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The Cost Approach to th Study of Elementary Bookkeeping and Accounting

Roswell H. Eaton

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"THE COST APPROACH
TO THE
STUDY OF ELEMENTARY BOOKKEEPING AND ACCOUNTING"

695
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A Thesis
Submitted to the Graduate Faculty
of the
University of North Dakota

by
Roswell H. Eaton
" "
In Partial Fulfillment of the Requirements
for the
Degree of
Master of Science in Commerce
June, 1937

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A. V. Quern.

Chairman

Sibus wloke

E. T. Towner

J. V. Breitwieser
Director of the Graduate Division

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CHAPTER 1

INTRODUCTION

The question has often arisen whether the methods used in teaching bookkeeping and accounting were as successful as they might be or whether some other approach to the elementary work in these fields might not be used to better advantage. The experiment upon which this thesis is based is the result of an attempt to find a partial answer to this question. The Cost Approach¹ was designed and used in the elementary courses in accounting at the North Dakota School of Forestry. This was a new method of approaching the field of bookkeeping and accounting used to determine whether through it the students were better able to master the material involved, and whether they were more successful in pursuing advanced courses than those who had the elementary work presented to them through one of the older approaches.

The Experiment

The writer experimented during the three academic years; 1932-33, 1933-34, and 1934-35, with the Cost Approach to elementary bookkeeping and accounting in his classes at the North Dakota School of Forestry, and he takes this means of offering his experience to others. It is not intended to present the Cost Approach as an established procedure, but rather to report the observations of one instructor who has been experimenting with it.

In the first place, it will be well to explain the conditions

¹Suggested by Professor Littleton's article, A Cost Approach to Elementary Bookkeeping, in the Accounting Review for March, 1931, and also in conference with Professor Littleton during the summer of 1931 at the University of Illinois.

under which the experiment was conducted. The school is a Junior College, offering both vocational and junior college work. Its year is divided into three quarters of twelve weeks each. The work in accounting was in charge of the writer, who met the various classes in the subject five periods a week for a fifty minute session each time. In addition to the class period, all students were expected to spend an hour each day in the accounting laboratory.

At the beginning of each year two classes were established: One used the "20th Century College Edition Accounting," and the other used material prepared by the instructor based upon the Cost Approach idea. At the end of the first quarter the two classes were combined, and the text "Elementary Accounting" by Streightoff was adopted. Only a brief survey of the early chapters of this text was taken during the first part of the second quarter, after which the class covered the remaining chapters of the text by the end of the school year.

In each year of the experiment the two classes were of approximately equal intelligence (Tables 1 and 2), yet it is the belief of the writer that the group which had been introduced to the subject of accounting via the Cost Approach was better able to handle the advanced work than were those taught by the other method. This statement is made with due respect for the text published by the South Western Publishing Company. It is an excellent text and is widely used, yet the newer approach seems to give the students an understanding of the fundamental principles of the subject which were not acquired when the old method was used.

One possible reason for the superior results obtained through the use of the Cost Approach which should be taken into consideration, is that possibly more effort was expended upon the classes using the newer approach by the instructor. If so, it was unconsciously done, for no attempt was made to give one class more attention, or to devote more time to one than to the other.

The use of the Cost Approach was not an attempt to teach "Cost finding" as such, but rather to introduce the students to the subject through the use of simple logic in the interrelation of the main accounts in factory bookkeeping. In our other methods of approach the student is too often told, "do it this way, you will understand why later." If the student can only be taught to understand as he goes along, the advanced work in the subject will be more easily grasped. It was with this idea in mind, that the work of the instructor in charge was guided.

Table 1
Average Mental Scores of Students by Classes^a

Class of Year	Classes Using the Cost Approach		Classes Using the 20th Century Approach	
	Number of Students	Average Mental Score	Number of Students	Average Mental Score
1932-33	16	35.2	6	33.3
1933-34	10	36.4	7	35.3
1934-35	12	38.1	17	41.9
Total	38		30	
Average		36.4		38.7

^aThe Average Mental Score was secured from the results obtained on the Otis Self-Administering tests of Mental Ability - Higher Examination, Form A. These results obtained on the Otis Self-Administering test of Mental Ability were secured from the files of Mr. Roy Grinnell who was in charge of Mental Ability testing at the North Dakota School of Forestry during the years covered by this experiment. No attempt was made to reduce these scores to the I Q of the students because of the following comment of Mr. Grinnell: "Intelligence Quotients are unavailable after the age of fifteen. After that age there is no agreement upon the validity of the quotient figures. The best we can do then is to give the scores made in the Otis test, and a table of comparisons with the scores made by students throughout the country at large." The table of comparison with the scores made by students throughout the country at large is omitted because the intelligence rating is herein used only for a comparison of the two groups used in the experiment and the scores on the Otis test serve for this comparison.

Table 2
Individual Mental Scores of All Students

Classes Using the Cost Approach		Classes Using the 20th Century Approach	
Student Number	Mental Score	Student Number	Mental Score
1	63	1	60
2	63	2	55
3	59	3	55
4	50	4	49
5	48	5	48
6	47	6	48
7	46	7	47
8	45	8	47
9	43	9	46
10	42	10	45
11	42	11	45
12	41	12	44
13	40	13	39
14	40	14	39
15	40	15	38
16	40	16	37
17	40	17	36
18	40	18	36
19	39	19	36
20	38	20	35
21	36	21	33
22	33	22	31
23	33	23	31
24	33	24	30
25	29	25	29
26	29	26	28
27	28	27	27
28	28	28	25
29	28	29	21
30	27	30	21
31	27		
32	26		
33	25		
34	21		
35	21		
36	21		
37	21		
38	13		
Average	36.4		38.7
Range	13-63		21-60

CHAPTER 2

A SHORT HISTORY OF VARIOUS METHODS OF APPROACH

Several methods of approach to the study of elementary bookkeeping and accounting have been used at various times during the long evolution of the study.

Table 3

Approaches Used in Presenting Bookkeeping and Accounting

Approach	Developed by	Dates Used
The Apprentice System	Unknown	Earliest date unknown In use up to the present time
The Journal Approach	Lucas Pacioli	1494 to present
The Ledger Approach	Unknown	Middle of 19th Century to present
The Balance Sheet Approach	Charles Sprague	1880 to present
The Cost Approach	R. H. Eaton	1931 to 1934

Apprentice System

The first was what might be termed the apprentice system. Little is known as to where this system of training originated, but it is known that it has existed for many centuries and is still being used today. Many of the accountants in England follow it in training young men. There are numerous examples of it in our own country, although it seems to be used less and less as our schools are becoming more successful in training men in bookkeeping and accounting. In this method a young man was placed in the office of an accountant, where he learned by practicing under the direction of the accountant in charge. Formerly for this service, the accountant was usually paid by the father or by the young man himself a contracted sum for allowing the apprentice to secure the

training in this way. In the beginning this was more or less in the nature of bondage (that is the young man was the "servant" of the accountant and there was no way in which he could escape). His work usually consisted of doing the undesirable, uninteresting routine work for the accountant in connection with the job in process and also the menial tasks around the office and home of the employer. As time went on, the idea of servitude became less. Nevertheless, we must recognize the fact that at least for the last three (the period was usually four) years of the apprenticeship the "student" was of value to the accountant as an assistant - yet the accountant received the pay. Gradually this plan was changed until now we usually find the apprentice receiving a small salary during his period of training. It is interesting that when this approach was used the student learned to do or learned "how" but seldom "why."

The Journal Approach

In the early texts what might be termed the journal approach was used. This method was arranged after the pattern laid down by the apprentice system. The greatest difference from the apprentice system was that the material was now available for use in the classroom in a text-book form instead of being presented orally in the office of the accountant. It will be noticed that it was stated "was available for use in the classroom" not was used in the classroom. The authors of the first texts wrote them with the idea in mind that they should be used by merchants as manuals to aid in keeping their records. In the small business organizations at that time few business men would find it necessary to employ one or more persons to do nothing but keep records,

as we find today. It wasn't until the last of the nineteenth century that business had grown to a sufficient size to make it necessary to employ specialists for this purpose only. This does not mean that there were not men who specialized in accounting prior to that time. Those who were in the field secured their knowledge by studying the books which were available, or by becoming an apprentice to one already proficient in the field. There were not many in this work until after the beginning of the twentieth century.

It is interesting to find that the first book written on bookkeeping and accounting was written by an Italian.

"Even during the first part of the sixteenth century, one-fourth of all the books printed came from one city only, i.e., Venice in Italy. Therefore a book produced from loose type in 1494 in Venice, must have been among the very first printed, and its subject must have been at that time of such prime importance as to make it worthy of being among the first to be published. The oldest treatise which has come down to us either printed or written on the subject of bookkeeping, is included as a part of a rather large printed volume on arithmetic and geometry. This volume was published in November, 1494, in Venice, Italy. It has been used considerably by later writers on the subject of arithmetic and geometry, and is mentioned in numerous works of bibliographers, both ancient and modern. The title is: "Summa de Arithmetica Geometria Proportioni e Proportionalita." Bookkeeping is treated in Part one, Section 9, Treatise 11, under the chapter title of "Particularis Computis et Scripturis," which translated would mean: 'Particulars of Reckoning and Their Recording'.¹

"The exact name of the author cannot be established definitely from this work, as his full name does not appear on the title page nor anywhere else. The author calls himself in this book Frater Lucas de Burgo Sancti Sepulchri, which translated into English may be called Brother Lucas of the City of the Holy Sepulchre. The City of the Holy Sepulchre, or Sancti, is a city in the northern part of Italy near Venice. On page 67-2, line 5, of Frater Lucas' book "Summa de Arithmetica," he states

¹Geijsbeck, J. B. Ancient Double-Entry Bookkeeping. Published by John B. Geijsbeck, Denver, Colorado, 1914, p. 8.

that about 1470 A.D. he dedicated a certain book to his students named Bartolo, Francesco, and Paulo, the three sons of a prominent merchant of Venice named (Anroniade) Rompiasi. From other writings and other evidence, bibliographers have come to the conclusion through their researches that the real name of this "Frater Lucas" was Lucas Pacioli.²

Pacioli spent most of the pages of his books in telling "why" instead of "how," a characteristic of his which was not adopted by those writers immediately following him, yet he did give a few examples of entries in his memorandum book and of the method of transferring these to the journal (Illustration 1) but illustrations are noticeably absent from his work.

Illustration 1³

Lucas Pacioli's Journal Entries

of these purchases, I will give you here an example and how the transaction with the said office must be recorded in the Journal and in the Ledger. First, you will express yourself in the memorandum book in the following manner:

I (or we), on this day above mentioned have bought of Mr. Zuan Antonio, of Messina, so many boxes of Palermo sugar and so many loaves of the net weight - that is, without the boxes, wrappers, ropes and straw - so many pounds at so many ducats per hundred; I deduct for what is due to the Messetaria at the rate of so much per cent., so many ducats, grossi, piccioli, etc. The broker was Mr. Zuan de Galardi; net value, so many ducats, grossi, piccioli, paid in cash.

The same should be entered in the Journal in the following

manner:

Per Palermo sugar. A cash. Cash paid to Mr. Zuan Antonio of Messina for so many boxes and so many loaves, of the net weight that is, without the boxes, wrappers, ropes and straw - so many pounds; at so many ducats per hundred, it amounts to so many ducats; I deduct what is due to the Mess-

²Op. cit. p. 8.

³Op. cit. pp. 53-54.

etaria at so much per cent., so many ducats, etc. net residue, so many ducats, etc. The Broker was Mr. Juan de Gaillard. L..., S..., G..., P...

In the Ledger you shall make the entries as follows:

Palermo sugar debit (dee dare or shall give)
 cash. Cash paid to Mr. Juan Antonio of Messina
 for so many boxes and so many leaves, weighting,
 net so many pounds, at so many ducats per hundred,
 which amounts to - Page 1: L..., S..., G..., P...

This early form of entry making has been modernized so that the same information may be recorded in a less complicated form (Illustration 2).

Illustration 2

Journal Entry as Made Today

Purchases (for the sugar and leaves)	\$0000.00	
Brokerage (for the amount paid the broker)	00.00	
Cash for the amount paid		\$0000.00
To record the purchase of sugar and leaves and the amount of the brokerage thereon.		

The purchase order, invoice or sales ticket has come to take the place of the memorandum book in most cases and the journal entry would be posted to a ledger wherein the "T" account arrangement was used.

Although this is not a history of the early texts, it is interesting to compare the journal entries of the Fifteenth Century with those of today. The point to be emphasized is that in this approach the student learned to journalise transactions. The basis of his analysis was the simple rule, "debit that which we receive; credit that which we give." This is not a modern rule but has been adopted from the early writers along with the form of the journal. Pacioli stated the same rule in his early text on double-entry bookkeeping.⁴ The student

⁴op. cit. p. 72.

received a long list of transactions in the form of debits and credits which he used as models in solving simple problems. Probably the greatest difficulty encountered in using this plan was that the student "learned to do" but "knew not why he was doing." As a result, when new transactions were introduced it was necessary for him to have a new model before he could attempt to record them. Teaching of bookkeeping by this method was merely the leading of the student in the footsteps of the bookkeeper. "Teaching was little more than a pedagogy of precept and example."⁵

The Ledger Approach

About the middle of the nineteenth century the ledger approach was developed. Here the student learned the purpose of the usual accounts and their plus and minus characteristics. The usual method of presenting material to the student in this approach was to select several of the principal accounts and discuss each one of them separately (Illustration 3). Usually the cash account was the accepted model to be the first introduced because the average student had received and paid cash, and could better understand why the receipts were placed on one side and the payments on the other side of the same account.

⁵Littleton, A. C. A Cost Approach to Elementary Bookkeeping, Accounting Review, March 1931.

Illustration 3

Cash Account as Used in the Ledger Approach⁶

The object of this account is to show a record of all transactions in which cash is received and paid, and the balance on hand. Cash is money or any commercial paper that the banks will accept at its face value as money. The latter includes personal checks, bank drafts, cashier's checks, post office and express money orders, and traveler's checks.

Debit the Cash Account:

For cash invested at the beginning of the business.
For cash received.

Credit the Cash Accounts:

For cash paid with currency or by check.

The balance of this account shows the amount of cash on hand; This may be in the safe, in the bank, or a part in each place. It is shown as a current asset on the Balance Sheet.

To close the Cash account. This account is usually closed at the end of each month and the balance brought down on the debit side on the same page, or transferred to a new page. When closed, the balance together with the date of closing and the word 'Balance' is entered on the credit side with red ink, the account ruled with single and double red lines and footed with black ink as in Illustration No. 1. The balance is carried down on the debit side under date of the next business day as in Illustration No. 1, or entered on the debit side of the Cash account on a new page.

		Cash			
Jan.	1	2,000 00	Jan.	4	20 00
	6	30 00		5	192 00
	9	10 00		6	77 30
	12	30 00		13	100 00
	13	40 00		20	34 95
	18	35 00		24	125 00
	20	50 00		30	150 00
	24	15 00		31	60 00
	26	4 25		31	Balance 1,547 50
	27	42 50			
	29	50 00			
		<u>2,306 75</u>			<u>2,306 75</u>
Feb.	1	Balance			
		1,547 50			

⁶Baker, James W. 20th Century Bookkeeping and Accounting. Southwestern Publishing Co. 1917. (In later editions by Baker, the Balance Sheet approach was used.)

This illustration of the cash account was followed by the explanation of each of the entries in the account.

Such a plan was better than either of the others presented thus far because the individual learned a few of the "whys." After he learned the various accounts, their uses, and the difference between debit and credit, he was ready to follow the footsteps of an accountant in making entries directly in the ledger. Modern accountancy practice does not approve such a procedure so it was then necessary to master the fundamentals of the books of original entry. Though better than other approaches used this ledger approach required much more time of the student in securing the principles of bookkeeping and accounting, for it was necessary for him to take each ledger account and master the debit and credit characteristics. Instead of learning fundamental rules which apply to all accounts he was forced to learn the detail characteristics of each account.

The Balance Sheet Approach

In the second decade of the twentieth century a fourth approach was introduced which might be called the balance sheet approach. This was probably an outgrowth of the "equation presentation" used by Charles E. Sprague⁷ as early as 1880, and which he more fully developed in 1907. In the journal approach the journal entry was regarded as the central fact in bookkeeping.

"The equivalence between debit and credit was treated as its fundamental principle. But that is formal. Double-entry bookkeeping might exist, with practically all its benefits to

⁷Sprague, Charles E. Member of the faculty of the School of Business of New York University.

business, without debits or credits. Sprague shows that the bookkeeper is not interested in a mere game of matching debits and credits, but that he is concerned in preserving an accurate record of assets, of liabilities, and of the changing proprietorship. He presents to the student an explanation of technique which relates itself to an obviously desirable end: knowledge of the status and the progress of the business, grouping all around the balance sheet, 'the ground work of all accountancy, the origin and the terminus of every account.'⁸

Up to the time of Sprague's work the student was confused by the rule "debit that which is received" for in the case of a loss by fire and similar transactions, just what did the business receive? It is evident that the various assets destroyed by the fire were given up, hence must be credited, but what did the business receive which might be debited?

"The naive thinker has difficulty in discovering the thing received, although the sophisticated student of bookkeeping rules, posit an imaginary person called "profit and loss," or "loss by fire," seated on a pile of ashes who receives the burned property, and him he debits. In most bookkeeping texts the attempt at a single rule leads ultimately, not merely to gymnastics and confusion but to contradiction and absurdity. But Sprague has emphasized the fact that debits means addition in one class of account and subtraction in the other two classes. From this he shows that in each of the nine possible combinations occurring in bookkeeping entries, a debit always is accompanied by a corresponding credit - a convenient check on accuracy rather than a principle. And the result is not merely a rule-of-thumb, not merely a clear and correct statement, but an explanation which is expressed in terms significant to the desired result of all bookkeeping.

"The older explanation trained the student to look upon entries in the books as a series of records of receivings and of givings, not always clear as to whether the recipient was an abstract "business," or the person named at the top of the account. After working through a month or a year, recording esoteric receipts which apparently have nothing to do with business interest, the student performed a mysterious process called 'closing the books' (accompanied with certain cabalistic marks, always in red ink,

⁸Hatfield, Henry Rand. Introductory Notes to the 1922 Edition Sprague's The Philosophy of Accounts, written as a tribute to Charles E. Sprague.

or the magic would not work), and behold, instead of a simple record of receivings and givings there would appear 'Assets, Liabilities, and Net Worth.' Sprague avoids this fantastic approach to bookkeeping. Entries are made because every business man desires a record of assets, liabilities, and proprietorship, and the conventions by which positive and negative items are recorded being explained, the whole process becomes rationalized and intelligible."⁹

Sprague started his work with the equation "Assets - Liabilities - Proprietorship"¹⁰ and developed it into the rules which follow:

"54. Any occurrence must be either an increase or a decrease of values, and there are three classes of value; hence there are six possible occurrences:

1. Increase of Assets
2. Decrease of Assets
3. Increase of Liabilities
4. Decrease of Liabilities
5. Increase of Proprietorship
6. Decrease of Proprietorship

55. Balances of assets belong on the debit (left) side; therefore increases are debits and decreases are credits.

56. Balances of liabilities are credits; therefore increases of liabilities are credits and decreases are debits.

57. Balances of proprietorship are credits; therefore increases of proprietorship are credits and decreases are debits.

58. We have therefore the six possible occurrences distributed as follows under debits and credits:

Debits	Credits
Entries on left side	Entries on right side
Increase of Assets	Decrease of Assets
Decrease of Liabilities	Increase of Liabilities
Decrease of Proprietorship	Increase of Proprietorship

59. We have now to show that in every transaction at least two of the occurrences must appear and that they must be on opposite sides of the above list. This may be done by going through the list and taking up each of the six.

⁹Op. cit. p. xix.

¹⁰Sprague, Charles E. The Philosophy of Accounts. The Ronald Press Company, 1922, p. 23.

- 1. Increase of Assets
 - Debit Increase of assets must either correspond:
 - (to decrease of assets,
 - Credit (to increase of liabilities, or
 - (to increase of proprietorship.

We cannot get something for nothing; but the something given in the third case is not a material something but a service of some kind. Increase in proprietorship by giving service is called 'earnings' or 'income.'

- 2. Decrease of Assets
 - Credit Decrease of assets must either correspond:
 - (to increase of assets
 - Debit (to decrease of liabilities, or
 - (to decrease of proprietorship.

- 3. Increase of Liability
 - Credit Increase of liability must be attended either:
 - (by increase of assets, or
 - Debit (by decrease of liabilities, or
 - (by decrease of proprietorship.

- 4. Decrease of Liability
 - Debit Decrease if liability involves either:
 - (decrease of assets, or
 - Credit (increase of liability, or
 - (increase of proprietorship.

- 5. Increase of Proprietorship
 - Credit Increase of proprietorship corresponds to:
 - (increase of assets, or
 - Debit (decrease of liability.

- 6. Decrease of Proprietorship
 - Debit Decrease of proprietorship is either:
 - (decrease of assets, or
 - Credit (increase of liabilities.

It is thus established that any entry to the debit, or left side, calls for a like amount on the credit side, and vice versa."¹¹

Sprague next derives a formula similar to "Assets = Liabilities + Proprietorship" but stated in terms which everyone can understand, re-

¹¹Op. cit. pp. 23-26.

gerdless of whether they know what is meant by asset, liability, or proprietorship. This formula is "What Belongs to me+What is owing to me = What is Claimed from me+What is Unclaimed."¹²

Charles Sprague developed his whole text from formulas such as those stated above and it was from these formulas that the balance sheet approach was developed. Finney¹³ used this approach in his text published in 1924 and has continued to use it in each of the revisions up to the present time. He starts his text with a balance sheet using terms familiar to everyone (Illustration 4).

Then to explain the difference between the terms used in this illustration and the terms used by an accountant (Illustration 5) he states, "bookkeepers and accountants have standard names for the various assets and liabilities. The show cases, scales, refrigerator, etc., are called Furniture and Fixtures; the delivery automobile is called Delivery Equipment; the merchandise on hand is called Merchandise Inventory, simply Inventory; the amounts due from customers for goods sold to them on account, are called Accounts Receivable; the amounts due to wholesale houses and other creditors for goods purchased from them on account are called Accounts Payable."¹⁴

Mr. Finney then went on to explain the various items included in the balance sheet and from there reverted to the books of original entry, adopting what has been described as the journal development.

¹²Ibid. p. 36.

¹³Finney, H. A. Professor of Accounting, Northwestern University.

¹⁴Finney, H. A. Accounting Principles and Bookkeeping Methods. Henry Hold & Co. 1924 p. 3.

Illustration 4¹⁵

Balance Sheet Using Familiar Terminology

William King

Statement of Assets and Liabilities
December 31, 1921

Assets:

Land	\$	500.00	
Store Building		6,000.00	
Show cases, Scales, Refrigerator, Etc.		975.00	
Delivery Automobile		850.00	
Merchandise on Hand		12,725.00	
Due from Customers for Goods Sold		935.00	
Cash on Hand		<u>210.00</u>	\$22,195.00

Liabilities:

Due to Wholesale Houses for Goods Purchases	<u>1,850.00</u>
---	-----------------

Net Worth	\$20,345.00
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Illustration 5¹⁶

Balance Sheet Using Accounting Terminology

Statement of Assets and Liabilities
December 31, 1921

Assets		Liabilities and Capital	
Land	\$ 500.00	Accounts Payable	\$ 1,850.00
Store Building	6,000.00	William King, Capital	20,345.00
Furniture and Fixtures	975.00		
Delivery Equipment	850.00		
Merchandise Inventory	12,725.00		
Accounts Receivable	935.00		
Cash	<u>210.00</u>		
	\$22,195.00		<u>\$22,195.00</u>

¹⁵Ibid. p. 3.¹⁶Ibid. p. 4.

In this, the balance sheet approach, the actual "entry making" was delayed until the balance sheet was understood. The entire procedure, it will be noted, was reversed from that used in the journal approach. The student was introduced to the purpose of accounting first, then to the simple statements and their relation to the business man. As he became accustomed to working with statements the ledger accounts or the books of original entry were presented to him as technical devices for the collecting and recording of the various transactions and the summarizing of them so that they might be considered when the statements were prepared.

The balance sheet approach was an improvement over the earlier approaches because the student learned "purpose" first and reached methods only after he had discovered a need for them. This procedure, however, necessitated a longer introduction for the art of entry-making. "The 'balance sheet approach' has the decisive advantage of making the beginning student aware of the business enterprise as the distinct entity to which statements belong."¹⁷ But it does not assist him in learning that the balance sheet is nothing more than a record of cost realized in the past or to be realized in the future and of the ownership therein.

The Cost Approach

The Cost Approach was suggested by Professor A. C. Littleton, Professor of Accountancy at the University of Illinois, Urbana, Illinois. He first mentioned the idea in an address before the national convention

¹⁷Noble, Howard S. A Cost Approach to Elementary Accounting, The Accounting Review, March 1933.

of the American Association of University Instructors in Accounting. Here he suggested this new approach in hopes of challenging someone to experiment with it. His lecture was reproduced in the Accounting Review for March 1931. It was in conference with Professor Littleton that the writer received the suggestion and encouragement for the conducting of the experiment described in Chapter 1.

Professor Howard S. Noble, Chairman of the Department of Economics, University of California at Los Angeles, spoke on the same subject at the Seventeenth Annual Convention of the American Association of University Instructors in Accounting, on December 28, 1932. His address was published in the Accounting Review for March 1933. He further developed the idea but has not experimented with it in the classroom.

The articles of these two men and the one of the writer¹⁸ are all that have been written on the subject; and, as far as is known, only the one experiment described herein has been attempted. Therefore it is quite evident that this study is not being presented as a finished product, but only as a report on the observation of the one who has conducted classes using this new approach.

Summary

In the past there have been four principal approaches to presenting bookkeeping and accounting to beginning students; namely, the apprentice system, the journal approach, the ledger approach, and the balance sheet approach.

¹⁸Eaton, R. H. The Cost Approach. Accounting Review, December, 1933.

We know little of the apprentice system other than that it is still in use in some places today, and that by it we mean that a young man is placed in the office of an accountant or bookkeeper where he learned by practicing under the direction of the man in charge of the office. In the beginning this was more or less a bondage (that is the young man was the servant of the accountant and there was no way in which he could escape). His work consisted of doing the undesirable, uninteresting routine work for the accountant in connection with the job in progress and also the menial tasks around the office and home of the employer. As time went on the idea of servitude became less, but we must recognize the fact that at least for the last three years of apprenticeship the "student" was of value around the office yet the man in charge received the pay.

In the journal approach, the first lessons related to determining the accounts debited and accounts credited from the transactions with a brief explanation so that anyone who took bookkeeping would know that the correct titles had been indicated. It was necessary at first to set up rules for determining debits and credits. It was assumed that the student must learn debits and credits in order to apply the principles of double-entry bookkeeping.

The third approach to be mentioned was the ledger approach. This was introduced about the middle of the nineteenth century. It is not known as to who started it, but by it the student was introduced to the field by a study of the ledger accounts with their plus and minus characteristics. In the earlier presentations of the account method, one account was presented at a time. After developing each of the most

used accounts the students were shown how the cash receipts would affect someone of the other accounts. He gradually became familiar with the rule "debit values received and credit values parted with."

In the second decade of the twentieth century a fourth approach was introduced which might be termed a balance sheet or equation approach. This was probably the outgrowth of the equation presentation used by Charles E. Sprague as early as 1880 and which he more fully developed in 1907. In the journal approach the journal entry was regarded as the central fact in bookkeeping. In the balance sheet approach the balance sheet is the most important fact. Sprague showed that the bookkeeper is concerned in preserving an accurate record of assets, and liabilities and of the changing proprietorship.

And now the cost approach. This idea was originally not the idea of the writer. He became interested in it after reading Professor A. C. Littleton's (University of Illinois) article in the Accounting Review of a few years ago and after conferring with Professor Littleton on it on several occasions. Professor Howard S. Noble of the University of California at Los Angeles has also done some work on it, but as far as is known the writer is the first to experiment with it in the classroom.

CHAPTER 3

THE NEED FOR A NEW APPROACH

The need for a new approach in which the student will be taught "why" as well as "how" has been recognized for a long time by many teachers of bookkeeping and accounting. However little has been done, other than to introduce some theory along with practice in the early courses. In the elementary courses the time element limits the amount of theory which can be presented for the courses are now crowded with routine work of the old type. Yet, if the student could be taught "why" as well as "how," the subject would be more interesting to him, and he would develop much faster in the field of accounting after he had completed the beginning courses. The work in the past has stressed "how" not "why." Montgomery states that part of the blame can undoubtedly be charged to the text books which have been available for use in the elementary courses.

"How much of the poor bookkeeping which is prevalent is due to poor or inadequate textbooks? Too much space is given to the explanation of account books and forms which are nearly obsolete. If underlying principles were always involved, perhaps the time so occupied might be justified; but there is little excuse for spending a lot of time in teaching methods of which no trace appears in a modern office.

Teachers of commercial subjects must make up their minds that textbooks have decided limitations. No textbook, however complete, will ever be a sufficient basis for a teacher. Teachers must depend more upon research work. I am convinced that the supplemental routine demanded by most of the textbooks requires too much time, and a considerable part of the time spent in writing up sets of books based on imaginary transactions carried on by, and among imaginary people fails to impress the average student, and consequently fails to equip him for a position as bookkeeper."¹

¹Montgomery, Robert H. How Teachers Can Increase the Efficiency of Accounting and Bookkeeping Courses. Addresses and Proceedings of the National Education Association of the United States, New York City, 1916.

Teachers of accounting will probably rebel at the idea of starting bookkeeping and accounting students with the material usually deferred until at least the third course in the series, but most of them will agree that logic is more important than tradition; that it is time for a change in our methods of teaching the elementary courses so that the student will see a relationship between that which he is studying and that which he reads, hears, and talks about; namely, business in which conversion is the principal basis of operation. At present with the approaches used in presenting the material of these beginning courses in the classroom, business, in which exchange is the sole purpose thereof, is studied. It is not until the second year in the work that the student is introduced to the business in which conversion plays the most important part.

It is not the purpose to belittle the work of our better schools of accounting where the student in four years does learn "why" as well as "how"; rather, it is the purpose to show the need for a change in the elementary courses and to suggest a possible solution to the problem. Undoubtedly those who complete the usual four years college course with a major in accounting are prepared to meet the problems they will face in the business world. But the majority of those entering business do not have this complete training. Many are those who have had one year's training in accounting, either as a part of their college work or as part of their work in a business college. These are the individuals who are handicapped by the methods used today.

It is known that in the past the greater part of bookkeeping has been adapted to the mercantile business -- the buying and selling

of ready made articles. Profit was made by buying at one price and selling at a higher price, by buying in time of plenty and withholding from the market until time of a shortage, or by buying in one place where there was plenty and transporting it to a place where there was a scarcity. Simple records were sufficient to record such transactions, for costs were easily computed. Early bookkeeping systems were developed to record these exchanges, but today, that is not enough. The severity of competition makes it necessary to arrive at accurate costs so that prices may be set at that point where competition can be met and still not be so low as to result in a loss. Formerly, a wide margin of profit could be made so that the merchant need not be greatly concerned over the result of one small transaction. He knew that his price was sufficiently high to recover for him the costs incurred and a profit beside. Today this margin is limited by competition; and, as the size of the average sale has increased tremendously, unless the dealer has accurate cost records from which he can determine the result of each transaction, he is apt to sustain a heavy loss without foreseeing it. Present day bookkeeping and accounting is required to provide the business man with this cost record as well as to trace out the conversions which take place between the original investment of property in a business and its final disappearance in one form or another from the enterprise.

Although bookkeeping systems in use have attempted to keep pace with changing business, the class room teaching of future accountants has not done so. As a result, a student completes the elementary courses in our schools, secures a position as bookkeeper, and in all

but the smallest business finds himself at a loss as to how to proceed with the work. Unless the student is exceptional, or the employer patient and willing to "teach," the young employee soon finds himself out of a job. Needless to say, this discouragement does the young man or woman a great deal of harm. The student cannot be blamed, for he cannot be expected to make a correlation between that which has been drilled into him in the classroom and that which he finds in the business world. The methods of teaching the material must be changed so that he is taught the bookkeeping and accounting of the business of conversion. He will have little difficulty if he encounters work wherein exchange is the sole purpose of the business, for this will be taught along with the work in the business in which conversion plays the most important part.

But what is the difference between a business in which exchange is the basis, and one in which conversion is the purpose for which the operation is carried on. Technically there is no difference, for business is dynamic, not static. The business man as a manager of a business is more interested in the profit and loss statement than he is in the balance sheet, not because he isn't concerned with what the business has, but because he must know whether the operations of the past period have been successful - whether a profit has been made. But the business man as the owner of the establishment is interested in the balance sheet. The profit and loss statement gives the results of the past operation; nothing can be done to improve the results after they have been obtained, but the balance sheet reflects what may be expected of the future.

"All business activity consists of the incurring of costs and the recoveries therefrom; accounting reports should picture the summaries of such activity. And this they do. The balance sheet portrays in the merchandise account, in the fixed asset accounts and in the deferred charges to expense accounts, those costs incurred which are applicable to future operations. In the current asset accounts, excepting inventories, it shows the recoveries from those costs, not included in the above. In the receivables and payables it records "claims" incidental to cost incurrence and cost recovery.

The statement which accountants choose to call the profit and loss accounts, or profit and loss statement, gives the items omitted in the balance sheet, the costs incurred not applicable to future periods but those applicable to the period in question, together with the extent of the recoveries from those costs."²

Both statements are Cost Statements. The balance sheet is a statement of costs applicable to the future, recoveries of the past, together with receivables and payables incidental to such costs and recoveries; the profit and loss statement is a cost statement of the costs applicable to the period just passed and the recoveries from the past.

The difficulty in the past has been that teachers of bookkeeping and accounting have failed to recognize this, or at least have not successfully presented it to the students. Too much attention has been directed to keeping the balance sheet items and the costs shown on the profit and loss statement separate instead of distinguishing between them as costs of the past period and costs of the future period or periods. Those investments which in the past have been designated as fixed assets such as land of the farmer, buildings of the retailer, machinery of the manufacturer are made by the business man not with

²Noble, Howard A. A Cost Approach to Elementary Accounting. The Accounting Review, March 1933.

the idea of placing them on a pedestal expecting them to last forever, but to put them into use so that the business may be more efficiently conducted. Their cost be continually being used just as much as is the cost of labor going into the product being manufactured or sold.

All business transactions then, consist of an incurrence of cost, not independent and unrelated, but with the purpose directly in the mind of the enterpriser of a recovery therefrom in excess of the costs incurred. This is the idea which has not been stressed; in fact it has been avoided in the classroom, and it is this idea in mind that the experiment, upon which this is a report was conducted. The purpose was to find a method whereby the students might discover that bookkeeping and accounting are nothing more than a process whereby the costs as incurred are recorded and traced through the business establishment until they finally leave in the same or some other form; that the recoveries therefrom must be compared with the costs, incurred and chargeable to the period under review, so that the business man might determine whether it was profitable for him to continue his investment in the particular business in question.

Summary

Montgomery stated that part of the blame for the poor results secured in the bookkeeping and accounting classroom can be charged to the text books which have been available for use in these courses. Undoubtedly this is true. The approaches used in texts available at the present time spend too much time upon the presenting of routine transaction recording and upon the use of books of record no trace of which can be found in the modern business office. Time spent in teaching such

material, all of which will be of little use to the student on the job, takes away from the time available for use in teaching theory. When the student finishes the usual course of a year's duration he is equipped to keep the books for a business which operated about fifty years ago. Costs were easily computed and the business man was able to keep sufficient information in his head to determine whether his selling price was high enough to provide a return of a profit over and above the costs invested in the goods handled. Today that is impossible. Business has grown to such an extent that no man is capable of determining cost figures without the aid of accurate cost records. The bookkeeper must be able to provide the information for the business man.

The bookkeeper and accountant must recognize the fact that all business activity consists of the incurring of costs and the recoveries therefrom and that his reports must picture the summaries of these activities. If his training has been such that he knows record keeping only for a business in which exchange is the basis he will be unable to provide the necessary information from his records for the business man of today.

Although bookkeeping systems in use have attempted to keep pace with the changing business, the classroom teaching of future bookkeepers and accountants has not done so. As a result the poorly equipped bookkeeper or accountant finds one of two things when he goes out into the business world either he cannot hold a job or he must learn all over again under the supervision of one who recognizes the need for cost information and the means of securing it from the records.

The student cannot be blamed for his deficiency for he cannot

be expected to make a correlation between that which has been drilled into him in the classroom and that which he finds in the business world. The methods of teaching the material must be changed so that the student is taught bookkeeping and accounting for a business in which conversion is the basis of operation. He will have little difficulty, if he should encounter work wherein exchange is the sole purpose, of adjusting himself to it for he will understand the fundamental theory back of all accounting.

CHAPTER 4

OUTLINE OF THE COURSE IN WHICH THE COST APPROACH WAS USED

At the first meeting of the class a general lecture was given covering the whole field of bookkeeping and accounting. The students were informed that an experiment was to be conducted and were asked to assist as much as possible by raising questions both in class and in conference with the instructor on those points which were not made clear by the lectures. They were warned of the difficulties to be encountered by not having a text to refer to, and were advised to keep as detailed a notebook as possible.

Upon completion of this general lecture the students were instructed to "understand" not "memorize" the material presented to them. With this in mind, definitions and explanations of eight accounting terms were introduced, namely, assets, liabilities, capital or proprietorship, income, expense, cost, prime cost, and factory cost. Each of these was explained by tying it to something with which the student was bound to be familiar. (Appendix B) For instance assets were tied up with the personal assets which each student had before him at the time, and were worked into a small business which any of the members of the class might have operated.

The need for accurate cost figures was explained by showing the necessity of having available the costs so that prices might be set which would not only provide for a return of the investment in the products, and allow for a reasonable profit on the investment, but would also make it possible to set the prices so as to meet competition with an understanding of the results. If the competition had to be met by selling

below cost, that information should be available immediately instead of at the end of the accounting period as is the case in any of our smaller establishments.

In the experiment, a small hypothetical factory, The Brown Shoe Company, was used as the basis for all lectures. As progress was made by the class, the first time the material was used, the company was carried through the various stages of business organization: single proprietorship, partnership, and corporation; and finally back to the single proprietorship again where the change was made from accounting for a manufacturing (conversion) business to accounting for a retail (exchange) business. The instructor felt that, since quite a few students took only one quarter of accounting, it would be well to give them a brief view of the work required in the most common forms of business organization. However, it was found too difficult to cover all three forms of business organization in one quarter no matter how briefly they were presented. Therefore, in the last two years of the experiment the material was built around a Mr. Brown, the proprietor of a small factory.

After the student thoroughly understood the elementary definitions mentioned above, work was started on the recording of transactions encountered in connection with the manufacture of shoes. A list was built up containing all the items that Mr. Brown would have to secure before he could begin the manufacture of the product. This list contained building, machinery, labor, leather, thread, dye, etc. The source of the funds with which to secure these items was explained as coming from two sources; investment of the proprietor and credit extended to him by those from whom he purchased supplies and raw materials. This information necessi-

tated the development of a method of keeping a record of it. Transactions (Illustration 6) were given so that the details would be available for recording.

Illustration 6

Transactions used in presenting the cost approach:

1. Brown invested \$50,000 in the business.
2. Bought \$5,000 worth of leather.
3. Bought machinery, \$50,000, paying \$25,000 cash and promising to pay the balance in 60 days.
4. Rented a building paying \$10,000 for a year's lease.
5. Paid his laborers for the week's work, \$5,000.

The "T" Account

Here the cost approach was similar to the ledger approach for the students were encouraged to develop some form of a record in which to keep separate the information in connection with each type of asset, liability, or capital item. Journal entries, as such, were omitted until quite late in the work of the quarter. Their first attempt resulted in the designation of a single page for each group of items. That is, the cash coming into the business would be recorded on one page, and the cash going out from the business would be recorded on a second page. One page was designated for each of the items as the place to record the building rent, the machinery purchased, the labor paid, the amount owed to creditors, etc.

As numerous transactions were recorded and several requests made by the instructor for the amount of cash which the business had left the students discovered that it would be easier to handle the transactions if both the increases and decreases could be recorded on the same page. It seemed natural to them, since the first transactions they recorded had to do with cash coming into the business, to record it on the left

hand side of the page and since they were paying out some of that received to record these payments directly opposite on the right hand side of the page. It was easy for them to understand the theory of debit and credit then; for they had devised the system themselves and all that was necessary was to correctly name the two sides of the account according to accounting terminology. The rule, "debit that which is received," was easily understood by the students for in the handling of transactions in which cash was received by the business they had devised the plan of putting the cash received on the left or debit side.

An attempt was made to present the business as a separate entity from the proprietor, and to show that the business owed the proprietor his investment just the same as it owed the creditors what they had advanced upon the agreement to pay at a later date. By so doing the class learned that as something was received by the business something went out from it. When the proprietor invested cash, the business received cash but it also owed the proprietor the money he had invested, therefore a promise to pay went out from the business. They had recorded the cash received as a debit so they had to record the amount due the proprietor as a credit. This led to the understanding of the second half of the rule, "Debit that received, and credit that parted with." It also made the introduction of the Trial Balance as a checking medium quite easy; for, if for every debit there had to be an equal credit, it was not difficult to see that the total debits and total credits should be equal; and if the total debits equaled the total credits, the total of the debit balances should equal the total of the credit balances.

The equation, "Assets=Liabilities + Proprietorship," developed naturally as the students learned that all assets came from two sources - proprietor and creditors; if everything the business owned belonged to these two classes of creditors the total of the assets would have to be equal to their combined claims on the business. If a profit was made which resulted in an increase in the assets without increasing the liabilities it could go only one place and that was to the proprietor's account for he was entitled to it due to the risk he was taking by investing his money in the venture.

The Recording of Sales

In the beginning, the shoes manufactured by the Brown Manufacturing Company were sold as produced, thus eliminating the need for the "cost of manufacturing" and other of the more difficult accounts. Each sale was made up of an increase of an asset for that received by the business for the shoes and a decrease of the material-assets for the materials used in manufacture which were given up in the form of shoes; and the difference between these two, that which was received and that given - the profit or loss, affected the proprietor's account. If a profit was made, the owner of the business had a right to expect the business to return that to him in addition to that he had invested; if the sales resulted in a loss, he had to deduct that from what he had originally invested.

Production orders were introduced to show the method used of collecting cost data, but instead of sending a production order through for a large order of shoes we sent one through with the first pair of shoes made and accepted the fact that one would go through the factory

every-so-often as a check on the cost figures obtained from the first pair manufactured. As previously stated the course was not designed as a cost accounting course in which detailed information for cost finding was taught, but merely as an approach to the study wherein the student would become acquainted with accounting for the business in which conversion played an important part. From the production order upon which the costs for the first pair of shoes were recorded the hypothetical figures were secured (Illustration 7). It was determined that the machines purchased (Illustration 6) would make 100,000 pairs of shoes before wearing out and each of the other items were found by actually checking on the cost which went into the first pair of shoes.

Illustration 7

Cost of Manufacturing One Pair of Shoes

Machinery	\$.50
Leather	1.00
Thread	.05
Labor	.50
Rent	.15
Light	.01
Heat	.02
Total	<u>\$2.23</u>

For each pair of shoes sold each of the items (Illustration 7) would be decreased by the amount shown. Had journal entries been made, the entry for the first sale would have appeared as in Illustration 8.

Illustration 8

Entry to Record Sale of Shoes

Sold for cash 100 pairs of shoes @ \$3.50		\$350.00
Debit (Increase) Cash	\$350.00	
Credit (Decrease) Machinery		50.00
Thread		5.00
Leather		100.00
Labor		50.00
Rent		15.00
Light		1.00
Heat		2.00
Capital (Profit)		127.00

Difficulties were encountered due to the calling of such items as labor, rent, light, heat, etc., assets for in the usual accounting terminology they are classed as expenses and it must be admitted that some students had difficulty when they were called expenses later. This was explained to them as though the expenses were those assets which are purchased, most of which will be used up in the current period. Though this is contrary to the usual accounting thought it most certainly is true, for if we pay rent in advance we have a right to use the property rented for the period covered by the pre-payment of the rent, and this right is an asset. Those items which are never paid in advance were a little more troublesome but it was shown that they were just the same as rent in that even though we did not pay for them in advance we were using them and at some future time would be held accountable for the amount we used. Such a procedure eliminated the usual difficulty encountered when using the other approaches in presenting the accrued and deferred items, for in this course all items were really being presented from the accrued and deferred position.

The material in Illustration 8 was used in developing this first sale and for the rest of the class period of the day when this was presented in working out several other sales. As an assignment to be done in the laboratory period on that day, ten additional sales were given to the class to be recorded in the same way. At the next meeting of the class a test was given on the recording of entries, and as an assignment three supplementary exercises were assigned requiring the recording of transactions from the investment of the proprietor through the recording of several sales in each and the making of a trial balance of the ledgers after each exercise was recorded.

Such a procedure used in recording sales involved so much work that the students realized there must be an easier method. This led to the introduction of the sales account which reduced the work considerably but made it necessary to lose sight of the conversion part of the business transaction. After the introduction of the sales account, the transaction recorded in Illustration 8 would be changed so that it would be shown in Illustration 9.

Illustration 9

Entry to Record Sales of Shoes Using a Sales Account

Sold for cash 100 pairs of shoes @ \$3.50	\$350.00;
Debit (Increase) Cash	\$350.00
Credit (Decrease) Sales	\$350.00

Recording Sales as a decrease was confusing until it was explained that it was a summary account in which to record the amount of assets parted with which would be distributed to the proper asset accounts at the end of the accounting period.

The Conversion Entries

Requisitions were introduced as a device used to authorize the storeroom clerk to release to the factory foreman the materials he wished to place in process. Illustration 10 gives the entry used in record the requisition.

Illustration 10

Entry to Record the Issuing of Material on Requisition

Debit (Increase) Goods in Process	\$xxx.xx
Credit (Decrease) Leather	\$xxx.xx
Thread	xx.xx

As goods were completed by the factory they were transferred to a storeroom from whence sales were made. It was possible to introduce the finished goods inventory with little difficulty here. The entry (Illustration 11), used to transfer the goods from the "In Process" account to the "Finished Goods" accounts leads to a natural introduction of the inventory of finished goods.

Illustration 11

Entry to Record the Goods Finished and Placed in the Stockroom

Debit Finished Goods	\$xxx.xx
Credit Goods in Process	\$xxx.xx

The entry which transferred the material to the "Goods in Process" Account (Illustration 10) taught the students to think of the "Goods in Process" account as a cost account wherein the costs of manufacture were to be collected. This leads to an attempt to transfer the other costs to this account. The interest to get the costs to this one account was further strengthened by the fact that after entries (Illustration 11) in which finished goods were transferred to the in-

ventory account were recorded the cost account, Goods in Process, was often left with a credit balance which was unnatural if it was a cost account. The explanation of the entry at the end of the cost period (Illustration 12) in which all other costs were transferred to the "Goods in Process" account was easily understood.

Illustration 12

Entry to Transfer Costs to Goods in Process Account

Debit	Goods in Process	\$XXX.XX
Credit	Labor	\$XXX.XX
	Light	XX.XX
	Heat	XX.XX
	Machinery	XX.XX
	Rent	XX.XX

It will be noticed that no attempt was made to introduce that group of expenses generally called factory overhead, burden or manufacturing expenses as such. Each was handled as a separate expense item. Later in the course the costs were considered in the three groupings used in cost accounting - material, labor, and burden, but here no attempt was made to complicate the material by the inclusion of pre-determined burden rates, over-absorbed burden or under-absorbed burden. The amount transferred in the entry (Illustration 12) was the amount contracted for or incurred during the period.

If the cost figures (Illustration 7) were not accurate, it made an inaccurate balance in the Goods in Process account. This possibility was not suggested to the class for as has been previously stated they were taught that the cost figures used were checked quite frequently, which would reduce the possible error to a negligible amount. This entry (Illustration 12) resulted, when recorded, in there being a debit

balance in the Goods in Process account, which was the inventory of goods still in process at the end of the period. It also resulted in closing all the expense accounts (cost accounts) with the exception of the material accounts - leather and thread - which led to an understanding of the raw material inventory accounts.

The entries recorded accomplished all cost transfers with the exception of the one to set up the cost of goods sold. As recorded up to this point the goods sold were still included in the Finished Goods account. It was necessary to make this last entry before introducing the statements. The entry (Illustration 13), when recorded, resulted in the opening of a new account, but its title made it self-explanatory.

Illustration 13

Entry to Record the Cost of Goods Sold

Debit	Cost of Goods Sold	\$xxx.xx
	Credit Finished Goods	\$xxx.xx

Considerable time was taken to develop these entries, and numerous exercises were worked out by the students, based upon them. Such a development led to a thorough understanding of the records necessary to record the costs incurred in converting the raw materials into the finished product, and finally the disposing of the product through a sale. Time might have been saved by spending less on the development of the material so far reviewed, but it was felt by the instructor that fundamental theory was being presented to the student which would aid him if he completely mastered it before proceeding.

Statements

The statements were introduced at this point. The manufacturing

statement (Illustration 14) was presented as nothing more than a statement showing the summary of the transactions recorded. The information was all taken from the ledger accounts and was so arranged in the statement so that it would give the businessman all the information in a form easily understood by him. Though the form used does not meet the requirements as we think of them in accounting it was so arranged to give the students an opportunity to see that all the information on the statement was being taken from the accounts in which they had recorded the information. For instance, in practice we use a material account instead of one account for each type of material, yet it might have caused difficulty had one account been presented here with which the students were not familiar. The only point which was new was the method of arriving at the cost of the various materials placed in process. The ledger accounts showed as a balance the figures used for the cost of the material item placed in process, and the amount of the inventory so this portion of the statement was a repetition of what had already been done in the ledger, but since the students know that the statement was being prepared for the use of the businessman they immediately saw that he would be interested in seeing how much material of each kind had been purchased during the period and how much was left on hand at the end of the period.

Illustration 14
Manufacturing Statement

R. J. Brown
Manufacturing Statement
January 1 to December 31, 19__

Exhibit C

Leather	Inventory January 1	\$XXX.XX	
	Purchases	<u>XXX.XX</u>	
		XXX.XX	
	Inventory December 31	<u>XX.XX</u>	
	Cost of Leather Placed in Process		\$XXX.XX
Dye	Inventory January 1	X.XX	
	Purchases	<u>XXX.XX</u>	
		XXX.XX	
	Inventory December 31	<u>XX.XX</u>	
	Cost of Dye Placed in Process		XXX.XX
Thread	Inventory January 1	XX.XX	
	Purchases	<u>XX.XX</u>	
		XXX.XX	
	Inventory December 31	<u>XX.XX</u>	
	Cost of Thread Placed in Process		<u>XX.XX</u>
	Total Cost of Material Placed in Process		\$XXX.XX
Labor			XXX.XX
Machinery Used			XX.XX
Rent			XX.XX
Light			XX.XX
Heat			<u>XX.XX</u>
	Total Cost of Work Placed in Process		XXXX.XX
	Add Work in Process January 1		<u>XXX.XX</u>
	Cost of Work to be Accounted for		XXXX.XX
	Less Work in Process December 31		<u>XXX.XX</u>
	Cost of Goods Manufactured		XXXX.XX

After the statement (Illustration 14) was understood and the source of the information traced to the ledger, the group headings were added to it. That is, the three materials were headed by Raw Materials, and the four expenses beginning with Machinery Used was headed by Burden. This was presented by first showing the class that the appearance of the statement would be improved by placing headings over the groups and by spacing the items a little better, and second by introducing the three elements of cost as known to the accountant - direct material, direct labor and burden - and showing that the statement prepared really contained items from each of these three groups. The materials and labor understood at this point were direct material and labor and went directly into or on the product while the burden items, though necessary expenditures of the factory, did not go into the finished product and were indirect expenses. The inventory of the various items of materials was discussed from the standpoint of proving the balance of the account by actually counting the amount on hand in the storeroom. This should agree with the balance of the ledger account, if errors had not been made in recording the requisitions of material placed in process.

The Balance Sheet (Illustration 15) as a development of the equation $\text{Assets} = \text{Liabilities} + \text{Capital}$ was presented next. Little difficulty was encountered here for the students understood the equation and the terms, so the form to be used was all that was new. The balances for all the asset accounts, at this point only cash and inventories, and the liability accounts were secured from the ledger but the balance of the capital was secured by subtracting the liabilities from the assets. After the figure was computed the class was told to see if it agreed with the

balance of the account in the ledger. The reaction to the fact that it did not at first was confusing, but it did not take them long to reason out that the difference was the profit or loss. The question raised was how to get the account in agreement with the amount shown on the Balance Sheet. This would have been a good place to introduce the closing entries but they were delayed until after the Profit and Loss Statement was presented.

Illustration 15

The Balance Sheet

R. J. Brown
Balance Sheet
December 31, 19__

<u>Assets</u>			<u>Liabilities</u>	
Cash	\$ XXX.XX	Creditors		\$XXX.XX
Machinery	XXX.XX			
Unused Rent	XX.XX		<u>Capital</u>	
Leather	XX.XX	Balance Jan. 1	\$XXX.XX	
Dye	XX.XX	Additional In-		
Thread	XX.XX	vestments	<u>XX.XX</u>	
Heat (Unused Fuel)	XX.XX		XXX.XX	
		Less Withdrawals	<u>XX.XX</u>	
			XXX.XX	
		Add Profit (or		
		Deduct Loss)	<u>XX.XX</u>	
Total Assets	<u> </u>	Capital Dec. 31		<u>XXX.XX</u>
	<u>XXX.XX</u>	Total Liabilities and		<u> </u>
		Capital		<u>XXX.XX</u>

It will be noted that additional investments and withdrawals were included in the Balance Sheet. This was explained as being necessary to show the proprietor just what had happened to his investment during the year. Probably little was actually gained by such a procedure, yet it did aid in impressing upon the minds of the students the various ways in which capital in a business may be affected.

The Profit and Loss Statement (Illustration 16) was a simple statement due to the fact that a Manufacturing Statement had been prepared and that only manufacturing expenses had been introduced. But by presenting it at this point it was easily understood by the students; and as additional profit or loss accounts were taken up, they were considered from the effect they had on this statement. The attention of the class was called to the fact that the result obtained on the Profit and Loss Statement was the same as the difference between the capital found on the Balance Sheet and the Capital account in their ledger. That the difference between the capital at the beginning of the period plus additional investments minus withdrawals and the capital at the end of the period as shown by the Balance Sheet was the profit or loss. That this was a means of proving the accuracy of the work up to this point, though not absolute proof it was an indication of the fact that the work had been correctly completed.

Illustration 16

The Profit and Loss Statement

R. J. Brown
 Profit and Loss Statement
 January 1 to December 31, 1900

Exhibit B

Sales		\$XXXXX.XX
Cost of Goods Sold:		
Inventory of Finished Goods Jan. 1	\$XXXX.XX	
Cost of Goods Manufactured (Exhibit C)	<u>XXXX.XX</u> <u>XXXX.XX</u>	
Inventory of Finished Goods Dec. 31	<u>XXXX.XX</u>	
Cost of Goods Sold		<u>XXXX.XX</u>
Net Profit		<u>XXXX.XX</u>

The Closing Entries

The next step to be developed was the closing of the nominal accounts into a summary account so that the profit or loss might be collected and finally be transferred to the capital account. The entry (Illustration 13) which transferred the cost of goods sold from the Finished Goods account to the Cost of Goods Sold account reduced the closing entries to two in number (Illustration 17).

Illustration 17

Closing Entries

Debit	Sales	\$XXXX.XX	
	Credit	Profit and Loss	\$XXXX.XX
Debit	Profit and Loss	XXXX.XX	
	Credit	Cost of Goods Sold	\$XXXX.XX

The Profit and Loss account was a new account, explained as a summary account used for the purpose of collecting the data effecting the profit or loss for the period which would be closed into the Capital account as soon as all nominal accounts had been closed into it (Illustration 18). It was shown that this account, Profit and Loss, was used only during the closing process and that only in exceptional cases would it be opened during an accounting period.

Illustration 18

Entry to Transfer Profit (or Loss) to Capital

Debit	Profit and Loss	\$XXX.XX	
	Credit	Capital Account	\$XXX.XX

(To close the Profit and Loss account if a profit has been made)

or

Debit Capital Account \$XXX.XX
 Credit Profit and Loss \$XXX.XX

(To close the Profit and Loss account if a loss has been made)

Ruling on Accounts

As a result of the posting of these entries into the ledger several accounts were in balance and the correct method of ruling was presented (Illustrations 19, 20, and 21).

Illustration 19

Ruling of An Account When It Is to Be Balanced^a

19		Cash Account	
Jan. 1	XXX.XX	Jan. 2	XXX.XX
10	XX.XX	12	X.XX
15	XXX.XX	20	XX.XX
20	XX.XX	30	X.XX
		31 Balance (Red)	<u>XX.XX</u>
	<u>XXX.XX</u>		<u>XXX.XX</u>
Feb. 1	XX.XX		

a. Steps to Balance an Account

1. Place balance of the account on the small side in red ink.
2. Total each side of the account placing the totals on the same line on each side.
3. Rule single and double lines above and below totals as in Cash account above.
4. Bring down the balance to the correct side of the account as of the first day of the next period.

The Cash and Capital accounts should be balanced at the end of each accounting period.

Illustration 20

Ruling Account When It Is in Balance with
Several Entries on One or Both Sides^a

19	Sales		
Jan. 31 to P. & L.	XXX.XX	Jan. 4	XXX.XX
		7	XX.XX
		12	XX.XX
		20	XX.XX
		25	XX.XX
	XXX.XX		XXX.XX
			XXX.XX

^aSteps to rule account that is in balance

1. Bring down totals on the same line on each side of the account.
2. Rule single and double lines above and below totals as in the Sales account above.

Illustration 21

Ruling Account When It Is in Balance with Only One
Entry on Each Side^a

19	Cost of Sales		
Jan. 31 From Finished Goods	XXX.XX	Jan. 31 To Profit and Loss	XXX.XX
	XXX.XX		XXX.XX

^aSteps to rule account that is in balance

1. Rule a double line under the entry on the same line on each side of the account

Books of Original Entry

This completed the work of one complete cycle of accounting, from the recording of the transactions to the closing of the profit or loss into the capital account and the preparation of the statements for the proprietor. Journal entries had not been presented as yet; and though journal form was used in many of the illustrations above, it was for simplicity in presenting the material in this report. When presenting it to the classes "T" accounts were used in all cases. It undoubtedly

has also been noticed that the working sheet has not been used. This was introduced as a tool of the accountant after the Journal and other books of original entry were presented. Thus both books of original entry and the working sheet served as a review of the material previously covered, for they provided an incentive for the solving of additional exercises without reaching the monotonous exercise solving that we often find when all the above is presented and then time is taken to solve numerous exercises to fix all of it in the minds of the students.

Journal entries were not introduced until all the material mentioned above had been grasped by the class. Very little time was spent on the General Journal as the only book of original entry. Since the class understood the rule of debit and credit, it was possible to introduce the other books of original entry: Cash Book, Sales Journal, and Purchase Journal, at almost the same time as the General Journal. The first time the material was used, the same problems were utilized to develop journal entries as had been assigned before in the work. The class reworked the old problems, which eliminated the need for analysis of transaction, and still gave them a review of all that had been covered. The reasoning back of such a plan is ideal, but in actual practice it was not as successful as had been anticipated. Some members of the class lost interest in reworking the old problems, so the second and third years new but similar problems were used. The writer feels that the problems should be as nearly like the old problems as possible in order not to cause difficulty by introducing strange transactions; but there should be enough difference to stimulate a review of the previous work.

The General Journal (Illustration 22) was introduced by showing

that there was little room for explanation in the ledger and that in many transactions a more complete explanation would have been advantageous. This served to impress upon the students a simple reason why the additional work was necessary. Some members of the class had difficulty in securing a balance in the exercises they had previously worked so the second reason given for the need of the book of original entry was satisfactorily proven to the class, that was the inconvenience of locating errors if the ledger should be out of balance. It was shown that it was customary to record each transaction in a book of original entry before entering it in the Ledger and then posting to the ledger from the book of original entry. Each entry in the book of original entry should contain the date of the transaction, the name of the account to be debited and the amount; the name of the account to be credited and the amount; and a detailed explanation of the transactions. That these transactions were recorded chronologically in the Journals.

The posting was explained as follows: Each amount in the first money column is posted to the debit side of the account written on the same line with it. Each amount in the second money column is posted to the credit side of the account written on the same line with it. The narrow column (b in Illustration 22) on the left side of the journal page is known as a ledger folio column. A similar column is provided in the ledger. When the debit amount is posted to the correct account on the debit side of the account in the ledger, reference is made to the journal to check the name of the account and the amount which has been posted. If it is correct, the page number of the ledger upon which the posting was made is inserted in the folio column of the journal and

Illustration 22

General Journal

(a)				
(b)	(c)		(d)	
(b)		(e)		(f)
		(g)		
			(h)	
(b)	(i)		(j)	
(b)		(k)		(l)
		(m)		

- (a) The month, day and year date of the first transaction on each page.
- (b) Insert the page of the ledger to which the debit or credit is posted when the posting of each item has been completed.
- (c) The name of the account to be debited in the first entry.
- (d) The amount of the debit in the first entry. (First money column)
- (e) The name of the account to be credited in the first entry. Note that it is indented approximately one-half inch.
- (f) The amount of the credit in the first entry. (Second money column)
- (g) The explanation of the first entry in the journal. As many lines may be used as is necessary to give a complete explanation.
- (h) The date date only for the second transaction on each page.
- (i) The name of the account to be debited in the second entry.
- (j) The amount of the debit in the second entry.
- (k) The name of the account to be credited in the second entry.
- (l) The amount of the credit in the second entry.
- (m) The explanation of the second journal entry.

the page number of the journal from which the debit was taken is inserted in the folio column of the ledger. This process of posting is followed for each debit and credit recorded in the journal. The ledger and journal folio serve as a cross reference medium for use in the future. The folio column in the journal also serves to indicate just where the posting was stopped if it had not been completed.

After assigning several exercises requiring entries in the journal, ledger posting, and statement making the Cash Book (Illustration 23), Sales Journal (Illustration 24), Purchase Journal (Illustration 25) were introduced as divisions of the General Journal. Only one day was spent on each of them. They were explained during the class period as to form, use and method of posting from. As a laboratory assignment for the period following several short exercises were prepared which required work only in the new books of original entry, the posting of it to the ledger, and the taking of a trial balance. After each of these four books of original entry had been presented, the class was required to work out a simple practice set, which was nothing more than a long exercise containing transactions to be recorded in each of the books of original entry, the posting of these entries to a ledger, and the making of statements from the information secured from this ledger.

It was explained to the class that only one side of the transaction was posted from the Cash Book daily, but that the other side would be posted in total at the end of the month. It was also explained that the Cash Book, as a division of the General Journal, had several advantages, some of which are: reducing the amount of posting required, making it possible for more than one person to work on the books of original entry

at the same time, and separating in a special book all the transactions which affected cash. The students were also shown that the balancing of the cash book at the end of the accounting period was just the same as balancing the cash account in their ledger.

Illustration 23

Cash Book

(Left Side)

Cash Receipts

Page 1

Date	LF	Account Credited	Explanation	Amount	Total
19__					
Jan. 2		Balance	On Hand		1471.75
7		G. H. Young	On Sale	25.00	
7		C. A. Walker	Cash Sale	151.65	
14		Sales	Cash Sale	562.75	
14		R. J. Brown	Add. Invest.	500.00	
30		Sales	Cash Sale	<u>300.00</u>	
31		Cash Debited	Total Receipts		1539.40
					<u>3011.15</u>
Feb. 1		Balance	On Hand		1811.15

(Right Side)

Cash Payments

Page 1

Date	LF	Account Credited	Explanation	Amount	Total
19__					
Jan. 4		Fuller Machinery Co.	In Full of Acct.	100.00	
5		Brown & King	In Full of Acct.	500.00	
13		R. J. Brown	Withdrawal	200.00	
15		Sapiro Leather Co.	Inv. of Jan. 4	<u>400.00</u>	
31		Cash Credited	Total Payments		1200.00
31		Balance*			<u>1811.15*</u>
					<u>3011.15</u>

*Red

Illustration 24

Sales Journal

Page 1

January 19__					
Day Date	L. F.	Account Debited	Address	Terms	Amount
4		Richard Roe	City	2/10, n/30	100.00
7		John Doe	Fargo	1/10, n/30	100.00
9		John Smith	Willow City	n/30	150.00
12		Richard Roe		2/10, n/30	300.00
20		Richard Roe		2/10, n/30	150.00
24		John Doe		1/10, n/30	200.00
31		Sales Credit	Total Sales		<u>1000.00</u>

The introduction of the Sales Journal makes it necessary to discuss sales on account, that is charge sales, but it caused no difficulty for the only changes were the inclusion of the necessary new ledger accounts and the understanding that the business was receiving a promise to pay which was an asset. When the account was paid it required a debit to cash and a credit to the account with the customer making the payment. We were receiving cash hence would debit the cash account and were giving back the promise to pay hence would credit the account in which we had recorded that promise. It was necessary to explain discounts at this time also. It is possible that they could have been omitted until later but while introducing the journal in which they are commonly found it was felt that the time needed to discuss them would be well spent. Cash and trade discounts were explained as to use. The cash book (Illustration 23) was not changed to provide for the taking of the discounts, as they were handled as a refund until later in the course. That is when a customer paid an invoice on which he was en-

titled to a discount, it was assumed that he paid the whole amount, and then that we refunded to him the amount of the discount.

The posting of the Sales Journal was easily grasped by the students; probably due to the fact that the posting from this type of book was thoroughly understood from the discussion on the cash book. They were shown that in posting to the Accounts Receivable only one side of the transaction was being posted daily, but that the other half of it would be posted in total at the end of the month. Sufficient explanation had already been given in connection with similar books to convince the class of the advantage of its use.

Illustration 25

Purchase Journal					Page 1
January 19					
Day Date	L. F.	Account Credited	Address	Terms	Amount
5		Shoe Leather Co.	St. Paul	½ cash, ½ 30 da.	5,000.00
7		X, Y & Z Leather Co.	Chicago	2/10, n/30	1,500.00
10		Johnes Leather Co.	Minneapolis	Cash	4,000.00
20		Smith Cotton Co.	St. Louis	n/30	500.00
31		Material Debited	Total Purchases		<u>11,000.00</u>

Creditors as such were not new to the students, but the accounting term Accounts Payable was, and it had to be explained here. It was, however, just renaming something already understood, so it caused no trouble. Here again, attention had to be called to the fact that only one-half of the entry was posted daily and the other half was posted in total at the end of the accounting period.

Cash purchases and cash sales were handled through both the sales or purchases journal and the cash book. The writer feels that in every

case where such a procedure is possible it should be followed. Sufficient is gained by having a complete record of the transactions with each customer or creditor to compensate for the additional work involved. Of course, in the larger establishments, or where many of the sales are extremely small, it probably would be impossible and in these cases we have to forego the advantage of the complete record with the customer and substitute the use of a one book entry for the cash sales, entering them in total in the cash book only.

As previously stated, as soon as several short exercises concentrating on each of these special books were solved, the class was given a simple practice set, the working out of which required; entries to be made in each of the books of original entry, posting to a ledger, taking of a trial balance, and preparation of the statements. This served to tie together all that had been covered and to review that which had been laid aside for the time being, namely, the conversion entries. The statements were quite long in the practice set, particularly the Balance Sheet for several customer and creditor accounts had to be included, and the attention of the class was called to the fact that there was little proof of the accuracy of the work until all the statements had been completed. Again they were warned that even though their statements checked, it was not absolute proof that the work was without error, but was a reasonable check upon the accuracy of the work completed. The fact that all statements had to be completed before any proof could be secured led to the introduction of the working sheet as a tool of the accountant. It was explained that the working sheet was prepared to secure the same proof as was secured by the statements but that it made

it possible to secure this proof before the accounts balances had been arranged in statement form.

The Working Sheet

A simple eight column working sheet (Illustration 26) was presented first. Adjustment columns were omitted because at this point we had no use for them. An attempt was made to show the students that the working sheet was a repetition of what had previously been done in the ledger accounts and what was to be done in the preparation of the statements; that its sole purpose was to serve as an aid to the accountant. It secured the desired proof for him in a easier manner, and it separated the accounts into the proper columns from which the statements could be prepared with little difficulty. It eliminated the necessity of preparing a trial balance on other paper, for the first two columns of the working sheet were the trial balance of the ledger.

Selling and Administrative Expenses

Selling and administrative expenses were presented after the working sheet was thoroughly understood by the students. No attempt was made to charge a portion of them to the product; for, as previously stated, it was not the intent to find accurate costs in this course. They were handled in the manner used in handling them in any system of accounting for exchange. It was necessary to introduce additional sections of the Profit and Loss Statements to accommodate these expenses thereon, but, as this did not necessitate any rearrangement, little difficulty was encountered.

Depreciation

It was undoubtedly noted that machinery was credited, in the

Illustration 36

Working Sheet

R. J. Brown
Working Sheet
January 31, 19__

	Trial Balance	Mfg. Statement	P. & L. Statement	Balance Sheet
Cash	XXXX.			XXXX.
G. H. Young	XX.			XX.
C. A. Walker	XXX.			XXX.
Fuller Machine Co.		XXXX.		XXX.
Brown & King		XXX.		XXX.
Sapiro Leather Co.		XXX.		XXX.
Richard Roe	XXXX.			XXXX.
John Smith	XXX.			XXX.
John Doe	XXXX.			XXXX.
Shoe Machine Co.		XXXX.		XXXX.
Shoe Leather Co.		XXXX.		XXXX.
X, Y, & Z Leather		XXX.		XXX.
Johnes Leather Co.		XXX.		XXX.
Smith Cotton Co.		XX.		XX.
Machinery	XXXX.	XXXX.		
Rent	XXX.	XXX.		
Light	XX.	XX.		
Heat	XX.	XX.		
Labor	XXX.	XXX.		
Leather	XXXX.	XXXX.		
Dye	XXX.	XXX.		
Thread	XXX.	XXX.		
Goods in Process	XXX.	XXX.		
Finished Goods	XXX.		XXX.	
Sales			XXXX.	
Inventories 1/31	XXXX.			
Machinery		XXXX.		XXXX.
Leather		XXXX.		XXXX.
Dye		XX.		XX.
Thread		XX.		XX.
Goods in Process		XXX.		XXX.
Finished Goods			XXX.	XXX.
Cost of Goods Mfg.		XXXX.	XXXX.	
Net Profit			XXX.	XXX.
	XXXX.	XXXX.	XXXX.	XXXX.

various entries transferring the cost of manufacturing to the Goods in Process account. Such a procedure is contrary to good accounting practice, but in this case it was a question of selecting the lesser of the two evils. No decision has been reached as to when is the best time to introduce depreciation as such. Some difficulty was encountered when it was delayed until this point in the course, for the students were accustomed to crediting the machinery for the estimated amount used and they had some trouble making the change to the correct method of handling this item.

In an attempt to avoid this misunderstanding during the second year of the experiment it was attempted to introduce the question of depreciation early, but this was not found to be any more satisfactory than the first plan; so during the third year the writer again tried the plan wherein the study of depreciation was delayed until the selling and general administrative expenses were introduced. It is possible that the question of machinery and housing facilities could be omitted entirely until later in the course, but the investigator felt that the students would raise the questions as to where the shoes were being produced and with what kind of machinery, so he attempted to put it in a logical sequence in a manner which the students could grasp, trusting to the possibility that the correct method of accounting for it could be explained later when it would be easier to understand. After an explanation of depreciation, obsolescence, supersession, inadequacy, depletion, and amortization as to the causes and the correct methods to use in accounting for them several exercises were solved by the students during the laboratory period, which had to do primarily with the handling of depreciation in the accounts. One long exercise was then assigned to be worked during the class period and

laboratory period all of which was supervised. This exercise required a thorough knowledge of all that had been covered and no reference to note books were permitted while the work on the exercise was in process.

Upon the completion of this exercise the change was made from accounting for a business in which conversion played an important part to one in which exchange was the principal purpose of operating. This change required little work in that only a few changes had to be made; a purchase account had to be explained and the method of closing at the end of the period had to be developed, but these two alterations were all that had to be introduced at this time. When this change was made no difficulty was encountered. In fact, the students remarked on how easy it was to do the accounting for an exchange business. One practice set was worked out in which the books were kept for a general mercantile business. This required all the work of recording the transactions, the posting, making of the work sheet and statements, and the closing of the ledger.

In presenting this outline of the course in which the writer used the cost approach no attempt had been made to go into details or to include all that was presented to the classes. Rather an attempt was made to present a general picture of the course as a whole so that the reader might form his own opinion as to the value of the new approach by comparing this outline with his own knowledge of the material covered and the manner in which it is presented in the several other approaches in use today.

Summary

In the experiment a small factory, The Brown Shoe Company was used as a basis for all lectures. After the students thoroughly understood

the elementary definitions, work was started on recording of transactions encountered in connection with the actual manufacturing.

A list of all the items Mr. Brown would have to secure before he could begin the manufacturing of the product was built up. The funds with which to secure these items was explained as coming from two sources; investments of the proprietor and credit extended to him by those from whom he purchases supplies and raw materials. This information necessitated the development of a method of keeping a record of it.

The class developed the T account as a place to record the value of the items coming into the business and the items going from the business. Journal entries as such were delayed until late in the quarter for little could be gained by confusing the students with a double record at the beginning. Since the students had devised the T account themselves they naturally understood the rule of debit and credit quite well and as soon as they discovered that for each debit they were making an equal credit the trial balance as a checking medium was introduced. The equation $\text{Assets} = \text{Liabilities} + \text{Proprietorship}$ developed naturally as the students learned that all assets came from the two sources proprietor and credits and that if every thing the business owned belonged to these two classes of creditors the total assets would have to be equal to the combined claims on the business. If a profit was made which resulted in an increase in the assets without increasing the liabilities it could go only in one place that was to the proprietor's account for he was entitled to it due to the risk he was taking by investing his money in the venture.

After the materials were secured sales were introduced. Each sale

being made up of an increase of an asset for the amount coming into the business and a decrease of the material-assets and an increase of the proprietorship for the profit. Had journal entries been used the explanation of each sale would have been made up of a debit to the asset received - usually cash and a credit to each of the following accounts: machinery, thread, labor, leather, rent, light, heat, and capital for the profit.

After several such transactions involving sales were recorded by the class they began to wonder why some means could not be used whereby these small credits could be eliminated. This was a natural place to introduce the sales and cost of manufacturing account. It lead, of course, to a separation of the sales from the manufacturing or conversion transactions and made it necessary to provide for the distribution of the material used and expenses accumulated at the end of the accounting period, but the students grasped this without difficulty.

After the students was familiar with the trial balance as a checking medium, statements and ledger closings were introduced. The students soon saw that it was a simple matter to transfer from the inventory accounts the material and expenses used to a cost of manufacturing account, and then the balance of this account to a profit and loss account, to which sales had already been transferred. The profit and loss account balance of course gave them the profit which they had lost sight of since the introduction of the sales account.

All goods were sold as manufactured. That is no finished goods were left in stock. The students raised the questions as to how stocks of merchandise were accumulated if all goods were made on special order.

So the finished goods and goods in process account were introduced.

The handling of depreciation was troublesome, and that is still some doubt as to just what is the best way of handling it. It is necessary to make the early presentation as simple as possible, yet enough of the costs should be included so that the student can visualize the manufacture of the product. If depreciation is introduced early in the course it must be handled the same as the other material-assets and should be explained correctly as soon as the students are far enough advanced to handle it. The three elements of cost should be introduced so that the cost of manufacturing statement may be set up in good form.

Journal entries were not introduced until all the material mentioned had been grasped by the class. Very little time was spent on the general journal as the only book of original entry. Since the classes understood the rule of debit and credit it was possible to introduce the other books of original entry, namely the cash book, sales journal, and purchase journal at almost the same time.

Selling and administration expenses were presented after the books of original entry. No attempt was made to charge a portion of them to the product for as previously stated it was not the intent to make the course one of cost finding. They were handled in the same way as in accounting for exchange, or the same as they are presented in any of the other approaches.

The change from accounting for a business in which conversion - manufacturing was the basis of operation to a business in which exchange - retail selling was the basis for operation was made. Little difficulty was encountered here in fact the ease in which it was accomplished was quite noticeable.

CHAPTER 5

CONCLUSIONS

The writer confidently expected a distinct gain in "teachability" to result from this approach; first, growing out of it logically; and second, out of the thorough drilling in the thoughtful analysis of transactions which is enforced by withholding the journal for some time. The things sought are simple: (1) an understanding of the logic of bookkeeping reasoning; (2) an acquaintance with the method of recording financial facts; and (3) the particular way of reflecting changes in physical production by corresponding figure-adjustments in the record (i.e., internal transfers between accounts, closing, etc.).

In these few, and, to the experienced bookkeeper, simple things, lies the mystery of double entry bookkeeping. Our main task as teachers, then, is to get these things over to the beginner regardless of the way bookkeeping was first practiced in the Middle Ages, and regardless, in the first part of the course, of the sequence now followed by the commercial bookkeeper in actual business transactions.

A report can be made that the new approach accomplished the above and more. At the end of the quarter the same general examination (Appendix A) was given to both classes mentioned early in this paper, and the class which had been taught by the cost approach had a higher average than did the other class (Table 4). It must be admitted that the results do not show the superiority as conclusively as might be desired, but it must be remembered that the students did not have access to a text. It is believed that when the material is placed in manuscript form and used again the results will be more satisfactory.

Table 4
Final Examination Grades

Year	Results of Cost Approach			Results of 20th Century Approach		
	Number of Students	Average Mental Score ^a	Average Final Examination Grade	Number of Students	Average Mental Score ^a	Average Final Examination Grade
1932-33	16	35.2	85.	6	33.3	78.
1933-34	10	36.4	86.	7	35.3	79
1934-35	12	38.1	91	17	41.9	84
1932-35 (Total)	38	36.4	87.1	30	38.7	81.6

^aThe Average Mental Score secured from the results obtained on the Otis Self-Administering tests of Mental Ability - Higher Education: Form A. These results were secured from the files of Mr. Roy Grinnell who was in charge of Mental Ability Testing at the institution. No attempt was made to reduce these scores to the I Q of the students because of the following comment of Mr. Grinnell; "Intelligence Quotients are unavailable after the age of fifteen. After that age there is no agreement upon the validity of quotient figures. The best we can do then is to give the scores made in the Otis test, and a table of comparisons with the scores made by students throughout the country at large." The table of comparison with the score made by students throughout the country at large is omitted because the intelligence rating is herein used only for a comparison of the two groups used in the experiment.

It will be noted in the above table that the group taking the work in which the 20th Century Text was used had a slightly higher average mental score, but that they were about five and one-half points below the group in which the cost approach was used. Though this difference in result is not great, it is more significant when the contents of the examination is noted and understood. The test (Appendix A) was built up from tests published by the Southwestern Publishing Company, designed to be used with their text. Consequently the students taught by the approach used in the text had a decided advantage on this test.

Not only were better results obtained on the final examination, but also for the quarter's work by those who were taught by the Cost

proach (Table 5). Again it will be noted that though the group used in the Cost Approach sections did not have quite as high an average on the Otis test, the results obtained as expressed in quarter grades were better.

As was stated earlier a large number of the students enrolled do not complete the year's work in accounting due to the fact that only the first quarter's work is required for those taking the stenographic course and the greenhouse course, and due to failures and transfers to other departments. Unfortunately this makes it impossible to determine with any degree of accuracy the quality of the work which might be expected in advanced courses. Approximately half of those included in this experiment completed the year's work during the years the experiment was being conducted, but they were not evenly distributed between the two groups, so no attempt was made to tabulate the results. From the number of cases available for study it was evident, however, that those who had been introduced to the subject by the cost approach had a better understanding of the fundamentals of bookkeeping and accounting than did those from the other group. It was also easier for them to grasp the new material. This of course is the opinion of the writer, tabulated results to prove it are not available.

In presenting this new method of approach to the students, errors were undoubtedly made. Some of them have been indicated in this review. These can be eliminated by working over the material and using it with new classes. There is no doubt in the mind of the writer that after it had been set up in the final form, the Cost Approach will be superior to any of the other systems of approach now in use. It is hoped that some time in the future this material may be turned over to a number of

Table 5
Quarter Grades of All Students Used in the Experiment

Student Number	Results of Cost Approach		Results of 20th Century Approach	
	Mental Score	Quarter Grade ^a	Mental Score	Quarter Grade ^a
1	63	80	60	80
2	63	89	55	89
3	59	89	55	89
4	50	80	49	80
5	48	89	48	80
6	47	97	48	80
7	46	89	47	89
8	45	80	47	97
9	43	80	46	50
10	42	89	45	80
11	42	89	45	80
12	41	89	44	80
13	40	89	39	80
14	40	80	39	50
15	40	80	38	80
16	40	80	37	80
17	40	80	36	72
18	40	50	36	80
19	39	89	36	50
20	38	89	35	80
21	36	80	32	72
22	33	80	31	80
23	33	80	31	50
24	33	72	30	72
25	29	80	29	50
26	29	72	28	50
27	28	89	27	80
28	28	72	25	72
29	28	72	21	80
30	27	50	21	80
31	27	50		
32	26	50		
33	25	80		
34	21	89		
35	21	72		
36	21	50		
37	21	50		
38	13	50		
Average	36.4	76.7	38.7	74.4
Range	13-63	50-97	21-60	50-97

^aThe median of the percentage allotted to each letter grade was used to compute the averages. For each "F" failure a numerical grade of 50 was assigned. "A's" were assigned 97, "B's" 89, "C's" 80, and "D's" 72.

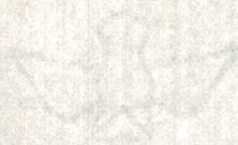
co-operating teachers, who will use it in their own classrooms to see whether they secure the same results as the writer. It is realized that to secure the adoption of this approach by a great number of teachers would require unquestionable proof of its superiority. This can be secured only by the tabulation of the results secured by continually working with the material, both in its present form and in manuscript form.

Those who read this thesis will undoubtedly form opinions both for and against it. If they would list their criticisms and submit them to the writer it would be appreciated.

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APPENDIX A



CHESTERLAND BOND

APPENDIX A

ACCOUNTING

First Year Accounting

Final Examination

Section 1. MULTIPLE CHOICE TEST. JOURNALIZING TRANSACTIONS

DIRECTIONS: As you read each transaction, select from the list of accounts given below, the account to be debited and the account to be credited in making the journal record. Write the numbers of these accounts in the appropriate columns as shown in the sample. The list of accounts is arranged in the order in the ledger

Dr.	Cr.
10	1

SAMPLES: (Use accounts below)

Bought merchandise for cash

LIST OF ACCOUNTS

- | | |
|------------------------|-------------------------------------|
| 1. Cash | 9. Sales Returns and Allowances |
| 2. Notes Receivable | 10. Purchases |
| 3. Customer's Account | 11. Freight and Drayage in |
| 4. Mdse. Inventory | 12. Purchase Returns and Allowances |
| 5. Notes Payable | 13. Misc. Expenses |
| 6. Creditor's Accounts | 14. Interest Earned |
| 7. Wm. Wolff, Capital | 15. Interest Cost |
| 8. Sales | |

GROUP A - CURRENT ENTRIES

TRANSACTIONS

	Dr.	Cr.
1 - 2. Bought merchandise on account		
3 - 4. Paid freight and drayage for the month		
5 - 6. Paid cash to a creditor on account. . .		
7 - 8. Wm. Wolff invested cash in the business		
9 - 10. Gave our note to a creditor on acct . .		
11 - 12. Paid one of our non-interest-bearing notes		
13 - 14. Make a record of cash sales for today .		

- 47 - 48. To transfer miscellaneous expenses to the profit and loss account
- 49 - 50. To transfer the net profit for the period to the proprietor's capital account

Section 2. RULES FOR JOURNALIZING.

DIRECTIONS: Complete the statements below by underlining the correct word: either debits or credits.

1. All increases in assets are recorded as . . . debits credits
2. All decreases in assets are recorded as . . . debits credits
3. All increases in liabilities are recorded as. debits credits
4. All decreases in liabilities are recorded as. debits credits
5. All increases in proprietorship are recorded
as debits credits
6. All decreases in proprietorship are recorded
as debits credits
7. All increases in income are recorded as . . . debits credits
8. All decreases in income are recorded as . . . debits credits
9. All increases in expenses are recorded as . . debits credits
10. All decreases in expenses are recorded as . . debits credits

Section 3. MULTIPLE CHOICE TEST - RECORDING TRANSACTIONS.

DIRECTIONS: As you read each transaction below, select from the list of Journals given below the Journal which will be used in making the record, and print its letter in the column. Note samples.

SAMPLES:

- Received check for interest on customer's note . .
- Paid creditor on account less discount

Which Journal
C
D

LIST OF SPECIAL JOURNALS

- A. Purchases Journal
- B. Sales Journal
- C. Cash Receipts Journal
- D. Cash Payments Journal
- E. General Journal

TRANSACTIONS

	Which Journal
1. Proprietor invests merchandise	
2. Proprietor invests cash	
3. Bought merchandise on account	
4. Sold merchandise, terms 60 days	
5. Sold merchandise, terms cash	
6. Gave creditor our note on account	
7. Received check from customer on account	
8. Paid creditor in full on account	
9. Received note from customer on account	
10. Sold merchandise for cash	
11. Bought stamps and stationery for cash	
12. Sold customer stamps for cash	
13. Gave customer cash refund on sale returned	
14. Customer returned merchandise for credit	
15. We returned merchandise for credit	
16. Received cash refund for merchandise we returned	
17. Gave bank our check in payment for note and interest	
18. Received check from customer on account less discount	

Section 4. TRUE FALSE TEST - SPECIAL JOURNALS.

DIRECTIONS: After each statement below that is true, draw a line under "true." If the statement is false, draw a line under "false." The first answer is underlined as a sample.

SAMPLE:

- One journal may be used to record all transactions . . true false
1. The use of special journals reduces the work of posting transactions true false
 2. The use of special journals reduces the work of recording transactions true false
 3. The purchases journal records all necessary information, for each purchases, on one line . . true false
 4. Each entry in the cash receipts journal requires several lines true false
 5. The sales journal provides, in one place, a record of all sales on account true false
 6. The purchases journal reduces the work of posting at least forty per cent true false
 7. The sales journal reduces the work of posting at least eighty per cent true false

8. The cash receipts journal separates the record of cash receipts from that of all other transactions true false
9. If a customer wants to know how much he owes, the bookkeeper looks in the sales journal for the amount true false
10. If the proprietor wants to know how much he owes a creditor, he looks in the purchases journal for the desired information true false
11. The purchases journal is a book of final entry true false
12. The sales journal may also be called the sales book true false
13. Only purchases on accounts are recorded in the purchases journal true false
14. Only sales on account are recorded in the sales journal true false
15. Merchandise returned by a charge customer is recorded in the purchases journal true false
16. A cafeteria does not need a sales journal true false
17. A cafeteria does not need a purchase journal true false
18. Cash sales are recorded in the cash receipts journal true false
19. Cash purchases are recorded in the cash payments journal true false
20. Merchandise returned to a creditor is recorded in the sales journal true false
21. The cash receipts journal and the cash payments journal combined are the cash book true false
22. The cash receipts journal is a book of final entry true false
23. All cash receipts are recorded in the cash receipts journal true false
24. Only cash receipts are recorded in the cash receipts journal true false
25. When merchandise is sold for cash the entry is made in the cash receipts journal true false
26. A note received from a charge customer is recorded in the cash receipts journal true false
27. Only cash payments are recorded in the cash payments journal true false
28. The cash payments journal is a book of final entry true false
29. A note issued to a creditor is recorded in the cash payments journal true false
30. When merchandise is bought for cash, the entry is made in the cash payments journal true false
31. The general journal is a book of final entry true false
32. The cash receipts journal and cash payments are subdivisions of the general journal true false
33. The purchases journal and sale journal are subdivisions of the general journal true false

34. ^{title} The title of a special journal is the title of the account to which the total is posted . . . true false
35. Opening entries are recorded in the general journal only true false
36. All adjusting entries are recorded in the general journal true false
37. All closing entries are recorded in the general journal true false
38. All current entries are recorded in the general journal true false
39. If there are assets other than cash invested the opening entry is made in the purchase journal. true false
40. The total of the sales journal is posted to the debit of the sales account true false
41. The posting to the accounts with charge customers is usually daily true false
42. The total of the purchases journal is posted to the credit of the purchases account true false
43. The bookkeeper may prove cash before posting to the two cash journals true false
44. An error in adding the sales discount column will be detected in proving cash true false
45. If the two cash journals are used, it is necessary to maintain two cash accounts in the ledger true false
46. The total of the net cash column of the cash receipts journal is posted to the credit of the cash account true false
47. Each individual entry in the purchase journal is posted to the credit of the account name . . . true false
48. Each individual entry in the cash payments journal is posted to the credit of the amount name true false
49. Each individual entry in the cash receipts journal is posted to the debit of the account named true false
50. The accounting term for property belonging to a business is asset true false
51. A business transaction is a change in assets, liabilities or proprietorship true false
52. It is not necessary to maintain records and prove them to be correct true false
53. Debit refers to the right side of the account . . true false
54. Cash paid for rent decreases the cash true false
55. Cash paid for merchandise purchased increases cash true false
56. A sale on credit increases the asset accounts receivable true false
57. Cash received from a charge customer increases cash and decreases the asset accounts receivable true false

- | | | | |
|-----|--|------|-------|
| 58. | Debit the Purchases account for merchandise returned to the creditor | true | false |
| 59. | Cash paid a creditor decreases assets and liabilities | true | false |
| 60. | Cash taken out of the business by the owner decreases the assets and proprietorship | true | false |
| 61. | The ledger contains information in account form | true | false |
| 62. | The journal contains a record of the transactions in journal form | true | false |
| 63. | Debit sales for merchandise sold | true | false |
| 64. | A liability incurred usually results in an increase in an asset | true | false |
| 65. | A liability paid results in a decrease to the assets | true | false |
| 66. | An account is kept with each cash customer | true | false |
| 67. | The balance of the Drawing account is one of the expenses of the business | true | false |
| 68. | The Capital account is credited for investments | true | false |
| 69. | The balance of the Drawing account is transferred to the Capital account at the close of the fiscal period | true | false |
| 70. | Each expense account records a decrease in proprietorship | true | false |
| 71. | Each income account records an increase in proprietorship | true | false |
| 72. | The Cash account is credited for each amount received | true | false |
| 73. | The Cash account is debited for each amount paid. | true | false |
| 74. | The balance of the Profit and Loss Summary account is transferred to the drawing account | true | false |
| 75. | The balance of each expense account is transferred to the credit of the Profit and Loss summary account | true | false |
| 76. | A withdrawal of a part of the capital decreases the assets and proprietorship | true | false |
| 77. | Assets equal Liabilities plus Proprietorship | true | false |
| 78. | The account with each creditor shows a liability. | true | false |
| 79. | The account with each charge customer shows an asset | true | false |

Section 5. WORKING SHEET.

DIRECTIONS: The columns below contains the Working Sheet Columns, and the columns below contain the account titles on the ledger of M. B. Butler at the close of the fiscal period. In the parenthesis at the right of each account title write the Working Sheet column numbers in which the account balances appear on the completed Working Sheet. The cash balance will appear in the Trial Balance Dr. and the Balance Sheet Assets columns, hence the "1 and 5" in the parenthesis.

Working Sheet Columns

- | | |
|--------------------------------|---|
| 1. Trial Balance, Dr. | 2. Trial Balance, Cr. |
| 3. Adjustments, Dr. | 4. Adjustments, Cr. |
| 5. Balance Sheet, Assets | 6. Balance Sheet, Liabilities and Capital |
| 7. P. & L., Expenses and Costs | 8. P. & L., Income |

Account Titles

- | | | | |
|---------------------------------|-----------|---------------------------------|-----|
| 1. Cash | (1 & 5) | 12. The Gauer Co., Cr. | () |
| 2. A. T. Ball, Dr. | () | 13. Smith Co., Cr. | () |
| 3. N. B. Lacy, Dr. | () | 14. Jones & Jones, Cr. | () |
| 4. D. D. Rand, Dr. | () | 15. M.B.Butler, Cap. | () |
| 5. R.B.Doyle, Dr. | () | 16. M.B.Butler, Draw | () |
| 6. R.Row. & Co., Dr. | () | 17. Sales | () |
| 7. J. Roe, Dr. | () | 18. Purchases | () |
| 8. Misc. Inventory | () | 19. Rent Expense | () |
| 9. Kline Bros., Cr. | () | 20. Salary Expense | () |
| 10. M.I.Lee & Son., Cr. | () | 21. General Expense | () |
| 11. Johnson & Son,Cr. | () | 22. Misc. Inv.Aug. 31 | () |

Section 6. POSTING AND TRIAL BALANCE.

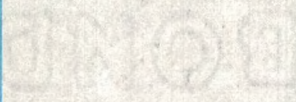
DIRECTIONS: Read each question below and underline the appropriate word as shown in the sample.

SAMPLE:

On which side of the proprietor's account is the original investment recorded? debit credit

1. To which side of the creditor's account is each entry in the purchases journal posted? debit credit
2. To which side of the customer's account is each entry in the sales journal posted? debit credit
3. To which side of the account named is each entry on the receipts side of the cash book posted? debit credit
4. To which side of the account named is each entry on the payment side of the cash book posted? debit credit
5. To which side of the Sales account is the total of the sales journal posted? debit credit

6. To which side of the Purchase account is the total of the purchases journal posted? debit credit
7. To which side of the Cash account is the total of the receipts side of the cash book posted? . debit credit
8. To which side of the Cash account is the total of the payment side of the cash book posted? . debit credit
9. If there is cash on hand, which side of the Cash account is the largest? debit credit
10. Each open account receivable will be listed on the Trial Balance as a? debit credit
11. Each open account payable will be listed on the Trial Balance as a? debit credit
12. The Sales account balance will be listed on the Trial Balance as a? debit credit
13. The Purchases account balance will be listed on the Trial Balance as a? debit credit
14. Each Expense account balance will be listed on the Trial Balance as a? debit credit
15. Which side of the Trial Balance is affected if an error is made in totaling a customer's account which causes it to be over-stated? . . debit credit
16. Which side of the Trial Balance is affected if an error is made in totaling a creditor's account which causes it to be over-stated? . . debit credit
17. If in posting from the sales journal the amount of the sale, \$1.15, is posted to the customer's account as \$9.51, which side of the Trial Balance is affected? debit credit
18. If in posting from the purchases journal the amount of a purchase of \$125.00 is posted to the debit side of the account with a creditor, which side of the Trial Balance is increased? debit credit
19. If through error the total sales, \$4126.50 is posted \$4026.50, which side of the Trial Balance is affected? debit credit
20. If through error the total purchases, \$2,132.55, is posted as \$2,122.55, which side of the Trial Balance is affected? debit credit


 UNIVERSITY OF CALIFORNIA

APPENDIX B



APPENDIX B

SAMPLES OF LECTURES USED IN THE COURSE

Second Lecture

A broad subject like accounting is always difficult to define. Precise definitions are likely to be inadequate at best, and are often misleading. It is often better to permit the entire exposition to build what definitions it may in the reader's mind than to attempt to formulate the essence of the matter in a few words. Accordingly, I shall not attempt to present a satisfactory characterization of accounting in a single statement. I believe, however, that looking in the direction of some possible definition, we will find inquiries and suggestions which will shed light upon our subject and especially aid in the development of the proper perspective.

In the first place, the accounting profession consists of four separate branches. First, there is what might be termed constructive accounting. Every business requires a system of accounts and accounting principles to aid in keeping the books. That is, someone must organize, plan, arrange, and put into use the books used by the business. Today, there is a group of accountants who have specialized in this work, and who do nothing but installation work. It is true that many of our present systems are not the result of one man's efforts, but are rather the work of a number of men - that is, they have gone through a process of evolution. Nevertheless, originally, there was one man who made the first installation. That work today has been specialized to the extent, as I have already said, that there are accountants who do no other type of work.

Second, there is that sub-field known as bookkeeping. Authors have attempted to differentiate between bookkeeping and accounting, but they have failed; it is impossible to draw a line and say to one side is bookkeeping, and on the other is accounting. Bookkeeping, however, is largely a routine, orderly process of analyzing and booking business transactions.

Third, there are the periodic interpretation and analysis of the records of the business enterprise in the light of various valuations and inventories and the preparation of important financial statements for the use of the managers, investors, etc., which are based upon their analysis. Undoubtedly, there is a question as to just how far the accountant may go in valuation work; but even though he is limited in this work, he does not have to interpret and pass judgment upon valuation data and incorporate this material in his fundamental financial exhibits. Furthermore, the accountant is certainly expected to compute accruals, to gauge intangibles, to formulate depreciation policies, and to work out rules of valuation in connection with merchandise and other assets, even if the actual work of appraisals and taking inventory is left to others. We might stop for a moment and consider what we mean by accruals and intangibles, but it is not my intention to go deeply into these subjects at this time. Later in the course we will consider them from all angles. By accruals, we mean those items which become real due to the passage of time - such as interest on money borrowed. Day by day this amount is increasing, yet in accounting we only attempt to record it periodically. Intangibles are those items having value, but not physical nature. All of you know that an inventor can secure a

patent, which protects his invention from use by others, from the Government of the United States. There is no doubt that this right to use or control the use of has value, but it is not a thing that one can pick up as one can a book.

The third branch of accounting involves the preparation of periodic income, balance sheets, and all other exhibits and reports designed to show the income or loss and net worth or actual value.

The fourth phase of accounting is that known as auditing, or simple checking of the work performed usually by the bookkeeper.

It is the function of the accountant to register all values coming into the business, to follow their course within the enterprise, and to note their final disappearance from the business, and at the same time to record the effect of all of these processes upon the various elements of ownership.

We can well afford to stop at this point to consider the social side of accounting. What is the function of accounting from the standpoint of the community, or the entire industrial situation? What part does accounting play in the economic process? Of what significance is accounting from the standpoint of general industrial welfare?

There is an inclination to consider accounting as a mere tool of trade, a mechanism with which the business man, for his own immediate purposes, counts profits and losses.

Personally, I think that accounting has a much more important place in the business world than merely the determining of the profits and losses. What, for instance, would a business man do if he were forced to set his prices without the aid of an accounting system? It

would be practically impossible for him to do this task in the modern business era. Formerly, when business was more or less barter, price fixation was of little importance; but today, in this highly competitive business world, the price must be set at a place where the business man will; first, get the money back that he has invested in the product; second, make a profit; and third, meet competition with his product. Prices accurately set also aid him in determining other business policies, such as when to increase or when to decrease his output. Insofar as accounting contributes to render effective the control of the price system in its direction of economic activity, it contributes to the general productive efficiency and has a clear cut social significance - a value to the industrial community as a whole.

The business man expands his business when prices are at that point which makes it advisable to buy at that time. He sells when he thinks the prices are at the most profitable point. The accountant must aid in preparation of these prices. Furthermore, we must consider that the money invested in these various items are not all recovered at the time of the sale of the products of the company. Some of them are retained and do not lose their value. Let us look at land for instance - practically unperishable (agricultural land excluded) so that all that is necessary for the business man to know is that he can recover his investment in land from its sale at any time. But in the case of a building we have an entirely different problem. For as the building is used, its value decreases. What becomes of that portion of the building which is being lost? We cannot say that the building is going into the product which is being manufactured, but it is evident that the building

is becoming of less value because the products are being produced. Naturally, if this is true, the selling price must include an amount to cover this loss in value of the building. It is the duty of the accountant to determine how much of this there is per unit of the product, and also how much of the building remains (what its value is) and can be considered as an asset (property belonging to the business).

We must also consider the difference between modern business and business of old. It has not been so many years ago that the common business house was of the type owned by one man and known as the single proprietorship. The large corporation was the exception. Today, it is the opposite. Not that the number of corporations have outnumbered the small firms, for they have not, but they have far outgrown them as far as capital invested is concerned. Formerly with the small business, the utmost simplicity in operation and marketing organization was the rule. In such a system the need for accounting as we now know it was not urgent. The owner could readily keep in mind much of the detail of his business, and could be personally cognizant of the status of each important property item without elaborate records. A more or less systematic diary of business transactions was usually the extent of his accounting; little in the way of managerial analysis or valuation was attempted or needed.

Comparing that with today, we find the large enterprise requiring a large amount of capital, employing a numerous personnel, utilizing scores or even hundreds of types of properties, operating perhaps several plants and selling goods in a world market. In the case of these large and complex enterprises there is evidently a need for an extensive system of accounts.

If prices were comparatively stable, as was the case in Early English Industrial history, the problem of ascertaining the status of properties would be essentially a matter of physical measurements and appraisal and hence would be relatively simple; physical units could be converted directly into value terms. But today, prices are anything but stable. They are continually fluctuating, and this together with the changing value of money complicates the task of the accountant, and at the same time renders his work more essential.

Notes of the Second Lecture

It might seem to the reader that such a lecture of seemingly difficult material would confuse the students even to the extent of encouraging them to drop the course. Such was not found to be true. The purpose of the lecture was to give the student what might be termed a "bird's eye view" of the work to be covered, and at the same time to make them realize the need for careful analysis and study of their notes. It was not intended that after this one discussion the student would be able to understand all the material covered. Yet it was surprising to find that many of the class did get a great deal out of the lecture as shown by the class discussions at the time the material was taken up in detail.

The results of the lecture the first year were so satisfying to the instructor that it was repeated the second and third years the "Cost Approach" was used, with even better results for it was better known what to emphasize and what not to emphasize.

It might be well to add that the instructor has the habit of using the blackboard almost constantly, and that it is difficult to write the

lectures as actually given. The material repeated here has been taken verbatim from the lecture notes prepared before meeting the various classes. But it is necessary to mention the fact that they were altered in presentation that is, they were not simply read to the class, but were used only as notes. Where the attitude of the class indicated that it was not clear, additional material was inserted.

Third Lecture

Most of you, of course, realize by this time that bookkeeping is the art of record making and record keeping. If that is true, one of the most important duties of the accountant is to classify the various expenses, incomes, debts, and properties of the particular business.

It is not difficult for you to imagine the condition of the records if they were not properly classified - a jumble of facts and figures would result which would be of little value to anyone.

The owners and employees of the business are not only interested in a correct classification for the personal reasons, but find that it is absolutely necessary. As has been previously said, this carefully arranged information is necessary so that the prices at which the goods are to be sold can be accurately set.

There is little need for memory work in accounting. You could probably take the lectures word for word and then memorize them; but you would find that unless you understand them, you would not be able to follow the discussion as the class progressed or to solve many of the problems. For that reason, it is necessary to emphasize again the need for conferences between you and your instructor whenever you are having difficulty.

It is necessary for us to understand a few of the technical terms which will be used throughout the course. In connection with what has been previously said about memorizing, it might be well to add that here you will have your first opportunity to understand instead of just learning words. You will find it necessary to learn these terms, but you must understand each of them and see the relationship between them.

"Assets" is the first one. Assets are those things which have value and are owned by an individual or a company. Practically all of you have before you a notebook, and have a pencil in your hand. Those two items are assets belonging to you. If you put up a pop stand and endeavored to operate it at a fair, you would have several assets; namely, the stand itself, the pop, candy, and whatever else you had for sale, and the cash you had for change at the start of the day. Now you could say that your assets consisted of the following: notebook, pencil, pop, candy and money. But if you wanted to know how much profit you made on the pop stand, it would be necessary for you to keep two sets of records; one in which you kept your personal items - pencil and notebook - and one in which you kept the record of the assets of your business - pop stand, pop, candy, and change.

"Liabilities" is the second term to consider because it seems to go hand in hand with the first. Liabilities are those amounts owed. It is altogether possible that you did not have enough money to buy the pop and candy we mentioned before, but you did find a merchant who would trust you for them. In other words he would allow you to charge them until after you sold a part of them and secured some money. Now we said the pop and candy were assets, but the amount you owe for them is your

liability. You have a creditor who has sold you goods with the understanding that you would pay him at some later date.

Where did the money you had for change at the beginning come from? You had saved it out of your allowance. To whom does it belong? To you, of course. But what are you doing with it? You have turned it over to your business. We might say the business, your business, owes you money too. Is that a liability? No, that is what we call "Capital." You have invested the money in the business with the idea in mind of getting it back plus a profit, but it is necessary for you to pay your creditor for the pop and candy before you take your money back. That shows the difference between liabilities and capital. Liabilities represent the amount owed to someone who has trusted the business, and this will have to be repaid before the owner of the business can recover the amount he has invested, the Capital.

As soon as you sell your first bottle of pop you have "income," that is money coming into the business. There are several different kinds of income, but for the time being we will be satisfied to understand that income is derived from the sale of goods.

The business is so great that it is impossible for you to take care of it satisfactorily alone, so you offer a friend one dollar if he will help you for the rest of the day. In other words, you employ him to help you. His wages, or salary, is an "Expense" of the business. And there we have the fifth term necessary to be understood at this time. Expenses are the various costs of operating the business. They may be salaries as in the above case, or they may be paid out as rent, or for any number of items which you find it necessary to secure to make the

operation of your business more successful.

Now it is necessary to stop for a moment and acquaint ourselves with the business which will be used as a basis for most of the illustrations and problems for the rest of the quarter. It is the Brown Shoe Company owned and operated by Mr. Brown.

Naturally, it is necessary for Mr. Brown to buy leather from which to make the shoes he hopes to sell. In addition, it is necessary to employ laborers, to secure machinery, and to rent or buy a building in which to operate.

In order to secure all of these assets it is necessary to have money. Where is he to get it? He may secure it from two sources; invest his own - capital; or buy the necessary items on credit - liabilities.

But if we are going to have in the business all of these valuable assets, owe creditors money, and owe the proprietor (owner) money it is going to be necessary to have some method of keeping a record of it. Have any of you a suggestion as to how we might keep a record of the information we want? Note: With very little leading on the part of the instructor, the students devised a form of account. They started out with a simple memorandum entry and finally ended up with the using of one page in a book for each of the various items. It was not ^{the} intention of the writer to introduce debit and credit at this point, so the idea of one page for each item was accepted. It was not difficult to have the class record the following transactions and others of a like nature - after which, they were given a list of twenty-five transactions to have recorded by the next time the class met.

Problems Solved in Class

Enter the following transactions in the form of accounts which we have just decided upon.

Mr. Brown invests \$50,000 in this business.**

Bought \$5,000 worth of leather.

Bought machinery costing \$50,000 paying \$25,000 cash and promising to pay the rest later. This machinery was purchased from The Machinery Co.**

Rented a building paying \$10,000 for a year's use in advance.

Paid employees \$5,000 cash.

**The students used two accounts for cash: one in which they recorded the cash invested by Mr. Brown, and the other to record the cash paid out.

Fifth Lecture

Mr. Brown finds that he can sell his shoes as fast as he can make them. In the first week he operated his factory, 100 pairs of shoes were manufactured. Mr. Jones offered to buy them for \$350.00.

But now Mr. Brown is at a loss to know whether he can afford to sell them for that amount of money, unless he has taken the trouble to find out how much each pair costs him. Fortunately, he very carefully traced the first pair through the factory, and he found that they cost him \$2.23. So he knows he can sell them for \$3.50 a pair and make a satisfactory profit. In his investigation of the cost of the first pair, he found that it took \$1.00 worth of leather to make them, that 5¢ worth of thread was used in making them, that he used 50¢ of the value of the machines, that 18¢ of the value of his right in the building was used, and that it required 50¢ worth of his employees' time to make each pair.

Now the problem is to determine the best method to record this sale of shoes to Mr. Jones. We had \$5,000 of leather, but after making the sale we will have only \$4,900 for there was \$1.00 worth of leather in each pair.

Note: In the same way as before the students were led to discover that it would be advisable to have two sides to each account, one for value received and one for value given. In the same manner as stated above they were encouraged to record the lessening value of each of the "asset" items making up the cost of the shoes and to record the profit on the transaction in the proprietor's account.

After this first sale was recorded additional sales were given them to be prepared outside of the class. It was the students who raised the question the next time the class met as to whether there was some way to record the information and eliminate the small credits. This made it easy to introduce the sales account and the cost of sales account.

APPENDIX G

CHIEFTAIN BOND

APPENDIX G

EXAMPLES OF PROBLEMS USED IN COURSE

CG10F

ACCOUNTING

Exercise 14

Trial Balance

Cash	\$47,000	
Machinery	50,000	
Rent	4,500	
Leather	40,000	
Thread	1,000	
Labor	10,000	
Light and Power	1,000	
Heat (fuel)	2,000	
James & Co.	2,000	
Smith & Co.	4,000	
Brown & Co.	5,000	
Piper Howe Co.		\$ 1,500
Brown, Proprietor		150,000
Sales		<u>15,000</u>
	<u>166,500</u>	<u>166,500</u>

Inventories:	Heat (Fuel)	\$ 1,500
	Machinery	49,000
	Light & Power	700
	Labor	5,000
	Thread	500
	Leather	34,000
	Rent	4,000

Directions:

1. Set up each of the accounts in the above Trial Balance on Ledger Paper.
2. Reduce the account balances to the inventory figures given by transferring the differences to the Goods in Process account.
3. Transfer of Goods in Process Account to the finished Goods Account.
4. Transfer the Finished Goods Account to the Profit and Loss Account.
5. Transfer the Sales to the Profit and Loss Account.
6. Transfer the Profit and Loss Account to the Proprietor's Account.
7. Construct a Balance Sheet
8. Construct a Profit and Loss Statement.

- Feb. 1 - R. J. Remnalds invested \$50,000 in shoe manufacturing business.
- 2 - Paid rent for month \$1,000.00.
- 2 - Bought leather \$10,000 cash.
- 2 - Bought dye \$1,000 cash.
- 3 - Bought machinery \$50,000 on account from Brown Shoe Co.
- 4 - Placed \$5,000 leather and \$500 dye in process.
- 5 - Bought for cash \$500 thread
- 5 - Placed \$200 thread in process
- 6 - Paid labor for week \$1,200.
- 6 - Place 1000 pairs of shoes in storeroom, cost placed at \$2.23, a pair.
- 8 - Sold for cash 200 prs. shoes at \$325.00.
- 8 - Placed in process leather \$5,000, thread \$100, Dye \$200.
- 9 - Remnalds invested \$50,000 more in business.
- 9 - Paid Brown Shoe Co., on account \$25,000.
- 10 - Sold R. Roe on account 100 prs. shoes at \$3.30 a pair.
- 10 - Bought leather from Black and Co., \$15,000 on account.
- 11 - Placed \$5,000 leather in process.
- 12 - Sold 200 pairs shoes at \$3.35 to Jenson and Co., on account.
- 13 - Paid labor \$1,500 for week.
- 13 - Placed 2000 prs. shoes, cost \$2.23 in storeroom.
- 15 - Placed in process \$2,000 dye, \$5,000 leather, \$100 thread.
- 15 - Bought \$1,000 dye and \$500 thread paying cash for it.
- 15 - Sold Bauer and Co., \$350, shoes on account.
- 15 - Sold Frykman Co., \$700 shoes on account.
- 16 - Paid Brown Shoe Co., \$10,000 on account 16.
- 16 - Brown Smith Co., paid us \$300.00 on a purchase by them of \$700 worth of shoes balance on account.
- 17 - Paid Salesmen salaries for first half of month \$400.
- 17 - Sold 200 prs. shoes for cash at \$3.35 a pair.
- 18 - R. J. Remnalds withdrew \$1,000 for personal use.
- 18 - R. Roe paid us the amount he owed us.
- 19 - R. J. Remnalds asked for a check for \$250 to pay a personal debt.
- 19 - Bought leather from Black & Co., \$10,000 on account.
- 20 - Paid Black & Co., for leather purchased on the 10th.
- 20 - Paid labor for week \$1,500.
- 20 - Placed 1000 prs. shoes in storeroom, cost the same as before.
- 22 - Placed in process \$5,000 leather, \$200 dye and \$100 thread.
- 22 - Brown-Smith Co., paid balance due us.
- 23 - Sold Jenson and Co., on account \$700 shoes.
- 23 - Sold Bauer & Co. on account \$700 shoes.
- 24 - Jenson and Co., paid us cash for sale of Feb. 12.
- 24 - Placed 3000 prs. shoes in storeroom - cost \$2.23.
- 25 - Received \$350 on account from Bauer & Co.
- 26 - Sold R. Roe 200 prs. shoes on account at \$3.50 a pair.

- Feb. 25 - Rennalds withdrew \$1,000 from business for own use.
26 - 4000 pairs shoes delivered to storeroom cost same as above.
27 - Paid salesman for last half of month \$400.
27 - Paid labor; \$1,500 for week.

Take a Trial Balance

- 28 - Transfer labor to Goods in Process.
28 - Transfer Machinery used \$500 to Goods in Process.
28 - By actual count of shoes in storeroom we find there to be 9200 pairs.
28 - Transfer cost of shoes sold - difference between total number of shoes placed in storeroom and inventory - to Profit and Loss Acct.
28 - Transfer rent and Salesmen's salaries to Profit and Loss Acct.
28 - Transfer Sales to Profit and Loss.
28 - Transfer profit (Balance of Profit and Loss Account at this point) to Capital Account.

Instructions:

Take a trial balance after these adjustments - known as closing the books - This trial balance is known as A Post Closing Trial Balance.

Make a Profit and Loss Statement.

Make a Balance Sheet.

- Mar. 1 - R. J. Brown invested \$75,000 in a shoe manufacturing business.
- 1 - Paid rent of month \$1,500.
 - 2 - Bought leather \$10,000 cash.
 - 2 - Bought dye \$500 cash.
 - 3 - Bought machinery \$25,000 on account from Shoe Supply Co.
 - 4 - Placed \$5,000 leather and \$500 dye in process.
 - 5 - Bought for cash \$700 thread.
 - 5 - Placed \$200 thread in process.
 - 6 - Paid labor for week \$1,500.
 - 6 - Placed 1000 pairs shoes in storeroom, cost placed at \$2.03.
 - 8 - Sold for cash 200 pairs shoes at \$3.25.
 - 8 - Brown Smith Co., bought from us 200 prs. shoes at \$700.
 - 8 - Placed in process leather \$5,000, thread \$100.
 - 9 - Brown invests \$25,000 more in business.
 - 9 - Paid Shoe Supply Co., on account \$15,000.
 - 10 - Sold M. Trengen on account 100 prs. shoes at \$3.30
 - 10 - Bought leather from Black and Co., \$15,000 on account.
 - 11 - Placed \$5,000 leather in process.
 - 12 - Sold 200 prs., shoes to Nero and Co., on account at \$3.35.
 - 13 - Paid labor \$1,500 for week.
 - 13 - Placed 2000 prs. shoes - cost \$2.03 in storeroom.
 - 15 - Placed in process \$5,000 leather, \$100 thread.
 - 15 - Placed in process \$5,000 leather, \$100 thread.
Bought \$1,000 dye and \$500 thread paying cash for it.
Sold Bauer and Co., \$350. shoes on account.
Sold Frykman Co., \$700. shoes for cash.
 - 16 - Paid Shoe Supply Co., \$5,000 on account.
Brown Smith Co., paid us \$300 on account.
 - 17 - Paid Salesmen salaries for first half of month \$600.
Sold 200 prs. shoes for cash at \$3.35.
 - 18 - R. J. Brown withdrew \$1,000 for personal use.
M. Trengen paid us the amount he owed us.
 - 19 - R. J. Brown asked for a check of \$250 to pay a personal debt.
Bought leather from Black & Co., \$10,000 on account.
 - 20 - Paid Black & Co., for leather purchased on the 10th.
Paid labor for week \$1,500.
Placed 1000 prs. shoes in storeroom, cost the same as before.
 - 22 - Placed in process \$5,000 leather, \$200 dye and \$100 thread.
Brown-Smith paid balance due us.
Sold Nero and Co., on account \$700 shoes.
 - 23 - Sold Bauer and Co., on account \$700.
 - 24 - Nero and Co., paid us cash for sale of Feb. 12.
Placed 3000 prs. shoes in storeroom - same cost.
 - 25 - Received \$350 on account from Bauer and Co.
Sold R. Roe 200 prs., shoes on account at \$3.50 a pair.
Brown withdrew \$1,000 from business for own use.

- Mar. 26 - 4000 prs. shoes delivered to storeroom cost the same.
27 - Paid salesman for last half of month \$700.
Paid labor \$1,500 for week.

Take a Trial Balance

- 31 - Transfer Labor to Goods in Process.
Transfer Drawings to Capital.
By actual count of shoes in storeroom we find there to be 9200 pairs.
Transfer cost of shoes sold to Profit and Loss Account.
Machinery depreciates at the rate of 20% a year. Set up a reserve remembering that this is for one month only.
Transfer Rent, Salesmen Salaries and Depreciation Expense to P. & L.
Transfer Sales to Profit and Loss.
Transfer profit to Capital account.

Instructions:

- Take a Trial Balance after these adjustments (Post Closing T.B.).
Make a Profit and Loss Statement.
Make a Balance Sheet.

R. J. Black
Trial Balance
January 31, 1932

Cash	29,400	
R. J. Black, Capital		100,000
Rent	1,300	
R. J. Black, Drawing	2,050	
Leather	10,000	
Dye	900	
Machinery	50,000	
Brown Shoe Co.		15,000
Finished Goods	24,530	
Office Expense	70	
President's Salary	500	
Office Salaries	300	
Office Rent	150	
Salesmen Salaries	700	
Salesmen Traveling Expenses	500	
Show Room Rent	200	
Show Room Clerk Salary	100	
Goods in Process	2,070	
Thread	500	
Labor	5,800	
Accounts Receivable		6,100
(R. Roe	1000.00)	
(J. Doe	2000.00)	
(Smith & Co.	1000.00)	
(Brown & Co.	1100.00)	
(N. D. S. F.	1000.00)	
Blane & Co.		10,000
Sales		10,170
	135,170	135,170

Instructions:

1. Set up the Trial Balance in Ledger Accounts and
 - a - Close sales into Profit and Loss Account.
 - b - Close Depreciation Expense into Goods in Process account. Note - Machinery depreciated at the rate of 2% each month.
 - c - Close labor into Goods in Process.
 - d - Close Selling and Administration Expense into P. & L.
 - e - Close Cost of Goods Sold into P. & L. account.
 - f - Close all other expenses to P. & L. account.
 - g - Close Drawing to Capital.
 - h - Close Profit and Loss account to Capital (Profit).

2. Rule those accounts that are closed (do not balance other accounts).

3. Take a Post Closing Trial Balance.

4. Make Manufacturing Statement

Purchases - Leather	\$25,000
Dye	9,000
Thread	4,000

 No burden, other than depreciation

5. From this trial balance, make a Profit and Loss Statement (Finished Goods inventory 9200 prs. shoes cost \$2.00).

6. Prepare a Balance Sheet.

EXERCISE GIVING PRACTICE ON USE OF CASH BOOK
AS SPECIAL JOURNAL

CC10f

Exercise 23¹

Enter the following transactions in a Cash Book, Post, and
take a Trial Balance of your Ledger.

- June 1 - A. F. Full invested \$3000.00 cash in business.
- 18 - O. M. Hall purchased for cash \$218.20 Merchandise.
- 18 - M. H. Bohle paid \$110.00 on account.
- 23 - J. L. Duncan paid \$125.00 in full of his personal account.
- 27 - J. N. Muller bought for cash \$342.65 Merchandise.

- 2 - Paid Rent for month \$85.00
- 3 - Paid Dobson on account \$1200.00.
- 16 - A. F. Full withdrew for his personal use \$125.00.
- 20 - Dobson Bros., were paid \$345.42 in full of account.
- 30 - Paid salaries for June: Bookkeeper, \$90.00 and
Clerk, \$80.00

EXERCISE GIVING PRACTICE ON USE OF PURCHASE JOURNAL

CC16f

Exercise 24'

Enter the following transactions in a Purchase Journal. Post to the Ledger Accounts - during the month and at the end of the month. Take a Trial Balance.

- July 1 - Purchased from Borton and Cox, Cleveland 2/10, n/30 \$155.90.
- 2 - Purchased from Day Bros., City, N/30, \$138.50.
- 3 - Purchased from M. H. Wotten, Uniontown, 60 days, \$321.65.
- 4 - Purchased from Burton and Cox, Cleveland, N/30, \$344.50
- 5 - Purchased from Red Star Creamery, Lakeville, \$160.00.
- 6 - Purchased from Day Brothers, \$129.95.
- 11 - Purchased from Smith Bros., Rockland, 30 days, \$190.00.
- 14 - Purchased from Dodge Bros., City, \$158.27.
- 18 - Purchased from Burton and Cox, 30 days, \$204.15.
- 19 - Purchased from Jones Co., Chicago, N/60, \$432.45
- 20 - Purchased from Smith Bros., Rockland, 30 days, \$123.32.
- 22 - Purchased from John Roe, New York, 2/10, N/30, \$231.76.
- 25 - Purchased from Richard Doe, St. Louis, N/30, \$219.20.
- 26 - Purchased from Jones & Co., Chicago, N/30, \$264.25.
- 28 - Purchased from Day Bros., \$125.43.

EXERCISE GIVING PRACTICE ON USE OF SALES JOURNAL.

CC10f

Exercise 25

Record the following transactions in a Sales Journal, Post, and take a Trial Balance of the Ledger.

- July 3 - Sold E. B. Morton, City, \$121.60.
8 - Sold C. H. Williams, Winton Place, 60 days, \$127.95.
9 - Sold A. L. Hart Co., St. Louis, 30 days, \$167.73
14 - Sold Samuel Solomon, 49 Third Ave., City, 30 days, \$169.65.
18 - Sold Tyler Bros., 69 Main St., City, 90 days, \$136.40.
19 - Sold E. B. Morton, \$209.55.
20 - Lay Bros., bought from us Mlse., terms 30 days, \$201.29.
23 - C. H. Williams bought Mlse., from us, terms 60 days, \$88.75.
24 - Sold E. B. Watson, 98 Spruce St., City, \$78.20.
27 - A. L. Hart bought \$59.60 Mlse., from us, terms 30 days.
29 - Sold C. W. Watkins, Toledo, terms, 30 days, \$204.45.
30 - Sold Tyler Bros., 90 days, \$204.55.
30 - Sold Way and Way, \$69.87 Mlse., Terms 2/10, N/30.

Journalize the following transactions dating them in the present year.

- August 1 - J. D. Gaylord invested \$9000 cash and \$1000 merchandise in business.
- 2 - Purchased merchandise for cash, \$3,000.00
- 3 - Purchased store equipment for cash, \$800.00
(Debit Store Equipment).
- 4 - Paid the store rent for the month, \$100.00.
- 5 - Purchased office equipment for cash, \$300.00.
- 6 - Purchased stationery, stamps, and other office supplies for \$35.00, paying cash (charge expense).
- 8 - Sold merchandise for cash \$125.00.
- 9 - Sold merchandise on account to R. K. James, \$140.00.
- 10 - Purchased an adding machine, \$200.00 paying cash
(Charge office equipment).
- 11 - Purchased scales at a cost of \$90.00, paying cash
(Store Equipment).
- 12 - Sold merchandise on account to F.L.Barton, \$325.00.
- 13 - Purchased merchandise from J. V. Chittenden on account, \$175.00.
- 15 - Received cash from R.K.James to settle his account.
- 16 - Purchased merchandise from J.S.Bigelow on account, \$145.00.
- 17 - Sold merchandise on account to G.N.Mitten, \$276.00.
- 18 - Paid the clerk's salaries for the first half of Aug. \$75.
- 22 - Collected \$175.00 from F. L. Barton.
- 23 - Sold merchandise for cash, \$160.00.
- 24 - Purchased merchandise for cash, \$937.00.
- 25 - Paid J. V. Chittenden, \$175.00.
- 26 - Purchased merchandise on account from J.S.Bigelow,\$338.00.
- 27 - Paid J. S. Bigelow for merchandise purchased on Aug. 16.
- 29 - Paid \$2.00 for having windows washed
(Charge General expense).
- 31 - Paid clerk's wages for the second half of the month, \$75.00.
- 31 - Depreciation on store equipment 1% a month.
- 31 - Depreciation on office equipment 1% a month.

Post these transactions to ledger accounts.

The inventory at the end of August amounted to \$3,971.00.

Draw up a statement of Profit and Loss for the month of August and balance sheet as of August 31.

Make and post Journal entries to close the books.

Prepare an after-closing trial balance.

¹ Used after charge had been made to business operating for exchange only.