The number of stockholders oftentimes runs into the thousands. There are 114,779 stockholders in the Pennsylvania Railroad Company[1] and 152,228 in the United States Steel Corporation.[2] When such is the case special machinery must be provided to facilitate the transfers of stock. For this purpose one or more stock books or ledgers are kept. In the stock ledger space is provided for the name of each stockholder, the number of shares of stock purchased by him, the date of the transfer, the number of the stock certificate issued to him, and such other data as may be desired. In some states, as New York, the form of the stock ledger is prescribed by law.

The Stock Certificate.—The stock certificate is a document which affords visible evidence of the ownership of stock. Sometimes, when the work of engraving these certificates is not completed, receipts are issued to the original purchasers of stock, and these are later exchanged for the engraved certificates. Similarly, when, as often occurs, the subscribers to the stock of a company pay for it in instalments, that is, so much down, and the balance in specified sums on stated succeeding dates, receipts are issued for the various instalments, the formal stock certificates being issued only when the last instalment has been paid. The essential features of a certificate of stock are, the name of the owner, the number and par value of his shares, the number of the certificate, the privileges that attach to the stock, and the validating signatures of the proper corporation officials. On the back of the certificate is provided a form for transfer of ownership to be filled in by the owner of the stock upon sale of a part or whole of his interest. Note that any number of shares of stock may be represented by one certificate. Accordingly if one man purchases all the holdings of three other men, of any particular stock, their three certificates are canceled and, providing the transfers are made simultaneously, one single certificate is issued in their place.

Transfer of Ownership.—Upon the stock market, shares of stock are bought and sold sometimes many times over in one

[1] As of Nov. 30, 1919.

[2] As of date books were last closed in 1919 for dividend purposes.

day, for speculative purposes. When this is done stock certificates may be assigned in blank, *i.e.*, the seller may sign away his interest in his shares by merely placing his signature in the proper place on the form on the back of the certificate without designating any transferee. When this is done the certificate becomes transferable by delivery, and may be passed from hand to hand without further formality. When it finally comes into the hands of an investor or speculator who intends to hold it for a time, it is necessary, for reasons to be explained, that he have a new certificate issued in his own name.

Dividends.—Money paid for the stock of a corporation is said to be invested. These who invest money in stock expect to secure a reasonable income thereon. Income on stocks is called dividends. Dividends are figured as a percentage of the par value of the stock. Thus if the par value of a share is $100, and the corporation issuing this stock pays a dividend of 6% per annum, payable quarterly, then for every share of such stock that one owns he will receive each quarter year a dividend of $1.50. The advisability of paying dividends or of discontinuing their payment rests with the board of directors. They do not possess complete freedom in this matter, however, for there are certain legal and accounting principles which they cannot neglect without running the risk of incurring personal liability. Unless there are profits, either current, or accumulated from previous years, a dividend cannot be paid lawfully; for to do so would diminish the capital invested and to that extent lessen the resources to which creditors might look for the satisfaction of their debts in case of insolvency. To the above rule there are certain exceptions, notably in case of those companies organized to exploit wasting assets, such as mineral deposits, forest tracts, and so on. The time during which such a company can continue its operations is necessarily limited by the extent of the resources which it exploits. To require such a company to keep its original capital intact and undiminished until the last bit of mineral has been smelted or the last tree hewn down would not be good policy. Consequently such companies may legimately return something in addition to profits in paying their dividends. This partly accounts for the surprisingly large dividends sometimes paid. One who invests money in such enterprises should not mistake his dividends as pure profits, lest he find later on that in spending them he has spent both his profits and his capital.

Common and Preferred Stocks.—Sometimes a corporation finds it advisable to issue stocks with varying qualities and privileges. When only one kind of stock is issued it is all common, but when two kinds are issued it is customary to classify them as preferred and common. In this case the preferred stock possesses some advantage not possessed by the common stock. This advantage may be in the form of a preference as to profits, or as to assets, or both. By a preference as to profits is meant that some specified dividend must be paid on the preferred stock before any can be paid on the common stock. When we speak of a six per cent preferred stock we mean that the preferred stockholders will receive this dividend in full out of profits before the common stock will receive any consideration. Just what method will be pursued with the common stock after such preferred stock dividend has been paid will be determined by the conditions under which the two classes of stock are issued. Sometimes the common stock will receive a dividend equal to that paid the preferred; sometimes it receives less, sometimes more. Profits remaining for distribution after the initial requirements of both classes of stock have been met may be divided between the two classes of stock on some pre-arranged basis, or possibly they may be retained as an addition to working capital or be invested in extensions and improvements.

Cumulative Preferred Stock.—If the preferred stock is cumulative, then in case there are not sufficient profits in any one year to satisfy its dividend requirements, whatever remains unpaid becomes a lien on the profits of succeeding years. Sometimes the unpaid dividends on the preferred stock accumulate to a very large amount, thus placing the common stockholders in a position where little hope exists of receiving any dividend for a very long time to come. For a long time preceding the outbreak of the European War in 1914, the International Mercantile Marine Company did not pay dividends on its cumulative preferred stock with the result that these accumulated and unpaid dividends have since amounted to a sum almost equal to the par of the stock itself.

Factors Determining Market Values.—When both preferred and common stock are outstanding the two kinds of stock will sell at prices which are determined by a number of factors, such as the value of the assets, the general prosperity of the company, the respective amounts of the stocks outstanding, the provisions regarding the dividends and any preferences that may affect the stocks, and the condition of the market and business generally. Quite frequently preferred stock is issued to an amount corresponding roughly in value to the cost price of the assets, while the common stock is issued on the presumption that it will be justified by future development, and that ultimately the increased earning power will make possible the payment of dividends thereon. Sometimes results do justify the act, but frequently they do not. In case of smaller companies it is usually best to issue only common stock; but the procedure to be followed must be determined upon the merits of the individual enterprise. Recently the directors of the New York, New Haven & Hartford Railroad Company considered the advisability of authorizing an issue of preferred stock, the company having only common stock outstanding. Preferred stock in this case would probably afford a safer means of obtaining additional funds than would bonds.

Full Paid Stock.—Subscribers to the stock of a corporation may make payment in full at the time of subscription, or later, or they may make their payment on the instalment plan. Moreover, payment may be made in cash, in property, or in services performed. When payment is made in cash there arises no question as to the value given for the stock. When, however, payment is made in property or services, these should be stated at their cash value. Should they be over-valued the stock exchanged for them would not be full-paid, and would subject the holder to the possibility of having to make it full-paid later on. This requirement is intended for the protection of the creditors, who naturally assume that the stock has been sold for its full face value and that the funds so received are invested in the assets of the company.

Bonded Indebtedness.—Bonds supplement stock as a means of securing capital to promote the corporation's work. Although there are many corporations which have no outstanding bonds whatever, they are a popular and useful means of securing additional funds. The issue of bonds up to a certain point is a healthful manifestation of business activity; although the over-issue of bonds is acompanied by dangerous possibilities. Bonds are to corporations what mortgages are to sole proprietors and partners, and differ from them in detail more than in principle. The ordinary mortgage fails to secure enough capital for a large concern for the same reason that a partnership fails to secure it, viz., lack of appeal to a sufficiently wide portion of the investing public. When money is secured upon a mortgage the entire sum must generally be secured from a single person or institution. Individuals may easily be found who are willing to loan sums mounting up into the thousands of dollars; and some institutions, such as banks, sometimes loan very large sums of money to companies which provide suitable security. Since, however, it is not the province of banks to provide capital for long term investments, and since they usually wish to loan on security other than real estate, it becomes desirable for companies possessing extensive holdings of real estate to find some suitable plan of borrowing large sums of money upon the security of these possessions.

The Deed of Trust.—The difficulties of borrowing suggested above are largely obviated by the use of bonds. An issue of bonds is also usually accompanied by a mortgage, or, as it is frequently called, a deed of trust. But the deed of trust, not being divisible, and not, therefore, being capable of being delivered to a large number of creditors, is deposited with a trustee, usually a trust company, while the bonds, which are issued in denominations of $100, $500, or $1000, contain a sufficiently extended reference to the deed of trust to make their identity certain. In this way an issue of say $1,000,000 in bonds may be scattered among scores of persons all dependent ultimately for protection upon a single mortgage or deed of trust. Several considerations serve to commend this arrangement. In the first place, it would be extremely awkward to issue separate mortages to each of the persons who might care to become investors in the bonds. Then, in case of the financial embarrassment of the company, there would be many creditors hastening to foreclose their mortgages and to secure their share of the spoils. This would make united and strong action impossible. When a single mortgage is placed in the hands of a trustee, the trustee acts as the representative of all the bondholders of a particular issue, thus securing their support and insuring a strong and united front.

Stockholders and Bondholders Compared.—The chief distinction between a stockholder and a bondholder is that the stockholder is a proprietor while the bondholder is a creditor. The stockholder receives dividends only when profits are earned; nor can the stockholder compel the board of directors to declare a dividend even when profits exist from which it might be paid. The declaration of a dividend is a question of policy. The payment of income on bonds, which is called interest, is a question not of policy but of necessity. Dividends may, but interest must, be paid. If the corporation cannot pay the interest on its bonds, or if, when the principal of the bonds falls due, it cannot pay that, the usual procedure is foreclosure of the trust deed according to its terms and the sale of the company's assets for the satisfaction of the creditors' claims.

Since, from the character of their lien, bonds must be satisfied before stock, it is natural to assume that they are safer for investment purposes than are stocks. As a rule this is true, and within a given corporation it appears inevitable. Nevertheless, the bonds of some companies are not as desirable as investments as are the stocks of other companies, so that the question of safety is entirely relative.

Variations in Bonds.—Bonds differ widely in the character of the assets upon which they are a lien, in the interest they bear, in the time they run, and in the method by which they are ultimately redeemed. To discuss these qualities here is beyond our purpose.

Advisability of Issuing Bonds.—Bonds may be issued largely as a matter of necessity after the possibilities of stock issues are exhausted. Usually, however, their issue is a matter of policy. If money can be borrowed at 5% and so invested as to yield 10%, the transaction is a profitable one. Such procedure is known as trading on the equity. The question which a corporation is frequently compelled to answer is, whether it is better to continue with present facilities which are inadequate to secure the best results, or to issue bonds and thus secure funds needed to bring the plant to the highest state of efficiency. If money thus borrowed can be invested so that it will return an income well above the interest paid for it, the stockholders will reap larger dividends without having invested any additional capital of their own.

Accounting for Stock and Bond Issues.—The books of a corporation provide adequate records for the issue and transfer of stocks and bonds, and for the payment of dividends and interest thereon. All facts in connection with each issue must be clearly and indisputably stated. If bonds are sold below or above par, this must be indicated, and the premium or discount must be taken into consideration. As interest accrues from month to month its effect upon profits must be carefully shown. Any actions of the board of directors definitely affecting the assets or liabilities of the company must be shown by proper entries in the books. In brief, the accounting principles already learned must be applied to those conditions which are peculiar to corporate organization.

CHAPTER XXIV

THE CORPORATION—OPENING CORPORATION BOOKS

Work of the Promoter.—Before a corporation can be organized it must be promoted. It is beyond our province to discuss the work of the promoter here except to say that it is his duty to present the prospective enterprise to his friends or to the public in order to secure their subscriptions to the stock of the new company. When enough stock has been subscribed the company is organized and the subscriptions become contracts between the subscribers and the corporation.

The Opening Entry—Stock Authorized.—As soon as the company is organized the books of account should be opened and entry made of whatever information of a financial character may be necessary to show clearly the status of the company. The Minute Book, in which a record is kept of all proceedings at the meetings of the stockholders and board of directors, may be consulted in order to obtain whatever information in the way historical development, purposes, etc., it may be desirable to incorporate in the opening Journal entry. Naturally the only assets of a newly organized corporation are the subscriptions to its stock, and its only liability is its obligation to the subscribers for their subscriptions. The opening entry should therefore show this incipient condition. Sometimes, however, it is not merely desirable to show the actual amount of subscriptions secured but also to indicate the amount of capital stock authorized by the charter, that is, the full amount of the stock which may be issued without securing an amendment to the charter. If the amount of stock authorized is to be made the subject of a formal journal entry, then this entry should precede the entry of the actual subscriptions. If it is not thought desirable to show the amount of stock authorized, in the balance sheet, then its amount may be given in the preliminary statement which it is customary to insert on the first page of the Journal—chiefly for explanatory purposes. In this case the first formal entry will be for the amount of stock actually subscribed.

Proceeding on the assumption that the authorized stock is to be journalized, the opening paragraph and first journal entry should appear somewhat as follows:

The Brown-Allen Company organized under the laws of the State of Connecticut, for the purpose of engaging in the retail grocery business, begins operations this first day of July, 1916, with an authorized Capital Stock of $100,000, divided into One Thousand Shares of a par value of One Hundred Dollars ($100.00) each.

July 1		
Unissued Stock............................	$100,000.00	
To Authorized Stock..................		$100,000.00
Being the total authorized stock of the Brown-Allen Company.		

In case of small corporations it is not customary to have more than one kind of stock, hence it is all common. If, as is frequently done among larger enterprises, permission is secured to issue both common and preferred stock, the journal entry required is:

Unissued Common Stock..............	———	
Unissued Preferred Stock..............	———	
To Authorized Common Stock......		———
Authorized Preferred Stock....		———
Being the total authorized stock, preferred and common, of the Company.		

The Opening Entry—Stock Subscribed.—As explained, the above entries may be omitted, being more or less a matter of form. Their presence in the journal neither hinders nor makes easier the entries which follow. The first essential entry is that which brings into the books a record of the liability of the subscribers on the stock which they agree to purchase. The general form of this entry is as follows:

(*a*) When the preceding entry, showing the amount authorized, is made:

Subscribers (or Subscriptions).................	$85,000.00	
To Unissued Stock.......................		$85,000.00
To enter upon the records the liabilities of the sundry subscribers to the stock of this company, as per the following schedule:		
A. R. Brown............ 450 shares		
L. M. Allen............. 300 shares		
R. T. Prince............ 50 shares		
L. O. Gordon............ 40 shares		
O. S. Smith............. 10 shares		

If there are both common and preferred stock subscriptions, the entry, which should be followed by suitable explanations, the names of the subscribers and the amount and kind of stock subscribed by each, is:

Subscribers to Common Stock....................	———	
Subscribers to Preferred Stock....................	———	
To Unissued Common Stock.................		———
Unissued Preferred Stock................		———

(*b*) When no formal journal entry is made to record the amount of stock authorized:

Subscribers (or Subscriptions)....................	———	
To Capital Stock.........................		———
(Explanation as in (*a*) above.)		

Payment of Subscriptions.—Before the corporation can begin operations it must in some way secure the cash and other working and fixed assets which are necessary. Naturally these will be provided by the subscribers to the capital stock, for they are to become the proprietors of the company. They can provide the necessary assets by paying their subscriptions to the capital stock of the company. Subscriptions to capital stock may be paid in cash, property or services. The simplest procedure possible would be to have all subscribers pay the full amount of their subscriptions, at one time, and in cash only. If the various subscribers to the stock of the Brown-Allen Company should make one cash payment in full for their liability on their subscriptions, this transaction could be journalized thus:

Cash....................................	$75,000.00	
To Subscribers...........................		$75.000.00
To record the payment in full for their subscriptions to the stock of the Brown-Allen Company, of the following: (Names of subscribers and number of shares bought by each).		

Payments other than Cash.—In many instances it 's not intended to have all or even a major portion of the stock subscriptions paid in cash. Frequently corporations are organized to take over enterprises which have been established under partnership organization. In such cases it is almost always the desire and intention of the partners to pay for their subscriptions to the stock of the new company by transferring to it their partnership interest in the old firm. Usually, too, it is good policy to pay some of the expenses incident to promotion and organization by means of stock. This is a legitimate procedure since promotion and organization expenses, unlike the expenses of operation, are looked upon as investments and become a portion of the assets of the company. Where, therefore, property or services are received in payment of stock subscriptions these must be charged, instead of cash, and the subscribers' account credited.

Payments in Instalments.—Sometimes, especially in the case of those who agree to pay for their subscriptions in cash, it is not desirable, either from the standpoint of the company or the subscribers, to require the immediate payment of the full amount of the subscriptions. Not only do subscribers find it more convenient to pay in instalments, but the company does not usually need all the cash at once. Hence the payments are usually made, in part when the company commences operations, and the balance in a given number of instalments. If the subscribers to the stock of the Brown-Allen Company agree to make payment in four instalments, one when operations are begun and the balance in three equal monthly payments, the following entry will be sufficient to make formal record of the agreement:

Instalment Number 1...........................	———	
Instalment Number 2...........................	———	
Instalment Number 3...........................	———	
Instalment Number 4...........................	———	
To Subscribers		———
To charge instalments Nos. 1, 2, 3 and 4, due respectively on the day when the Brow -Allen Company begins operations, and on the same day of the three succeeding months.		

As the instalments fall due cash account or other proper account is charged and the instalment account is credited. Thus, if Instalment Number 1 is paid in cash, the entry is:

Cash..	$17,500.00	
To Instalment Number 1		$17,500.00

Similar entries must be made for succeeding instalments as they fall due and are paid.

CHAPTER XXV

PROPRIETORSHIP AND PARTNERSHIP INCORPORATED

As has been noted, corporations are frequently organized to continue a business hitherto run by a sole proprietor or by partners. When this is the situation the assets owned by the individual proprietor or by the partners become the assets, or at least a portion of the assets of the corporation. The corporation in turn assumes the debts of the organization which it supplants. This is oftentimes the plan followed by individuals and partners who do not possess the requisite amount of capital to make needed improvements or extensions, and who can, by this agency, appeal to a large number of investors.

Valuation of Assets.—When this is done it is necessary for the proprietor or partners to determine what valuation they wish to place on their business when transferring it to the corporation, for they will desire to obtain their fair proportion of interest in this organization. Probably the real estate, fixtures, stocks of goods, and so on, have been kept on the books at cost price less whatever deductions may have been allowed for depreciation, bad debts, etc. Perhaps the owners will not be content to transfer their assets to the corporation without receiving some consideration for the goodwill which they have created through their diligence and industry. It is even possible, though it may not be probable, that the goodwill may exceed in value all of the tangible assets. On the other hand goodwill may be overvalued with less likelihood of the overvaluation being detected than in case of tangible assets. Consequently the valuation of the assets preparatory to their exchange for the stock of the corporation should seriously engage the attention of the old proprietors.

If the proprietors place too great a valuation upon their interests their action will operate against the future welfare of the company by making difficult the disposition of the stock to others. The solution of the question may perhaps best be found by using as a basis for estimating the value of goodwill the earning power of the old organization and the probable earning power of the new one. If the old organization earns 15% on the capital of its proprietors and if the investing public are securing, say 6%, on money which they invest in stocks of companies doing a similar kind of business and affording about the same degree of security, then the difference between 15 and 6, or 9%, represents roughly the earning power of the goodwill. If, for example, the profits of a partnership amount to $15,000 on the partners' combined capital accounts of $100,000, then $15,000 capitalized on a 6% basis gives $250,000 as the real value of the partners' interests. The difference between $250,000 and $100,000, or $150,000, represents the value of the partners' goodwill.

The above is an assumption; yet in practice some such plan of valuing goodwill is pursued. There may be reason to believe that under the corporate form of organization, with more capital invested, wider markets, etc., the earning power of each dollar invested will be greater than before. If so, the partners may be justified in increasing the valuation of the goodwill to an even greater figure. Experience shows, however, that the anticipations of greatly increased profits, under the conditions suggested, are frequently over-optimistic.

Statement of Assets and Liabilities.—When the time arrives to make the transfer of the partnership or proprietary interests to the company, an accurate statement of the assets and liabilities to be transferred should be made. If the accounts have been properly kept the closing balance sheet of the old concern will afford the necessary information. This statement is now used as a basis for closing the books of the old enterprise and for bringing into the corporation's books the assets which it receives and the liabilities which it assumes.

Goodwill.—Before the closing entries can be made in the old books, however, an account must be opened in them for goodwill, if it is to be sold. This goodwill account is then charged with an amount which, found by some such method as we have already suggested, is deemed proper, and a corresponding credit is made in the one or more capital accounts. To illustrate, assume that the firm of Brown and Allen, before goodwill is brought into its books, has assets and liabilities as shown in the following balance sheet:

Balance Sheet, Brown and Allen:

Real Estate	$27,000	Brown, Capital	$30,000
Merchandise	6,000	Allen, Capital	20,000
Accounts Receivable	16,000	Accounts Payable	6,000
Cash	7,000		
	$56,000		$56,000

If Brown and Allen conclude that their profits justify them in placing a valuation of $25,000 on their goodwill, the following journal entry will serve to charge goodwill and credit their respective capital accounts, which we assume are to be credited in proportion to their respective interests:

Goodwill	$25,000.00	
To Brown, Capital		$15,000.00
Allen, Capital		10,000.00

After these entries are posted a balance sheet will show:

Balance Sheet, Brown and Allen:

Real Estate	$27,000	Brown, Capital	$45,000
Goodwill	25,000	Allen, Capital	30,000
Merchandise	6,000	Accounts Payable	6,000
Accounts Receivable	16,000		
Cash	7,000		
	$81,000		$81,000

The balance sheet now presents the net worth at the figure at which the partners are willing to exhange it for the stock of the corporation, which, let us assume, will continue the business under the title, The Brown-Allen Company. This title will preserve to the corporation whatever goodwill attaches to the names of the partners, while the latter, owing to their large interest in the corporation, are likely to become directors or officers.

Factors Determining Capitalization.—Before proceeding with the entries required to close the partners' accounts, and all other accounts in the old books, providing new books are to be installed, let us consider the factors which will determine the capitalization of the corporation. Two prime considerations are (*a*) present requirements and (*b*) future requirements. Allowance must be made for both of these when determining what shall be the capitalization. Authorized capital must be sufficiently large to permit all desirable expansion. On the other hand if made unnecessarily large it will cause the taxes which the state levies on the authorized stock to become an unnecessary burden. Probably the partners will desire to control securely the corporation by becoming owners of a majority not only of all issued stock but of all issuable stock as well. This they can do by fixing the capitalization of the corporation at such a figure that their original purchase of stock will give them such controlling interest. We must not forget, however, that the chief factor to be considered in determining the proper amount at which to capitalize is the need for funds, present and future.

In the example we have assumed that $100,000 would appear to be a reasonable authorized capitalization. Since Brown and Allen are to receive together $75,000 of the stock they will control the corporation, while there will remain $25,000 authorized stock which may be sold when desirable. Furthermore, we assume that only common stock will be authorized. In addition to the stock subscribed by Brown and Allen, R. T. Prince subscribes for 50 shares, L. O. Gordon, 40 shares, and O. S. Smith, 10 shares, to be paid in cash in four equal instalments, the first when the company begins operations and the remaining three at intervals of one, two and three months, respectively, thereafter.

Entries Necessary to Record Changes.—The opening entry in the journal of the corporation will now be the same as shown on page 156, with some possible variations in the introductory paragraph, mentioning the purposes of the corporation, and going into whatever detail may be necessary to state fully the conditions under which the purchase of the business of Brown and Allen is made. Either of the two methods described on page 156, may be pursued, accordingly as it is desired to have both the authorized and the issued stock shown in the balance sheet, or merely the amount of stock issued. If method (*a*) is followed the full amount of the authorized stock will be shown in the ledger and consequently in the balance sheet. If method (*b*) is followed only the actual stock outstanding will be shown.

Since the subscription of the firm of Brown and Allen will be paid in full when its assets and liabilities are transferred to the Brown-Allen Company, while the other subscriptions will be paid in instalments, it will be well to make separate entries for these two classes of subscriptions. The entry necessary to show the four instalments is:[1]

Instalment Number 1...........................	$2,500.00	
Instalment Number 2...........................	2,500.00	
Instalment Number 3...........................	2,500.00	
Instalment Number 4...........................	2,500.00	
To Subscribers............................		$10,000.00

[1] A variation from this procedure is to charge each instalment and credit subscribers account as each instalment falls due and is paid.

Old Books Continued.—Suitable explanation should follow this entry, stating the time when the instalments fall due and giving any other information the circumstances may make desirable. The entries necessary to bring into the company's books the assets and liabilities of the firm of Brown and Allen will vary according to conditions. If the old books of Brown and Allen are to be closed and a new set of books opened for the Brown-Allen Company a different procedure will be required than if the old books are to be continued. In the former case all of the accounts in the old books will be closed and new accounts will be opened in the new ledger of the Brown-Allen Company for the sundry assets purchased and liabilities assumed. In the latter case only the partners' capital accounts will be closed in the old ledger and such new accounts opened as are peculiar to corporation accounting. As the retention of the old books requires the simpler procedure let us first consider the adjustments necessary when they are continued by the corporation.

When Brown and Allen subscribed to the stock of the Brown-Allen Company they were charged as subscribers in the journal. Since the capital accounts of Brown and Allen, respectively, are the same in amount as their subscriptions, and since their interest in the old concern is measured by their capital accounts, the following entry will close their individual capital accounts, and at the same time cancel their liability as subscribers:

Capital, Brown.............................	$45,000.00	
Capital, Allen........	30,000.00	
To Subscribers.........................		$75,000.00

The Subscribers Account in the ledger should now appear thus:

Subscribers Account

To Unissued Stock......	$85,000	By Instalment No. 1.....	$ 2,500
		By Instalment No. 2.....	2,500
		By Instalment No. 3	2,500
		By Instalment No. 4.....	2,500
		By Capital, Brown......	45,000
		By Capital, Allen........	3,000
	$85,000		$85,000

The subscriptions remaining unpaid at any time are shown by the debit balances of the Instalments Accounts.

New Books Opened.—If new books are installed for the corporation it will be necessary to close not only the partners' accounts in the old books, but all others as well. At the same time that the asset and liability accounts in the old books are closed they are opened in the new books of the corporation. In the partnership books the Brown-Allen Company is charged with the value of the assets which are to be turned over to it and credited with the amount of the liabilities which it is to assume, thus:

Journal, Brown and Allen

The Brown-Allen Company....................	$81,000.00	
To Real Estate..................................		$27,000.00
Goodwill		25,000.00
Merchandise		6,000.00
Accounts Receivable		16,000.00
Cash		7,000.00
To charge The Brown-Allen Company for the value of the assets of the firm of Brown and Allen, according to the conditions of the agreement made between the firm of Brown and Allen and the Brown-Allen Company, which latter is to receive the assets and assume the liabilities of the firm of Brown and Allen.		
Accounts Payable..............................	$6,000.00	
To The Brown-Allen Company..............		6,000.00
To credit The Brown-Allen Company with the liabilities of the firm of Brown and Allen, these accounts being assumed by the Brown-Allen Company as per agreement.		

As a result of the above entries the Brown-Allen Company is charged in the books of Brown and Allen with the net amount of $75,000, the gross charge of $81,000 being offset to the extent of $6,000, the credit for liabilities assumed. As $75,000 is also the amount of the stock of the Brown-Allen Company subscribed by Brown and Allen, upon receipt of the stock by Brown and Allen the following journal entry is made:

Capital Stock of the Brown-Allen Company.....	$75,000.00	
To The Brown-Allen Company...........		$75,000.00
To charge the capital stock of The Brown-Allen Company for the amount received, $75,000, this being the consideration for which Brown and Allen agree to sell their interests to The Brown-Allen Company.		

The only accounts now remaining open on the books of Brown and Allen are:

Capital Stock of The Brown-Allen Company ...	charged with	$75,000.00
Capital, Brown	credited with	45,000.00
Capital, Allen	credited with	30,000.00

When the stock is transferred to Brown and Allen, respectively, as individuals, the following entry is required to close their capital accounts as well as the account with the stock of the Brown-Allen Company:

Capital, Brown	$45,000.00	
Capital, Allen	30,000.00	
To Capital Stock of The Brown-Allen Co.		$75,000.00

In the books of the Brown-Allen Company entry must be made to charge the assets taken over from Brown and Allen as well as to credit the liabilities assumed. This is accomplished thus:

Journal, the Brown-Allen Company

Real Estate	$27,000.00	
Goodwill	25,000.00	
Merchandise	6,000.00	
Accounts Receivable	16,000.00	
Cash	7,000.00	
To Subscribers		$75,000.00
Accounts Payable		6,000.00
To charge the assets purchased from the firm of Brown and Allen, and to credit the liabilities of Brown and Allen which are assumed, also to credit Subscribers Account with the excess of assets purchased over liabilities assumed.		

The Trial Balance.—After the above entries in the journal of the Brown-Allen Company are posted to the ledger a trial balance (not essential, but desirable to prove the correctness of the work) appears thus:

Trial Balance, the Brown-Allen Company:

Instalment No. 1	$2,500	Capital Stock	$85,000
Instalment No. 2	2,500	Accounts Payable	6,000
Instalment No. 3	2,500		
Instalment No. 4	2,500		
Real Estate.	27,000		
Goodwill	25,000		
Merchandise	6,000		
Accounts Receivable	16,000		
Cash	7,000		
	$91,000		$91,000

If ledger accounts are opened for Unissued Stock and Authorized Stock, the trial balance will appear slightly different. In the one shown above Unissued Stock would appear charged with $15 000 and Authorized Stock would show a credit balance of $100,000, while Capital Stock, $85,000, would not appear on the credit side.

The procedure in case of a corporation which does not purchase an established business, but secures funds for the construction of its plant, etc., entirely through the sale of stock for cash differs only in detail the instalments and cash being charged in place of the real estate, merchandise, etc., taken over.

CHAPTER XXVI

THE CORPORATION—ACCOUNTING FOR BOND ISSUES

General Considerations.—The advisability of issuing bonds was discussed in Chapter XXIII. When the management has determined upon an issue of bonds entries must be made recording the transactions incident to their sale, also, later on, to record interest accruals and payments thereon, the correct distribution of discount on the bonds when they are sold at a discount, and the premiums on the bonds when they are sold at a premium. The specifications of the deed of trust for the establishment of sinking funds for the ultimate payment of the bonds must be observed. Money placed in sinking funds is oftentimes invested in interest-bearing securities, or in some other form of profitable investment. All facts incident to the establishment of such funds must be recorded and careful record kept of interest earned by the funds and of its disposition according to the provisions of the deed of trust.

Marketing Bonds.—The price at which a corporation is able to market its bonds is a variable dependent on several factors. Among the things which determine bond prices are the general credit of the corporation, the protection afforded the bonds by the provisions of the deed of trust, the rate of interest which the bonds bear, as well as business conditions generally and the situation of the money market when the the sale is made. An old and firmly established company, able to offer abundant protection to creditors, might readily market a given issue of its bonds, bearing 5 per cent interest, above par, *i.e.*, above the face value of the bonds. A new and untried company, on the other hand, might have great difficulty in marketing a similar issue at par. Again, when money is scarce, investors shy, and conditions in general are unfavorable, the most firmly established concern may find it impossible to market bonds at what it considers a reasonable price. Following the panic of 1907 many of our large industrial and transportation corporations chose to issue notes running only a few years rather than yoke themselves to long term bonds bearing high rates of interest. Such recourse to short term securities is frequently had in the expectation that the near future will bring better opportunities to market securities having a long term to run.

Bonds Sold at Par.—From an accounting point of view, the simplest situation is that which occurs when bonds are sold at par. There is no premium or discount, since the cash received is equal to the face of the bonds. Cash is charged and the bond account is credited as follows:

Cash..	———	
To Bonds..................................		———
To charge cash and credit bonds for the amount sold, at par.		

If the following balance sheet of The Atlas Company indicates the situation before the sale of bonds

Balance Sheet, The Atlas Company:

Fixed Assets............	$15,000	Capital Stock...........	$25,000
Current Assets (including cash)................	5,000	Accounts Payable.........	5,000
Goodwill...............	10,000		
	$30,000		$30,000

then after the sale at par, of an issue of bonds amounting to $10,000, the balance sheet appears thus:

Balance Sheet, The Atlas Company:

Fixed Assets....	$15,000	Capital Stock...........	$25,000
Current Assets (including cash)................	15,000	Bonds..................	10,000
Goodwill	10,000	Accounts Payable.......	5,000
	$40,000		$40,000

Bonds Sold at Discount or Premium.—When, however, the bonds are disposed of either above or below par, as is very likely to happen, the situation is more complicated. If sold below par the amount of cash received is less than the par value of the bonds. The difference must therefore be charged to some other account. This account is usually called the "discount on bonds" account. If we assume that The Atlas Company markets its bonds at 90 per cent. of their par value, thus receiving $9,000 in cash instead of $10,000, the following entry is made:

Cash	$9,000.00	
Discount on Bonds	$1,000.00	
To Bonds		$10,000.00

The balance sheet now becomes:

Balance Sheet, The Atlas Company:

Fixed Assets	$15,000	Capital Stock	$25,000
Current Assets (including cash)	14,000	Bonds	10,000
Discount on Bonds	1,000	Accounts Payable	5,000
Goodwill	10,000		
	$40,000		$40,000

If, on the contrary, the bonds sell at a premium of 10 per cent instead of a discount, the following entry is required to record the sale:

Cash	$11,000.00	
To Bonds		$10,000.00
Premium on Bonds		1,000.00

Effective Interest Rate—Bonds Sold at Discount.—The accounts thus set up to record the premium and discount on bond issues deserve careful consideration. First, let us consider the situation where bonds are sold at a discount. The reasons for such a situation have already been discussed. Since the amount of cash received when bonds are sold below par is less than the par value of the bonds, the interest rate paid on the par of the bonds is really nominal and in a sense fictitious. The real or effective interest charge is found by adding together the actual amount paid out yearly as interest and such a portion of the $1,000 discount on bonds as one year is a part of the whole number of years the issue runs. If the above mentioned issue of bonds runs twenty years and bears the nominal rate of interest of 5%, that is, 5% on the par of the bonds, then the effective interest rate is ($500 + 1/20 of $1,000) ÷ $9,000, or 6.11% on $9,000, which is $550.00 per annum.

Thus to find the effective rate of interest we find the ratio of the cost per year to the actual amount of cash received for the bonds and not to the par value of the bonds. In this instance the actual cash received is $9,000. Moreover, it is clear that the interest cost per annum is $500 (5% of $10,000) plus one-twentieth of the discount on the bonds, which is $50 (1/20 of $1,000).

Recording Interest Charge.—As most progressive concerns find their profit and loss monthly the accounting procedure required to bring into the books the real interest charge for each month is:

Profit and Loss	$45.83	
To Interest Accrued		$41.67
Discount on Bonds		4.16
To charge Profit and Loss with the month's burden of interest accruing on bonds, and to credit Interest Accrued with the nominal rate of interest, and Discount on Bonds with the month's proportion of that expense, the same being a charge to Profit and Loss.		

Later when the interest falls due and is paid, presumably at the end of a six month's period, Interest Accrued is charged and Cash is credited, thus:

Interest Accrued	$250.00	
To Cash		$250.00
For payment of interest accrued on bonds during six months' period closed.		

Small Discrepancies in Interest Calculations.—Since, in business transactions, it is not customary to carry figures representing dollars beyond the second decimal point, thus rounding off the sum to the nearest cent, some slight discrepancies arise in the above figures, not sufficiently great, however, to vitiate the results to any material degree. Thus the amount credited each month to Discount on Bonds, if multiplied by 12, the number of months in a year, and in turn by 20, the number of years the bonds run, should give a product of 1,000, the original amount in dollars of the Discount on Bonds account. But $4.16 × 12 × 20 = $998.40, or $1.60 less than it should be. If $4.17 were credited monthly to Discount on Bonds, then $4.17 × 12 × 20 = $1,000.80, which shows an excess of $0.80. A discrepancy as small as this may be ignored until the bonds mature and then be added or deducted from the last monthly credit to Discount on Bonds account, thus closing this account.

A similar discrepancy will exist at the end of each six months' period between the credit balance in the Interest Accrued account, which will be 6 × $41.67, or $250.02, and the actual amount of interest paid, $250. Since the $0.02 represents an excess charge to Profit and Loss it may be credited to that account at the end of each six months, thus:

Interest Accrued	$250.02	
To Cash		$250.00
Profit and Loss		0.02
For payment of accrued interest on bonds, and to carry excess interest charge of $0.02 to Profit and Loss.		

Similarly when the bonds mature, any slight discrepancy in the balance of the Discount on Bonds account, such as was indicated above, can be carried to Profit and Loss.

Effective Interest Rate—Bonds Sold at Premium.—When bonds are sold at a premium the same principles apply as when they are sold at a discount, but the effective rate of interest is less than the nominal rate. Suppose that the issue of bonds had sold at 110 instead of 90. The entry recording the sale follows:

Cash	$11,000.00	
To Bonds		$10,000.00
Premium on Bonds		1,000.00
Full explanation here.		

The nominal rate of interest, that is, the rate paid on the par value of the bonds, is 5%. But the actual interest cost per annum is ($500–1/20 of $1,000) ÷ $11,000, or 4.09% reckoned on $11,000, or $450 per year. This rate of interest considers two factors which the nominal rate, 5%, ignores. The first factor is the $11,000 actually received for the bonds; the second factor is the premium on the bonds, of which 1/20 should be written off each year to reduce the amount of interest charged to Profit and Loss. The entries required are similar to those given above, with such alterations as may be seen by an examination of the following:

Profit and Loss	$37.50	
Premium on Bonds	4.16	
To Interest Accrued		$41.66
To charge the Profit and Loss and Premium on Bonds accounts with the month's portion of interest accrued, and to credit the Interest Accrued account with the nominal rate of interest.		

If interest is paid semiannually, at the end of each six months' period, Interest Accrued is charged and Cash is credited with $250, as shown above. Any slight discrepancy existing in the Interest Accrued account can be carried to Profit and Loss, as already explained.

Premium or Discount Affects Profit and Loss.—From the foregoing discussion we see that if either a bond premium or a bond discount account is raised on the books when bonds are sold at other than par value, this premium or discount account must be considered as a factor aiding in the determination of the actual interest charge to be made to Profit and Loss. If the bonds sell at a discount, the amount of the discount should be prorated over the time the bonds run, the amount applicable to each period being added to the actual interest paid, *i.e.*, the nominal interest, to determine the amount to be charged to Profit and Loss. If the bonds sell at a premium, the amount of the premium should be prorated over the life of the bonds, and the amount applicable to each period should be subtracted from the actual interest paid to determine the amount to be charged as interest to Profit and Loss.

When bond discount and premium are considered in connection with redemption prices above or below par, or when the situation is complicated by the redemption of bonds before the date of maturity, complications arise. The student is referred to works listed on page 183 for a discussion of these questions.

CHAPTER XXVII

THE CORPORATION—REDEMPTION OF BONDS

Redemption of Bonds.—An issue of bonds may be redeemed serially, that is, a given number of the outstanding bonds may be drawn each year by lot and purchased by the issuing company, being redeemed at par or some other figure. On the other hand, the whole issue may remain outstanding until the expiration of the period prescribed and then be redeemed *in toto*. Accordingly bonds are classified as serial and sinking fund, depending upon the mode of payment. A third classification includes those bonds which are issued with the expectation, not of paying them off, but of refunding them, when the time over which they run expires. That is, new bonds are issued in exchange for the old ones. The advisability of issuing a given kind of bonds must be determined by the character of the issuing company and the purpose of the issue.

Bonds Issued in Perpetuity.—We have learned that it is frequently of advantage to a company to trade on the equity of borrowed funds. Consequently it may be desirable for a company to establish a permanent bonded indebtedness, within certain limits. This being true, it might be desirable to sell bonds not having a maturity date and which, therefore, would remain the permanent obligations of the company. This plan is followed extensively in England, but in the United States it has not been popular. However, some of our corporations have issued bonds maturing at such a distant period that they may be regarded as perpetual obligations, for practical purposes. When interest rates are high, as they tend to be in a new country where capital is scarce, short term issues are naturally preferred because of the expectation that interest rates will be lower later on.

Sources of Redemption Funds.—Whether bonds be sinking fund or serial, there are but two possible sources from which the means for their redemption can be secured, viz., (*a*) capital and (*b*) profits. If an issue of bonds amounting to $1,000,000 is sold at par and the receipts from the sale invested in the business, the net proprietorship will remain the same or be increased by $1,000,-

000 accordingly as these bonds are ultimately redeemed out of capital or out of profits, assuming that the assets purchased with the $1,000,000 are preserved at their original value. To illustrate, let us assume that The Royal Manufacturing Company, before the sale of $1,000,000 of bonds, has the following balance sheet:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets........	$2,000,000	Capital Stock........	$2,000,000
Accounts Receivable..	200,000	Accounts Payable.....	310,000
Cash................	110,000		
	$2,310,000		$2,310,000

If the bonds are sold at par and the returns invested in land or other fixed assets, the balance sheet becomes:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets.........	$3,000,000	Capital Stock........	$2,000,000
Accounts Receivable..	200,000	Bonds...............	1,000,000
Cash...............	110,000	Accounts Payable...	310,000
	$3,310,000		$3,310,000

If the bonds run ten years, then, disregarding interest, it will be necessary to lay aside $100,000 each year for ten years in order, after ten years, to have a fund of $1,000,000 with which to redeem the bonds. Where shall the $100,000 be secured each year? Shall we retain that much of the profits each year until we have saved $1,000,000 profits? Or shall we wait until the expiration of ten years, meanwhile distributing profits to stockholders, and then use whatever available assets there may be to pay off the bonds? If we reserve $1,000,000 of the profits, then at the end of ten years, but before the bonds are redeemed, the balance sheet will appear essentially as follows:

Balance, Sheet Royal Manufacturing Company:

Fixed Assets..........	$3,000,000	Capital Stock	$2,000,000
Accounts Receivable...	200,000	Bonds..............	1,000,000
Cash...............	1,110,000	Accounts Payable.....	310,000
		Profit and Loss	1,000,000
	$4,310,000		$4,310,000

When the bonds are paid the following entry is made:

Bonds...............................	$1,000,000.00	
To Cash..........................		$1,000,000.00

after which the balance sheet becomes:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets	$3,000,000	Capital Stock	$2,000,000
Accounts Receivable	200,000	Accounts Payable	310,000
Cash	110,000	Profit and Loss	1,000,000
	$3,310,000		$3,310,000

An examination of this balance sheet shows that whereas the liabilities of The Royal Manufacturing Company are no greater than before the bonds were issued, its assets have increased in value $1,000,000. This is due to the fact that the bonds have been paid out of profits. Had no profits been retained, it would have been necessary to convert enough of the fixed assets into cash to make the $1,000,000 required for the payment. If this is done the balance sheet appears thus:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets	$2,110,000	Capital Stock	$2,000,000
Accounts Receivable	200,000	Bonds	1,000,000
Cash	110,000	Accounts Payable	310,000
	$3,310,000		$3,310,000

providing the conversion of fixed assets into cash is made without loss. Then, after the bonds are redeemed, the balance sheet becomes:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets	$2,110,000	Capital Stock	$2,000,000
Accounts Receivable	200,000	Accounts Payable	310,000
	$2,310,000		$2,310,000

which leaves the company with assets of the same value as before the bonds were issued—the consequence of redeeming bonds out of capital.

Comparison of These Plans.—Which plan is best to follow circumstances must determine. A company is not under obligation to use profits to pay bonds, the sale of which is made to secure purchase money for permanent additions and betterments. But while, theoretically, a company invests the returns from bonds in assets of permanent value, it frequently happens, in practice, that the money derived from bond sales is spent for improvements the value of which is by no means permanent. Suppose that the Royal Manufacturing Company invests the $1,000,000 secured by the sale of bonds, in machinery possessing a useful lifetime of ten years. Then, if no reservations are made to cover depreciation, the balance sheet, after the bonds are paid, becomes:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets	$1,110,000	Capital Stock	$2,000,000
Accounts Receivable	200,000	Accounts Payable	310,000
Deficit	1,000,000		
	$2,310,000		$2,310,000

Depreciation a Factor.—In this instance $1,000,000 of the capital has been paid out as dividends, an illegal procedure in most cases for which the directors of the company may be held personally responsible. Had proper allowances been made for depreciation this situation would not have arisen. A depreciation reserve would have been set up on the credit side of the ledger and credited each year with, say, $100,000, and a corresponding charge made to Profit and Loss—with the result that, for the ten year period, a showing of $1,000,000 less in profits would have been made; so that essentially the same situation would have resulted as when the assets do not depreciate and no reserve for depreciation is set up. In reality, of course, the profits are $1,000,000 less.

These illustrations indicate the principles to be followed in determining whether a sinking fund ought to be set aside out of profits or out of capital. If adequate depreciation allowances are made it is not necessary or even advisable, as a rule, to adopt the ultraconservative policy of paying bonds out of profits.

The Sinking Fund.—We must not conclude from the foregoing that it is not necessary to make actual cash reservations for the sinking fund, which is an altogether different matter. This is a procedure quite independent of the question whether bonds ought to be redeemed out of capital or out of profits. If proper depreciation allowances are made, or if profits sufficient to pay off the bonds are retained, the presumption is that cash will be forthcoming to make the payment when the time for it arrives. But there is no guaranty that this will be the case other than the general policy of the management. Usually such a guaranty does not satisfy the requirements of investors.

The customary procedure is to require the company that issues the bonds to make periodic payments, annual or otherwise, to a trustee, whose duty it is to invest them as profitably as is consistent with security, and thus to hold them for the protection of the bondholders as well as for the ultimate redemption of the bonds. The earnings of this trust fund may be added to it, or not, according to arrangements. If the earnings are turned back into the fund the instalments needed to bring the fund to the required amount in a given time are smaller than if the earnings are turned over into the general fund of the company. If, to illustrate, we ignore interest considerations, it will require ten yearly instalments of $100,000 each to create a sinking fund of $1,000,000 in ten years. The following entry records the transfer of the periodic instalment to the trustee:

Sinking Fund Trustee......................	$100,000.00	
To Cash...............................		$100.000.00
To record payment of cash to the trustee according to provisions of the deed of trust.		

As a consequence of this annual transfer of cash to the sinking fund trustee there appears on the balance sheet an asset account under the title, Sinking Fund, which after ten years amounts to $1,000,000 and the balance sheet becomes:

Balance Sheet, Royal Manufacturing Company:

Fixed Assets	$3,000,000	Capital Stock	$2,000,000
Accounts Recievable..	200,000	Bonds...............	1,000,000
Sinking Fund in Hands of Trustee	1,000,000	Accounts Payable....	310,000
Cash................	110,000	Profit and Loss.......	1000,000
	$4,310,000		$4,310,000

When the bonds are redeemed the following entry is made:

Bonds.................................	$1,000,000.00	
To Sinking Fund.....................		$1,000,000.00

which, when posted, leaves the balance sheet as shown at the top of page 175.

Interest on Bonds.—Although there is room for dispute as to the proper origin of funds to be employed in payment of the principal of bonds there is no question as to the proper source of the means needed to satisfy interest requirements. Interest is an expense which must be paid out of income, not out of capital. It is one of the deductions which must be made from gross income to arrive at net profits. Since interest is paid annually or semiannually, it is necessary, when closing the nominal accounts into Profit and Loss, to charge Profit and Loss with the period's proper burden of interest, even though it be not yet due. Thus if the $1,000,000 issue of the Royal Manufacturing Company bears 5% interest, payable semiannually on June 30 and December 31, and if an income statement is set up monthly, each month's interest charge must be entered although interest is paid only twice during the year. One month's interest at 5% on $1,000,000 is $4,166.67 The following entry is necessary to charge Profit and Loss and credit the liability account, Interest Accrued.

Interest..	$4,166.67	
To Interest Accrued........................		$4,166.67

Interest is in turn charged to Profit and Loss, but Interest Accrued is a real account which appears in the balance sheet for January 31 as a current liability. Similarly, each month Profit and Loss is charged with the month's quota of interest and the Interest Accrued account is credited, until at the close of the half year Interest Accrued stands credited with six months' interest—$25,000, which is then due and payable. When paid the following entry is made:

Interest Accrued......	$25,000.00	
To Cash.............		$25,000.00

Thus the Interest Accrued account is closed, and the current liability which has been accruing for six months is liquidated. The same process is repeated during the next six months, and so on.

Interest on Sinking Fund.—Interest earned by the sinking fund may be (*a*) added to the fund, or (*b*) turned back into the business. Entries must be made to record this interest. If it is added to the sinking fund the following entry is made monthly:

Accrued Income on Sinking Fund.................	———	
To Income on Sinking Fund.................		———
To record interest accrued during the month on sinking fund investments.		

When the sinking fund trustee receives cash in payment of the accrued interest on the sinking fund the following entry is made

Sinking Fund Trustee............................	———	
To Accrued Income on Sinking Fund..........		———
To charge with cash received by him on sinking fund investments.		

If the sinking fund trustee retains the interest received this entry is sufficient. If he pays it over to the company cash is charged and the trustee credited, thus:

Cash...	———	
To Sinking Fund Trustee..................		———
To credit the sinking fund trustee with the amount of interest received by him on sinking fund investments and now paid over to the company.		

CHAPTER XXVIII

THE CORPORATION—ROUTINE ACCOUNTING PROCEDURE

Use of the Surplus Account.—In general, the routine procedure involved in corporation accounting is not different from that required for proprietorships or partnerships. The chief peculiarities in corporate procedure are the result of the method employed to indicate proprietorship and to show the disposition of profits. The amount of the capital stock i fixed by the charter and cannot be readily changed. Moreover, capital stock is usually shown at par in the accounts while its real value may be either above or below par value. Capital is constantly changing as the result of the losses and gains incident to operations while capital stock remains stationary. Therefore it becomes necessary to establish an account whose purpose is to show these changes. This is the Surplus or Deficit account, accordingly as capital is greater or less than the amount shown by the Capital Stock accounts—assuming that capital stock is full paid.

In case of sole proprietorships and partnerships it is customary to carry the undistributed part of net profits to the capital accounts in accordance with some prescribed procedure, but in corporation accounting separate capital accounts are not kept or the stockholders. In place of these capital accounts there is the Capital Stock account (or accounts) which is sometimes a controlling account for the individual stockho ders' accounts kept in the subordinate Stock Ledger. These individual accounts are altered only when stock is transferred from one party to another or when new stock is issued, neither of which transactions are related to the determination, recording, or distribution of profits.

For this reason it is necessary to carry profits to a Surplus account. This account plays a significant part in corporation accounting. When a corporation increases its surplus by bringing into it each year a portion of the current profits it is said to pursue a conservative policy, while one which accumulates no surplus is not likely to be found well prepared to weather a period of hard times Such a statement is a mere generalization, however, and subject to many qualifications and limitations in individual instances. The amount of surplus which it may be desirable to accumulate will depend upon the character of the enterprise and the peculiar conditions surrounding it.

Surplus Account Illustrated.—Let the following statement represent the condition of the Smith-Alling Company as at Dec. 31, 1919:

Balance Sheet, Smith-Alling Company, as at Dec. 31, 1919:

Factory Building	$100,000	Capital Stock	$150,000
Inventories	55,000	Other Liabilities	12,000
Current Assets	12,000	Reserve for Depreciation	5,000
	$167,000		$167,000

During the year 1920 various operations are engaged in, resulting in a net profit of $10,000 which is carried to Surplus. The balance sheet as at Dec. 31, 1920 is as follows:

Balance Sheet, Smith-Alling Company, as at Dec. 31, 1920:

Factory Building	$100,000	Capital Stock	$150,000
Inventories	60,000	Other Liabilities	10,000
Current Assets	20,000	Reserve for Depreciation	10,000
		Surplus	10,000
	$180,000		$180,000

The entry by which net profits is carried to Surplus is:

Profit and Loss	$10,000	
To Surplus		$10,000
To carry net profit for the year ending Dec. 31, 1920, to the Surplus account and to close the Profit and Loss account.		

Disposition of Surplus.—The disposition of the surplus rests in the power of the board of directors. It is they who decide what portion of it shall be used to pay dividends, what portion shall be retained in the Surplus account, and what portions shall be set up as special reserves. We have learned that reserves are of two kinds, profit and valuation. Reserves established out of surplus are reseves of profit because they represent value over and above the original investment. Among such special reservations are those made to finance additions and betterments, to meet contingencies, and to provide for the liquidation of bonded indebtedness out of profits.

Sources of Surplus.—Surplus does not always represent accumulated profits, however. There are various ways in which it may be increased or diminished other than through profits or losses resulting from operations. One of the most frequent of these is by the sale of capital stock above par. Thus if 100 shares of capital stock having a par value of $100 per share is sold at a premium of 10 we have the following:

Cash....................................	$11,000	
To Capital Stock..................		$10,000
Surplus		1,000
To record sale of capital stock at 110, the premium being credited to surplus.		

Evidently surplus which originates at occasional intervals by sale of stock above par or as the result of other more or less fortuitous circumstances should be distinguished from that which represents accumulated profits. This has led in some instances to a subdivision of the surplus account to show capital surplus distinct from surplus representing accumulated profits. Note to what extent the surplus account prescribed by the Interstate Commerce Commission for railroad companies is subdivided:

Corporate Surplus

Additions to property through income and surplus.
Funded debt retired through income and surplus.
Sinking fund reserves.
Miscellaneous fund reserves.
Appropriated surplus not specifically invested.
  Total appropriated surplus.
Profit and loss—Balance.
  Total corporate surplus.

The first five items in this statement represent appropriations of surplus for specific purposes. The first four represent specific investments. Unappropriated surplus is represented by the balance of Profit and Loss. By combining appropriated and unappropriated surplus we secure total corporate surplus. This arrangement does not show the division between earned and unearned surplus, however.

That surplus arising from sale of capital stock at a premium should be segregated will appear from the following considerations. The total amount received for a share of stock sold at a premium represents what the purchaser considers such a share to be worth. It in no way represents profits but is rather in the nature of an original investment of capital. To employ such surplus for purposes of paying dividends would be to impair the original investment and therefore reduce the value of outstanding stock.

Dividends.—The profits accruing to a corporation may be distributed in whole or in part to the stockholders in the form of dividends. How much of the profits shall be retained to strengthen the concern and how much shall be distributed is a question of financial policy which the board of directors must decide. Banks make especially large reservations of profits, so that we frequently find their surplus accounts in excess of their capital stock accounts.

Dividend Defined.—A dividend is a distribution of accumulated profit among a given class of stockholders. If but one class of stock is outstanding the distribution is made on a pro rata basis among all stockholders. When, however, there are two or more classes of stock outstanding a different procedure may be followed for each class. Thus if there are preferred and common stocks, and the preferred is, let us say, 6% cumulative stock, then the preferred stock dividend must be paid in full before anything can be paid on the common; and if in any given year the profits are insufficient to pay the full amount of the dividend on the preferred stock, then it must be paid in the next year, or later, before anything can be paid to the common stockholders.

Kinds of Dividends.—Dividends are of several kinds in accordance with the medium of payment. Cash dividends are most frequent and consist in payment by check, or, in exceptional cases, actual cash. Scrip dividends are paid in the form of promissory notes of the company, which are at a later period redeemable in cash or other form of property. Stock dividends are paid by issuing capital stock, either treasury or unissued, in payment. Other forms less frequently used are property and bond dividends, the former being paid by an actual distribution of property and the latter by issuing bonds.

Declaration of Dividends.—The board of directors can rightfully declare a dividend only when sufficient profits exist. It is unlawful to pay a dividend out of capital and the directors authorizing such a dividend may be held personally for damage resulting to creditors of a corporation. There are, of course, various ways in which fictitious profits may be shown, so that it is not always a simple matter to determine whether profits shown are real profits. The board of directors will protect itself by securing the services of a competent firm of public accountants to audit the accounts.

As soon as a dividend is declared it becomes the direct liability of the corporation. The routine procedure necessary to show this liability is to charge Profit and Loss and credit Dividends Payable, thus:

Profit and Loss..............................	———	
To Dividend Payable No. —..............		———
To show liability for dividends declared in accordance with vote of the board of directors.		

Instead of Profit and Loss the Surplus account may be charged. In this case, however, a distinction should be made between capital Surplus arising out of sale of stock at a premium and Surplus derived from operating profits. It is wrong to use capital surplus to pay dividends. This distinction has been recognized by the Interstate Commerce Commission which provides a distinct account for "Premium on capital stock" which is shown, not as a subdivision of Corporate Surplus, but as a subdivision of the stock account. When the dividend is paid, if in cash, the following entry is made:

Dividend Payable No. —......................	———	
To Cash................................		
In payment of dividend No. —............		———

If there are a large number of stockholders it is customary to draw a single check for the total amount of the dividend. This is placed in a separate account, possibly in a different bank. The dividend checks are then drawn on this account. This plan segregates the work of paying dividends so that it can be readily performed by subordinates. If, however, the dividend is paid in stock the entry is:

Dividend Payable No. —......................	———	
To Capital Stock.......................		———

It should be noted that when a cash dividend is paid the corporation reduces its assets by the amount of the dividend, whereas no reduction in assets occurs when a stock dividend is paid. This is the principle which has led the courts to declare that the receipt of a stock dividend does not constitute income to the recipient.

Records Peculiar to Corporations.—There are certain books employed in corporate finance and accounting which are peculiar to this form of organization. Some of these are required by state laws while the use of others is voluntary. The size of the corporation and the manner in which its stock is held are two of the factors which will determine what special records are necessary. Since some of these records are secretarial in character and all are strictly subordinate to the accounting records proper, it is sufficient here to give a brief outline of their uses. They are concerned with the recording of minutes of stockholders, and directors' meetings, the subscriptions for stock and the payment thereof, and the transfer and recording of capital stock sold on the market. Chief among these are:

Minute Book
Record of Subscriptions
Stock Certificate Book
Register of Transfers
Stock Ledger

The minute book is employed to record the proceedings at stockholders' and directors' meetings. The subscription record contains the names and addresses of the subscribers to the capital stock, and the number and value of shares subscribed by each. The stock certificate book contains the stock certificates which are issued to purchasers of stock. Each certificate contains the name of the company, capitalization, total number of shares represented by the certificate, and whether they are full paid. The register of transfers records all transfers of stock between buyers and sellers. The stock ledger, which must agree with the capital stock account, when the par value of holdings is given, shows the name and address of all stockholders and the amount of stock standing to the credit of each.

CHAPTER XXIX

THE CORPORATION—PRACTICE

Problem 1.—A corporation issues 20-year first mortgage bonds on January 1, 1919, bearing 5½% interest, payable semi-annually, January 1 and July 1. The trust deed provides that yearly contributions are to be made to a sinking fund which earns 3% compound interest. The bonds sell at a premium, as of January 1, 1919. Show *pro forma* entries in journal form necessary on the following dates:

Jan. 1, 1919
July 1, 1919
Jan. 1, 1920
Jan. 1, 1939

NOTE.—*Pro forma* entries are those with amounts omitted.

Solution, Problem 1.—

Jan. 1, 1919		
Cash..	———	
To First Mortgage Bonds....................		———
Premium on Bonds......................		———
For sale of 20-year first mortgage bonds, bearing interest at 6%, due 1938, interest payable semiannually.		
July 1, 1919		
Interest on Bonds............................	———	
To Cash....................................		———
For interest on bonds, due July 1, 1919.		
Premium on Bonds............................	———	
To Profit and Loss..........................		———
One-fortieth of premium on bonds applicable to income.		
Jan. 1, 1920		
Interest on Bonds............................	———	
To Cash....................................		———
For interest on bonds, due Jan. 1, 1920.		
Jan. 1, 1920		
Premium on Bonds............................	———	
To Profit and Loss..........................		———
One-fortieth of premium on bonds, applicable to income.		

Jan. 1, 1920		
Surplus..	———	
To Sinking Fund Reserve....................		———
Reservation of surplus for sinking fund.		
Jan. 1, 1920		
Sinking Fund Trustees...........................	———	
To Cash....................................		———
Annual payment to sinking fund trustee.		
Jan. 1, 1939		
Premium on Bonds.............................	———	
To Profit and Loss.........................		———
One-fortieth of premium on bonds applicable to income.		
Jan. 1, 1939		
Surplus..	———	
To Sinking Fund Reserve....................		———
Reservation of surplus for sinking fund.		
Jan. 1, 1939		
Sinking Fund Trustees...........................	———	
To Cash....................................		———
Annual payment to sinking fund trustee.		
Jan. 1, 1939		
Sinking Fund Trustees.	———	
To Sinking Fund Reserve....................		———
For interest allowed by sinking fund trustee.		
Jan. 1, 1939		
First Mortgage Bonds...........................	———	
To Sinking Fund Trustees....................		———
For retirement by trustee of the 20-year 5½% first mortgage bonds, due this date.		
Jan. 1, 1939		
Sinking Fund Reserve....	———	
To Surplus..................................		———
To credit surplus with amount reserved therefrom to retire bonds, now cancelled.		

NOTE.—The problem does not state whether the bonds are to be paid from surplus or from income. We may assume, therefore, that they are to be paid from surplus. Interest, however, is charged to income. The proportion of the premium on bonds credited each six months to Profit and Loss is in the nature of interest, being an offset to the interest charged, so that the true interest cost is something less than 5½%. This might have been carried to Profit and Loss indirectly by first being credited a nominal account, as, Amortization of Premium on Debt, which is in turn closed into Profit and Loss by a closing journal entry.

Problem 2.—A corporation issues 10-year second mortgage bonds on March 1, 1918, bearing interest at 5%, payable semi-annually, March 1 and Sept. 1. The trust deed provides that annual contributions are to be made to the Acme Trust Co., sinking fund trustees, to establish a sinking fund for the extinguishment of the bonds when they fall due. This sinking fund earns 2%, compound interest. The bonds sell at a discount. Show *pro forma* entries in journal form necessary on the following dates:

March 1, 1918
Sept. 1, 1918
March 1, 1919
March 1, 1928

NOTE.—This problem differs from the preceding chiefly in the fact that the bonds were issued at a discount.

Problem 3.—A company under its articles of incorporation is required to set aside a certain percentage of its profits at the close of each year to provide a sinking fund for retiring its bonded indebtedness when it matures.

(*a*) Give necessary entries to be made in the books setting up the reserve at the close of each year.

(*b*) Give entries required when the bonds are paid off at maturity.

(*c*) What relation has the sinking fund provision to depreciation?

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PART V

FINANCIAL STATEMENTS

CHAPTER XXX

CONSTRUCTION AND INTERPRETATION OF THE INCOME STATEMENT

Use of Income Statement.—On page 42 was presented a simple form of income or profit and loss statement. The income statement is a popular form of presentation of the facts which are given in more technical form in the profit and loss account. For some purposes the account form is entirely adequate; but for one unskilled in the technique of accounts it is generally better to present the information in more legible form. This is accomplished by the use of the income statement.

An examination of the published reports of corporations will indicate how widely the statement form has been adopted. Such an examination will also show to what extent these reports furnish adequate information, and how much they fall short of completeness. Some companies publish income statements that are wholly inadequate for any purpose except that which can be satisfied by the most superficial examination. Much that is essential is purposely omitted, either from fear of disclosing to competitors information which might be of aid to them, or because unfavorable conditions would be shown, or for some other reason. The degree to which such procedure is justifiable is a question which must be decided on the merits of each case.

Contents and Arrangement of Income Account.—The contents of the profit and loss account depend upon the character of the business in question and the subdivision of the nominal accounts in the General Ledger. A manufacturer will be obliged to keep some accounts for which there can be no occasion in case of a concern engaged in merchandising. The accounts of a transportation company differ from both of the above. It is customary to separate the general profit and loss account into sections, into each of which are brought those items which affect, or are incidental to, a particular branch of the work. Thus for a manufacturing concern the general profit and loss account permits of a subdivision into not loss than four sections, possibly more. These may be termed:

1. Manufacturing Section
2. Trading Section
3. Administrative Section
4. Distribution Section

If instead of making such a sectional subdivision of the profit and loss account, all items are entered in one account, some obscurity results. Below is given such a profit and loss account for the Acme Manufacturing Company, for the month ending June 30, 1916:

Profit and Loss Account, Acme Manufacturing Co., Month Ending June 30, 1916:

Raw Materials, May 30	$20,000	Raw Materials, June 30	$21,000
Goods in Process, May 30	5,000	Goods in Process, June 30	4,000
Finished Goods	10,000	Finished Goods, June 30	9,000
Labor	4,000	Sales	20,000
Fuel	1,000	Discount on Purchases	500
Freight In	200	Rent of Steam Power	700
Depreciation (factory)	100		
Taxes (factory)	40		
Purchases (raw materials)	9,000		
Advertising	320		
Salesmen's Salaries	1,000		
Discount on Sales	200		
Salaries of Officers	600		
General Expense	630		
Interest	427		
Bad Debts	20		
Rent	100		
Balance, net Profit	2,563		
	$55,200		$55,200

The chief criticism to be passed upon this form of the profit and loss account is its failure to disclose, at a glance, the essential facts relative to the manufacturing and trading operations of the company. It is desirable to know not merely the net profit earned during the month, but it is also desirable to know the cost of manufacture, also of selling. Consider the following arrangement:

Profit and Loss Account, Acme Manufacturing Co., Month Ending June 30, 1916:

Manufacturing Section

Raw Materials, May 31....	$20,000	Raw Materials, June 30....	$21,000
Goods in Process, May 31..	5,000	Goods in Process, May 31..	4,000
Finished Goods, May 31..	10,000	Finished Goods, May 31...	9,000
Purchases (raw materials)...	9,000	Discount on Purchases.....	500
Labor....................	4,000	Rent of Steam Power......	700
Fuel.....................	1,000	Balance carried to Trading Section, Cost to Manufacture....................	14,140
Freight In................	200		
Depreciation (factory).....	100		
Taxes (factory)...........	40		
	$49,340		$49,340

Trading Section

Balance, Cost to Manufacfacture.................	$14,140	Sales....................	$20,000
Advertising...............	320		
Salesmen's Salaries........	1,000		
Discount on Sales.........	200		
Balance carried to Administrative Section—Trading Profit.................	4,340		
	$20,000		$20,000

Administrative Section

Salaries of Officers.........	$ 600	Balance, Trading Profit....	$4,340
General Expense..........	630		
Interest..................	427		
Bad debts................	20		
Rent (offices).............	100		
Balance carried to Distribution Section—Net Profit.	2,563		
	$4,340		$4,340

Distribution Section

Reserve for Contingencies...	$ 500	Balance, Net Profit........	$2,563
Reserve for Extensions.....	1,000		
Balance to Surplus........	1,063		
	$2,563		$2,563

Variations in Usage.—In both terminology and arrangement of the profit and loss account, there is much variation in usage, among accountants. The arrangement presented above is meant to be suggestive rather than final. The fourfold arrangement into sections is merely a matter of utility and convenience. Sometimes the administrative and distribution sections are united. Sometimes they are entitled differently than they are here. There is good ground for assuming that a particular item may with propriety appear in a certain section of the profit and loss account under certain conditions and in another section under different conditions, even in case of the same enterprise.

Discount on Purchases.—For example, whether discount on purchases ought to appear in the manufacturing section, as a reduction of cost of goods purchased, or whether it ought to appear in the administrative section, as a profit resulting from good management, is an undecided question. Those who assert that the latter is the proper usage do so on the ground that the ability to observe cash discount privileges is due to (*a*) possession of sufficient cash to make the policy a feasible one, or else to (*b*) the ability to make loans at a bank in amount sufficient to permit such a policy. It is maintained that in either case the manufacturing department has nothing whatever to do with the securing of the discount, and that it is rightly shown in the administrative section as a premium for good management.

The advocates of the contrary policy, that is, of showing the discount on purchases in the manufacturing section, maintain that the financial success of a concern is dependent as much if not more upon the efficiency attendant upon the manufacturing process as upon any other function and that the presence of sufficient cash to enable the observance of discounts is therefore a credit to the manufacturing department. The question appears to be one that might permit of an answer conditioned upon the peculiarities of the concern under consideration. What made possible the taking of the cash discounts? Efficient manufacturing, efficient trading, or efficient administration? May it not have been a combination of the three? It appears that the question is largely a theoretical one, which in practice must be decided more or less arbitrarily. To attempt to split up the amount of the discounts on purchases among the three sections on the basis of their relative efficiency would prove a difficult task.

Perhaps the best solution of the difficulty would be the abolition of all cash discounts. There is really very little justification for them. They are the outgrowth of the delinquent methods fostered by the antequated system of open accounts. Their introduction did not represent a step in advance but merely a makeshift remedy for a system which has proven unsatisfactory. There can be little doubt that it would be an improvement to make sales net 10 days, or net 30 days, or for whatever time the nature of the trade makes desirable. It is to be hoped that the adoption of the trade acceptance will remedy the situation, although it is by no means necessary to abolish cash discounts in order to make use of the trade acceptance. But by making prompt payment of bills a habit it may remove the necessity for cash discounts. Cash discounts have given rise to a variety of abuses that may thus be ended.

Arrangement of the Profit and Loss Statement.—With these remarks about the possibility of disagreement upon the location to be ascribed to individual items in the profit and loss account, let us now consider the rearrangement of the items of the profit and loss account required to form the profit and loss statement. The purpose of the profit and loss statement is to present in non-technical form the information contained in the profit and loss account. A little reflection will show that the amount of sales in a profitable enterprise will be sufficient to cover all costs of manufacture, trading, and administration, and leave a balance representing net profits. Omitting details, this may be expressed as a *pro forma* statement, thus:

Sales		———
Deduct: Cost to Manufacture	———	
Cost of Selling	———	
Cost of Administration	———	
Net Profit		———

This is all right as far as it goes, but it hides too much desirable information. It requires expanding and amplifying. Consider the following, which is merely a rearrangement of the items shown in the profit and loss account presented on page 193, with the costs of manufacture expressed as one item:

Profit and Loss Statement, The Acme Manufacturing Co., Month Ending June 30, 1916:

Sales			$20,000	100%
Less Cost of Goods Sold			14,140	
Gross Profit on Sales			$ 5,860	—%
Selling Expenses:				
Advertising	$ 320			
Salesmen's Salaries	1,000			
Discount on Sales	200	$1,520		
Administrative Expenses:				
Salaries of Officers	$600			
General Expense	630			
Interest	427			
Bad Debts	20			
Rent (offices)	100	$1,777	3,297	—%
Net Profit			2,563	—%
Distribution of Net Profit:				
Reserve for Contingencies	$ 500			
Reserve for Extensions	1,000		1,500	
Surplus			$1,063	—%

If it is desirable to show the costs of manufacture in detail, this may be done by substituting for the single item, "Cost of Goods Sold," the detailed costs of manufacture, in the above statement, which then becomes:

Profit and Loss Statement, The Acme Manufacturing Co., Month Ending June 30, 1916:

Sales			$20,000	100%
Less Cost of Goods Sold:				
Raw Materials, May 31	$20,000			
Goods in Process, May 31	5,000			
Finished Goods, May 31	10,000	$35,000		
Raw Materials, June 30	$21,000			
Goods in Process, June 30	4,000			
Finished Goods, June 30	9,000	34,000		
		$ 1,000		
Purchases (raw materials)		9,000		
Labor		4,000		
Fuel		1,000		
Freight in		200		
Depreciation (factory)		100		
Taxes (factory)		40		
		$15,340		

Less:				
Discount on Purchases........	$ 500			
Rent of Steam Power..........	700	$1,200	$14,140	—%
Gross Profit on Sales....................			$5,860	24.3%
Selling Expenses:				
Advertising..................	$320			
Salesmen's Salaries............	1,000			
Discount on Sales.............	200	$1,520		
Administrative Expenses:				
Salaries of Officers............	$600			
General Expense..............	630			
Interest......................	427			
Bad debts....................	20			
Rent (offices).................	100	$1,777	$3,297	
Net Profit.............................			$2,563	12.3%
Distribution of Net Profit:				
Reserve for Contingencies..............		$500		
Reserve for Extensions.................		1,000	$1,500	
Surplus................................			$1,063	—%

The possibilities of variation from the above form are very great. It merely illustrates a type of statement that is widely used. Such statements differ much in both terminology and construction. It is improbable that complete standardization of the form of the income account will be adopted, even we e it desirable. The peculiarities of different kinds of enterprises require variations in the forms of such statements. However, it is undeniable that standardization in a given line of business is desirable; for only through standardization is it possible to arrive at comparisons between concerns upon an exact and intelligible basis.

Net Sales an Important Statistical Base.—In the above statement no "returned sales and allowances" are indicated. When there is such an item it must be deducted from sales to arrive at net sales. The figure for net sales is very important because it is the best basis from which to figure the percentage of the various items of cost, expense, etc. If net sales is taken as 100 per cent, then all following items in the income statement can be figured as a percentage on net sales. This suggests great possibilities in the way of comparison and interpretation. In the above statement the gross profit on sales is $5,860, or 24.3 per cent of net sales. The net profit is 12.315 per cent of net sales. Similarly any or all other items may be expressed as a percentage of net sales. For comparisons, either between different accounting periods in the history of the same concern, or between contemporaneous periods in the history of different concerns, the expression of all significant items in the income statement as percentages on net sales at once reduces all to one basis. Relationship thus expressed is much more intelligible than when the items compared are expressed absolutely in dollars and cents.

Significance of Income Statement—Deductions from Assets.—The full significance and bearing of the income statement can be comprehended only by studying its significant component parts in their relation to one another and in their bearing upon the assets and liabilities as presented in the balance sheet. Thus there are certain items of expense found in the income statement which represent deductions from asset values, sloughings-off, so to say, in the form depreciation and bad debts. The amount of the taxes depends upon the valuation of the assets. Fuel expense represents the consumption of an asset. The income statement measures changes in assets and liabilities during the period covered.

The Inventories.—Again, the income statement renders it possible, at least to a degree, to determine the normality or abnormality of assets and liabilities when considered in their relative positions. Thus the relative size, and the increases and decreases in the inventories are shown with special clearness when they are expressed as percentages of net sales. A considerable increase in the inventories may be legitimate; on the other hand it may indicate overbuying, and possibly stagnation. Any unnecessary increase in the inventories requires the useless tying up of working capital. It also means added interest cost. Similarly, the various manufacturing costs, labor, fuel, and so on, may be expressed both in dollars and as percentages, and their tendencies shown. Changes in selling expenses may be noted and studied.

The Fixed Charges.—Among most important classes of items shown in the income statement are the fixed charges. These do not fluctuate (or if so, but little) with fluctuations in the amount of business transacted. Among them are included taxes, rents, interest, and so on. They represent the low water mark beneath which the income of the business should not be permitted to fall. When income is insufficient to cover all ordinary expenses, operating and fixed, it may be possible to curtail on the operating expenses, such as labor, fuel, and advertising, and possibly, too, on some of the administrative expenses, such as salaries, but up to a certain point only, while it is unlikely that the fixed charges can be reduced at all. They must be met. Hence the necessity of keeping them within reasonable limits.

Margin of Profits.—The margin of profits remaining after all fixed charges have been accounted for is one of the most important indices of the financial condition of an enterprise. If this margin is a narrow one the enterprise stands in jeopardy of having all of its income consumed by its expenses, and of being unable to meet its fixed charges, or else of being able to meet them only by curtailing some of its usual expenses of operation and administration. The possibility of a concern's failing to meet its fixed charges is dependent not only upon the amount of those charges but also upon the fluctuations of its gross income from sales or services. If gross income continues quite uniform from year to year the concern's ability to assume and meet fixed charges can be accurately gauged. But if its gross income fluctuates greatly from year to year, its ability to carry a burden of fixed charges is correspondingly reduced. The poorer years become the measure of what an enterprise can hope to do in the way of carrying fixed charges.

Steadiness of Income.—Steadiness and uniformity of income vary somewhat between enterprises engaged in the same line of business—due to location, management, and so on. In different lines of business there exists great disparity in this respect. In some cases income remains steady month after month and year after year. In other cases it is seasonal, but nevertheless one year returns a total income about equal to that of other years. In still other lines of business there exist great variations in income from year to year, depending in large measure, perhaps, on events the future occurrence of which remains in uncertainty.

An example of steady uniform income is furnished by many public utility companies. A street car company is quite certain of enjoying a steady and uninterrupted demand for transportation. The same is true of gas, water, and electric companies. As a consequence, such companies can safely operate on a narrower margin of profits than can concerns engaged in more hazardous undertakings. The opposite extreme is illustrated by the so-called industrials and mining companies. Here market fluctuations, both in prices of raw materials and finished products, are great. General business conditions are very influential factors. Various factors conspire to make the incomes of even the greatest of such enterprises changeable and uncertain. Steamship companies also fall into this class. Rates for ocean transportation fluctuate greatly from season to season and from year to year. Rate agreements are difficult to secure and still more difficult to maintain. A poor harvest on one continent lies entirely beyond the control of a trans-Atlantic ship company, yet it may very materially affect its earnings.

Need of Reserving Profits.—Such being the conditions, each kind of business must recognize that there are certain maxima and minima which experience has shown are likely to occur in the income of an enterprise engaged in that business. These must be considered in determining what amount may safely be depended upon for meeting fixed charges, year after year. Moreover, to add a further protection, a concern ought to reserve a certain amount of its profits as surplus, and this surplus should be large in proportion to the uncertainty of the income. If this policy is consistently pursued, an enterprise engaged in an undertaking the income of which is subject to considerable changes may place itself in a position of comparative safety, compensating for occasional reductions in income by encroachments upon the surplus account. Such a policy cannot be pursued, of course, unless in prosperous years there is earned enough, over and above ordinary requirements, to establish the surplus. When it can be done, immunity from those disturbances that so adversely affect poor concerns of a like character is secured, and correspondingly larger fixed charges can be assumed.

Relation of Question to Borrowing.—This theoretical discussion receives practical application in the establishment of a bonded indebtedness. What proportion of its capital a corporation ought to secure by the sale of capital stock and what by the sale of bonds depend upon various considerations, some of which are likely to be peculiar to the individual company. However, some general principles apply. Certainly a concern ought not to attempt to secure all of its capital by means of bond issues, for in such a case all invested capital would require the imposition of a fixed charge in the form of interest. This would permit no leeway whatever, no room for the expansion and contraction that accompany all kinds of undertakings. Some corporations have no bonded indebtedness, and so corporations may be graded into classes which run all the way from those without any permanent indebtedness to those in which the funded indebtedness exceeds the outstanding capital stock.

No ideal proportion for stocks and bonds exists. Even though one might be established theoretically it is not likely that it could be adhered to in practice. The proportion of stocks to bonds is not determined by any single consideration, but by a variety of factors, sometimes conflicting in character. It might not be desirable to increase the bonded indebtedness because fixed charges are already as large as the fluctuating income will safely carry. Yet they may be the only recourse. It may be impossible to market stocks satisfactorily. Statutory requirements must be observed.

The student should distinguish between the monthly income statement, which is made up as quickly as possible after the close of each month, and the yearly income statement, which is intended for publication or at any rate for a permanent source of statistical data. The monthly income statement is necessarily inexact in certain respects owing to the fact that there are expenses, losses and gains which cannot be determined definitely until a considerable time after they occur. Certain readjustments may be necessary. Overlappings occur from month to month which it is difficult to allocate with exactness on a monthly basis. Among items of this sort may be mentioned the expenses incurred by traveling representatives, doubtful accounts receivable, and so on.

For this reason the yearly income statement serves better as a permanent record of achievement than does a statement covering a shorter period. Varying seasonal influences which create wide differences in monthly statements are eliminated in annual statements, so that the only disturbing external factors are those of an irregular character to which all enterprises are more or less subject, such as depressions, interest rates, changes in labor costs, and the like.

CHAPTER XXXI

THE INCOME STATEMENT ILLUSTRATED

Illustrative Statements.—As has been suggested, the form and contents of the income statement depend upon the character of the enterprise. Illustrative of this fact we shall reproduce two typical income accounts taken from the annual reports of the Delaware, Lackawanna & Western Railroad Company and the United States Steel Corporation, respectively. Below is the income statement of the Delaware, Lackawanna & Western Railroad Company for the year ending December 31, 1916.

Comment on Above Illustration.—This is the form of income account prescribed by the Interstate Commerce Commission. It became effective July 1, 1914. Defects in the earlier forms had become apparent through the investigations of certain railroad companies. By way of suggesting methods of interpretation Hooper, in his book on *Railroad Accounting*, says: "Even a superficial study of the comparative income account would include a comparison of the increase or decrease in railway operating revenues with a normal increase or decrease and with the increase or decrease shown by other railroad companies in the same territory, the trend of the ratio of operating expenses to operating revenues, the trend of taxes and its ratio to operating revenues, the trend or changes in hire of freight cars and rent of of other equipment, the trend of profit or loss from separately operated properties, the changes in interest on funded debt and on unfunded debt, dividend appropriations and appropriations for investment from income, and of course, the balance transferable to profit and loss."[1]

If the income statement affords insufficient information on any point aid may be secured by using the balance sheet and the various supplementary statements which ordinarily accompany the income statement. Hooper says further: "Any considerable change in the balance for hire of freight cars or other equipment should be compared with the amount of business done and with the charges made to expenses for retirements of equipment and also with capital charges for new equipment as shown on the balance sheet." It is noteworthy that whereas, in 1915, the

[1] Hooper, Wm. E., *Railroad Accounting*, p. 223.

Annual Report of The Delaware, Lackawanna & Western Railroad Company for the Year Ending December 31, 1916:

	1916	1915	Per cent
Revenues:			
From Transportation of Coal	$14,475,244.09	$13,364,006.89	Inc. 8.32
From Transportation of Merchandise Freight	23,229,864.82	18,742,617.06	Inc. 23.94
From Transportation of Passengers	8,674,863.13	8,218,316.43	Inc. 5.56
From Transportation of Mail	235,728.89	211,766.24	Inc. 11.32
From Transportation of Express	1,068,662.21	873,317.56	Inc. 22.37
From Transportation of Milk	1,086,733.73	1,084,979.60	Inc. .16
Other Revenue from Transportation	1,808,878.97	1,567,783.33	Inc. 15.38
Incidental Revenue	1,000,923.23	723,943.77	Inc. 38.26
Total Revenues	$51,580,899.07	$44,786,730.88	Inc. 15.17
Expenses:			
For Maintenance of Way and Structures	$ 4,819,787.28	$ 4,662,311.01	Inc. 3.38
For Maintenance of Equipment	$ 7,616,683.81	$ 6,869,899.60	Inc. 10.87
For Traffic Expenses	915,300.54	920,556.07	Dec. .57
For Transportation Expenses	17,167,742.83	14,222,296.73	Inc. 20.71
For Miscellaneous Operations	406,418.51	350,504.82	Inc. 15.95
For General Expenses	1,054,746.23	951,999.79	Inc. 11.97
For Transportation for Investment–Cr.	39,705.18*	210,621.30*	Dec. 81.15
Total Expenses 61.92%	$31,940,974.02	$27,756,946.72	Inc. 15.07
Net Revenue from Operation 38.08%	$19,639,925.05	$17,029,784.16	Inc. 15.33
Less Railway Tax Accruals	$ 2,517,882.68	$ 2,115,333.84	Inc. 19.03
Less Uncollectible Railway Revenues	7,449.64	1,505.40	Inc. 394.86
Operating Income	$17,114,592.73	$14,912,944.92	Inc. 14.76
Add for Additional Income:			
Joint Facility Rent Income	$ 81,059.91	$ 74,203.99	
Miscellaneous Rent Income	235,664.85	242,326.17	
Dividend Income	476,936.50	405,501.06	
Income from Funded Securities	237,547.58	271,725.34	
Income from Unfunded Securities and Accounts	516,071.71	367,244.69	
Coal Department Earnings	2,899,309.37	1,536,916.36	
Depletion of Coal Deposits	2,033,713.19	1,906,123.16	
Sundry Additions and Deductions	1,052,261.97	199,532.80	
	$ 7,532,565.08	5,003,573.57	
Total Income	$24,647,157.61	$19,916,518.49	
Deductions From Income:			
Hire of Equipment-Debit Balance	$ 755,733.83	$ 22,439.94*	
Rent for Leased Roads	5,983,152.26	6,063,815.49	
Renewals and Betterments	1,701,967.66	1,616,056.13	
Interest on Funded Debt	6,156.00	6,247.00	
Discount on Bonds Sold	....	1,289,700.00	
Total Charges	$ 8,447,009.75	$8,953,378.68	
	$16,200,148.06	$10,963,139.81	
Less:			
Ten Per Cent. (10%) Dividends on Stock	$ 4,222,040.00	$ 4,222,040.00	
Ten Per Cent. (10%) Extra Dividend Payable December 20, 1916	$ 4,222,040.00	$ 4,222,040.00	
	$ 8,444,080.00	$ 8,444,080.00	
Balance, Surplus	$ 7,756,068.06	$ 2,519,059.81	

* Credit items.

Delaware, Lackawanna & Western had a credit balance of $22,-439.94 in its "Hire of Equipment" account, in 1916 this changed to a debit balance of $755,733.83. This increased use of rented equipment is fully explained by the extraordinary increase of traffic in 1916. The coal traffic of this company increased 16 per cent. in tonnage while its merchandise traffic increased 26.15 per cent., as fully set forth in the company's annual report.

Under the head of "deductions from income" we note that in 1915 there was charged $1,289,700.00 for "discount on bonds sold." In the company's report for 1915 it is explained that this sum was charged against income to cover the discount on the 3½ per cent bond issue of a subsidiary, the Morris & Essex Railroad Company, the proceeds from which were employed to pay off certain outstanding bonds of that subsidiary. The reason the company chose to charge off the entire amount of the discount on its bonds in a single year is explained below.

The classification of revenue and of operating expenses required by the Interstate Commerce Commission should be noted. The account, "Transportation for Investment—Cr.," requires explanation. A railroad company is constantly engaged in transporting workmen and materials from point to point along its lines for the purpose of making improvements or engaging in new construction work. The cost of such transportation is not an expense, but an investment. Since, however, it cannot be separated from the ordinary operating expenses when incurred, it is deducted from them in the profit and loss statement and of course is charged in the company's ledger to the appropriate property investment accounts.

The Operating Ratios.—Note that the ratio of operating expenses to revenues from operation is 61.92 per cent. This ratio is of considerable importance as an aid in the interpretation of the income accounts of railroad companies as well as of other enterprises. It is familiarly known as the *operating ratio.* It must be employed with reservation and judgment, however. It is easy to see that as between enterprises of essentially different natures it does not afford a fair basis of comparison; while between enterprises of a like character it would be very rare indeed to have no differences which might in some degree invalidate the worth of the comparison. Unquestionably, railroads afford one of the best illustrations of an adequate basis for a legitimate comparison of operating ratios, because railroad accounts are fully standardized. Not only does the operating ratio afford a basis of comparison between two or more companies over a given period, but it also affords a valuable check upon changes which occur at various periods in the history of a given concern. As in railroad accounting all items in the income statement are expressed as percentages of revenue, so in the income statement of a trading of a manufacturing concern all items are expressed as percentages of net sales.

Other Income, etc.—Frequently an income is derived from sources other than chief operations of the enterprise. Such income is known as "other income." Thus any revenue that a railroad company derives from activities other than transportation is other income. In case of the Delaware, Lackawanna & Western other, or "additional," income amounted to $7,532,565.08 in 1916 and to somewhat over $5,000,000.00 in 1915. When such additional income is added to income from operations the sum is "total income." From total income are deducted various rentals and fixed charges—the desideratum of the expenses after operating expenses are deducted. The propriety of charging "Betterments" as an expense might be questioned. Theoretically betterments should be charged to capital and ought not to appear in the income account. "Renewals," on the other hand, is a proper charge to income. Indeed, the charging of betterments to income is a variation from the requirements of the Interstate Commerce Commission; it makes no provision for charging betterments to income, unless we may assume that such a charge might be made under the general head of "miscellaneous income charges."

As noted, the Delaware, Lackawanna & Western charged off, in a single year, the entire discount on its issue of 3½ per cent bonds. The usual procedure in such cases is to prorate the discount over the life of the bonds, charging off the proper amount each year. Under the rules of the Interstate Commerce Commission, however, a railroad company has the option of charging off, at any time, any remaining portion of such discount, providing there is sufficient surplus to permit it. The latter policy appears to have been adopted by the Delaware, Lackawanna & Western.

A noticeable feature of the income statement of this company is the small interest charge on the funded debt. In 1916 the funded debt of the company was $320,000; its capital stock was $42,277,000. The funded debt amounted to less than 1 per cent of the outstanding stock—a situation not often found in railroad finance. After paying two dividends of 10 per cent. each in 1916, there remained out of current income $7,756,068.06, to carry to surplus, increasing the total surplus to $46,987,405.33, or more than the combined par value of outstanding stocks and bonds.

	1915	1914	+ Increase − Decrease
Earnings—Before charging interest on Bonds and Mortgages of Subsidiary Companies..............			
First Quarter................	$15,082,369.36	$20,450,988.60	−$ 5,368,619.24
Second Quarter...............	30,536,467.71	22,956,414.32	+ 7,580,053.39
Third Quarter................	41,050,432.47	24,792,603.80	+ 16,257,828.67
Fourth Quarter...............	53,580,796.79	13,546,511.14	+ 40,034,285.65
Total for year..............	$140,250,066.33	$81,746,517.86	+$58,503,548.47
Less, Interest on outstanding Bonds and Mortgages of the Subsidiary Companies.....................	9,854,054.69	10,082,902.69	− 228,848.00
Balance of Earnings...........	$130,396,011.64	$71,663,615.17	+$58,732,396.47
Less, Charges and Allowances for Depreciation applied as follows, viz.:			
To Depreciation and Extraordinary Replacement Funds..........	24,408,576.60	17,044,183.32	+ 7,364,393.28
To Sinking Funds on Bonds of Subsidiary Companies.............	1,553,587.99	1,903,041.68	− 349,453.69
To Sinking Funds on U. S. Steel Corporation Bonds................	6,465,884.26	6,195,982.41	+ 269,901.85
Net Income in the year........	$ 97,967,962.79	$46,520,407.76	+$51,447,555.03
Deduct:			
Interest on U. S. Steel Corporation Bonds outstanding............	21,928,633.74	22,239,086.53	− 310,452.79
Premium paid on Bonds redeemed by Sinking Funds, viz.:			
On Subsidiary Companies' Bonds	107,210.28	87,331.46	+ 19,878.82
On U. S. Steel Corporation....... Bonds...........................	864,100.00	822,200.00	+ 41,900.00
Balance........................	$ 75,068,018.77	$23,371,789.77	+$51,696,229.00
Add: Net Balance of sundry charges and credits, including adjustments of various accounts................	765,813.94	124,978.40	+ 640,835.54
Balance......................	$75,833,832.71	$23,496,768.17	+$52,337,064.54
Dividends on U. S. Steel Corporation Stocks, viz.:			
Preferred, 7%................	25,219,677.00	25,219,677.00	
Common, 1915–1¼%, 1914–3%...........................	6,353,781.25	15,249,075.00	− 8,895,293.75
Surplus Net Income for the year	$44,260,374.46	$16,971,983.83*	+$61,232,358.29

* Deficit.

United States Steel Corporation.—Above is the comparative income statement of the United States Steel Corporation for the years ending Dec. 31, 1914 and 1915, respectively.

Comment on Above Illustration.—The United States Steel Corporation is more liberal than most of the larger industrial companies in the matter of publicity. Nevertheless we find this income statement less satisfactory than the preceding one. Gross and net sales and operating expenses are not shown. Practically, the manufacturing and trading sections are omitted, and only the deductions of the fixed charges are shown. Presumably the officials consider it inadvisable to present a fuller statement. The statement shows the remarkable fluctuations to which such enterprises are subjected by general financial and business conditions. In spite of the smaller deductions for depreciation made in 1914, there were not sufficient profits to meet the usual dividend requirements; and as a result the accumulated surplus was diminished by nearly $17,000,000. In 1915, on the other hand, the profits were three times as great as in 1914, making possible a substantial addition to surplus of over $44,000,000, although the common stock dividend was cut to 1¼ per cent.

These illustrations indicate the possible differences and variations in income statement construction. When enterprises are unlike, differences are necessary. When they are alike, uniformity is desirable.

CHAPTER XXXII

CONSTRUCTION AND INTERPRETATION OF THE BALANCE SHEET

The balance sheet and the income statement are complementary business documents. They are the two most condensed and comprehensive sources of information that have been contrived for the presentation of facts concerning the progress and condition of an enterprise. The construction and interpretation of the income statement were discussed in the preceding chapters. In this chapter the balance sheet will be considered.

Arrangement of the Balance Sheet.—A balance sheet should afford a systematic classification of assets and liabilities. It indicates their condition at a given instant, and shows the changes that have taken place during the preceding accounting period, when a comparison is made with the preceding balance sheet. Since the purpose of the balance sheet is to show as nearly as possible the financial condition of an enterprise, its general form and arrangement should be determined upon this consideration. In this country we think of the balance sheet as a statement listing assets on the left side and liabilities, capital, and surplus on the right side, although we frequently meet with variations from this form. Perhaps the most notable is that in which the arrangement corresponds in a general way with the income statement. Here the assets are placed above and the liabilities and proprietary accounts below. In England the general arrangement is reversed, the liabilities and proprietary accounts being placed to the left and the assets to the right. These three forms of the balance sheet are illustrated below:

Balance Sheet of the A. B. Co.:

Assets		*Liabilities*	
Plant	$10,000	Capital Stock	$14,000
Machinery	4,000	Accounts Payable	3,000
Merchandise	3,000	Surplus	1,000
Cash	1,000		
	$18,000		$18,000

Balance Sheet of the A. B. Co.:

Assets	
Plant	$10,000
Machinery	4,000
Merchandise	3,000
Cash	1,000
	$18,000

Liabilities	
Capital Stock	$14,000
Accounts Payable	3,000
Surplus	1,000
	$18,000

Balance Sheet of the A. B. Co.:

Liabilities		*Assets*	
Capital Stock	$14,000	Plant	$10.000
Accounts Payable	3,000	Machinery	4,000
Surplus	1,000	Merchandise	3,000
		Cash	1,000
	$18,000		$18,000

Classification of Assets.—The subdivision and classification of the assets, liabilities and proprietary accounts are important problems. Upon them the value of the balance sheet is largely dependent. The consideration of a going concern will disclose certain general classes of assets essential to its existence, and perhaps some of a less essential character. First in amount and importance usually come the fixed assets, consisting of land, buildings, and permanent investments, if any. In general, the fixed assets are those of a permanent character with an expectation of a lifetime frequently of many years—possibly perpetual, as in case of land. In a sense, we cannot say that fixed assets are absolutely more important than those of a less permanent character, yet they usually constitute a large proportion of the entire investment, and necessitate a continuous and heavy upkeep expenditure.

A. Lowes Dickinson[1] suggests a threefold subdivision of the more important forms of invested capital into (1) fixed assets, (2) permanent investments, and (3) investment of reserves. If such a detailed subdivision in the balance sheet is thought necessary the above classification is a good one. Fixed assets include the

[1] *Accounting Practice and Procedure*, p. 38.

various permanent tangible properties as well as goodwill, franchises, and patent rights. By permanent investments is meant those which are held for the income produced by them or for purposes of control of subsidiary companies. They should be distinguished carefully from temporary investments made for the purpose of turning idle funds to some profit. Investment of reserves would include all funds set aside for specified purposes, such as bond sinking funds, funds intended for future extensions, and so on.

Working and Current Assets.—Next, a suitable classification must be made of the assets of a less permanent character, such as cash, merchandise, accounts and notes and acceptances receivable, and so on. Accountants sometimes make a twofold classification of this division, namely, working and current, although the division line between these is not always distinct. As a consequence the word "current" has been employed by some to include working assets. Generally, however, a distinction ought to be made between working and current assets. Unlike cash or accounts receivable they are not free to be spent or liquidated, but they are to be used in the process of doing business. They include raw materials and supplies, and if we follow the authority of Dickinson, various expenses paid in advance of the time to which they are incident, such as insurance, taxes and royalties.

Current assets, on the other hand, are cash and those assets convertible into cash in the near future without any significant alteration in their form or character. By a significant alteration in form or character is meant one which requires time and expense to perform. Thus the conversion of raw material into finished product is a significant alteration. But the acceptance of a note for an open account is not a significant alteration. Working assets are permanent only as a class and thus are to be distinguished from fixed assets which are permanent as individual units.

Current assets likewise are permanent only as a class, but they are to be distinguished from working assets by the fact that they are either in form of cash or else convertible into cash without first undergoing a significant alteration. The chief purpose of the working assets is to further the process of production. The chief purpose of current assets is to provide a fund for the payment of liabilities as they fall due. If the working assets may be said to represent a stage in the business cycle then the current assets represent the next stage in the cycle.

The distinction between working and current assets is not always an absolute one; nevertheless it is justified if it makes possible a better comprehension of the relative position and significance of the elements constituting these two groups. For instance, in interpreting the balance sheet we customarily make a comparison of the assets and the liabilities in order to determine not merely the absolute solvency of the concern, but also its relative ability to meet its accruing liabilities. In doing this we set the cash and assets that are easily liquidated over against the current liabilities, making due allowance for the time required to liquidate the assets and for the time the various liabilities run. Evidently, for such purposes it is desirable to make a distinction between those assets that are held with the object of employing them in the processes of production and those that are in a form which permits of their immediate or prospective use for payment of debts.

Briefly, the functions of working and current assets are different, and in any case the division of the assets into one class or the other ought not to be made arbitrarily but on the basis of the function they happen to perform.

Deferred Charges.—With assets classified as fixed, working and current, it is still impossible to include under any of these three heads certain more or less common items. These are variously termed deferred charges, deferred assets, deferred charges to income, and suspense debits. However, these terms are not always employed synonymously, for they admit of two possible interpretations. As reserves are divided into valuation reserves and reserves of profit, so deferred charges represent either actual value or merely expense which is to be distributed over future accounting periods on some equitable basis.

What is the function of this class of items? Klein[1] says deferred assets "consist of expense items not yet consumed or used up." Hatfield[2] says of deferred charges that they "indicate that payment has been made of expenses properly belonging to a period subsequent to the date of the Balance Sheet." Dickinson[3] says that "suspense debits represent no value and must sooner or later be written off entirely as losses or expenses." A discrepancy exists between the contentions of Hatfield and Klein on the one

[1] *Elements of Accounting*, p. 165.
[2] *Modern Accounting*, p. 113.
[3] *Accounting Practice and Procedure*, p. 41.

hand and of Dickinson on the other. From the first two quotations cited we infer that this particular class of balance sheet accounts represents value because they represent expenses "properly belonging to a period subsequent to the date of the Balance Sheet" and because they are "not yet consumed or used up." In the last quotation cited we are told that they "represent no value." The only possibility of reconciling these statements is to assume that Dickinson's phrase, "suspense debits," is employed in a different sense than that attached to "deferred charges" by Klein and Hatfield.

Dickinson (p. 34) includes among working assets "insurance, interest, taxes, royalties, etc." paid in advance, thus greatly narrowing the range of his charges to "suspense debits;" so that about the only items that remain within the field covered by his "suspense debits" are, discount on bond issues, organization expenses, and certain other extraordinary expenses. Thus limited, this account probably corresponds to Dickinson's definition. In the more inclusive sense deferred charges represent real asset value—any kind of legitimate expense incurred in advance of the time when it actually accrues as an expense.

Why should expenses paid in advance be considered working assets? Insurance, interest and taxes are expenses of a general character and at most only a certain proportion of them enter into the cost of the product. Moreover, they are distributed as indirect cost or burden, not as direct elements of cost. There is no assurance as to what proportion of them will ever be absorbed as indirect and what part may ultimately find its way to profit and loss as a part of undistributed burden or as an administration expense. The better way is to show such items as deferred assets and then make their distribution to cost of product, or otherwise, as they accrue. Sometimes payments are made in advance to cover a very considerable period and the impropriety of including such charges in working assets is apparent.

CAPITAL AND SURPLUS

Capital and surplus together represent the proprietorship or interest of the stockholders. The word capital here refers to the par value of outstanding capital stock, although it is sometimes used more comprehensively as including both capital stock and surplus. The stockholders' interests as measured by the market value of their stocks may not correspond to their interests measured in terms of the book accounts for capital stock and surplus. Capital stock and surplus are considered separately for technical and legal reasons although they represent one thing—the equity of the stockholders.

Liability on Capital Stock.—By law, the purchaser of capital stock at par is relieved of any further obligation upon it. In fact, even when stock is full paid, certain possibilities accompany it which, though they may not take the form of compulsory requirements, do lead to further payments. For example, if a corporation is unable to meet the interest on its bonded indebtedness the stockholders may be given the choice of paying an assessment of so much per share or of losing control of the company.

The Trust Fund Theory.—The law regards money or other valuable consideration received for capital stock issued as a fund held in trust for the protection of the corporation's creditors. This fund must be zealously guarded and its disposition limited to legitimate uses. It is for this reason that the payment of dividends out of capital is prohibited and the directors held personally responsible for them.[1] It has been held in Connecticut that as the stock of a company is the only basis of credit, its capital stock is to be regarded as a trust fund to which the claims of creditors precede those of stockholders.[1] There are, however, some exceptions to the rule which has prohibited the payment of dividends out of capital. Moreover, additions to surplus are sometimes made from such sources that it becomes a question whether or not they represent profit distributable as dividends. Let us consider some of these cases.

Capital Invested in Wasting Assets.—In the first place a distinction must be made between companies whose capital is in-

[1] Crandall et al., Receivers, vs. Lincoln, 52 Conn. 73. Also, Bush, Trustee, vs. Ross, 68 Conn. 29.

Section 5 of the corporation of Connecticut, provides:

"No corporation shall pay any dividend or make any other distribution of its assets except from its net profits or actual surplus, unless in accordance with the law allowing the reduction of stock, or upon the dissolution of the corporation. . . If such payment or distribution renders a corporation insolvent, the directors so voting shall be jointly and severally liable, to the amount so paid or distributed, to any creditors existing at the date of such vote who shall obtain judgment against such corporation on which execution shall be returned unsatisfied."

vested in wasting assets and those whose capital is invested in permanent assets. In a sense, of course, all assets are wasting, but as here used the term refers only to a special class—those which must be consumed in the process of exploitation, such as iron ore beds, gold deposits, and so on. "Permanent," on the other hand, signifies assets which, even though they depreciate, can be repaired and replaced and thus be retained at something like their original value. A coal deposit cannot be replaced. It follows that the life of a concern engaged in the exploitation of a wasting asset is strictly limited by the quantity of that asset, while one whose work consists in manufacturing, transportation or trading is not so limited, but may continue indefinitely in operation by making due allowance for repairs and replacement of plant.

The question, then, is, must the same principle respecting the integrity of capital invested hold for both classes of companies, say, for a mining company as well for a manufacturing company? There is little doubt that, from a theoretical point of view, no distinction ought to be made. But certain practical considerations intervene. In the first place, a company engaged in the exploitation of a wasting asset must pursue a somewhat different policy in the construction and maintenance of its plant than one which has the prospect of continuous existence. It may not be advisable to build as well or to continue making repairs and replacements beyond a point in time which will be determined by the prospective life of the wasting assets. As the time of exhaustion of a mineral deposit approaches it would be inadvisable to continue making any more repairs to the buildings and machinery than would be required to keep up operating efficiency to a normal point. To continue making repairs and replacements as if upon the assumption that the plant is to continue operating indefinitely would mean that when the point of exhaustion is reached a highly repaired and efficient plant would remain without any work to perform and therefore become a heavy loss; whereas if only such repairs are made as are absolutely essential the loss represented by the defunct establishment is much less.

Exhaustion of Wasting Assets.—Even though the plant and machinery about a mine are kept in a high state of repair and their normal depreciation[1] is fully covered by reserves, the miner-

[1] See Saliers: *Principles of Depreciation*, p. 25, for a discussion of normal or average depreciation.

als will be exhausted finally and the investment in the form of the purchase money paid for them as they lay *in situ* will have vanished—unless some provision for this depletion is made in the form of a sinking fund which accumulates approximately at the rate that the value of the mineral *in situ* decreases from exploitation. This is the only possible arrangement by which the capital can be kept in tact as a fund for the protection of creditors.

The Sinking Fund.—The deed of trust securing the bonds of such companies usually makes provision to the effect that for each unit of product exploited a given amount shall be set aside in the hands of a trustee as a sinking fund to replace wasting assets. The amount of such deposit, however, is usually conditioned, not upon the total investment, but upon the portion of the investment represented by bonded indebtedness. It appears that so far as bondholders are concerned this plan offers them the desired protection. It does not appear, however, that it would be necessary to preserve in tact the whole original investment. That part represented by fully paid up stock might be permitted to deteriorate in value through a process of dividend payment by which not only the current profits but also a part of capital would be returned to the stockholders.[1]

Unproductivity of Investments.—Nevertheless, capital must not be distributed in disregard of the rights of creditors. But when provision has been made for their protection the policy to be followed respecting a further retention of capital would appear to be a matter of expediency so long as its effect is not obscured by incorrect accounting. The objection to the retention of assets equivalent to the original investment, in the case of a concern whose original possessions consisted in part of wasting assets, is that these assets must take the form, to a considerable extent, of investments which are liable to prove to be rather unproductive. As cash accumulates in the fund established to compensate the loss resulting from exhaustion of wasting assets it must be invested after the usual method of handling sinking funds. But sinking funds are notoriously unproductive, and to gradually transfer the capital invested in the more profitable field of active endeavor to the less profitable one of an invested

[1] See Hatfield: *Modern Accounting*, Chap. XI, for a consideration of court decisions on dividends paid from capital.

fund does not appear to be a justifiable plan, except in so far as it is necessary for the protection of creditors.

Protection Required for Creditors.—Hence to say that the whole original investment must be kept in tact as a trust fund for the protection of creditors is imposing a restriction upon the stockholders which may not be desirable. Creditors must be protected to the extent of their loan but not to the extent of twice or thrice its amount.[1] In Connecticut, by a two-thirds vote of the stockholders, the capital stock may be reduced as much as desirable so long as the company is not thereby rendered insolvent. If it is thus rendered insolvent, the stockholders voting in favor of such reduction are held liable, jointly and severally, for all debts that may remain unsatisfied. From this we infer that the capital stock may be regarded as a trust fund for protection of creditors only to the extent of such indebtedness. Beyond this it rests with the stockholders themselves to say what they will do with their capital.

Permanent Corporations.—Outside the ranks of corporations engaged in the exploitation of wasting assets the question of the preservation of the invested capital is essentially different. A mining company is most prosperous when its assets are being most rapidly consumed. With a manufacturing company conditions are different. Its supply of raw material is continually replenished from without and ordinarily there is no question about the preservation of this supply. The raw materials are not usually bought up in large quantities in advance but as they are required. So there is no large initial investment in raw materials. A mining company buys its raw material in advance. It is as if a manufacturer of shoes were to buy up enough leather to last for thirty years with the expectation of discontinuing business when this supply gives out.

Instead, the shoe manufacturer purchases his raw materials as he needs them, and as the supply of them is continuous he has no intention of going out of business at all. His depreciation problem is a different one. His plant is permanent and provision must be made for its permanent upkeep. He makes repairs and replacements with the assurance that the money spent upon them will not be lost through the discontinuance of operations at some future time, but that it will be fully returned through the endless process of manufacture.

[1] Not limited to corporations engaged in exploiting wasting assets.

If wasting assets are being exploited the procedure will therefore consist in (*a*) preservation of capital to the extent that may be necessary for the protection of creditors, this capital preferably taking the form of special funds created on a basis of output, as so much per ton mined, etc.; (*b*) distribution of capital to stockholders when it can be more profitably employed by them than by the company, due allowance being made for (*a*) above and for the running requirements of the plant.

CHAPTER XXXIII

CONSTRUCTION AND INTERPRETATION OF THE BALANCE SHEET—*(Continued)*

Balance Sheet Illustrations.—Any such diminution of the original investment as that suggested at the close of the preceding chapter ought to be honestly and accurately reflected in the balance sheet. Not only must present creditors be protected but prospective creditors as well must not be misinformed about the worth of the company's assets. To illustrate, assume that the following balance sheet indicates accurately the condition of the Superior Mining Company on the day it begins business:

Balance Sheet, Superior Mining Company:

Wasting Assets..........	$100,000	Capital Stock...........	$100,000
Plant..................	20,000	Bonds (20 years)........	35,000
Machinery..............	10,000		
Cash...................	5,000		
	$135,000		$135,000

Assume, further, that at the end of ten years it is estimated that the wasting assets are one-half exhausted, and that a fund has been set aside to cover this exhaustion, that reserves have been set up to cover depreciation of plant and machinery, and that other accounts undergo no change. The balance sheet then appears thus:

Balance Sheet, Superior Mining Company:

Wasting Assets.........	$100,000		Capital Stock.....	$100,000
Less Reserve for Depletion	50,000	50,000	Bonds (20 years).	35,000
Plant..................	$20,000			
Less Reserve for Depreciation..................	8,000	12,000		
Machinery..............	$10,000			
Less Reserve for Depreciation.................	5,000	5,000		

Funds				
For wasting Assets.......	$50,000			
For Plant................	8,000			
For Machinery..........	5,000	63,000		
Cash....................		5,000		
		$135,000		$135,000

This balance sheet has been drawn up according to the assumption that the entire original investment must be preserved. No capital has been distributed as dividends. Suitable reservations have been made for depletion of wasting assets and for depreciation of plant and machinery.[1] The amounts thus reserved have been set aside as special funds, as shown. An examination of this balance sheet discloses the fact that the assets are worth $135,000, or nearly four times the amount of the outstanding bonds. Must the total value of these assets be regarded as a trust fund for the protection of the bondholders? Would not this be placing too severe a construction upon the trust fund theory? Why should a larger trust fund be required for the protection of the bondholders than could reasonably be required for security on an ordinary loan? A bank would be willing to loan $35,000 upon collateral security consisting of about $40,000 first grade government bonds or about $45,000 in high grade railroad bonds.

If adequate security is afforded to all creditors, either in the form of sinking funds in the hands of trustees or of liens upon specific assets, this is all the protection that could reasonably be asked. Let us assume that the Superior Mining Company pursued a different plan than that outlined above, and that after making a due allowance per unit of mineral mined for the establishment of a bond sinking fund and due allowance for the depreciation of its plant and machinery, it paid out the balance of revenues as dividends. Assume also that the allowance made for the establishment of a sinking fund now (at the end of ten years) amounts to $20,000, which is adequate since but one-half of the minerals are estimated to have been removed. As a consequence of this policy the balance sheet at the end of ten years appears thus:

[1] The word "depletion" is very properly employed to distinguish the exhaustion of wasting assets from the depreciation of plant, etc.

Balance Sheet, Superior Mining Company:

Wasting Assets.........	$100,000		Capital Stock....	$100,000
Less Depletion........	50,000		Bonds (20 yrs.)..	35,000
		$50,000		
Plant..................	$20,000			
Less Reserve for Depreciation	8,000	12,000		
Machinery.............	$10,000			
Less Reserve for Depreciation...............	5,000			
		5,000		
Funds				
For Plant.............	$8,000			
For Machinery........	5,000			
For Bonds............	20,000	33,000		
Cash...................		5,000		
Deficit (due to payment of dividends from capital).		30,000		
		$135,000		$135,000

This balance sheet shows the results of the payment of dividends from capital. No provision has been made for the depletion of wasting assets. The only item which tends to compensate for the decrease in value of wasting assets, amounting to $50,000, is the bond sinking fund of $20,000, which has been reserved out of income. This gives adequate protection to the bondholders providing this money is placed in the care of an independent trustee. To require the corporation to retain the full original equity of its capital stock by reserving out of revenues an amount equal in value to the deposits that are exhausted would mean that the corporation would be gradually transformed from a mining to an investment institution, and as the last years of the company's existence as a mining corporation approached it would find a very large proportion of its capital tied up in investments which would be either unsafe in character or else very unproductive.

Profits Distributable as Dividends.—Aside from enterprises engaged in the exploitation of wasting assets, it is the rule to make full provision for all losses from depreciation. The continued efficiency of the concern requires this. But important questions arise concerning the nature of profits and increments of capital from various sources. It is generally acknowledged that *bona fide* profits resulting from ordinary operations are distributable as dividends. Owing to the complex nature of business this matter frequently becomes complicated, as the following considerations will indicate:

1. In determining whether there is a distributable surplus of profits must we consider each year as a unit by itself or must any losses incurred during previous years first be made up? A period of inactivity might leave a corporation with a deficit of $50,000. Then might follow a year during which a net profit of $40,000 is made. Must this profit be employed to reduce the previously accumulated deficit or may it be distributed as dividends?

2. Assets sometimes appreciate in value due to community growth, and so on. Should such increments of wealth be considered as profits; if so, are such profits distributable as dividends?

3. Shares of stock are sometimes sold at a premium. If a corporation disposes of stock at a premium, is that premium to be considered as profit distributable as dividends or is it a part of capital and not distributable?

Each Year not a Unit.—As to the first proposition, there is little to justify the theory that each year is a unit to be considered without reference to the ones preceding it. To carry such a plan to its logical conclusion would be equivalent to a denial of the integrity of the invested capital and make uncertain its amount and stability. If each year in which a deficit occurs is permitted to make inroads into capital, and if nothing is reserved during fat years to make up these deficits, then with every year in which there occurs a deficit there will result a reduction of the investment. An accumulation of such deficits would ultimately lead to insolvency.

Although some court decisions have thrown doubt upon the manner in which the situation suggested above should be handled, the general principle that should govern is clear, namely, that with the exception of companies engaged in exploiting wasting assets, capital must be kept in tact by making up the deficits of poor years from the gains of prosperous years. This rule must be employed with reason, however. Good accounting "averages up" good and bad years and tries to make possible some consistent kind of dividend payment. It might be better to remove an extraordinary deficit by writing it off over a series of years, rather than by a drastic recision of all dividend payments for a single year.[1]

Profit on Appreciated Property.—As to the second proposition, whether appreciation of property due to influences beyond the control of the company may be made the basis of a distribution of profits, it is generally conceded that until such appreciated value is actually realized by sale it should not be considered as a profit and so cannot be distributed as such. When the profit is actually realized by sale there appears to be no objection to its distribution as dividends, although conservative management might retain it as a permanent addition to surplus.

Premium on Capital Stock.—Proposition three. When shares of stock are sold at a premium the excess received above the par of the shares is credited to an account usually known as the premium on stock account. Concerning the possible procedure here authorities differ greatly. Some maintain that this premium, even though it may be viewed as a profit, is one which ought not to be distributed as dividends. Others assert that it is not a profit at all and that to consider it as such places a corporation in a culpable situation.[2] On the other hand authorities are not wanting who justify the distribution of such a premium on stock as a dividend. On July 14, 1914, the New York court of appeals, in the case of *Equitable Life Assurance Society* vs. *Union Pacific Railroad Company*[3] took this view. The Equitable Life Assurance Society sought to restrain the railroad company from paying an extraordinary dividend from surplus acquired in part by the sale of stock at a premium. Note the following quotation from this decision:

New York Case Cited.—"It is said, because in the retirement of its convertible bonds defendant sold and issued its capital stock at $175 per share of $100 par value, that this entire sum was paid in as capital and must be held and distributed as such. That is not my interpretation of the transaction under the allegations of the complaint. The amount at par value paid for each share of stock undoubtedly became capital, which the corporation was required to preserve and maintain

[1] For a discussion of some English and American court decisions touching on this matter, see Hatfield: *Modern Accounting*, pp. 205-213.

[2] For various interpretations of this view consult Hatfield: *Modern Accounting*, pp. 155, 234; Esquerré, *Applied Theory of Accounts:* p. 330; Bennett: *Corporation Accounting*, p. 88; and Montgomery: *Auditing Theory and Practice*, 2nd ed., 1916, p. 194.

[3] N. E. Rep. vol. 106, p. 92.

as against its liability on the outstanding share of stock which had been issued for it. Just as undoubtedly the extra $75 paid per share represented the amount of accumulated profits or surplus which it was supposed would be apportionable to each share of new stock after payment and issue as aforesaid. . . When paid in this premium became part of such accumulation of profits and surplus and distributable as such. It was credited to profit and loss and not to capital. . ." Also: "When a corporation has a surplus, whether a dividend shall be made, and if made how much it shall be, and when and where it shall be payable, rest in the fair and honest discretion of the directors uncontrollable by the courts."

Briefly, as stated, the premium is "for the purpose of equalizing as between new and old stockholders, their respective rights in accumulated profits" which presumably are distributable as dividends. In other words, one who pays above par for stock because there is a distributable surplus back of it ought not thereby to be prevented from the receipt of dividends out of such surplus. Ordinarily a stockholder is thought of as being liable only to the extent of the par value of his shares, in case of insolvency. If his shares are not full paid he can only be made to pay the difference between what he has already paid and the par of his shares. There is nothing to prevent the distribution of surplus accumulated out of profits, as dividends, whenever the company sees fit. To illustrate, let the following balance sheet represent the condition of a corporation at a given time:

Balance Sheet:

Fixed Assets............	$100,000	Stock..................	$100,000
Current Assets..........	50,000	Bonds..................	25,000
		Surplus................	25 000
	$150,000		$150,000

This surplus of $25,000 may or may not be distributed, according to the judgment of the board of directors. If it is distributed, the equity of the stockholders will be reduced from $125 to $100 per share of stock. Consequently, were more stock to be sold it would be reasonable to assume that, under normal conditions, it would go for about par, and the old and new stockholders would remain on a parity. If it is not distributed the new stock would probably sell for about $125 per share, since the old stockholders would not wish new stockholders to get the advantage of the old equity over and above the par of the stock. Suppose that $100,000 of new stock is sold at 125. This brings the surplus to $50,000, $25,000 of which is accumulated profits and $25,000 premium on stock. Suppose further that this $50,000 is distributed as surplus to the stockholders.

In what way is the condition of the company different from what it would have been had the original surplus of $25,000 been distributed to the old stockholders before the sale of the new stock, which would then have been made at par or thereabouts? In no way whatever. The whole affair is one of policy in no way affected by the rights of creditors. This view has already received the recognition of the Interstate Commerce Commission, which has ruled that, "In case the accounting company is permitted and elects to distribute all or any part of the net premium on its capital stock to its stockholders, the amount thus distributed shall be charged to the premium account."[1]

Conclusion.—A balance sheet should be so constructed that the work of interpretation will be aided, as far as possible, by its construction. The significance of the balance sheet lies in the relationship which the items in it bear to one another. That relationship ought to be clarified, not obscured. Although very much remains to be done in the way of systematization in balance sheet construction, much progress has been made toward standardization in form and terminology.

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[1] *Classification of Income, Profit and Loss and General Balance Sheet Accounts for Steam Roads*, effective July 1, 1914, p. 39. See also *Uniform System of Accounts for Electric Railways*, effective July 1, 1914, p. 75, and *Uniform System of Accounts for Express Companies*, effective July 1, 1914, p. 73. Apparently, however, the Interstate Commerce Commission favors the retention of the premium on stock sold until offset (1) by discounts on sales of the same class of stock, or (2) by credits to profit and loss upon the reacquirement of the stock. See references noted above.

PART VI

SPECIAL APPLICATIONS OF PRINCIPLES

CHAPTER XXXIV

DEPARTMENT ACCOUNTING

Accounts Locate Responsibility.—One of the main objects of an accounting system is to enable the management to locate responsibility. This is difficult or impossible unless we have a proper kind of organization in charge of persons upon whom responsibility can be definitely placed. When an enterprise expands beyond a certain point adequate organization is usually possible only as the result of the classification of its activities on a departmental basis. The size and character of the departments depend upon the nature of the business. In manufacturing, departments are established for the performance of a certain process or the manufacture of certain classes of commodities. In merchandising, departments are established to deal in certain classes of goods, as illustrated by the ordinary department store.

Purpose of Departments.—As soon as a business is departmentalized it is no longer a single activity but a group of activities united by a single ownership and control. The manager of such an enterprise must be able not only to show what results are being accomplished by the concern as a whole; he must also be able to distinguish and compare the results accomplished by the different departments. Each department incurs various expenses, consumes supplies, and must be charged with a reasonable proportion of general expenses or overhead, such as result from salaries paid to general officers, taxes, depreciation, and so on. If a concern is properly organized, and if its departments are definitely laid out and responsibility located, an adequate accounting system can be set up. If, on the other hand, the organization is loose, departments without definite functions, and responsibility indefinite, it is impossible to install a system of accounts that will give valuable results.

When the significance of departmentalization is fully grasped it will be seen that the only difference between an accounting system for a non-departmentalized concern and one for a departmentalized concern lies in the subdivision of the accounts. Thus if a merchant who has kept a general merchandise establishment wishes to organize a department store he can do so by classifying his merchandise into groups, making each group the basis of a department. For example, Department A might be the dry goods department, Department B the groceries department, Department C the hardware department, and Department D the notions department, and so on. Each department may be compared to a small single-line store. The number of departments will vary considerably with the conditions and the desires of the management in different instances. The departments mentioned above might be further subdivided. Department A–1 might be men's clothing, Department A–2 women's clothing, Department A–3 children's clothing, and so on *ad infinitum*.

How Accounts are Kept.—The systematization and coordination of the various departments are accomplished by the use of columnar Journals and controlling accounts with subordinate Ledgers. Such a system must be both accurate and practicable. A single Journal with two columns, one for charges and one for credits, might be accurate but it would be impracticable, for a department store. Likewise a single Ledger might be accurate but the introduction of hundreds of personal accounts would make it impracticable. Accounts must not only be correct in principle, they must also be adaptable to specific requirements. Such systems cannot be purchased ready made. They must be contrived to fit the peculiar conditions that characterize an enterprise just as an architect draws up the plans for a building only after he consults both his customer's needs and the physical surroundings of the location. He then applies the general principles of architecture to these specific conditions.

Suppose a department store to have four departments. All purchases, sales, and expenses must then be accounted for on the basis of this subdivision. Each department is considered as a unit and the accounts are so kept that all purchases, sales, and expenses incident to that department may be ascertained. So far as possible, therefore, distinct accounts must be kept for each department, while those expenses which cannot be charged directly to the different departments must be distributed over the departments on an equitable basis.

A purchases account is kept in the General Ledger for each department. Consequently the Purchases Journal should have a purchases column for each department, which may be headed Department A, Department B, and so on. At the end of the month the totals of these columns are posted to their corresponding purchases accounts in the General Ledger—Purchases, Department A, and so on. If the accounts payable are not so numerous but that they can be easily kept in one subordinate Ledger, then the totals of the four departmental purchases columns will be posted to the credit of the accounts payable controlling account. A sundry column in the Purchases Book will provide for the reception of purchases which are not made on a departmental basis. Possibly it will be found desirable to provide a miscellaneous column for each department in which the purchases of things other than commodities may be recorded when made on a departmental basis, such as supplies, etc.

Possibly, with the expansion of business, it may be desirable to provide a separate Purchases Journal for each department, with columns for expenses in addition to the one for merchandise purchases. The monthly postings from these would be made in the same way as if there were but one Purchases Journal, the proper accounts being charged in the General Ledger and the controlling accounts payable account being credited. If the Voucher Register is used columns must be provided in it for the distribution of purchases and expenses on a departmental basis, whenever such a direct distribution is possible.

Distribution of Indirect.—Probably the most difficult problem in departmental accounting is the distribution of indirect, or general expenses, among the various departments on an equitable basis. These expenses, since they cannot be charged directly to the departmental expense accounts, must first be charged to "clearing accounts." Then, at the end of the month, some basis for their distribution having been determined upon, the clearing accounts are credited and charges are made to the proper departmental accounts. Following are some examples of such general or overhead expenses:

Insurance	Salaries of General Officers
Light	Rent
Heat	Advertising

Basis of Distribution.—Possibly one or more of these may be charged directly to departmental expense accounts. Thus if the lighting arrangement is such as to permit the use of separate meters for the various departments light expense[1] could be charged directly to departments, and so on. The accountant's problem is to find an equitable basis of distribution for these general expenses. This basis will vary with the nature of the expense. The following is suggested as showing the procedure to be followed:

Name of Expense	*Basis of Distribution*
Insurance	Value of property
Interest on stock (if used)	Value of property
Light	Candle power required
Heat	Cubic feet of space
Salaries of General Officials	Sales
Rent	Floor space, or desirability of location
Advertising	Sales, or space area
General Administrative	Sales

Distribution Illustrated.—These are suggestive rather than final. The best method to follow must be determined according to circumstances. To illustrate the procedure necessary to make the distribution of such a general expense as rent, assume that, on the basis of floor space occupied, the departments are chargeable as follows,

Department A...............................	½
Department B...............................	¼
Department C...............................	⅛
Department D...............................	⅛

and that the light bill for the month is \$50. This might be entered in the Voucher Register as follows:

Light Expense—Clearing Account.....................	\$50.00	
To Vouchers Payable..........................		\$50.00

When the distribution is made to departments the clearing account, "Light Expense," is closed, as follows:

Light Expense—Department A......................	\$25.00	
Light Expense—Department B......................	12.50	
Light Expense—Department C......................	6.25	
Light Expense—Department D......................	6.25	
To Light Expense—Clearing Account..............		\$50.00

[1] See Moxey, E. P., Jr. and others: *Practical Accounting Methods*, p. 195.

In this manner all expenses which it may be desirable to charge to a clearing account is in turn charged to the departmental accounts. When the above entries are posted the Light Expense—Clearing Account appears as follows:

Light Expense—Clearing Account

To Vouchers Payable......	$50.00	By Light Expense—Dept. A....	$25.00
		By Light Expense—Dept. B....	12.50
		By Light Expense—Dept. C....	6.25
		By Light Expense—Dept. D...	6.25
	$50.00		$50.00

Results Secured.—When all general expenses have been thus distributed to the respective departments it is possible to set up profit and loss accounts for each department. By combining them a profit and loss account for the whole enterprise is also secured. In this way the relative efficiency of the different departments as compared with one another and with the whole establishment may be learned. Departmentalization may be carried as far as desirable; but ordinarily a practical limit will be suggested by the nature of the business.

Transfers between Departments.—When transfers of merchandise are made from one department to another these must be accounted for either through the General Journal or through a special Journal kept for that purpose. Transfer slips are made out charging the department receiving the goods and crediting the one surrendering them, *at cost price.* At the end of the month these are recapitulated and the proper journal entries formulated for making the proper debits and credits, thus:

Purchases—Department A.........................	$310.20	
To Purchases—Department B..................		$310.20
To record transfer, at cost, of merchandise from Department B to Department A.		

All interdepartmental transfers are similarly recorded. Instead of crediting the purchases account of the department surrendering the goods, "sales" might be credited. This is not the best procedure, however, as no profit is made on such a "sale" because it is "at cost." To credit this item to sales account increases the total of sales without increasing profits. It then becomes necessary to make deductions from sales for these transfers in order to secure the correct percentage of profits on sales—an important statistical figure.

Manufacturing.—The same principles apply to departmental accounting in manufacturing as in trading. A department of a factory is charged with raw material consumed and also with its proper proportion of indirect expense. These costs are charged to the departmental goods in process (or manufacturing) controlling account and at the same time are distributed over the various order numbers in the departmental cost ledger. Separate finished goods Ledgers may also be kept for the different departments. Each department thus becomes a unit, a factory within a factory—and its profits can be determined independently.

Whether or not a factory can be thus completely departmentalized depends upon the nature of its operations. If its output is such that it requires a continuous operation, passing from stage to stage, and undergoing the different processes one after another, the factory in a sense is but one large department. Separate raw materials, goods in process and finished goods Ledgers would not then be practicable. But in so far as definite departmental processes are distinguishable departments may be said to exist and to serve as convenient units of organization for the allocation of labor, material and indirect. In this case the output of a department is a portion of a process instead of a complete process.

CHAPTER XXXV

DEPARTMENT ACCOUNTING—PRACTICE

Problem 1.—The General Retail Company is engaged in selling the following classes of merchandise:

1. Men's clothing
2. Women's clothing
3. Children's clothing
4. House Furnishings

The store building, for which a monthly rental of $500 is paid, consists of two floors and the basement. The floor space is 60,000 square feet divided equally among the three levels, 20,000 square feet to each. The basement and the first floor are given over to house furnishings. The second floor is used as follows: 7,500 square feet for men's clothing; 7,500 square feet for women's clothing; and 5,000 square feet for children's clothing. All ceilings are of the same height.

There exist separate departments, A, B, C, and D, respectively, for each of the four classes of merchandise mentioned above. The following departmental accounts are to be kept:

1. Sales
2. Purchases
3. Returned Sales
4. Returned Purchases
5. Wages
6. General Departmental Expense
7. Selling Expenses

The general expenses are to be charged to the following general clearing accounts:

Account	Basis of Distribution
Insurance	Value of property
Light	Candle power required
Heat	Cubic feet of space
Salaries—General Officers	Net Sales
Rent	Floor space
Advertising	Net Sales
General Administrative	Net Sales
Bad Debts	Net Sales

Required:

(*a*) To contrive a system of accounts adequate for this business.

(*b*) To set up a trial balance as of the close of the year 1919, inserting assumed amounts for the various accounts; then to set up departmental income statements, a general distribution statement, and a balance sheet. Assume that the books were last closed as at Dec. 31, 1918. Also assume all data necessary for transferring to departmental accounts the amounts charged to overhead under the respective clearing accounts.

Under (*a*) above it is required that a complete voucher system be installed.

Solution, Problem 1.—The following books are necessary:

General Journal
Sales Journal
Returned Sales Journal
General Ledger
Accounts Receivable Ledger
Cash Journal
Voucher Register

The rulings and headings of these books are shown below:

General Journal

Acct. Pay.	Notes Rec.	Sundries	F	Explanation	F	Sundries	Notes Pay.	Acct. Rec.

Sales Journal

Date		F	Totals	Dept. A	Dept. B	Dept. C	Dept. D
	At end of month debit Accounts Receivable for total sales and credit the respective sales accounts in the General Ledger.						

Returned Sales Journal

Date		F	Totals	Dept. A	Dept. B	Dept. C	Dept. D
	At end of month credit Accounts Receivable Account for total returned sales and debit respective sales accounts in the General Ledger.						

The General Ledger and the Accounts Receivable Ledger have ordinary ledger rulings.

Cash Receipts Journal

Date	Explanation	F	Sundries	Accts. Rec.	Sales Dept. A	Sales Dept. B	Sales Dept. C	Sales Dept. D	Totals

Cash Payments Journal

Date	To Whom Paid	Check No.	Voucher No.	Voucher's Pay.	Dis. on Purchases	Sundries	Net

Voucher Register

Date	Creditor	Voucher No.	Terms	Amount	Purchases Dept. A	Purchases Dept. B	Purchases Dept. C	Purchases Dept. D

Voucher Register (continued)

Wages A	Wages B	Wages C	Wages D	General Expenses A	General Expenses B	General Expenses C	General Expenses D	Selling Exp. A	Selling Exp. B	Selling Exp. C	Selling Exp. D	Insurance	Light

Voucher Register (continued)

Heat	Salaries	Rent	Advertising	General	Sundries		How Paid	
	General Officers			Administrative	Account	Amount	Time	Manner

Trial Balance, General Retail Company, as at December 31, 1919

Capital Stock Outstanding		$ 40,000
Surplus		5,400
Cash	$ 12,100	
Petty Cash	200	
Insurance Expired on Mdse-Clearing a/c	600	
Insurance Prepaid	240	
Light Expense-Clearing a/c	300	
Expense-Clearing a/c	2,300	
Salaries General Officers-Clearing a/c	11,500	
Rent Expense-Clearing a/c	6,000	
Advertising Expense-Clearing a/c	700	
General Administrative Expense—Clearing a/c	2,000	
Bad Debts Expense-Clearing a/c	400	
Sales: Dept. A		20,500
Dept. B		18,000
Dept. C		7,000
Dept. D		57,000
Purchases: Dept. A	17,000	
Dept. B	14,000	
Dept. C	4,000	
Dept. D	35,000	
Returned Sales: Dept. A	640	
Dept. B	200	
Dept. C	100	
Dept. D	1,200	
Returned Purchases: Dept. A		200
Dept. B		500
Dept. C		40
Dept. D		100
Wages: Dept. A	1,500	
Dept. B	1,200	
Dept. C	500	
Dept. D	2,000	
General Departmental Expense: Dept. A	1,400	
Dept. B	700	
Dept. C	300	
Dept. D	2,000	
Selling Expenses: Dept. A	800	
Dept. B	400	
Dept. C	100	
Dept. D	1,000	
Accounts Receivable	15,000	
Accounts Payable		11,600
Reserve for Bad Debts		500

Inventories, Dec. 31, 1918:		
Dept. A	4,000	
Dept. B	3,000	
Dept. C	1,200	
Dept. D	17,300	
Furniture and Fixtures	10,000	
	$160,880	$160,880

Inventories, Dec. 31, 1919:	
Dept. A	$ 5,000
Dept. B	3,100
Dept. C	500
Dept. D	16,000

The following conditions are determined:

(*a*) Insurance is distributed on the basis of average inventory value, that is, old plus new inventory divided by 2. These are:

Dept. A. (4,000 + 5,000) ÷ 2 = 4,500 (17.96 %)
Dept. B. (3,000 + 3,100) ÷ 2 = 3,050 (12.18 %)
Dept. C. (1,200 + 500) ÷ 2 = 850 (3.39 %)
Dept. D. (17,300 + 16,000) ÷ 2 = 16,650 (66.47 %)

(*b*) The relative candle power required by the departments for lighting is as follows:

Dept. A	1/6 of total
Dept. B	1/9 of total
Dept. C	1/18 of total
Dept. D	2/3 of total

(*c*) The relative heat consumption is as follows:

Dept. A	1/8 of total
Dept. B	1/8 of total
Dept. C	1/12 of total
Dept. D	2/3 of total

(*d*) The amounts of net sales are as follows:

Dept. A	$19,860 (21.98 %)
Dept. B	17,800 (19.70 %)
Dept. C	6,900 (7.64 %)
Dept. D	45,800 (50.68 %)

Salaries of General Officers, Advertising, and General Administrative and Bad Debts Expense are allocated to departments on the basis of net sales.

(*e*) The amount of floor space devoted to the different departments is as follows:

Dept. A	7,500 sq. ft. (12.50 %)
Dept. B	7,500 sq. ft. (12.50 %)
Dept. C	5,000 sq. ft. (8.33 %)
Dept. D	40,000 sq. ft. (66.67 %)
Total	60,000 sq. ft.

Rent is allocated on the basis of floor space occupied.

The next step is to credit the clearing account and charge departmental expense account, the allocation being determined on the bases indicated above. Instead of opening departmental expense accounts, however, we will carry the distribution direct to trading and profit and loss, as follows:

Trading Account—Dept. A. (17.96%)	$107.76	
Trading Account—Dept. B. (12.18%)	73.08	
Trading Account—Dept. C. (3.39%)	20.34	
Trading Account—Dept. D. (66.47%)	398.82	
To Insurance Expired on Mdse.—Clearing a/c..		$600.00

To carry insurance to departmental trading accounts, distribution being on basis of average inventory values in the departments.

Trading Account—Dept. A. $\frac{1}{6}$	$ 50.00	
Trading Account—Dept. B. $\frac{1}{9}$	33.33	
Trading Account—Dept. C. $\frac{1}{18}$	16.67	
Trading Account—Dept. D. $\frac{2}{3}$	200.00	
To Light Expense—Clearing a/c		$300.00

To carry light expense to departmental trading accounts, distribution being on basis of relative candle power required by departments.

Trading Account—Dept. A. $\frac{1}{8}$	$ 287.50	
Trading Account—Dept. B. $\frac{1}{8}$	287.50	
Trading Account—Dept. C. $\frac{1}{12}$	191.67	
Trading Account—Dept. D. $\frac{2}{3}$	1,533.33	
To Heat Expense—Clearing a/c		$2,300.00

To carry heat expense to departmental trading accounts, distribution being on basis of cubic feet of space occupied by the departments.

Trading Account—Dept. A	$ 750.00	
Trading Account—Dept. B	750.00	
Trading Account—Dept. C	499.80	
Trading Account—Dept. D	4,000.20	
To Rent Expense—Clearing a/c		$6,000.00

To carry rent expense to departmental trading accounts, distribution being on basis of floor space devoted to departments.

Trading Account—Dept. A	$153.86	
Trading Account—Dept. B	137.90	
Trading Account—Dept. C	53.48	
Trading Account—Dept. D	354.76	
To Advertising Expense—Clearing a/c		$700.00

To carry advertising expense to departmental trading accounts, distribution being on basis of net sales of the departments.

Administrative Account—Dept. A	$2,527.70	
Administrative Account—Dept. B	2,265.50	
Administrative Account—Dept. C	878.60	
Administrative Account—Dept. D	5,828.20	
To Salaries General Officers—Clearing a/c		$11,500.00

To carry salaries of general officers to departmental administration accounts, distribution being on basis of net sales of the departments.

Administrative Account—Dept. A	$ 439.60	
Administrative Account—Dept. B	394.00	
Administrative Account—Dept .C	152.80	
Administrative Account—Dept. D	1,013.60	
To General Administrative Expense—Clearing a/c		$2,000.00

To carry general administrative expense to departmental administration accounts, distribution being on basis of net sales of the departments.

Administrative Account—Dept. A	$ 87.92	
Administrative Account—Dept. B	78.80	
Administrative Account—Dept. C	30.56	
Administrative Account—Dept. D	202.72	
To Bad Debts—Clearing a/c		$400.00

To carry bad debts expense to departmental administration accounts, distribution being on basis of net sales of the departments.

This closes all clearing accounts into the departmental trading and administrative accounts. Next the closing entries must be made for the departmental accounts. These follow:

Trading Account, Dept. A	$ 4,000.00	
Trading Account, Dept. B	3,000.00	
Trading Account, Dept. C	1,200.00	
Trading Account, Dept. D	17,300.00	
To Dept. A. Inventory		$ 4,000.00
Dept. B. Inventory		3,000.00
Dept. C. Inventory		1,200.00
Dept. D. Inventory		17,300.00

To carry inventory (old) to trading accounts of departments.[1]

[1] Note that inventories, purchases, sales, etc., are carried direct to the trading accounts. They are sometimes taken to a merchandise account, but it is thought that the above procedure will here facilitate the construction and understanding of the trading and profit and loss statement.

Dept. A. Inventory	$ 5,000.00	
Dept. B. Inventory	3,100.00	
Dept. C. Inventory	500.00	
Dept. D. Inventory	16,000.00	
To Trading Account Dept. A		$ 5,000.00
Trading Account Dept. B		3,100.00
Trading Account Dept. C		500.00
Trading Account Dept. D		16,000.00

To credit new inventories to trading accounts of the departments and charge the proper inventory accounts.

Sales—Dept. A	$20,500.00	
Sales—Dept. B	18,000.00	
Sales—Dept. C	7,000.00	
Sales—Dept. D	57,000.00	
To Trading Account—Dept. A		$20,500.00
Trading Account—Dept. B		18,000.00
Trading Account—Dept. C		7,000.00
Trading Account—Dept. D		57,000.00

To carry sales to the trading accounts of the departments, closing the department sales accounts.

Trading Account—Dept. A	$17,000.00	
Trading Account—Dept. B	14,000.00	
Trading Account—Dept. C	4,000.00	
Trading Account—Dept. D	35,000.00	
To Purchases—Dept. A		$17,000.00
Purchases—Dept. B		14,000.00
Purchases—Dept. C		4,000.00
Purchases—Dept. D		35,000.00

To carry purchases to the trading accounts of the departments and to close the departmental purchases account.

Trading Account—Dept. A	$ 640.00	
Trading Account—Dept. B	200.00	
Trading Account—Dept. C	100.00	
Trading Account—Dept. D	1,200.00	
To Returned Sales—Dept. A		$ 640.00
Returned Sales—Dept. B		200.00
Returned Sales—Dept. C		100.00
Returned Sales—Dept. D		1,200.00

To carry returned sales to trading accounts of the departments and to close the returned sales account.

Returned Purchases—Dept. A	$200.00	
Returned Purchases—Dept. B	500.00	
Returned Purchases—Dept. C	40.00	
Returned Purchases—Dept. D	100.00	

To Trading Account—Dept. A		$200.00
Trading Account—Dept. B		500.00
Trading Account—Dept. C		40.00
Trading Account—Dept. D		100.00

To carry returned purchases to trading accounts of the departments and to close the returned purchases accounts.

Trading Account—Dept. A	$1,500.00	
Trading Account—Dept. B	1,200.00	
Trading Account—Dept. C	500.00	
Trading Account—Dept. D	2,000.00	
To Wages—Dept. A		$1,500.00
Wages—Dept. B		1,200.00
Wages—Dept. C		500.00
Wages—Dept. D		2,000.00

To carry wages to department trading accounts and to close the wages accounts.

Trading Account—Dept. A	$1,400.00	
Trading Account—Dept. B	700.00	
Trading Account—Dept. C	300.00	
Trading Account—Dept. D	2,000.00	
To General Dept. Exp.—Dept. A		$1,400.00
General Dept. Exp.—Dept. B		700.00
General Dept. Exp.—Dept. C		300.00
General Dept. Exp.—Dept. D		2,000.00

To carry general dept. expense to dept. trading accounts and to close the general dept. expense accounts.

Trading Account—Dept. A	$ 800.00	
Trading Account—Dept. B	400.00	
Trading Account—Dept. C	100.00	
Trading Account—Dept. D	1,000.00	
To Selling Expense—Dept. A		$ 800.00
Selling Expense—Dept. B		400.00
Selling Expense—Dept. C		100.00
Selling Expense—Dept. D		1,000.00

To carry selling expense to the departmental trading accounts and to close the selling expense accounts.

The income statements of the departments follows:

Income Statement, Department A, for year ending Dec. 31, 1919:

Trading Section

Inventory, Dec. 31, 1918	$ 4,000.00	Sales.............	$20,500.00	
Purchases..................	17,000.00	Less Returned Sales...........	640.00	
	$21,000.00	Net Sales.......		$19,860.00
Less Inventory, Dec. 31, 1919.....................	5,000.00	Balance, Gross Trading Loss....		989.12
	$16,000.00			
Less Returned Purchases....	200.00			
Cost of goods sold (turnover)	$15,800.00			
Wages.....................	1,500.00			
General Departmental Expense.....................	1,400.00			
Selling Expense..............	800.00			
Insurance on Mdse...........	107.76			
Light Expense...............	50.00			
Heat Expense................	287.50			
Rent Expense...............	750.00			
Advertising Expense.........	153.86			
	$20,849.12			$20,849.12

Administration Section

Balance, Gross Trading Loss..	$ 989.12	Balance, Net Loss, carried to Distribution Section.......	$4,044.34
Salaries, General Officers.....	2,527.70		
General Administrative Expense.....................	439.60		
Bad Debts	87.92		
	$4,044.34		$4,044.34

Income Statement, Department B, for year ending Dec. 31, 1919

Trading Section

Inventory, Dec. 31, 1918	$ 3,000.00	Sales	$18,000.00
Purchases	14,000.00	Less Returned Sales	200.00
	17,000.00	Net Sales	$17,800.00
Less Inventory Dec. 31, '19	3,100.00		
	13,900.00		
Less Returned Purchases	500.00		
Cost of goods sold (turnover)	$13,400.00		
Wages	1,200.00		
General Departmental Expense	700.00		
Selling Expense	400.00		
Insurance on Mdse	73.08		
Light Expense	33.33		
Heat Expense	287.50		
Rent Expense	750.00		
Advertising Expense	137.90		
Balance, Gross Trading Profit	818.19		
	$17,800.00		$17,800 00

Administration Section

Salaries, General Officers	$2,265..50	Balance, Gross Trading Profit	$818.19
General Administrative Expense	394.00	Balance, Net Loss, carried to Distribution Section	1,920.11
Bad Debts	78.80		
	$2,738.30		$2,738.30

Income Statement, Department C, for year ending Dec. 31, 1919:

Trading Section

Inventory Dec. 31, 1918	$1,200.00	Sales	$7,000.00
Purchases	4,000.00	Less Returned Sales.	100.00
	$5,200.00	Net Sales	$6,900.00
Less Inventory Dec. 31, 1919	500.00		
	$4,700.00		
Less Returned Purchases	40.00		
Cost of Goods sold (turnover)	$4,660.00		
Wages	500.00		
General Departmental Expense	300.00		
Selling Expense	100.00		
Insurance on Mdse	20.34		
Light Expense	16.67		
Heat Expense	191.67		
Rent Expense	499.80		
Advertising Expense	53.48		
Balance, Gross Trading Profit	558.04		
	$6,900.00		$6,900.00

Administration Section

Salaries, General Officers	$878.60	Balance, Gross Trading ing Profit	$ 558.04
General Administrative Expense	152.80	Balance, Net Loss, carried to Distribution Section	503.92
Bad Debts	30.56		
	$1,061.96		$1,061.96

Income Statement, Department D, for year ending Dec. 31, 1919:

Trading Section

Inventory, Dec. 31, 1918	$17,300.00	Sales	$57,000.00
Purchases	35,000.00	Less Returned Sales	1,200.00
	52,300.00	Net Sales	$55,800.00
Less Inventory Dec. 31, 1919	15,000.00		
	36,300.00		
Less Returned Purchases	100.00		
Cost of Goods sold (turnover)	$36,200.00		
Wages	2,000.00		
General Departmental Expense	2,000.00		
Selling Expense	1,000.00		
Insurance Mdse	398.82		
Light Expense	200.00		
Heat Expense	1,533.33		
Rent Expense	4,000.20		
Advertising Expense	354.76		
Balance, Gross Trading Profit	8,112.89		
	$55,800.00		$55,800.00

Administration Section

Salaries, General Officers	$5828.20	Balance, Gross Trading Profit	$8,112.89
General Administrative Expense	1,013.60		
Bad Debts	202.72		
Balance, Net Profit, carried to Distribution Section	1,068.37		
	$8,112.89		$8,112.89

Distribution Section (all Dep'ts.)

Net Loss, Men's	$4,044.34	Net Profit, House Furnishings	$1,068.37
Net Loss, Women's	1,920.11	Balance, Net Loss all Depts., carried to Surplus	5,400.00
Net Loss, Children's	503.92		
	$6,468.37		$6,468.37

Balance Sheet, General Retail Company, as at December 31, 1919:

Assets		*Liabilities and Capital*	
Cash	$12,100.00	Capital Stock Outstanding	$40,000.00
Petty Cash	200.00	Accounts Payable	11,640.00
Insurance Prepaid	240.00	Reserve for Bad Debts	500.00
Accounts Receivable	15,000.00		
Inventories, Dec. 31, 1919	24,600.00		
	$52,140.00		$52,140.00

CHAPTER XXXVI

DEPARTMENT ACCOUNTING—PRACTICE (*Continued*)

Problem 2.—The Ashton-Noble Company began business on January 1, 1918. The company operates a department store consisting of five departments, as follows:

Dept. A.—Toys
Dept. B.—Groceries
Dept. C.—House Furnishings
Dept. D.—Clothing, Women's and Children's
Dept. E.—Shoes

The store building, which is owned by the Ashton-Noble Company, consists of three floors and a basement. The total floor space is 80,000 square feet divided equally among the four levels. The basement is occupied by Depts. A and B, the former occupying 8,000 square feet of floor space and the latter 12,000 square feet. The entire first floor is occupied by Dept. C, except 2,000 square feet which is rented to a fruit dealer at a monthly rental of $150. Dept. D occupies the entire second floor and Dept. E the entire third floor. The basement ceiling is 8 feet above the floor; all other ceilings are 9 feet high.

The following departmental accounts are kept:

1. Sales
2. Purchases
3. Returned Sales
4. Returned Purchases
5. Wages
7. Advertising
8. Miscellaneous Selling Expense.

General expenses are to be charged to the following general clearing accounts and distributed on the basis indicated:

Account	*Basis of Distribution*
Insurance—Building	Floor space
Insurance—Mdse.	Value of property
Repairs on Building.	Floor space
Depreciation of Building	Floor space
Taxes on Building	Floor space
Light	Candle Power Required
Heat	Cubic Feet of Space
Salaries General Officers	Net Sales
General Administrative	Net Sales
Bad Debts	Net Sales

Following is the trial balance of the Ashton-Noble Company as at Dec. 31, 1919 (student will insert amounts in the two vacant places):

Capital Stock Outstanding		$ 30,000.00
Cash	————	
Surplus		8,700.00
Petty Cash	$ 300.00	
Insurance Expired in mdse-clearing a/c	780.00	
Insurance Prepaid on mdse	500.00	
Insurance Expired on Building-clearing a/c	1,100.00	
Insurance Prepaid on Building	1,740.00	
Repairs on Building-clearing a/c	540.00	
Depreciation of Building—clearing a/c	500.00	
Reserve for Depreciation of Building		500.00
Taxes on Building	1,000.00	
Building	24,000.00	
Light Expense—clearing a/c	400.00	
Heat Expense—clearing a/c	————	
Salaries General Officers—clearing a/c	8,000.00	
General Administrative Expense—clearing a/c	1,200.00	
Bad Debts Expense—clearing a/c	300.00	
Reserve for Bad Debts		300.00
Space Rented		1,800.00
Sales: Dept. A		5,000.00
Dept. B		23,000.00
Dept. C		49,000.00
Dept. D		45,000.00
Dept. E		41,000.00
Purchases: Dept. A	3,000.00	
Dept. B	17,000.00	
Dept. C	35,000.00	
Dept. D	36,000.00	
Dept. E	34,000.00	

Returned Sales:	Dept. A	40.00	
	Dept. B	350.00	
	Dept. C	890.00	
	Dept. D	500.00	
	Dept. E	200.00	
Returned Purchases:	Dept. A		500.00
	Dept. B		1,100.00
	Dept. C		600.00
	Dept. D		2,000.00
	Dept. E		700.00
Wages:	Dept. A	720.00	
	Dept. B	1,600.00	
	Dept. C	2,400.00	
	Dept. D	2,400.00	
	Dept. E	2,000.00	
General Departmental Expense:	Dept. A	300.00	
	Dept. B	500.00	
	Dept. C	800.00	
	Dept. D	700.00	
	Dept. E	650.00	
Advertising:	Dept. A	100.00	
	Dept. B	300.00	
	Dept. C	1,200.00	
	Dept. D	800.00	
	Dept. E	300.00	
Miscellaneous Selling Expenses:	Dept. A	127.00	
	Dept. B	302.00	
	Dept. C	808.00	
	Dept. D	700.00	
	Dept. E	560.00	
Accounts Receivable		17,000.00	
Accounts Payable			9,000.00
Furniture and Fixtures		13,000.00	
		$218,200.00	$218,200.00

The amounts inserted in the blank spaces for Cash and Heat Expense—Clearing a/c must be such that their total is $3,593. It is suggested that Cash be placed between $500 and $1,000 and the balance placed in Heat Expense—Clearing a/c.

Note that the adjustment for depreciation for the year has been made.

The following additional data is given to aid in determining the proper distribution of amounts charged to clearing account.

In determining distribution of insurance on merchandise use inventory values as at Dec. 31, 1919.

The ratios of candle power required are as follows:

Dept. A. 8
Dept. B. 12
Dept. C. 12
Dept. D. 15
Dept. E. 15
Space Rented 3

A proper portion of insurance on building, repairs on building, depreciation of building, taxes on building, light and heat should be charged to the account "Space Rented," so that the balance of this account will show net profit or loss from this source. This balance will be carried direct to the distribution section.

Required:

(*a*) To contrive a system of accounts adequate to take care of this business.

(*b*) To set up departmental income statements, a general distribution statement, and a balance sheet.

Under (*a*) above it is required that the books be such as are necessary for a voucher system.

CHAPTER XXXVII

MANUFACTURING ACCOUNTING

General Principles.—Manufacturing accounting consists in the adaptation of the principles of double entry to the processes of production. In Chapter XVI the methods of expanding and specializing accounting records were discussed and illustrated. The work of creating specialized records consists in applying accounting principles to given conditions. In so far as accounting principles are concerned cost accounting does not differ from mercantile accounting. It consists in their application to different conditions. Were the general principles any different from those that govern other accounting, cost keeping would be a distinct science instead of a branch of accounting.

Meaning of "Cost."—Fundamentally, all accounting is based on costs. But when, as is the case with trading concerns, cost means simply the purchase price of a commodity, the matter is so elementary that the importance of this "cost" is not strongly impressed upon our minds. Yet this is the germ of cost accounting. The simplest cost system is fully outlined in the following journal entry:

Purchases..	$100.00	
To Cash..		$100.00
To record "cost" of goods bought.		

When commodities are purchased in the same form in which they are ultimately sold, the determination of their cost is a simple task. It consists of the invoice price of the goods purchased less any discounts secured through prompt payment, plus the cost of placing them "on the shelves" ready for sale. The Purchases Journal or Voucher Register shows the bare cost of the goods while the additional information required is found in the general ledger accounts.

When, however, commodities are not sold in the same form in which they are purchased the situation is more complicated. The Purchases Journal and Cash Journal no longer constitute a complete cost system. They merely show the cost of commodities "as purchased." It is also necessary to show the cost of commodities "as sold." When commodities are purchased, not to be sold in the same form, but for the purpose of rearranging or altering them and thus fashioning them into other commodities differing more or less widely in appearance, value, and usefulness from the original commodities, they are said to undergo a process of manufacture. When products are manufactured into other products they incur increments of cost—the cost of manufacture. Evidently, then, for one engaged in manufacturing the cost of the commodities which he sells is not the cost of the commodities which he purchases nor the cost of the process of manufacture, but a combination of the two. Every manufactured article costs:

$$\left.\begin{array}{l}\text{1. Raw Material}\\ \text{2. Expense of Manufacture}\end{array}\right\}100\%$$

"Raw Materials" is a phrase of relative significance. It is that with which a given process of manufacture begins. What is raw material to one process is finished product to another. A bit of material may be successively raw material and finished product several times before it arrives at the ultimate form of a consumable commodity. An illustration is afforded by paint, screws, and the various materials entering into the construction of furniture. Paint is the finished product of the paint manufacturer as are screws of the hardware manufacture, but to the furniture manufacturer they serve as raw materials.

Analysis of Cost.—The analysis of cost of a manufactured commodity may be carried still further. Cost of manufacture is like a chemical compound which can be broken up into its elements. One of these elements is labor, while the remaining ones consist of various expenses which are customarily considered *in toto* as burden or overhead. Revising our outline of the cost of a manufactured article we have, then:

1. Raw Materials
2. Expense of Manufacture
    a. Labor
    b. Indirect

By labor cost is meant the cost of wages paid to workmen for time spent on a given commodity. If a workman receives 50 cents an hour and spends three hours of his time on an article being manufactured, the labor cost applicable to that article, for this workman, is $1.50. By keeping a record of all labor spent on a commodity the total labor cost is secured.

Indirect costs, sometimes called burden, are less easily accounted for and give rise to the most difficult cost problem. They include those costs that are not directly applicable to any given process, but which are incidental to and a part of, general operations; and without which the work of manufacturing could not be executed. Among the indirect costs are insurance, power, taxes, salaries of foremen and superintendents, certain kinds of labor that cannot be directly applied, such as janitor service and repair work, and so on. These expenses occur perpetually, but they are for the benefit of the whole factory or a department thereof, rather than for that of any particular process. Nevertheless each commodity manufactured must be charged with its due proportion of these indirect costs. The proper basis for making such a distribution of indirect over manufactured commodities will be considered later in this chapter.

Trading vs. Manufacturing Accounts.—The chief difference between the accounting system of a trading concern and of an enterprise engaged in manufacturing consists of an extension of journals and ledgers in case of the manufacturing enterprise to supply an adequate record for its additional activities. These additional activities consist of the purchase and handling of the raw materials, the process of manufacture, and the transfer of manufactured articles from the factory to a finished goods department. From this point on the work differs in no way from that of a mercantile concern, because finished goods correspond to the merchandise inventory of a trading enterprise. The additional work performed by the manufacturer requires the installation of such records as will furnish all necessary information regarding, (*a*) the kind, quantity, and cost of raw materials on hand, (*b*) the transfer of this raw material into the factory, (*c*) the increments of cost to the article being manufactured, from raw materials, labor, and indirect, (*d*) the transfer of the completed article from the factory to the finished goods department.

Purchase of Raw Materials.—Raw materials are ordered by a purchasing agent upon requisition from the foreman of the factory, or department thereof. The order may be made out in triplicate, one copy being sent to the party which is to furnish the raw materials, one to the receiving department, and one to the accounting department. If the purchasing agent also desires a copy of the order it should be made out in quadruplicate. When the invoice for the goods is received it is compared with the purchase order and then sent to the receiving department to be checked up with the goods when they arrive. If the goods are as ordered the invoice serves next as authority for an entry in the Purchases Journal or Voucher Register. The form of either the Purchases Journal or Voucher Register will vary with conditions. Columns should be provided for the different departments. In its simplest form the Purchases Journal would appear as an ordinary journal with a column for the details as to character and quantity of raw materials purchased and one for the amount of the purchase.

If a Purchases Journal is kept postings are made to two subordinate ledgers, namely, the Accounts Payable Ledger, in which accounts are kept with creditors the same as in an ordinary mercantile business, and the Raw Materials Ledger, in which accounts are kept with the various classes of raw materials used. If materials are purchased on a departmental basis, the Raw Materials Ledger may be divided into sections corresponding to departments, or separate Raw Materials Ledgers may be provided. Similarly separate Purchases Journals may be provided, if desirable. If the Voucher Register is used no subordinate Accounts Payable Ledger is required.

In the Raw Materials Ledger accounts are kept with each class of raw material and spaces are provided to show maximum and minimum quantities, the amounts received, the amounts sent into factory on requisition, etc. At the close of each month the total of purchases as shown by the Purchases Journal or Voucher Register is posted to the debit of the raw materials controlling account and to the credit either of the accounts payable or of the vouchers payable controlling account in the General Ledger.

Origin of Manufacturing Order.—The manner in which an order for the manufacture of a commodity originates varies with circumstances. Sometimes goods are manufactured for stock, that is, they are manufactured before a purchaser is secured for them. Sometimes they are manufactured to order only. Naturally the plan to be followed will depend upon the character of the output. If it is of a kind which meets with a continuous, wide, and steady demand, then manufacture for stock is possible since it is not difficult to find a market. On the other hand, there may be such an exceedingly narrow market for certain classes of commodities that they are manufactured only to order.

The Order Number.—Whatever the motive leading to the decision to manufacture a commodity, the actual work is started by a responsible official who gives the order for the execution of a given piece of work. The order is given a number by which it is known from start to completion of the manufacturing process. Thus Order No. 420 will always refer to a given line of work in process of manufacture, and which was so designated before the work began on it. Such an order number may refer either to a single commodity, as a machine, or to a large number of like articles made up under a single order, as a gross of overalls or one thousand steel wrenches. Before work is begun on machinery, etc., the specifications must be made in the drafting department.

Production or Plant Orders.—Sometimes work is done by way of an addition or a repair to plant. Orders for such work should be distinguished from orders manufactured for trade. This is accomplished by classifying all orders into production, plant, and repair, and prefixing the proper explanatory word to the number of the order. Thus "Production Order No. 450" refers to an order for stock or trade while "Plant Order No. 475" refers to an order to be executed for the purpose of making some addition to plant.

Requisition of Materials.—As soon as the foreman of the factory, or of the department in which the work is to be executed or begun, receives the order from headquarters to manufacture a given commodity, he issues stores requisitions upon the keeper of the raw materials for the necessary materials with which to begin work. All of the stores requisitions are numbered to correspond to the order number of the job to which they refer. The stores requisition may itself be used as a posting medium direct to the proper ledgers, or from it entry may be made in a "Materials to Factory Journal." Whichever method is followed, the principle is the same.

Accounting Procedure, Labor, Materials, Indirect.—From the Materials to Factory Journal postings are made to the credit side of the various raw materials accounts in the Raw Materials Ledger and to the debit of the proper order number account in the Cost Ledger. The order number accounts in the Cost Ledger are charged with the various elements of cost—raw materials, labor, and indirect—as they accrue or as soon thereafter as is practicable. The total amount of the raw materials sent into factory on such requisitions is shown by the total of the Materials to Factory Journal. At the end of each month this total is posted to the credit side of the raw materials controlling account and to the debit side of the manufacturing account (controlling the Cost Ledger) in the General Ledger.

As raw materials are but one of the three elements of cost, it is necessary to make provision for the charging of the various order numbers with their direct labor cost and proper proportion of indirect. An accurate record of the time spent by workmen on orders is required. For this purpose each workman is provided with a time card on which he enters the time spent on one or more orders.[1] The workman's name and number are entered upon the card, also his wage rate. Space is provided for such a description of the work performed as will facilitate making the charge to the proper order number.

These time reports, when collected and assorted according to order numbers, furnish data for all charges to the various order numbers on account of productive labor. When assorted according to workmen they afford a check upon the payroll.

At the end of the month when the total of productive labor is thus ascertained the following entry is made in the General Journal:

Manufacturing..............................	———	
To Payroll..................................		———

or if the voucher system is used:

Manufacturing..............................	———	
To Payroll Vouchers Payable..................		———

The total of productive labor thus charged to manufacturing account is also distributed over the various order number accounts in the Manufacturing or Cost Ledger, which is controlled by the manufacturing account in the General Ledger. The proper distribution of the labor cost over the order numbers is obtained from the time reports referred to above.

[1] The student is referred to a series of articles by E. S. Clark, in the Dec., 1916, and following numbers of *Industrial Management*, on "Practical Costs." In the March, 1917, number, page 768, are found forms illustrating the workman's time report, the material requisition, the production order, and the manufacturing cost sheet or cost ledger. This series discusses in detail the method of distributing indirect.

Proration of Indirect Costs.—Finally, the indirect costs must be prorated over the different accounts in the Cost Ledger on an approximately accurate basis. This distribution of the indirect costs is the most difficult problem of manufacturing accounting. Before considering the various methods of distributing indirect costs, let us secure a better understanding of what the component parts of indirect are.

Sources of Indirect Costs.—The amount and character of indirect are dependent upon the nature of the plant in which they occur. In a broad sense it may be said that they arise out of (*a*) expenses incident to the upkeep and use of buildings and (*b*) expenses of power production.[1] Incident to the upkeep and use of buildings are taxes, insurance, depreciation, repairs, heating, lighting, and janitor and watchman's service. In case of rented buildings the rent charge takes the place of all or a part of the above. The amount of each of the above items is determined on some practical basis—taxes by the state, insurance by the management, depreciation by the character of the buildings, repairs, heating, lighting and janitor's and watchman's services by actual requirements.

Incident to power production are insurance on boilers, pipes, etc., depreciation, fuel, supplies, maintenance, wages of engineers, firemen, etc., power purchased (if any), and such proportion of building expense, mentioned above, as is applicable to power production. This last would therefore represent a credit to building expense and a debit to power production expense.

General and Administrative Expenses.—Not all expenses other than labor and materials should be considered as indirect to be distributed or prorated over the various jobs numbers. There are certain kinds of expense that are best handled as general or administrative expenses to be charged direct to profit and loss. Into this list falls the income tax. But property taxes should be prorated over the various component parts of plant in a way which will permit their being properly charged to plant. Some authorities class rent as an expense not distributable as indirect.[2] Since, however, it merely displaces the expenses incident to direct ownership it is better to consider it as a cost of manufacture and therefore distribute it over the output. In brief, the key to the problem, whether a charge should be dis-

[1] E. S. Clark in *Industrial Management*, Jan., 1917, p. 529.

[2] See Wildman: *Principles of Accounting*, pp. 63–4.

tributed as indirect or charged direct to profit and loss as an expense of administration, is the answer to the question, is it a cost of manufacture or is it not? We shall recur to this problem later in this chapter.

Bases of Prorating Indirect Costs.—We may now consider methods of distributing indirect expense. Several bases of doing this have been advocated. We shall consider the following:

1. Direct Labor
   (a) Time
   (b) Cost
2. Raw Materials Cost
3. Prime Cost
4. Machine Rate
   (a) Old Rate
   (b) New Rate

When the direct labor method is employed the indirect is distributed over the various jobs, either on the basis of the hours of labor expended upon the jobs or else upon the basis of the cost of labor expended upon them. When the raw materials method is employed the distribution is made on the basis of the cost of raw materials entering into the various jobs. When the prime cost method is used the basis is the combined labor and raw materials cost. Under the machine rate method indirect is distributed by applying to each machine its proper burden of indirect and then distributing this indirect on the basis of the time during which the machine is occupied on a piece of work.

The Direct Labor Method.—For a detailed discussion of these methods the reader is referred to the treatises mentioned at the end of this chapter. It will suffice to mention here some of the advantages and defects of the various plans. The first two methods mentioned have simplicity in their favor, but the cases in which they serve as accurate bases for distribution of indirect are not many. Certainly, in but few instances is it true that the proper amount of indirect applicable to an order is proportionate to either the cost or the duration of the direct labor expended on that order. Indeed, it is oftentimes the case that the comparative cost of labor on products requiring a great amount of machine work is much smaller than on those requiring much hand work, although the indirect applicable to such a job is naturally greater because of the machine work.

The Raw Materials Method.—Similar considerations invalidate the raw materials basis in most instances. In case of the highest grade products of our factories raw material frequently forms a rather small percentage of the total cost of the output;

so that it may usually be said that the proportion of indirect applicable to work done is in no way proportionate to the cost of raw material entering into the work.

The Prime Cost Method.—The same objections that are advanced against the direct labor and the raw materials methods of distributing indirect may be brought with equal relevancy against the plan which attempts to combine the two, namely, the prime cost method. We need not conclude, of course, that in no instances are these methods practicable. Manufacturing processes are possible in which they would serve satisfactorily; but in most cases they do not.

To illustrate, assume that two commodities are being manufactured in a factory. One is of very simple construction, the production of which requires a prime cost of $500, made up of $200 of labor and $300 of raw material. The time required in construction is brief, little milling and machining being needed. The other commodity is of a more complex structure, the cost of which consists to a large degree of indirect, owing to the great amount of expensive machine work necessary. The raw material, however, costs but $100 and the labor, consisting mostly of attendance upon and supervison of the machine processes, $75. Clearly, in this instance it would be quite improper to charge indirect to these two commodities by the direct labor, raw materials, or prime cost method. The indirect cost, instead of being proportionate to these, is just the opposite, being large where labor and material costs are small, and vice versa.

CHAPTER XXXVIII

MANUFACTURING ACCOUNTING—(*Continued*)

The Machine Rate Method—Old Machine Rate.—When the machine rate is employed the distribution is first made to the various departments and is then distributed to the various machines in the departments. Under the old machine rate, the indirect for the department having been determined, it is divided by the actual number of machine hours for the department to determine the rate. Thus if the indirect for department A is $10,000 and the total number of machines in department A is 20, and each, when operating full time, runs 250 hours in a given month, then the machine rate for department A, for this month, is $\$10{,}000 \div (20 \times 250) = \$2$. Consequently, for each hour that a machine in department A operates on an order, that order is charged with $2 for indirect, and so on.

A little reflection will serve to indicate that this plan is accurate only under more or less extraordinary circumstances; that is, when all of the machines in a department are uniform in size, cost, and power consumption, and when there is no irregularity in the process, such as bench work.

The New Machine Rate.—The new machine rate plan obviates this difficulty by affording a still more definite and direct plan of allocating the indirect. As in the old rate plan, the indirect must be distributed first over the departments. But a step further is then taken. Each machine is considered as a unit, or "production center," and the indirect applicable to a department is in turn distributed over the various machines in the department on an equitable basis, as, for example, that of space occupied.[1] Each machine is then given a rate which is obtained by dividing the total indirect applicable to that machine by the total number of hours the machine runs during the month, no allowance being made for idle time. The charge to any given order is secured by multiplying the machine rate by the number of hours the machine operates on that order.

[1] The basis varies with the nature of the expense and the character of the factory. Thus electric lighting costs might be distributed on a space basis or on the basis of the number of bulbs used.

Idle Machine Time.—However, it is seen that, owing to the impossibility of keeping all machines running full time, all of the burden will not be allocated to the various orders operated upon. The question arises, how shall the unallocated burden left over as the result of idle machine time be charged? Here two very definite and distinct theories have been developed. The one theory, of which the leading exponent and originator is A. Hamilton Church, advocates the distribution of this unapplied burden by means of a "supplementary rate" (secured by dividing the undistributed balance of indirect by the standard number of hours operated by all machines). This adds a cost to all orders proportionate to the machine hours spent on each, and dependent, absolutely, upon the amount of idle time. The other theory, advocated by Clinton H. Scovell, is to the effect that the undistributed balance of burden resulting from idle machinery is not an element of cost of manufacture, but rather a general expense or loss representing the penalty placed upon an organization which is unable to keep its machinery running up to standard full time. This undistributed burden ought, therefore, to be charged direct to profit and loss.[1]

The indirect for any given month is determined by an estimate based upon the indirect cost of previous months. As a consequence, when the supplementary rate plan is employed and the whole of the *estimated* indirect is charged to the various orders through the primary machine rate and the supplementary rate, it may be found that the *actual* overhead for the month differs from the estimated. Estimated overhead is employed because some little time may be required to ascertain actual overhead. When actual overhead is determined an adjustment must be made for it. This then gives rise to a second supplementary rate, by means of which the difference between the estimated and the actual indirect is either charged or credited to the various orders, accordingly as the actual indirect is greater or smaller than the estimated indirect.[2]

[1] See the works of Messrs. Church and Scovill listed at the end of this part.

[2] The difference between the actual and estimated indirect, if small, might be added to the indirect of the succeeding month; or if it is possible to delay distribution of indirect until actual indirect for the month is learned, no such undistributed balance occurs. What follows in this chapter is said subject to this qualification.

To illustrate, assume that the total number of machine hours for a given machine, running full time, is 360 for a given month, and that the total indirect applicable to that machine is estimated to be $720 for that month. Its rate per hour is, therefore, 720÷360 or $2. But if idle time for the month for this machine amounts to 60 hours, the unapplied portion of the estimated burden will amount to 2 × 60 or $120. Further, let us assume that in due time the actual indirect for this month is ascertained to be $780, or $60 in excess of the estimated indirect. To simplify matters for illustrative purposes assume further that the machine's time during the month has been occupied exclusively upon four order numbers. Below is shown the appearance of the account for indirect and also the cost ledger accounts for the four orders, after the indirect has been distributed, first by the direct rate, secondly, by the first supplementary rate, and, thirdly, by the second supplementary rate:

General Ledger

Indirect, Dep't. A.

Actual Indirect.............	$780	Direct rate................	$600
		1st Supplementary	120
		2nd Supplementary........	60
	$780		$780

Cost Ledger

Order No. 230 (70 hrs.)

Direct Rate..............	$140.00
1st Supplementary........	28.00
2nd Supplementary........	14.00

Order No. 231 (100 hrs.)

Direct Rate..............	200.00
1st Supplementary........	40.00
2nd Supplementary........	20.00

Order No. 232 (70 hrs.)

Direct Rate..............	$140.00
1st Supplementary.	28.00
2nd Supplementary........	14.00

Order No. 233 (60 hrs.)

Direct Rate..............	$120.00
1st Suppementary........	24.00
2nd Supplementary...	12.00

The hours indicated within the parentheses are the actual number of hours spent by the machine on the different orders. The "direct rate" charge is made on the supposition that the machine operates full time. The "1st supplementary" charge distributes the balance of estimated indirect resulting from idle time. The "2nd supplementary" charge distributes the excess of the actual over the estimated indirect. The "1st supplementary" rate is secured by dividing the unapplied burden resulting from idle time, \$120, by the number of operating machine hours for the month, 300, which gives, as the first supplementary rate per hour, \$0.40. The "2nd supplementary" rate is secured by dividing the excess of the actual indirect over the estimated indirect, \$60, by the number of operating machine hours for the month, 300, which gives as the second supplementary rate per hour, \$0.20. The various distributions are shown in the above accounts.

Use of Clearing Accounts.—In actual practice the account for indirect would be either in the form of one general clearing account in the General Ledger, or else there would be set up separate accounts for indirect for the various departments. Since the estimated indirect is charged to the various order numbers before the actual indirect is determined the general ledger indirect account would be credited with the amount of the estimated indirect before being charged with the actual indirect. At the time the various order numbers are charged with their due proportion of indirect as determined by the direct machine rate, an entry is made in the General Journal debiting manufacturing account (controlling the Cost Ledger) and crediting the account for indirect. Thus, for the example suggested above the entries are:

Manufacturing	\$600.00	
To Indirect, Dept. A		\$600.00

When the amount of the first supplementary is determined the following entry is in order in the General Journal:

Manufacturing	\$120.00	
To Indirect, Dept. A.....		\$120.00

Finally, when the second supplementary is determined the following entry is made:

Manufacturing	\$60.00	
To Indirect, Dept. A		\$60.00

Departmental Indirect.—Before the last entry above is made, however, the departmental indirect account is charged with the actual amount of indirect for the month. The procedure by which this actual charge for indirect finds its way to the various departmental indirect accounts is as follows. All indirect expenses which can be computed on a direct departmental basis are charged to proper departmental accounts. Thus we may assume that at the close of the month the departmental expense accounts of Department A show the following charges:

Supplies, debited with	———
Maintenance, debited with	———
Wages of janitors, debited with	———
Lighting, debited with	———

While accounts for the factory as a whole are charged as follows;

Taxes, debited with	———
Insurance, debited with	———
Depreciation, debited with	———
Heating, debited with	———

These are merely put down thus for illustrative purposes. The classification of such accounts on a departmental or a general factory basis varies with conditions. If, however, the above is the accepted basis, then to transfer these debit balances to the departmental indirect accounts the following journal entries are necessary:

Indirect, Dep't. A.	———	
To Supplies, Dep't. A.		———
Maintenance, Dep't. A.		———
Wages of Janitors, Dep't. A		———
Lighting, Dep't. A.		———
To carry the departmental expense charges to the clearing account for indirect.		
Indirect, Dep't. A. ½	———	
Indirect, Dep't. B. ¼	———	
Indirect, Dep't. C. ¼	———	
To Taxes, whole factory		———
Insurance, whole factory		———
Depreciation, whole factory		———
Heating, whole factory		———
To distribute the various general factory expenses to the departmental indirect accounts.		

The various expenses are distributed on some proper basis; of course the different ones need not be distributed in the same proportion to the different departments. In this way each departmental indirect account is charged with the department's due proportion of such indirect, and this is in turn charged to manufacturing, as has already been shown.

Criticism of Supplementary Rate Plan.—The attitude of those who criticize the supplementary rate plan may best be shown by the following quotation from Scovell:

"Under the old and familiar percentage-on-wages method, as usually applied, or with the cumbersome and unsound supplementary rate, the costs *seem* low during periods of active production, while during periods of curtailed production costs *seem* high, since all of the burden is distributed over a greater or less volume of manufacture. Thus a varying production, which is entirely beyond the control of foremen and operatives apparently affects the cost of work done by them." Further, "contrary to the general practice stated above, the fact is that only a part of the total burden is chargeable to the manufacturing cost of the product made during periods of curtailed production, the part chargeable being the same percentage of the total burden, as the curtailed production is of the standard production."[1]

It is difficult to understand why the cost of a product should be increased by being charged with the cost of idle machine time. To do so establishes costs without a standard and which will continue to change, not with the rise and fall of labor and materials, but with the changes in the amount of work the factory may be fortunate in obtaining. The products of busy machines are penalized for the expense of upkeep of idle machines. The cost of idleness is shown as a cost of manufacture. If on the other hand, the unapplied indirect were charged direct to profit and loss as a general expense not distributable, it would at once serve as a convenient measure of the loss due to part time operations and thus afford a useful index of manufacturing efficiency.

Unapplied Indirect Charged to Profit and Loss.—Under this plan the distribution of the indirect in the example cited above is accomplished as follows:

General Ledger

Indirect, Dep't. A

Actual Indirect	$780	Direct Rate	$600
		Profit and Loss	180
	$780		$780

Cost Ledger

Order No. 230 (7 *hrs.*)

Direct Rate $140

Order No. 231 (100 *hrs.*)

Direct Rate $200

Order No. 232 (70 *hrs.*)

Direct Rate $140

Order No. 233 (60 *hrs.*)

Direct Rate $120

[1] *Cost Accounting and Burden Application*, p. 70.

According to this method each order is charged with only that proportion of indirect which would be applicable were there no idle machine time. As a consequence the cost of a manufactured article is not affected by idle time, all unapplied indirect being charged directly to profit and loss. This plan does not, of course, remove the discrepancy between estimated and actual burden, which may be distributed on a basis similar to that already suggested, or if it is small it may be carried to profit and loss direct or else added to the following month's indirect. It will be used of course in making the estimate of the next month's indirect.

Transfer to Finished Goods.—When an order number in the Cost Ledger has been charged with direct labor, raw materials, and indirect for the month, its monthly record of cost is complete. When all elements of cost entering into its production, continuing over a more or less extended period of time, are entered in the Cost Ledger, a complete record of cost is furnished. The next step is to indicate the accounting procedure required to record the transfer of the finished product from the factory to the stock-room or finished goods department.

As a record of finished goods on hand, a Finished Goods Ledger should be kept, controlled by the finished goods controlling account in the General Ledger. When goods are transferred from the factory to the finished goods department the proper accounts in the Cost Ledger are credited and at the same time detailed charges are made in the Finished Goods Ledger, at cost price. For the total of goods thus transferred during the month a summary entry is made in the General Journal and posted to the proper controlling accounts, thus:

Finished Goods (controlling account)..............	———	
To Manufacturing (controlling account).......		———

Sale of Goods.—Finally, as the finished products are sold the detailed accounts in the Finished Goods Ledger are credited, while for the total monthly sales entries are made, crediting the finished goods controlling account and charging profit and loss with the cost of goods sold, thus:

Profit and Loss..................................	———	
To Finished Goods..........................		———

From this point the procedure is not different from that of the ordinary trading concern.[1]

Advantages of a Cost System.—1. *As an Aid in Contract Work.*—In determining the price at which he is willing to undertake the execution of a piece of work, the experience with past costs is of most value to a contractor, if accurate records have been kept. When such records are non-existent price-making is haphazard and liable to be conditioned more upon what a competitor may offer than upon a suitable margin of profit. Such procedure has nothing to recommend it. Sometimes it may be necessary to sell below cost, but it should be done only with a full comprehension of the facts. Perhaps a competitor may be selling below cost. Such competition, when continued long enough, extinguishes itself. There is but one adequate basis upon which to determine prices—accurate cost data.

2. *As an Aid in Preparing Monthly Statements.*—An adequate cost system necessitates the keeping of accurate book inventories. A book or perpetual inventory differs from a physical inventory. The latter is taken at the close of an accounting period by means of an actual count. A perpetual inventory, on the other hand, consists of detailed records of goods so kept that they at all times furnish the needed information as to their kind and quantity. Forms are provided upon which are entered the additions to and deductions from any given class of goods. In manufacturing accounting perpetual inventories should be kept for three classes of commodities—raw materials, goods in process, and finished goods. These book inventories do not dispense with the necessity of physical inventories, but they lessen the burden of taking them by making it possible to take them at times when work of other kinds is not pressing.

When all postings from journals have been made the balances of the three controlling accounts, raw materials, manufacturing, and finished goods, represent the totals of the raw materials, goods in process, and finished goods inventories, respectively. Even were monthly physical inventories feasible the delay incurred would be considerable. Perpetual inventories avoid this. At intervals the book or perpetual inventory should be checked

[1] In the income statement it is customary, of course, to detail the elements entering into cost—taxes, depreciation, wages, insurance, fuel, etc.; also to show the effect on earnings of changes in inventories of raw materials, goods in process, and finished goods.

up by a physical inventory and errors adjusted. One of the most important qualities of the monthly income statement is its timeliness. To this perpetual inventories are essential.

3. *Locating Leaks and Inefficient Procedure.*—Any discrepancy between book and physical inventories is investigated. Such a check on the keeper of the raw materials serves as an incentive to carefulness on his part. Sometimes unprofitable processes or departments are sustained by profitable ones. By learning costs with exactness these unprofitable lines are located and may be discontinued or made efficient by introducing needed changes.

4. *Moral Effect.*—When a foreman knows that his department is being compared with other departments on an exact basis he employs all of his influence to lower costs and increase production. He economizes on raw materials and supplies. He returns all unused raw material to the storeroom for credit to his department. A scientific supervision is established and merit is rewarded. Favoritism is made impossible and endeavor profitable.

CHAPTER XXXIX

MANUFACTURING ACCOUNTING—PRACTICE

Problem 1.—

Following is the trial balance of the Ironton Manufacturing Company as at Dec. 21, 1919:

Purchases of Raw Materials	$14,500.00	
Inventories: Raw Materials	2,100.00	
Goods in Process	1,900.00	
Finished Goods	1,271.40	
Wages	8,999.25	
Sales		$18,128.40
Expense, factory	312.00	
Discount on Purchases		348.00
Allowances to Customers	187.40	
Rentals	340.00	
General Expense	411.41	
Insurance (current)	418.00	
Cartage Out	144.00	
Commissions	188.00	
Notes Receivable	5,000.00	
Accounts Receivable	5,890.15	
Petty Cash	100.00	
Cash in Bank	5,491.17	
Factory: Tools	3,000.00	
Drawings and Models	1,200.00	
Machinery	6,800.00	
Notes Payable		9,700.00
Capital Stock Outstanding		20,000.00
Surplus		10,076.38
	$58.252.78	$58,252.78

The inventories Dec. 31, 1919 are:

Raw Materials	$ 2,121.50
Goods in Process	10,100.00
Finished Goods	4,040.00
	$16,261.50

The company has been operating for about three years. The books were last closed as of Dec. 31, 1918, but nothing has been written off for depreciation of tools, drawings and models, and machinery. A reserve for bad debts of $100 should be set up.

Prepare such statements as are necessary to show the worth of the outstanding capital stock.

Problem 1—*Solution.*—To show clearly the progress made during the year and the present financial condition of the company it will be necessary to set up an income statement and a balance sheet. The amount of depreciation to be written off on tools, drawings and models, and machinery is optional. We shall assume that $1500 for tools, $700 for drawings and models, and $2000 for machinery, represent the depreciation for the past two and one-half years. Only one year's depreciation should be charged to operations for the current year, and the remainder should be carried direct to surplus because it should have been charged off previously to the current year.

The income statement follows:

Income Statement, Ironton Manufacturing Co. for year ending Dec. 31, 1919:

Manufacturing Section

Inventories Dec. 31, 1918:			Balance, Cost to Manufacture....	$15,259.15
Raw Materials...............		$ 2,100.00		
Goods in Process............		1,900.00		
Finished Goods..............		1,271.40		
		$ 5,271.40		
Purchases..................		14,400.00		
		$19,771.40		
Less Inventories Dec. 31, '19:				
Raw Materials.......	$ 2,121.50			
Goods in Process.....	10,100.00			
Finished Goods......	4,040.00			
		$16,261.50		
Cost of Raw Materials....		$ 3,509.90		
Wages......................		8,999.25		
Expense, factory............		312.00		
Rentals.....................		340.00		
Insurance...................		418.00		
Depreciation: Tools..........		600.00		
Drawings and Models......		280.00		
Machinery.....		800.00		
		$15,259.15		$15,259.15

Trading Section

Balance, Cost to Manufacture..	$15,259.15	Sales	$18,128.40
Allowances to Customers	187.40		
Cartage Out	144.00		
Commissions	188.00		
Balance, Trading Profit	2,349.85		
	$18,128.40		$18,128.40

Profit and Loss Section

General Expense	$ 411.51	Balance, Trading Profit	$2,349.85
Balance, Net Profit to Surplus	2,286.44	Discount on Purchases	348.00
	$2,697.85		$2,697.85

The balance sheet follows:

Balance Sheet, Ironton Manufacturing Co.
as at Dec. 31, 1919:

Notes Receivable		$ 5,000.00	Capital Stock Outstanding		$20,000.00
Accounts Receivable		5,890.15	Notes Payable		9,700.00
Petty Cash		100.00	Surplus Dec. 31, 1918	10076.38	
Cash in Bank		5,491.17	*Less* Depreciation 1½ yrs	2520.00	
Inventories:					
Raw Materials		2,121.50		7556.38	
Goods in Process		10,100.00	*Add* Net Profit, 1919	2286.44	9,842.82
Finished Goods		4,040.00			
Tools	3,000.00				
Less Res. for Dep.	1,500.00	1,500.00			
Drawings	1,200.00				
Less Res. for Dep.	700.00	500.00			
Machinery	6,800.00				
Less Res. for Dep.	2,000.00	4,800.00			
		$39,542.82			$39,542.82

The wasting assets have been written down to a conservative basis and all proper expenses have been charged against the current year's costs of operation. As a result the net profits for the current year are something over 11% on the capital stock outstanding and something over 8% on net capital invested, *i.e.*, capital stock outstanding plus surplus.

For each share of outstanding stock (par value $100) there exists a net investment of $137.78 which, as nearly as can be ascertained from the data available, is the value of the stock per share.

Problem 2.—The trial balance of the Williams-Allen Manufacturing Company, as at Dec. 31, 1919, is as follows:

Raw Materials, 12/31/18	$ 90,000.00	
Goods in Process 12/31/18	30,000.00	
Finished Goods 12/31/18	25,000.00	
Factory Wages	75,000.00	
Sales		500,000.00
Purchases (raw materials)	160,000.00	
Factory Expense	50,000.00	
Purchase Discounts		6,000.00
Rentals (office space)		2,000.00
Factory Insurance (current)	3,000.00	
Freight Out	1,000.00	
Selling Expenses	26,000.00	
Investments	60,000.00	
Accounts Receivable	42,000.00	
Cash	7,000.00	
Factory Building	220,000.00	
Machinery	135,000.00	
Tools	20,000.00	
Capital Stock:		
Common		200,000.00
Preferred (6% cumulative)		100,000.00
Surplus		36,000.00
Bonds (1st Mortgage)		100,000.00
	$944,000.00	$944,000.00

Inventories Dec. 31, 1919:	
Raw Materials	$100,000.00
Goods in Process	25,000.00
Finished Goods	31,000.00
	$156,000.00

The company began operations two and one-half years ago and, except for the current year, adequate depreciation allowances have been made on all wasting assets. Instead of being credited to depreciation reserves these allowances were credited directly to the asset accounts, so that the amounts shown indicate cost less depreciation. You are requested to submit an opinion upon the value of the preferred stock, which has a par value of $100 per share. Show how you arrive at this opinion. Submit an income statement and a balance sheet.

CHAPTER XL

RELATION OF ACCOUNTING TO MANAGEMENT

Purpose of Accounts.—The chief usefulness of accounts begins where the routine work of creating them ends. Too frequently the accounts are regarded as an end in themselves rather than as a means of promoting more efficient management. An accounting system must afford not only a complete record of details regarding accounts receivable and payable, inventories, uncollectible accounts, and all other pertinent financial data which compose the *history* of a concern's operations; it must also supply live information to the manager of such a character as will enable him to deal efficiently with present and future problems.

Information the Manager Needs.—The problems which confront the manager are, roughly, those which refer to strictly internal conditions—departmental efficiency, waste, amount of turnover, and so on; and those which arise in connection with the outer world—price making, contracts, taxation, and so on. He requires all information which will aid him in arriving at an accurate and businesslike solution of these problems. Much of this information must be furnished by the accountant, who, if he makes the most of his opportunities, will find his services in constant demand for supplying this useful information to the executive department.

The Balance Sheet and Income Statement.—Much information can be derived by the manager from a study of the current balance sheet and the income statement. Moreover, the usefulness of these statements is greatly increased if they are presented in such form as will enable the making of comparisons between periods. This is emphatically true of the income statement. Many corporation reports present these in comparative arrangement. Sometimes balance sheets for successive periods are also presented in comparative form. Forms of comparative income statements are shown on pages 203 and 206.

The usefulness of such comparative statements is limited. They do not show all of the information that the manager requires and they do not emphasize vital tendencies. It becomes necessary, therefore, to contrive means not only of presenting all figures and facts needed by the manager or executive, but of presenting these in such form that changes and tendencies are emphasized and that the greatest amount of information may be secured with the least expenditure of time and effort.

Character of Reports.—Cost systems sometimes fail because cordial cooperation is lacking between the accountant and the manager. Without this such reports lose much in value. The skillful manager will regard them as a means of control over departments and processes. His attitude must determine, largely, to what degree the cost system is to be an instrument of control.

Reports to the manager may be either statistical and tabular in form, or graphic, or the two methods may be combined. Ordinarily the graphic method will be found less satisfactory than the tabular method, for routine purposes, although there may be exceptions to this rule. The manager should be sufficiently familiar with conditions and tendencies to interpret statistics, and the presentation of many graphs might lead to unpleasant results. The use of graphs should be limited to the explanation of the more important tendencies of business which necessitate the consideration of considerable periods of time; such, for example, as the amount of net sales from month to month, the relationship between sales and net profits in different periods, and the variations, from period to period, of purchases, sales, and inventories. By proper planning such graphs may be made continuing in character, additions being made as the latest results of operations are reported.

Expression by Percentages.—Within certain limitations percentages may be employed to bring significant relationships and changes before the mind. Being related to a common base of 100 they afford a better mode of comparison than do sums expressed in quantities of dollars, or other concrete units of measurement. Thus, if we try to distinguish the relative significance of two sums of money, $1728.40 and $1423.80, we are aided by being informed that the latter amount is 82.3+ % of the former amount. Or if we wish to compare a ship of 19,000 tons burden with one of 12,000 tons burden we are aided in making the comparison by knowing that the smaller tonnage is 63.1+ % of the larger. That percentages must be carefully related to a common base, however, will appear from the considerations which follow.

Problem of Price-making.—One of the most important duties of the executive is to fix prices that will enable him to meet competition and still make a suitable profit. Haphazard price-making is a frequent cause of insolvency and bankruptcy, especially when competition is keen and costs inaccurate. Various factors—business customs, changing fashions, credit conditions, and so on—enter to complicate the problem of price-making. These external factors do not enter directly into the accounts but they do affect materially the use which can be made of the results which the accountant secures.

Even when costs are accurately kept the method of fixing the selling price is often misunderstood. It has been estimated that out of every one hundred individuals who engage in the retail business only five succeed. This great proportion of failures is unquestionably due in part to ignorance of capital requirements and of correct methods of calculating profits on the capital invested.

The real cost of doing business is apt to be overlooked by the small enterpriser because of his failure to possess accurate information as to the more intangible elements of cost, such, for example, as contingencies and depreciation. Items of expense for which immediate payment must be made, such as rent, heat, light, wages, advertising, insurance, and freight are usually accounted for with a fair degree of accuracy; but not so those of a less definite character such as the unavoidable depreciation of stock, fixtures and real estate, as well as depreciation of stock resulting from overbuying or errors in buying, losses caused by dishonest employees, bad debts, losses on special sales and so forth.

Profits Based on Selling Price.—Not only is there a likelihood that the merchant will understate costs of doing business; he frequently adopts the erroneous policy of calculating his profits on cost instead of selling price, with the result that a policy which is wrong in itself is aggravated by understatement of costs upon which the profits are figured. Having established his cost at an amount below that which greater care would have determined, the merchant proceeds to find the selling price which will afford him the desired percentage of profit.

To illustrate, let us assume that the true cost of a commodity is \$10 and that the merchant decides to sell it for \$12.50. This is an increase of 25 per cent on the cost price but only 20 per cent on the selling price. This means that if the merchant reckons his operating expenses as a percentage of gross sales, which is customary practice, while he at the same time figures his profits as a percentage of cost of goods, he is working with two different standards—with financial difficulties for his reward.

Thus, if the income statement shows that the expenses of operation amount to 20 per cent of sales and the merchant concludes that a net profit of 5 per cent will be satisfactory and so proceeds to write up his goods 25 per cent above cost, he is ultimately surprised to find that he has made no profit at all. He discovers that 25 per cent of 100 is but 20 per cent of 125, the selling price, which is just sufficient to cover costs of operating. He errs by reckoning his percentage of profit on cost and his percentage of operating expense on selling price.

The Problem Illustrated.—A merchant buys a commodity for \$1. His operating expenses are 20 per cent of gross sales. He wishes to make a net profit of 8 per cent.[1] What should be the selling price of the commodity?

Solution:

$$100 - (20 + 8) = 72$$
$$\$1 \div 72 = \$1.39 \textit{ Answer.}$$

All problems of a similar character may be solved by the following rule: To the operating expense add the net profit desired, both expressed as percentage figures. Deduct this sum from 100 per cent. Divide the cost of the article by the difference.

Selling Price the Proper Basis.—The common error lies in the failure to distinguish the selling price as the proper figure upon which to base all percentages of expense and profit; so that sometimes an attempt is made to work both from the sales basis and the cost basis. As has been well said, "many business men seem to have persistently refused to acknowledge that *any per cent of a smaller sum is a smaller per cent of a larger sum*. . . . . or to put it concretely, that if 25 is 25% of 100 it is only 20% of 125 and 25% increase over cost is 20% profit on the selling price."

This leads to a consideration of the reasons for employing sales instead of costs as a basis upon which to figure profits. Re-

[1] Note that per cent. of net profit here refers to cost or to selling price, not to investment of capital.

flection will reveal that no other single item bears such a significant relationship to the various activities of an enterprise. Upon the amount of the sales depend all other functions and activities. When sales are of satisfactory volume, with a duly large margin of income over expenditure, the goal of all the many activities is reached. As a consequence the amount of the sales of an enterprise is made the basis of various calculations. Net sales determines the amount of revenue applicable to payment of costs, expenses, and a suitable return for investment and management. The remuneration of salesmen, for example, is figured as a percentage of sales. Why, then, consider profit as a percentage of cost?

The significance of this is the emphasis it throws on the method employed in fixing selling prices. To illustrate, assume that a grocer finds that the cost of doing business amounts to 18 per cent of net sales. He wishes to learn whether he can make a profit of 10 per cent on a given commodity and sell at the market price. He reasons as follows:

The cost of the article is \$1.50. To this he must add 18 + 10 or 28 per cent to cover cost of doing business and provide the desired profit. To \$1.50 he adds 28 per cent of \$1.50, or \$0.42, which gives \$1.92 as the selling price.

Note the error in this calculation. The cost of doing business is 18 per cent of net sales, but 18 per cent of \$1.92 is \$0.35, which deducted from the selling price, \$1.92, leaves \$1.57 to cover cost and provide the net profit desired. The excess of \$0.07 above cost does not give the merchant a profit of 10 per cent—not even on cost. The confusion arose from a failure to employ net sales as the basis from which to compute all percentages.

Employing the rule given above we find that the correct selling price to provide 10 per cent net profit and cover expenses of 18 per cent is:

$$100 - (18 + 10) = 72$$
$$\$1.50 \div 72 = \$2.08 \textit{ Answer.}$$

Whether the grocer can sell at this price may be questionable, but he has the satisfaction of knowing the truth regarding profits.

Limitations of Interpretation by Percentages.—When the data to be compared are not too numerous the plan of expressing their relationship by the percentage method is effective. When,

Comparative Income Statement, Iron Manufacturing Company, for Six Year Period Ending Dec. 31, 1919

Item	1914		1915		1916		1917		1918		1919	
Net Sales	107,000	100.0	95,000	100.0	90,000	100.0	103,000	100.0	115,000	100.0	140,000	100.0
Cost of Manufacture	50,000	46.7	45,000	47.4	50,000	55.6	52,000	50.5	55,000	47.8	60,000	42.9
Selling Expenses	15,000	14.0	16,000	16.8	17,000	18.9	17,000	16.5	17,500	15.2	18,000	12.9
General Expenses	5,000	4.7	4,500	4.7	6,000	6.6	6,500	6.3	6,600	5.7	7,000	5.0
Net Profits	37,000	34.6	30,000	31.6	17,000	18.9	27,500	26.7	35,900	31.2	65,000	46.4
Dividends Declared	30,000	28.0	30,000	31.6	30,000	33.3	30,000	29.1	30,000	26.1	30,000	21.4
Carried to Surplus	7,000	6.5	00	0.0	13,000*	14.4	2,500*	2.4	5,900	5.1	35,000	25.0

* Deficit for year.

however, the data consist of much detail it is difficult to keep in mind a sufficient number of percentages and at the same time relate them to some common base. A consideration of the following proposition will make this clear. The net sales, manufacturing, selling, and general expenses, net profits, and dividends declared, and amounts carried to surplus, of the Iron Manufacturing Company for the six year period ending December 31, 1919, are as shown herewith.

The percentages shown in this table are based on the sales of the year shown at the head of the column in which they appear. As the sales differ year after year the value of the percentages for comparison of any item in two or more years is nil. See page 287, for a graphic chart of the same data. Percentages are valueless for purposes of comparison unless they are referable to a common base.

Turnover.—Rate of turnover refers to the rapidity of the sale of merchandise. If on an average a business sells out its stock four times a year its turnover is said to be four. Expressed in dollars the turnover is the cost of goods sold. Thus if the income statement shows the following regarding inventories and purchases:

Inventory 12/31/19	$6,000
Purchases	20,000
	$26,000
Less Inventory 12/31/20	4,000
Turnover	$22,000

then assuming that the average stock of merchandise is ($6,000 + $4,000) ÷ 2 or $5,000, the rate of turnover is $22,000 ÷ $5,000, or 4.4.

Nothing deserves more careful attention on the part of the manager than the rate of turnover. If the rate of turnover is below that for similar concerns being run on an efficient basis then either sales are lagging or there is being carried an excessive stock of merchandise. This same principle applies also to manufacturing. One of the best means of avoiding the tying up of capital in excessive stocks of raw materials or merchandise is the keeping of book or running inventories. A large part of the average merchant's capital is invested in merchandise. Anything which abridges the time that elapses between his purchase and his sale of any given commodity to that extent reduces the amount of capital necessary to carry the required quantity of merchandise, or enables the merchant with a given amount of capital to expand his activities by taking on additional kinds of goods.

Some business men hesitate to sell anything below cost and in consequence accumulate quantities of stock which not only grow less and less salable as time passes but tie up a quantity of capital from which no return is secured. If capital properly employed is worth 6 or 8 per cent, it follows that holding articles over long periods of time is disastrous policy. Not only do the articles become less salable but the capital invested in them does not circulate and thus ceases to earn a return, so that ultimately there is incurred both loss of capital and of profit which that capital should normally have earned. It is better to take a partial capital loss, if necessary, to dispose of such goods quickly.

Preparation of the Budget.—The purpose of the budget is to enable the manager to make an intelligent estimate of, and to provide for, the customary outlays which will be necessary during the coming year. In a well thought out plan the budget affords a thoroughgoing survey of future requirements. If the accounts have been well kept they provide a storehouse of information which the manager can use to aid in constructing a budget, making allowance for such changes from the past program as may be necessary. Accounts permit the study of expenditures after they are made. The budget permits the study of expenditures before thay are made. Scientific budget-making is an important step in the direction of economy.

Making Contracts.—The manager can make contracts for future work on an intelligent basis only when accurate costs of past work have been kept. Moreover, it is always desirable to know what is the outcome of any undertaking. This cannot be determined by estimation; only a cost system adapted to the needs of the business will serve. It is necessary to compile costs as work proceeds, especially when the contract covers an extensive undertaking, in order to locate waste and leaks, and to prevent unnecessary or extravagant expenditure. Work accomplished is compared with costs incurred in order to keep the trend of these such that the anticipated profit will result when the work is finished.

Reports on Internal Affairs—Manufacturing.—These reports should take the form of prompt periodical analyses covering:

1. Wastes which occur daily, also with reference to any given lot or order manufactured.
2. Operating costs, daily in relation to orders.
3. Complete cost of orders finished, either daily or weekly.
4. Production accomplished by the day, run, or week, according to nature of the work.
5. Payroll, according to time of payment of wages.
6. Special and general expenses.

CHAPTER XLI

GRAPHIC CHARTS

Use of Graphs.—Statistical data may sometimes be interpreted to advantage by the use of graphic charts. Graphs serve to emphasize tendencies and relationships and to make them more vivid than do tables of figures. Statistical tables are sometimes so detailed and so complicated that only the most experienced can interpret them adequately. Important tendencies are apt to be overlooked. We have found that expression by percentages sometimes is preferable to expression in quantities of dollars and cents; this is especially true when all items to be considered are referable to a common base. When, however, there are two variables instead of one it becomes necessary to contrive some other means of conveying an idea of the significance of their constantly varying relationship to each other. Thus we frequently find that we must interpret numerous quantities relating to successive periods of time. We desire to show their relative weight and tendencies. Graphs are especially suited to this purpose.

Fundamentals of Graphic Presentation.—Graphs are generally employed to indicate the relationship existing between sets of data. One set of data usually refers to an independent variable and the other set of data to a dependent variable. The dependent variable is to be interpreted in terms of the independent variable. Thus we say that food prices have risen 100 per cent over a period of five years. The price of food is the dependent variable and time is the independent variable.

In interpreting accounting data time is usually the independent variable, because most important tendencies of a financial character are measured in terms of days, weeks, months, or years. For example, we say that in one year net profits amount to 5% on invested capital and in the next year to 6%. Here the dependent variable is the rate of net profit on invested capital and time, expressed in years, the independent variable.

Principles of Graph Construction.—For a detailed discussion of graphic presentation the student is referred to works treating of that subject.[1] It will be possible here merely to state the more general rules which must be followed. Presumably, the student is familiar with the common coordinate paper used by statisticians and chartographers. An examination of the charts shown in this chapter will indicate its nature. In general, this paper must be ruled to a scale which careful planning shows to be best suited for the presentation of the data to be charted. If the scale is unnecessarily small it will tend to obscure the curve. The following rules may be studied with reference to the charts which follow:[2]

1. The general arrangement of a diagram should proceed from left to right, *i.e.*, so that it can be read from left to right.

2. Where possible represent qualities by linear magnitudes as areas or volumes are more likely to be misinterpreted. Areas and volumes are not used in this chapter.

3. For a curve the vertical scale, whenever practicable, should be so selected that the zero line will appear on the diagram.

4. The zero lines of the scales for a curve should be sharply distinguished from the other coordinate lines.

5. It is advisable not to show any more coordinate lines than necesary to guide the eye in reading the diagram.

6. The curve lines of a diagram should be sharply distinguished from the ruling.

7. The horizontal scale for curves should usually read from left to right and the vertical scale from bottom to top.

8. Figures for the scales of a diagram should be placed at the left and at the bottom.

9. It is often desirable to include in the diagram the numerical data presented.

10. If numerical data are not included in the diagram it is desirable to give the data in tabular form accompanying the diagram.

11. All lettering and all figures on a diagram should be placed so as to be easily read from the base as the bottom, or from the right-hand edge of the diagram as the bottom.

12. The title of a diagram should be made as clear and com-

[1] See Brinton, W. C.: *Graphic Methods for Presenting Facts;* also Warne, F. J.: *Chartography in Ten Lessons.*

[2] Adapted from report of *Joint Committee on Standards for Graphic Presentation.* Copies may be had from The American Society of Mechanical Engineers, 29 West 39th St., New York: Price 10 cents.

plete as possible. Sub-titles or descriptions should be added if necessary to insure clearness.

Data for Graphic Presentation.—The following are suggestions as to accounting data which afford subject matter for graphic presentation:

1. Comparative sales, for two or more years, by months, also cumulative totals of sales by months.
2. The same by years.
3. Sales, cost of sales and expenses, and net profits by months.
4. Purchases and sales by months.
5. Significant trial balance items, by months.
6. Undistributed indirect and total indirect, by months.
7. Departmental sales, purchases, profits, wages, etc., by months.
8. Advertising expenses and sales, by months.
9. Raw materials purchased, raw materials on hand, goods in process, finished goods, and orders received, by months.
10. Net profits, dividends, and amount carried to surplus, by years.

The charts which follow should be studied with reference both to the data presented, the significance of the relations expressed, and the plan and arrangement of the diagrams.[1]

Following are four diagrams presented here to illustrate the method and possibilities of graphic interpretation of accounting data. Plate I shows the trend of monthly sales of a department for two successive years. This brings before the mind more clearly and more definitely the relative volume and tendency of sales during the two years than a table of statistics would be likely to do. For example, the fluctuations were somewhat more marked in 1918 than in 1919. Sales in 1919 are greater than in 1918 with the exception of one month, April, which shows a remarkable increase in sales, in 1918. Are the tendencies such as would be likely to occur in a general merchandise business? For instance, would sales be likely to fall from a high mark in December to a low mark in January?

Plate II shows the trend of sales and purchases during a given year. Note that in October the purchases are nearly as great as the sales, and that in the succeeding months there is a falling off in purchases. Such a diagram might serve to bring before the

[1] For the use of graphs in studying depreciation methods see Saliers: *Principles of Depreciation*, chapters XI–XV.

manager the fact that overbuying exists. Of course he might learn this from other sources, but in no other way could it be presented so emphatically and so simply. Naturally every graphic illustration must be read with reference to actual conditions. What is overbuying in one business, or under given circumstances, might not be overbuying under other conditions. Purchases are made in advance for the rush seasons in some lines of business. Graphs will serve to emphasize this relationship between purchases and sales.

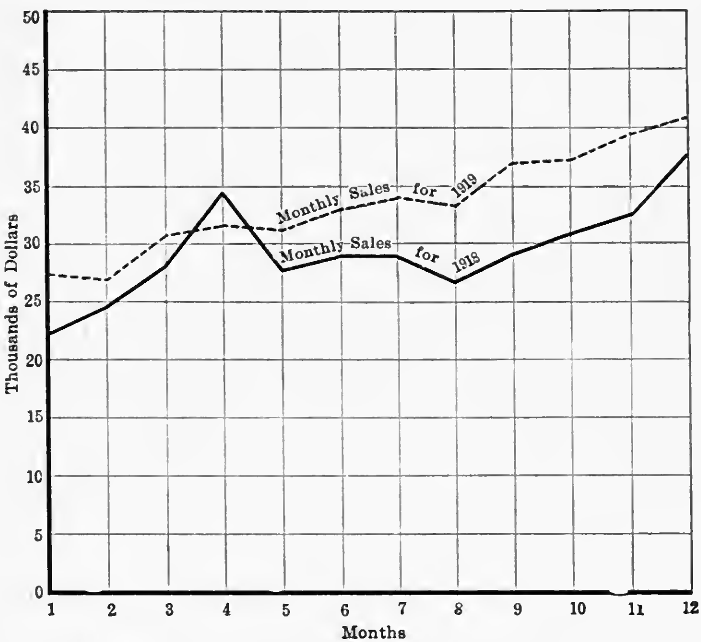

PLATE I.—Monthly sales of department B for the years 1918 and 1919, in thousands of dollars.

Plate III shows the status of the indirect costs of manufacture in Department A of the Falls Manufacturing Company, for the year 1919. Note the progressive relationship existing between distributed and undistributed indirect. It is the desire of the manager to reduce undistributed indirect to the lowest possible minimum because it is the result of idle machine time. Why does not total indirect increase as rapidly as distributed indirect, after the low point in May? What would be the operating condition if the curve for undistributed indirect reached that for total indirect? If it reached the zero line? What would then be the position of the curve for distributed indirect?

Plate IV shows in graphic form the information given in the table on page 278. Although there are a large number of curves, this method is a distinct aid in bringing the situation clearly before the mind. Certain interesting relations and tendencies are brought out. Note that when production declines, net sales and net profits decline still more rapidly. The dividend rate

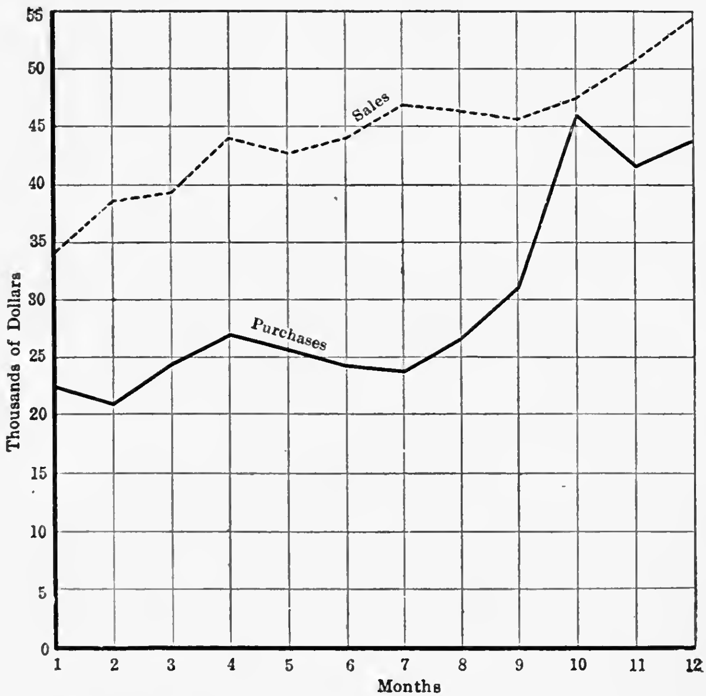

PLATE II.—Monthly purchases, S. T. Alling, for the year 1919.

remains constant. General expenses increase but slightly with increasing business. The same is true of selling expenses. Note that in the years in which a deficit occurred the curve showing the amount carried to surplus falls before the zero line. As sales increase net profits increase still more rapidly.

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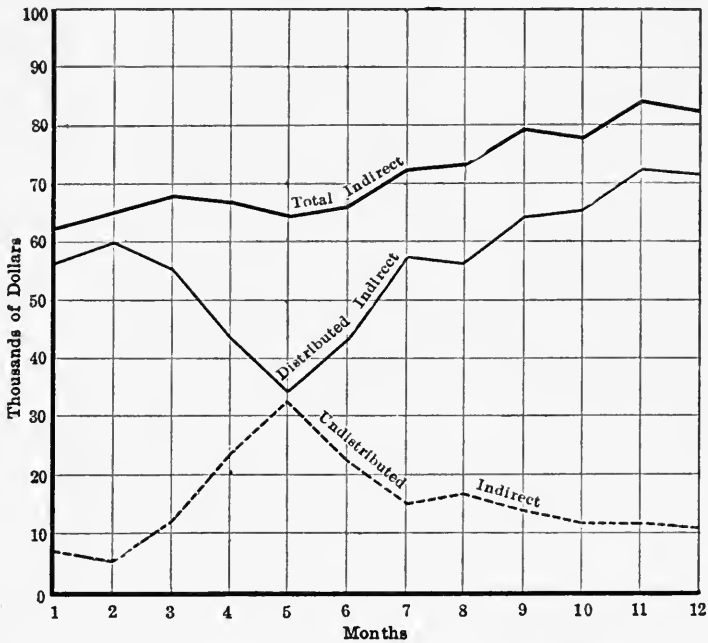

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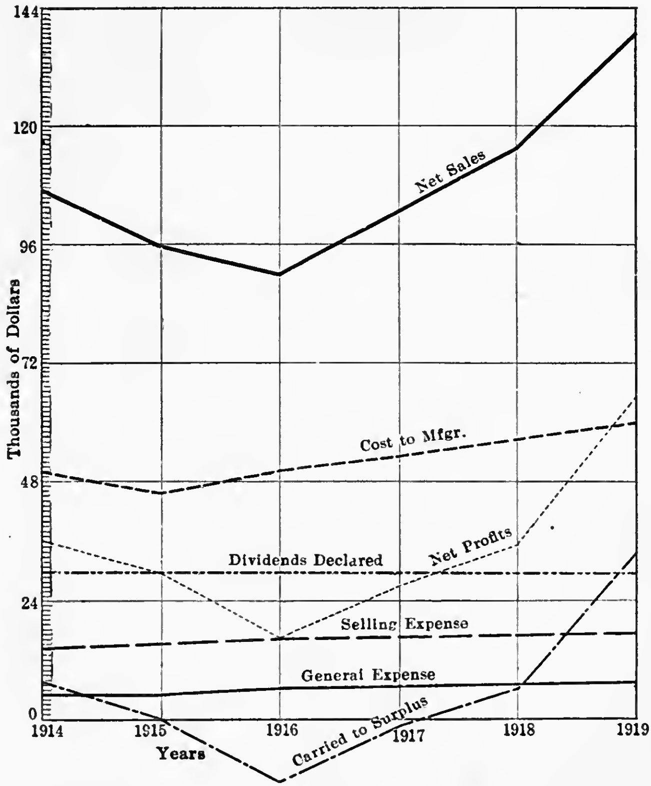

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APPENDIX A

REVIEW QUESTIONS

Chapter I

1. Show why accounting is a branch of economic science.
2. Why do modern industrial methods require carefully compiled records?
3. How are price-making and competition related to accounts?
4. How do adequate records improve credit conditions?
5. In what way is efficient management related to accounting?
6. What information do accounts afford in valuations?
7. How is income taxation dependent on accounts?
8. Why should an investor understand accounting?
9. How does correct determination of profits affect the interests of various claimants?

Chapter II

1. Distinguish between cash and credit transactions.
2. How are cash and credit transactions recorded?
3. What is the function of the Journal?
4. Explain the technical use of the words, debit and credit.
5. Give three rules for debits.
6. Give three rules for credits.
7. Distinguish between losses and expenses.

Chapter III

1. How should the journal be subdivided? Why?
2. What is the function of the Cash Journal?
3. Why are losses or gains not shown for each sale?
4. What is a chronological record?
5. What is an "account?"
6. What is the function of the Ledger?
7. Distinguish between "real" and "nominal" accounts.
8. What are "mixed" accounts?
9. Explain the difference between chronological and functional records.
10. Define "posting."
11. What is the "folio" column?

Chapter IV

1. What is meant by the interpretation of accounts?
2. How do losses and gains affect liabilities and assets?
3. Define "capital."
4. What statement should be made up preliminary to opening a set of books?
5. What is the purpose of the opening journal entry?

6. Suggest how the ledger accounts may be arranged and classified.
7. How should cash be treated in the opening entry?
8. What is meant by the analysis of an account?
9. To what extent should accounts be subdivided?

Chapter V

1. Distinguish between the functions of the Cash Journal and the General Journal.

2. What is the purpose of the purchases account? The sales account? The capital account? The nominal accounts? The accounts payable? The accounts receivable?

Chapter VI

1. What is a trial balance?
2. Show why the trial balance is really a trial balance of balances.
3. What are the two principal objects of a trial balance?
4. Explain the character of purchases and inventory accounts in the trial balance.
5. What is the purpose of the closing entries?
6. Why are the nominal accounts closed?
7. What is the purpose of the profit and loss account?
8. Why is net profit carried to capital?
9. How does the final trial balance differ from the first trial balance? From the balance sheet?
10. How does the profit and loss account differ from the profit and loss statement?
11. What are the six steps in the process of ledger interpretation?
12. What is the relation of the balance sheet and the profit and loss statement? Why is their value largely comparative?
13. What is the accounting period?

Chapter VII

1. What is the purpose of practice work?
2. What materials are required for this chapter?
3. What is a diary of events?
4. Why not charge furniture bought to "Purchases?"
5. What is a "stereotyped phrase?"
6. What is the purpose of the notes receivable account?
7. When, in practice, is posting done?
8. In closing, what becomes of the balance in the withdrawals account?
9. Why is discount on purchases a credit nominal account?
10. Distinguish between the "new" and "old" inventories.

Chapter VIII

1. Why is "mortgage" a real account?
2. Why is "bad debts" a nominal account?
3. Why does not the new inventory appear in the trial balance?
4. Distinguish between interest and interest accrued.

Chapter IX

1. What is an accrual? A deferred charge?

2. Define interest. How may interest periods differ from accounting periods?

3. Explain the use of the interest accrued account.

4. When is the interest accrued account closed? When is the interest account closed?

5. How does the principle of accruals apply to wages and salaries? To taxes?

6. What is a deferred charge? Give an illustration not found in the text?

7. Are buildings and machinery deferred charges? Why?

Chapter X

1. When is advertising a deferred charge?

2. What are adjustment entries?

3. When are adjustments for wages accrued required?

Chapter XI

1. State three causes of depreciation.

2. How does capital in the economic sense differ from capital in the accounting sense?

3. Distinguish between fixed and working capital.

4. How may depreciation cause financial trouble?

5. Why does it sometimes cause bankruptcy?

6. How may depreciation be counteracted?

7. What is a valuation reserve?

8. How may depreciation be charged without using a valuation reserve account?

9. Should the reserve be kept in cash? Explain.

10. Why is the depreciation reserve a clearing account?

11. What is normal depreciation? How is it related to efficiency?

12. Explain the use of valuation reserves for bad debts.

Chapter XII

1. What would an increase in the reserve for bad debts from year to year indicate, providing business is not growing?

2. Why is depreciation an expense?

3. Why is the depreciation reserve called a valuation account?

4. Why should depreciation reserves be deducted from corresponding assets in the balance sheet?

5. Why is the year ordinarily too long as an accounting period?

6. Why cannot bad debts be credited directly to the accounts receivable accounts?

Chapter XIII

1. When is the partnership form of organization desirable?

2. What is a personal service corporation?

3. What are the leading features of common law partnerships?

4. How may limited partnerships be established?

5. May all partners be limited as to liability?

6. How does the English Partnership Act of 1890 define a partnership? The New York law?

7. What provisions should appear in the articles of agreement?

8. What causes lead to partnership dissolution?

9. How are assets distributed at dissolution?

Chapter XIV

1. How does accounting for partnerships differ from accounting for a sole proprietor?

2. When is goodwill brought in to adjust partners' capital accounts?

3. How does the interest question arise in partnership accounting?

4. Why distribute interest on investments when profits are distributed in proportion to investments?

5. What is meant by the average investment for a given period? How is it found?

6. In closing, how are the partners' withdrawals accounts treated?

7. How is a deficit treated when a partnership is liquidated?

8. No provision to the contrary, how are profits divided among partners?

Chapter XV

1. Give reason why Gray and Smith credit their capital accounts with 5 per cent on their investments?

2. Why are not withdrawals carried to profit and loss?

Chapter XVI

1. What changes in the system of accounts does expanding business necessitate?

2. What is the purpose of controlling accounts and subordinate ledgers?

3. When are special journals needed?

4. What is the purpose of special columns in journals?

5. When are postings to the controlling accounts ordinarily made? Why?

6. How do controlling accounts facilitate the work of finding errors?

7. How should returned sales and returned purchases be treated?

Chapter XVII

1. What is the purpose of a bank account?

2. Why should all cash receipts be deposited in bank?

3. Describe the imprest system of handling petty cash.

4. When is petty cash account charged in the ledger?

5. What advantages has the imprest system?

Chapter XVIII

1. Name the books ordinarily required in a system of accounts for a trading concern with numerous accounts payable and receivable.

2. What is the significance of a "Salaries Prepaid" account?

3. When the petty cash is replenished what accounts are charged?

4. How distinguish between items to be paid from petty cash and by check?

6. Why cannot a purchase of furniture be entered in the purchases journal? How might this be remedied?

7. What is meant by accrued interest?

Chapter XIX

1. What is the purpose of the voucher register?
2. What is a voucher system?
3. What is a voucher?
4. Explain use of paid and unpaid vouchers' files?
5. What charges are made through the voucher register?

Chapter XX

1. What books does the voucher register displace?
2. How are discounts on purchases taken care of in the voucher system?
3. What columns should a voucher register contain?
4. How should vouchers be numbered? Why?
5. Why are adjustments and closing entries made in the general journal?

Chapter XXI

1. When is a private ledger desirable?
2. What is the function of the private journal?
3. What accounts are ordinarily kept in the private ledger?

Chapter XXII

1. How is the private ledger related to the general ledger?

2. What transactions require entries in the private ledger?

3. Is it usually desirable to open the profit and loss account in the private ledger? Why?

Chapter XXIII

1. When does the corporate form of organization become desirable?
2. How are corporate policies determined?
3. What is meant by limited liability? Double liability?
4. What principle determines the desirable ratio of stocks to bonds?
5. What is the status of a stockholder in a corporation?
6. How is ownership in a company transferred?
7. What is cumulative preferred stock?
8. What is the deed of trust?
9. What is stock full paid?

Chapter XXIV

1. Should unissued stock be shown in the opening entry? Why?

2. What accounting procedure is necessary when subscriptions are paid in instalments?

3. What may be received in payment of subscriptions?

4. What explanations are desirable in the opening entry?

Chapter XXV

1. How does the valuation question arise when a proprietorship or a partnership is incorporated?

2. Should goodwill ever be capitalized? Why?

3. What factors determine the desirable amount of authorized capital stock?

4. Describe the process of conversion to the corporate form (*a*) when the old books are continued; (*b*) when new books are opened.

Chapter XXVI

1. What is the deed of trust?

2. What factors determine the interest rate of bonds?

3. Describe the accounting procedure (*a*) when bonds are sold at par; (*b*) when sold above or below par.

4. What is meant by the effective interest rate?

5. How is the effective interest rate determined?

6. When and how should interest charges be recorded?

7. When is the interest accrued account closed?

8. What is the relation of the premium or discount on bonds to current profit and loss?

Chapter XXVII

1. What are bonds issued in perpetuity?

2. What are the two sources of funds for redemption of bonds?

3. How may the question of bond redemption be related to depreciation?

4. What is a sinking fund? A sinking fund trustee?

5. Why should not interest on bonds be paid out of capital?

6. What should be done with interest earned by the sinking fund?

Chapter XXVIII

1. Why is a surplus or deficit account required in corporation accounting?

2. Who determines the disposition of the surplus?

3. For what objects are special reservations of surplus made?

4. What is meant by a conservative dividend policy?

5. Describe several kinds of dividends.

6. What is a declaration of dividends?

7. What is the accounting procedure when dividends are declared? When they are paid?

8. Describe five books peculiar to corporations.

Chapter XXIX

1. What are *pro forma* journal entries?

2. What is the relation of premium on bonds to interest?

3. What is the purpose of a sinking fund reserve?

4. What is the relation of discount on bonds to interest?

Chapter XXX

1. How is the income account frequently subdivided?

2. What are the advantages of such subdivision?

3. How may discount on purchases be treated in the income account?

4. How does a statement differ from an account?

5. Why is the statement form usually preferable to the account form in published reports?

6. Why is "net sales" an important statistical base?

7. How can the income statement be studied with reference to the assets?

8. What are some of the most important items in the income statement that deserve study?

9. What is the relationship between fixed charges and the margin of profits?

10. How does uniformity in income vary in different kinds of enterprises?

11. How is the preceding question related to the question of reserving profits in the form of surplus?

12. What portion of its funds may a concern safely secure by selling bonds?

Chapter XXXI

1. What is a comparative income statement? How should increases and decreases as between years be expressed?

2. How does Hooper suggest that an income statement should be studied?

3. By what governmental body are railroad accounts prescribed?

4. What is the significance of the operating ratio?

5. What is meant by "other income" in railroad accounting?

6. Why is "renewals" a charge to income?

7. How did the Delaware, Lackawanna & Western charge off discount on bonds? Why is this unusual?

8. What is remarkable about the funded debt of the D. L. & W.?

9. How may the income statement of the U. S. Steel Corporation be criticized?

10. How did the years 1914 and 1915 compare in prosperity for this company?

Chapter XXXII

1. Why are the balance sheet and the income statement complementary business documents?

2. Describe three possible forms of the balance sheet.

3. How should assets be arranged in the balance sheet?

4. How does A. Lowes Dickinson classify invested capital?

5. How do working and current assets differ?

6. Why separate working and current assets in the balance sheet? Would this separation be always desirable?

7. What two interpretations apply to deferred charges?

8. Are expenses paid in advance working assets?

9. How does surplus differ from capital stock?

10. How is liability on capital stock limited?

11. What is the trust fund theory of capital stock?

12. What is the meaning of "wasting assets?"

13. Does the usual rule of preservation of capital apply in case of wasting assets?

14. How, in such a case, are the bondholders protected?

15. What objection may be raised against the use of a sinking fund for this purpose?

16. How may capital stock be reduced in Connecticut?

Chapter XXXIII

1. What does a reasonable interpretation of the trust fund theory require for protection of bondholders?

2. When is it permissible to pay dividends from capital?

3. Should all profits be subject to dividend distribution?

4. Why, in determining profits subject to distribution, is not each year a unit?

5. What is meant by "integrity of invested capital?"

6. When does a profit result from appreciation of property?

7. What is the nature of a premium on capital stock?

Chapter XXXIV

1. How do accounts locate responsibility?

2. What are the objects to be secured by departmentalization?

3. What rules should govern in fixing the number of the departments?

4. How are clearing accounts used in department accounting?

5. On what basis should heat, rent, and advertising be distributed to departments?

Chapter XXXV

1. Why, in department accounting, is it necessary to take careful account of space occupied by each department?

2. What accounts should be kept for each department? What ones should be general clearing accounts?

3. In general, what rules govern in determining the necessary columns in the voucher register, sales journal, etc.?

4. Why must inventories be kept by departments?

5. What statements should be declared, at closing, for a department store?

6. What is the purpose of the trading section? The administrative section?

7. Why is not a balance sheet prepared for each department?

Chapter XXXVI

1. How should space rented be accounted for?

2. Suggest another base than candle power for distribution of light expense.

Chapter XXXVII

1. What is the meaning of "cost," in trade, in manufacture?

2. When is finished product for one concern raw material for another?

3. What is meant by "indirect costs?"

4. How does manufacturing accounting differ from trading accounting?

5. Describe the procedure when materials are purchased.

6. What is a manufacturing order?

7. What is a production order? Plant order?

8. What is the purpose of a cost ledger? By what account is it controlled?

9. What are the chief sources of indirect costs?

10. Why are not certain general and administrative expenses charged to manufacture?

11. What is the direct labor basis of expense distribution? The raw materials method? The prime cost method?

Chapter XXXVIII

1. What is the old machine rate? The new machine rate?

2. Describe two methods of accounting for idle time costs.

3. How does the secondary supplementary rate differ from the first supplementary rate?

4. What does Scovell advocate doing with idle time cost? Why?

5. Give four advantages of a cost system.

Chapter XXXIX

1. Why are three inventory accounts required in manufacturing accounting?

2. Why should drawings and models usually be depreciated rapidly?

3. In general, what determines the value of a share of stock?

4. Why is depreciation an important factor in the determination of stock values?

Chapter XL

1. What information does the manager need? Where does he secure it?

2. In what form should reports to the manager be written?

3. How is expression by percentages useful? What are its limitations?

4. Why should profits be reckoned on the selling price?

5. What is turnover? How does rate of turnover serve as an index of efficiency?

6. What is a budget? How is it related to the accounts?

7. How does a knowledge of costs aid in making contracts?

8. In reporting to the manager on internal conditions, what points should be covered?

Chapter XLI

1. Why are graphs sometimes used to interpret statistics?

2. In graphics, what is the independent variable? The dependent variable?

3. What should be the general arrangement of the diagram?

4. Suggest kinds of data which submit to graphic presentation.

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