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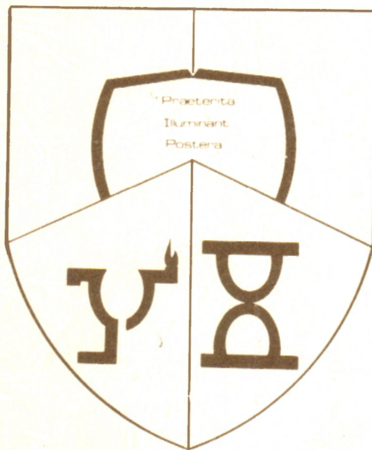

Fall 1980
Volume 7, No. 2

Research on the Evolution of
Accounting Thought and
Accounting Practice

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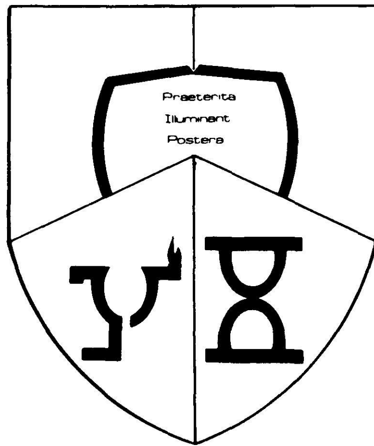

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FREDERICK WINSLOW TAYLOR'S CONTRIBUTIONS TO COST ACCOUNTING

Abstract: This article is to introduce the cost accounting system that Frederick Winslow Taylor installed at the Tabor Manufacturing Company sometime in the 1890s. A comparative analysis between this system and Captain Henry Metcalfe's *Cost of Manufactures* is also made in order to investigate their sources and influences. It is concluded that Taylor was a pioneer in many aspects of cost accounting, but his most important contribution was the development of the managerial approach that paved the way for modern managerial accounting.

In the later stages of the Industrial Revolution, businessmen were under increasing competitive pressure and were, therefore, striving to improve their managerial efficiency. It was largely in response to this drive for efficiency that Frederick W. Taylor (1856-1915) pursued the study of scientific management. Realizing that efficient managers require timely, complete, and accurate accounting information, he devoted a great part of his time to studying accounting in the 1880s. Following the widespread acceptance of scientific management, his methods of cost accounting became popular. This popularity lasted at least up until the 1920s.

Accounting history has not done justice to Taylor's contributions. This is probably because he had little interest in publicizing or claiming credit for the originality of his bookkeeping and costing systems. Nevertheless, an introduction to his work in cost accounting serves a valuable purpose. For one thing, it provides better understanding of his system of scientific management in general. It also helps identify Taylor's role in the development of industrial accounting and thereby bridges a historical gap in an important period of modern industrialization.

Acknowledgement is made to Dean V. K. Zimmerman and Professor R. I. Dickey of the University of Illinois, Dean Emeritus Paul Garner of the University of Alabama, and the anonymous reviewers of this paper for their comments and encouragement. Great appreciation is extended to the Stevens Institute of Technology for the use of the Taylor Collection, without which this paper would have been impossible.

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Using sources from the Taylor Collection of the Stevens Institute of Technology, this study describes Taylor's cost system that he installed for the Tabor Manufacturing Company in the 1890s, including his innovative procedure of expense distribution. According to one authority, Taylor "was the pioneer in the method of distributing shop expenses . . . through the medium of machine hour rates."[1] Our study will proceed from (1) a discussion of the features of Taylor's cost accounting system, (2) an introduction to his cost reports, (3) an examination of his costing process, and finally to (4) an investigation of the originality of his cost system in comparison with that proposed by Captain Henry Metcalfe, the author of the first modern cost accounting book published in 1885.

Features of Taylor's Cost Accounting System

It was during his first period of employment, at the Midvale Steel Company from 1878 to 1890, that Taylor already demonstrated his great interest in accounting, especially cost accounting. In a short paper found in his Midvale file, Taylor traced several distinctive features of his accounting system including: (1) monthly closing of the books; (2) monthly determination of unit costs; and (3) monthly accounting reports consisting of a balance sheet, an expense analysis sheet, a detailed cost sheet, and a detailed income account. Taylor maintained that these "are the features in which my system of accounting differs from ordinary commercial and manufacturing accounting, and, so far as I know no other system has as yet attempted to accomplish the above."[2]

It is unlikely that Taylor installed any accounting system, as such, while he was still working with the Midvale Steel Company. However, a study of the accounting systems that he later installed in various manufacturing companies reveals little change in these distinctive features, apart from a clear separation of costing from bookkeeping functions. As a result of functional separation, the following features attributable to cost accounting can be identified:

1. *Cost Accounting as a By-Product of Scientific Management.* In his paper on his cost keeping system, Taylor started with the statement that cost department is a by-product of his system, under which "the same sets of forms used in recording Labor and the amount of Material needed in planning the work are now used for making the Cost."[3] Copley, Taylor's biographer, also pointed out that "placing the cost accounting in the planning room, he [Taylor] made it a by-product of operations . . . the papers and slips he designed to plan and control operations became the documents on

which was based both the cost and production records."[4] As a by-product, cost accounting is articulated with managerial planning and control on one hand, and serves as a link between the shop and the bookkeeping department on the other.

2. *Accuracy as the First Principle of Cost Accounting.* Taylor stated that an objective of costing is to establish a legal base for setting the price of an article and to determine the amount and source of profit for the different products manufactured. For this purpose, accuracy is considered the first principle of cost accounting.[5] Even in his later years when he reconsidered the usefulness of cost information, Taylor maintained that "my experience has been, however, in industrial establishments, that keeping of costs with a reasonable degree of accuracy can be made a matter of very great profit to the company."[6] Implicit in his system, cost accuracy indicates two things, namely, actual (historical) costing and proper distribution of overhead.

3. *Equitable Expense Distribution as the First Step in Obtaining Cost Accuracy.* Taylor noted that the first step in obtaining accuracy of cost is to determine an equitable method for distributing expenses.[7] For an equitable expense distribution, expenses are divided into direct expense, construction, and overhead. The latter is divided into shop, general business, and selling expenses (to be described later). Like direct costs, overhead is considered legitimate and necessary to promote the progress of work in process towards being salable products. Thus each of the classes of the product bears a certain proportion of overhead, and the cost keeper must make out a distribution showing the proper proportion of overhead that each class of the product will have to bear.[8]

Cost Reports

Being a by-product of the general system of scientific management, the cost department is responsible for preparing three monthly comparative reports that are to be sent to the administrative department so that steps can be taken to control the expenditures of the business. The comparative presentation of cost and profit figures exemplifies Taylor's management by exception principle, according to which the manager should receive only condensed, summarized, and comparative reports. These summaries are to be scrutinized by an assistant in order to highlight all exceptions to past averages before the report reaches the manager.[9]

1. *Expense Analysis Sheet.* The expense analysis sheet gives a general outline of all the expenses, direct and indirect, incurred during the month. The direct expenses for all worked materials manu-

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factured are divided into classes of products, such as grinding machines, molding machines, etc. For each of the expense accounts shown on the sheet, four figures are given on a comparative basis: this month, last month, average this year to date, and average last year.

It is important to note that a comparative presentation of various overhead distribution rates (i.e., the rates for distributing shop expense, general business expense, and selling expense, respectively) is also given on the expense analysis sheet as a means of performance evaluation. For example, a higher shop expense distribution rate could indicate an increase in shop expense and/or idle machine time. The procedures of determining and applying these rates will be analyzed in detail later.

2. *Worked Materials Finished Sheet.* The worked materials finished sheet shows mainly the unit cost of one lot in comparison with other lots. For each class, various expenses are presented in their separate columns including the total cost of the worked materials finished during the month, the unit costs of this lot and the last lot, the best cost in the past twelve months, and the best previous cost. To compare current unit cost with the best historical unit cost could reflect a rigid standard of performance evaluation. In addition, this sheet allows the bookkeeping department to record costs of goods manufactured and thus to update inventory accounts.

3. *Income Account.* The income account is separated into two parts. The summarized figures such as total sales, total manufacturing cost of merchandise shipped, total selling expense, total profit or loss on merchandise sold, total profit or loss from other sources, and net profit or loss are presented in the upper part. In addition, the totals of expenses, orders received, credits allowed against accounts receivable, and the manufacturing cost of orders for merchandise finished (minus transfer-in costs) are presented in the memorandum record section.

In the lower part, the income account shows the profitability of both worked materials and stores sold. The total worked materials sold are further itemized according to the classes of products. For each class, selling price and total costs (including manufacturing and selling expenses) are shown and the resulting profit is determined. Finally, the ratio of profit to sales is computed as an indicator of relative profitability. All the above figures of this month are to be compared with those of last month, the total for this year to date, and the total for last year, so that the performance of individual products can be comparatively evaluated against their respective historical records.

Costing Process

The above described cost reports are outputs of a comprehensive costing process designed to assure accurate cost determination and equitable expense distribution. As indicated in Figure 1, costs recorded in the shop, such as wages, stores, and worked materials, are first entered on cost collecting cards. At the end of the month, these cards are sorted and totaled, and other cost data kept in the bookkeeping department are obtained. The total amounts of various cost categories are then computed and entered in (1) the detail cost sheet, (2) the detail analysis of expense sheet, and (3) the sheet of expense distribution. Each phase of this costing process is described in the sections to follow.

1. *The Cost Collecting Cards.* A separate cost collecting card is made out for each cost factor recorded in the shop such as wages, stores, or worked materials used. On each card is a symbol designating the account to which the cost will be charged. These symbols are derived from Taylor's well-known mnemonic classification system in which a combination of letters and numbers is used to specify a worked material account. For example, the symbol GD20 indicates a charge against the class of worked material G, division D of this class, and the twentieth lot (or batch) of this class that is being manufactured. Likewise, three letters are used to represent an indirect expense account. The first letter shows the class of the department, the middle letter the name of the department, and the final letter the nature of the expense. An example of such symbolic presentations of shop expense accounts is shown below:

D.—MANUFACTURING DEPARTMENTS: When any letters follow the letter D, they indicate a charge AGAINST some one of the various MANUFACTURING DEPARTMENTS, and should be classified as SHOP EXPENSE (DIRECT).

DM.—MOTOR DEPARTMENT: The main body of the Machine Shop in which motors are made.

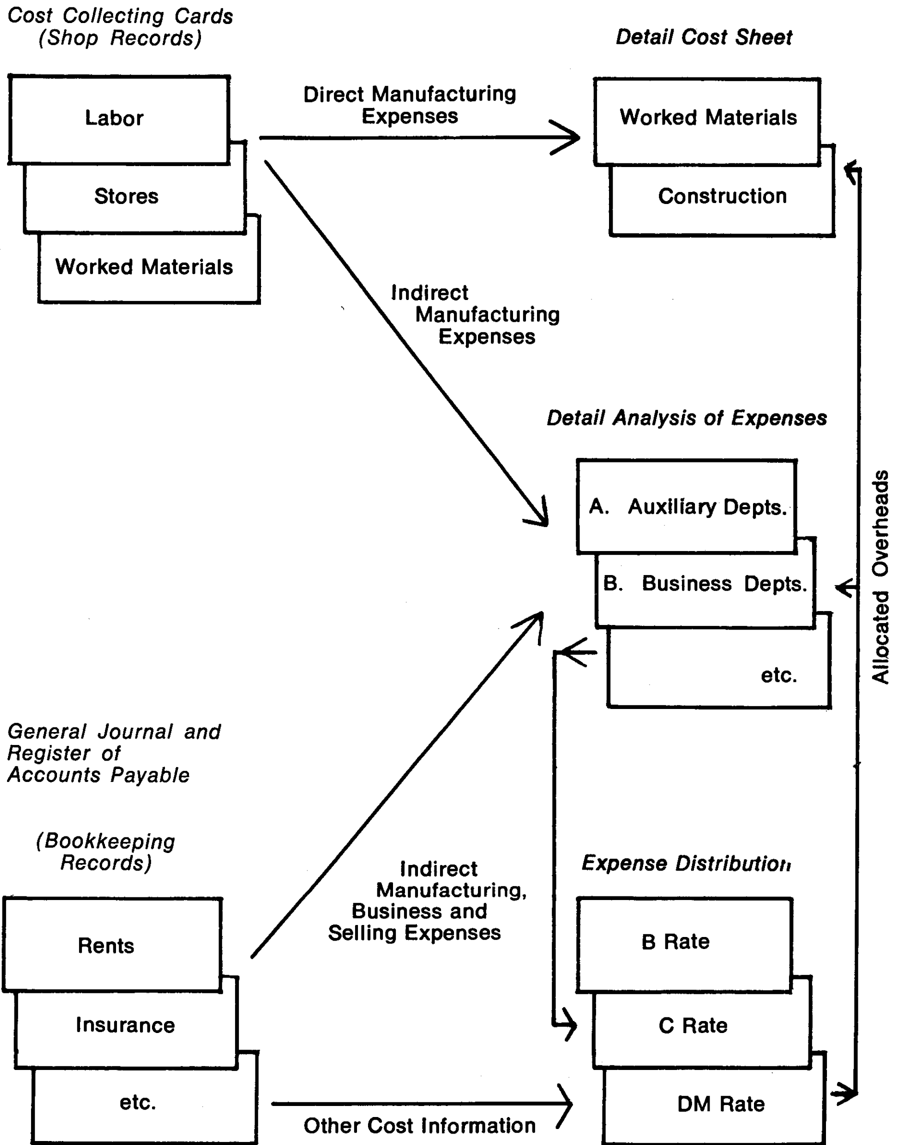
DMA.—FOREMEN, GANG BOSSES, CLERKS, AND INSPECTORS, whose work cannot be charged to a particular manufacturing order.

DMB.—ALL MISCELLANEOUS LABOR that cannot be charged directly to a particular manufacturing order.

DMC.—STATIONARY FIXTURES, such as benches, cupboards, shelving and partitions that are fixed or immovable.

Figure 1

Costing Process Under the Taylor System



With such a comprehensive mnemonic symbol system, the recorded cost figures are easily processed, and the chance for classification error is greatly reduced.

At the end of the month, the cost collecting cards are gathered and sorted, and the costs are classified, totaled, and entered on the respective cost sheets. For cost classifications, the following cost concepts are specified:

a) Direct Expense—that which is directly chargeable to salable product.
b) Construction—that which is chargeable for work that will increase the value of the plant. (It is, in a way, direct expense, as this is a sale of product to the firm for its own use.)
c) Indirect or Overhead Expense—that which is not directly chargeable to a salable product or construction. In every manufacturing plant, indirect or overhead expenses can be further separated into:
   (1) Shop Expense—that which attaches itself to the use or running of the machine in the plant.
   (2) General Business Expense—that which is incurred by the business or administrative end and which has no connection with the manufacturing end.
   (3) Selling Expense—that which is necessary for carrying out sales in addition to manufacturing costs.

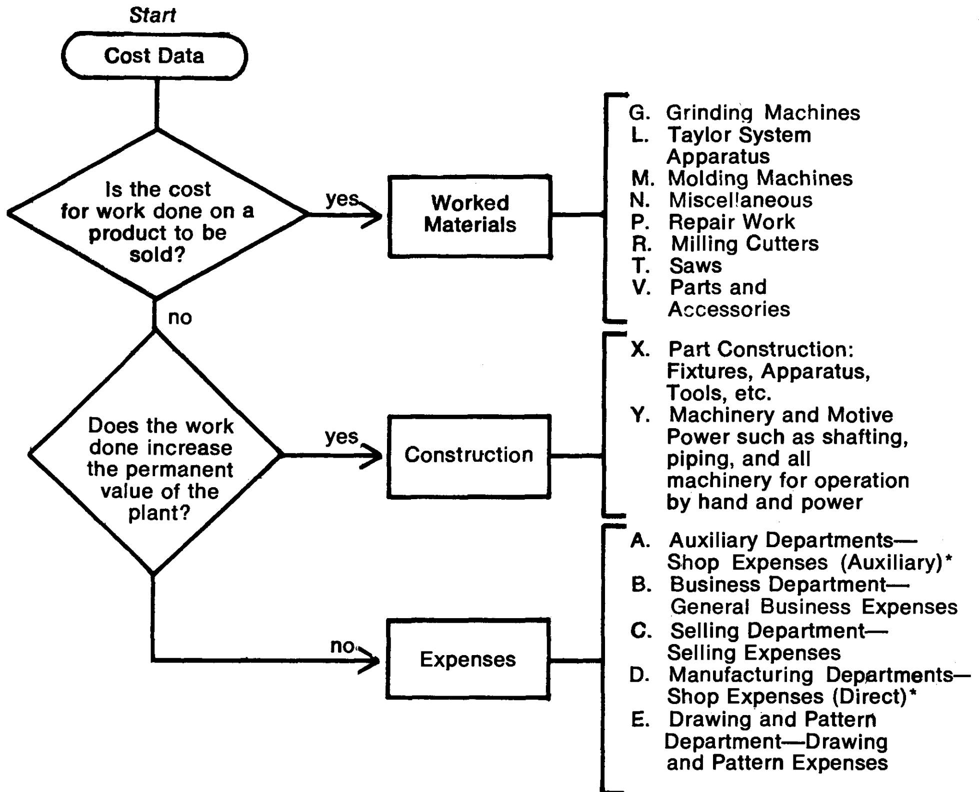
Taylor developed an innovative flow chart to facilitate cost classification. A modified version of this flow chart is shown in Figure 2, for which cost data are either derived from cost collecting cards of the shop, or obtained from the records of the bookkeeping department. The third column of the chart shows the accounts to be charged with their respective symbolic presentations.

2. *The Detail Cost Sheet.* The detail cost sheet is essentially a job order cost sheet. A separate sheet is prepared for each class of worked material or construction. This sheet is divided into columns in which the costs incurred monthly are recorded. Total costs are separated by rows into wages, general business expense, shop expense, drawing and pattern expense, stores, worked material from stores, and miscellaneous. Both the shop and the general business expenses are apportioned to the specific job order on the basis of their relative apportionment rates.

Taylor regarded actual cost apportionment as a special feature of his bookkeeping system. As this feature is found in the books of Tabor Manufacturing Company, the last month's rates are used to

Figure 2

Flow Chart of Cost Classification



* Direct shop expenses are those indirect manufacturing costs charged directly to manufacturing departments, in contrast with auxiliary shop expenses which are charged first to auxiliary departments and then transferred to manufacturing departments.

apportion both the shop and the general business expenses. This use of historical rates can be justified on the grounds of needing timely information. According to Taylor, bookkeeping and costing systems should be so arranged that a daily statement could be readily copied from the books showing the summary of all the transactions of the previous day. By using historical rates, one could provide updated cost information right after the completion of a specific job order at any time during the month.

On the detail cost sheet, the apportionment rates of general business and shop expenses for the month are presented along with their respective application bases: namely, "wages" and "machine hour x cost number." The sheet also shows the date that the order is finished, total quantity produced, and the unit cost of the order.

3. *Detail Analysis of Expenses.* While the detail cost sheet of worked materials is in part a subsidiary statement of the worked materials finished sheet, the detail analysis of expense sheet is a supplementary statement of the expense analysis sheet. For every department in which overhead expenses occur, a sheet is prepared to record costs according to Taylor's mnemonic coding system. A part of the sheet presenting the costs incurred during one month is shown in Table 1. On another part of the sheet the total amount of the month is compared, account by account, with (1) the total amount of last month, (2) average per month this year to date, (3) average per month for corresponding period last year, and (4) average last year. It is interesting to note that, even though Taylor has been generally regarded as a pioneer of standard costs, standard cost *per se* has not been found in any of his cost reports.

Table 1

Partial Sheet of Detail Analysis of Expenses

Name or Symbol of Account	Wages	Salaries	Total Wages & Salaries	Stores	Misc.	Materials	Total This Month
DM	$1,000	$500	$1,500	$300	$50	$240	$2,090
DMA	300	120	420	80	30	100	630
DMB	400	200	600	120	10	80	810
DMC	300	180	480	100	10	60	650

4. *Expense Distribution.* The whole process of overhead expense apportionment is shown on the expense distribution sheet. Also shown is the computation of the three basic rates, namely: B (general business expense), C (selling expense), and DM (shop expense) rates. To prepare this sheet, the costs in the accounts shown in

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Figure 2 and the costs of stores issued for sales are copied from the detail cost sheets and some other original records, such as the register of accounts payable and the general journal.

Each of the cost accounts is presented in a separate column on the sheet. The following cost factors are then shown in rows:

Wages and Salaries
Stores Used
Worked Materials Used Chargeable to Expenses other than Production
Miscellaneous Expenses
Accounts that are Pro-Rated or Charged through a Journal Entry
Amount to be Added to or Subtracted from General Business and Direct Shop Expenses

The above "accounts that are pro-rated or charged through a journal entry" include advertising and interest expenses. The above "amount to be added to or subtracted from general business and direct shop expenses" is considered an adjustment for last month's under- or over-applied overhead, i.e., the difference between actual overhead and the overhead applied to products based on the previous month's rates.

An illustration of the whole process of expense distribution is presented in Table 2 using hypothetical figures. In this table, the distributable expense accounts are rearranged in the order of distribution, and no difference between the distributed and the actual costs for either the general business or shop expense is assumed.

Table 2 shows that after the costs have been summarized and totaled, the following seven-step distribution process begins:

Step 1. Apportion drawing and pattern expense (E). One half of this expense is to be apportioned to the general business expense (B), and the other half to worked materials (G, L, M, N, P, R, T, and V) according to the related work done on job orders.

Step 2. Partially apportion selling expense (C), general business expense (B), and direct shop expense (D). Each of these expense accounts is to be apportioned to stores sold (S) at a rate of 5% of the cost of stores issued for sale.

Step 3. Apportion general business expense (B). This expense is to be apportioned to construction (X and Y) and worked materials (G, L, M, N, P, R, T, and V) by multiplying the wages and salaries charged against each of these accounts by last month's B rate.

Table 2

Stepwise Expense Distribution Schedule Under the Taylor System

Expense Accumulation	E (Drawing & Pattern Expense)	B (General Business Expense)	X (Part Construction)	A (Auxiliary Shop Expense)	D (Direct Shop Expense)	C (Selling Expense)	Y (Construction)	W* (Worked Materials)	S (Stores Issued For Sale)
Wages & Salaries	$ 500	$ 500	$ 200	$ 500	$ 500	$ 500	$ 400	$ 400	$ 500
Stores Used	300	300	300	300	300	300	300	300	100
Worked Materials Used	150	150	150	150	150	150	150	150	200
Miscellaneous	50	30	350	50	20	50	50	50	200
Pro-Rated Charges	—	—	—	—	—	—	100	100	—
Adjustments	—	20	—	—	30	—	—	—	—
Total Before Distribution	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Steps of Expense Distribution									
1. (E) to (B) & (W)	(1,000)	500	—	—	—	—	—	500	—
2. (B), (D) & (C) to (S)		(50)	—	—	(50)	(50)	—	—	150
3. (B) to (X) (Y) & (W)		(1,450)	290	—	—	—	580	580	—
4. (X) to (A) & (Y)			(1,290)	645	—	—	645	—	—
5. (A) to (D)				(1,645)	1,645	—	—	—	—
6. (D) to (Y) & (W)					(2,595)	—	595	2,000	—
Total After Distribution	$ 0	$ 0	$ 0	$ 0	$ 0	$ 950	$2,820	$4,080	$1,150
Cost of (W) Shipped								$3,000	
7. (C) to (W)						$ (950)		950	
Total of (W) Sold						$ 0		$3,950	

*For simplicity W is used to indicate all of the worked materials including G, L, M, N, P, R, T, and V. (See Figure 2 for specifications.)

Step 4. Apportion part construction (X). One half of this account is apportioned to auxiliary shop expense (A), and the other half to construction (Y).

Step 5. Apportion auxiliary shop expense (A). The total amount of this account is to be transferred to direct shop expense (D).

Step 6. Apportion direct shop expense (D). This expense is apportioned to construction (Y) and worked materials (G, L, M, N, P, R, T, and V) by multiplying relative cost of machine time for each account by last month's DM rate.

Step 7. Apportion selling expense (C). This expense is apportioned to worked materials sold by multiplying the cost of each worked material shipped by current C rate.

When the first six steps of expense distribution are completed, the sheet will show the total costs of: (1) construction, (2) various worked materials, (3) stores sold, and (4) selling expense. The last step is to apportion selling expense by adding the distributed selling expenses to the cost of worked materials shipped in order to obtain the total cost of merchandise sold.

The general business, selling, and direct shop expenses are applied by the use of B, C, and DM rates, respectively. The applications of these three rates are introduced as follows:

a) *General Business Expense:*
General Business Expense Apportioned = Relative Wages and Salaries x B Rate
Where: $\text{B Rate} = \dfrac{\text{General Business Expense}}{\text{Sum of Wages and Salaries for all of the Construction and Worked Materials}}$

b) *Selling Expense:*
Selling Expense Apportioned = Relative Cost of Worked Materials Shipped x C Rate
Where: $\text{C Rate} = \dfrac{\text{Selling Expense}}{\text{Sum of Costs of the Worked Materials Shipped}}$

c) *Direct Shop Expense:*
Direct Shop Expense Apportioned = Relative Cost of Machine Time x DM Rate
Where: $\text{DM Rate} = \dfrac{\text{Direct Shop Expense}}{\text{Sum of Relative Costs of Machine Time}}$

Relative Cost of Machine Time = Machine Time x Relative Cost Number

Machine Time = Total Time of a Machine Worked on Jobs

$$\text{Relative Cost Number} = \frac{\text{Estimated Operating Expenses Allocated to the Machine}}{\text{Expected Machine Time of the Machine}}$$

S. Paul Garner concisely summarized Taylor's cost number system in his study of the evolution of cost accounting.[10] This system was developed by Taylor as a means of distributing shop expense. To illustrate the whole process of determining and applying relative cost numbers and the DM rate, an example is presented in Appendix A.

Originality of the System and its Influence

Taylor's cost accounting system is characterized by the use of: (1) a cards system of cost collection, (2) a mnemonic system of cost classification, (3) the machine-dollar-hour method of overhead distribution, and (4) the comparative approach to cost reporting. To some extent, this system is close to Metcalfe's *Cost of Manufactures* (1885), which has been generally recognized as the first modern book on cost accounting.[11] In view of the similarities of the two systems proposed by these two pioneers living in the same period, it seems appropriate to present a comparative analysis in terms of the four characteristics stated above.

1. *Cards System.* Garner pointed out that Metcalfe made several recommendations for a looseleaf recording arrangement, which was one of the first suggestions along those lines.[12] The use of cost cards was a part of this arrangement, in which cards were used to record workshop expenses, such as service (labor) and material. Each card was limited to a single entry so that the cards could be sorted according to the amount and type of service or material used on each order. In 1886, at a meeting where Metcalfe presented his paper on this subject, Taylor commented that "we have tried it [the cards system], particularly in our works [the Midvale Steel Company], for nearly ten years."[13] Furthermore, in his book, *Shop Management,* Taylor stated that "the writer [Taylor] appreciates the difficulty of this [Metcalfe's invention of the complete cards system] undertaking, as he was, at the same time, engaged in the slow

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evolution of a similar system in the Midvale Steel Works."[14] These statements left no doubt that Taylor's system had been developed without any direct influence from Metcalfe.

Metcalfe admitted that "the use of cards in workshops as well as in libraries is no new thing."[15] Evidently, neither Taylor, nor Metcalfe, was the first to introduce the cards system to the shop. Nevertheless, Metcalfe appears to have been the first to use cards as an integral part of his costing system, in which both the service and the material cards were designed for multiple uses. For example, the same material card could be used to record any kind of material transactions; such as, procurement, insurance, return, transfer, etc. As a result, the card was necessarily complex as it had to provide spaces for all foreseeable entries. In contrast, Taylor employed different cards for different purposes. The cost collecting card was designed solely for the recording and summarizing labor, stores, and worked materials used in shop operation. It was an innovative device to increase the efficiency of manual data processing and to reduce clerical error.

2. *Mnemonic System.* Metcalfe used symbols for both service and material costs and noted:

> The idea is to keep a strict account with each job by such a simple and invariable method that the same work will always be called by the same name, and the resulting cost may be readily analyzed.[16]

For any service or material cost incurred, Metcalfe used a set of symbols to identify the account (or the output) to be charged. He defined these symbols as follows:

S-O. — stands for Shop-Order.
C. — stands for Characters of expenditure such as P (plant), W (work), A (attendance) and T (tools).
O. — stands for Object worked on represented by a combination of letters and figures.
N. — stands for the Number of the operation.[17]

For example, the cost incurred could be charged to:

S-O. — 617
C. — P
O. — A.31
N. — 313

The most special feature of this system is the so-called "character of expenditure," (C). To explain this classification scheme, Metcalfe presented a tree diagram specifying the following three steps:

a) To classify service and material costs into plant (P) and work (W).
b) To separate work (W) into attendance (A) and productive work (W).
c) To separate productive work (W) into tools (T) and operative work (W).[18]

"The main difficulty" of this scheme, noted Metcalfe, "lies in expressing the idea that work, though capable of subdivision, retains its character unaltered in the undivided remainder."[19] This difficulty seems to be a result of his unsuccessful attempts to separate direct and indirect expenses on one hand, and to allocate indirect expenses to products on the other. No such difficulty is indicated in Taylor's flow chart (see Figure 1), in which the expenses are clearly distinguishable and the classification of cost objects is comprehensive and operational. However, it is hard to tell whether or not Taylor's flow chart was influenced by Metcalfe.

While the origin of Metcalfe's tree diagram and Taylor's flow chart is in question, the bases of their symbolic systems is apparent. In 1881, Oberlin Smith, a close friend of Taylor, presented a paper entitled "Nomenclature of Machine Details" at the American Society of Mechanical Engineers. Metcalfe utilized it and even reprinted it in his book; because, in his own words, "I cannot do any better than transcribe his article entire."[20]

In the meantime, as Taylor began to split up labor operations according to their elements, he was confronted by the need for a systematic classification scheme. After several unfruitful attempts, he worked out a system to meet his need. Like Metcalfe, however, he acknowledged his appreciation of "the mnemonic system of order numbers invented by Mr. Oberlin Smith and amplified by Mr. Henry R. Towne."[21]

Although evolved from the same source, Taylor's system is more sophisticated than Metcalfe's. More importantly, under Taylor's system, the classification scheme of costs was integrated into the general system of management. The symbols were used not only for costing, but also for planning and control. In this regard, Taylor's contribution and influence have been recognized elsewhere.[22]

3. *Overhead Distribution.* Metcalfe gave relatively little attention to the distribution of overhead expenses. Nevertheless, he demon-

strated several distribution methods, emphasizing the one that follows:[23]

Given: F = Fixed charges
V = Variable charges
D = Numbers of 'direct days' worked in the period
Then: C = Cost factor (i.e., apportionment rate)
= $(F + V)/D$

It is noted that this method, a forerunner of the direct labor hour method, was attributable to William Sellers and Company (as acknowledged by Metcalfe in both his book and his paper mentioned above).[24]

Apparently, William Sellers and Company pioneered the idea of shop expense distribution in the 1880s. During most of the time that Taylor was with Midvale, Mr. William Sellers, a family friend of Taylor, was the president of both Midvale and Sellers. This connection enabled Taylor access to otherwise secret accounting methods including the one described by Taylor and summarized below:[25]

Given: A = summation of value hours of all machines in the department where: value hours is the product of the machine's value and its average working hours of the past five years
D = total expense of the period
Then: E = cost (or wage) per dollar hour of machine
= D/A

It seems apparent that the first Sellers method that Metcalfe utilized was a forerunner of the second Sellers method that Taylor described; and that the second Sellers method was, in turn, the forerunner of Taylor's machine dollar hour method. Therefore, both Metcalfe and Taylor owed much to Sellers for their methods of shop expense distribution.

4. *Cost Reporting.* Unlike the above three characteristics, little similarity is found between Metcalfe's and Taylor's cost reporting systems. This is mainly because Metcalfe's experience was limited to an Army arsenal where costing systems were designed for property accountability as required by laws and ordinance regulations. Although Metcalfe did attempt to apply his system to private shops, the proposed cost analysis sheets were merely a summary of direct and indirect costs and an allocation of these costs to departments. There was no information about unit costs, nor was there any indication of production efficiency.[26] This kind of reporting system could not meet the needs of private industry as industry grew and became

highly competitive during the recession in the last quarter of the 19th century.

It was under these circumstances of recession and competition that Taylor developed his system of scientific management, of which the proposed timely, detailed, and comparative reports were a part. Copley pointed out that "more important still, his [Taylor's] system called for *monthly* reports, and reports presented in such a way as, not only to be readily intelligible to the company's officer, but also to lead them to realize the significance of the figures."[27] It appears that Taylor was a pioneer whose extensive comparative statements paved the way to modern variance analysis.

Concluding Remarks

The foregoing suggests that many aspects of Taylor's costing system were his own creation. However, he never claimed the credit of their originality, nor did he ever claim to be an accountant. He was an industrial engineer interested in the organization of a shop. To a shop organizer, the most important function of costs is to aid in securing better management and greater efficiency.[28] Indeed, Taylor was among the first shop organizers to realize that efficiency could and should be "checked" by means of accounting. Furthermore, Taylor's concern with efficiency was not only mechanical (i.e., output/input ratio), but also commercial (i.e., benefit/cost ratio). In his first paper, read before the American Society of Mechanical Engineers, he compared the efficiency of two gases in the steel-making process and found that the one that yielded the greatest heat per unit did not yield the greatest heat per dollar.[29] It was while in pursuit of the greatest commercial efficiency that cost accounting was conceived of being an indispensable part of management.

Apparently, Taylor's approach to cost accounting was managerial. In 1909 he noted: "Fifteen to twenty years ago I looked upon a correct cost system as one of the most important among the various elements of management."[30] Evidence shows that by 1909, he shifted his emphasis from cost accounting to daily supervision as a means of cost reduction. Nevertheless, he still considered cost accounting as a necessary tool, given that an "active, practical, and money-saving use of the cost figured" could be assured.[31] In other words, it was the effective managerial use of the output of cost accounting with which Taylor concerned himself. This concern reaffirmed his proposition that usefulness should be the primary criterion to justify a cost or any other accounting system.

FOOTNOTES

[1]Hathaway.
[2]Taylor, Unpublished Manuscript, A., p. 1.
[3]Taylor, Unpublished Manuscript, C., p. 1.
[4]Copley, Volume I, p. 369.
[5]Taylor, Unpublished Manuscript, C., p. 1.
[6]Copley, Volume II, p. 376.
[7]Taylor, Unpublished Manuscript, C., p. 3.
[8]Taylor, Unpublished Manuscript, C., p. 19.
[9]Taylor, 1911, p. 126.
[10]Garner, pp. 196-197.
[11]Chatfield, p. 159.
[12]Garner, p. 92.
[13]Taylor, 1886 A, p. 343.
[14]Taylor, 1911, p. 202.
[15]Metcalfe, p. 24.
[16]Metcalfe, p. 97.
[17]Metcalfe, pp. 97-105.
[18]Metcalfe, pp. 104-105.
[19]Metcalfe, p. 102.
[20]Metcalfe, p. 105.
[21]Taylor, 1911, p. 201.
[22]Copley, Volume I, p. 355.
[23]Metcalfe, p. 338.
[24]Metcalfe, p. 24, p. 349., See also Garner, p. 178.
[25]Taylor, Unpublished Manuscript, B.
[26]Metcalfe, pp. 336-337.
[27]Copley, Volume I, p. 365. (Italics original).
[28]Evans, p. 7.
[29]For a discussion of various efficiency concepts and Taylor's perception, see Haber, pp. 11-14. See also Taylor, 1886 B.
[30]Copley, Volume I, p. 367.
[31]Copley, Volume I, p. 367; Volume II, p. 376.

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Appendix A

Determination and Application of DM Rate — An Illustration

Given the following information:

1. Estimated conditions for the year.

   a) *Operating Expenses:*

Expense Account	Estimated Cost for the Year	Base of Allocation
Building Expense	$30,000	Space Occupied
Machine Expense	40,000	Acquisition Cost of Machine
Power Expense	5,000	Horse Power of Machine
Total	$75,000	

   b) *Machine in Operation:*

Machine	Cost of Acquisition	Space Occupied	Horse Power	Expected Machine Time for the Year
A	$ 60,000	2,500 s.f.	8,000 h.p.	9,000 hrs.
B	100,000	5,000	12,000	12,000

2. Actual conditions for a month.

   a) *Actual Machine Time:*

Worked Materials		Actual Machine Time	
		A	B
L		200 hrs.	200 hrs.
M		300	500
N		100	300
	Total	600 hrs.	1,000 hrs.

   b) *Actual Shop Expense:* $11,600

Tables A and B show the process of determining and applying relative cost numbers and DM rates. Both the estimated operating expense and the expected machine time are based on ideal conditions and include a period of one year. The result shows that the rate per hour for the service of Machine A is $3 and of Machine B is $4. Thus Machines A and B are assigned the cost numbers 3 and 4, respectively, which represent their service charges. Based on these cost numbers, $2,800 of the total shop expense is apportioned to worked material L, $5,800 to M and $3,000 to N.

Table A

Schedule of DM Rate Determination

Machine	Allocate Estimated Expenses to Machines[1]				Determine Machine Cost Numbers[2]		Determine DM Rate[3]			
	Building Expense (1)	Machine Expense (2)	Power Expense (3)	Total (4)= (1)+(2)+(3)	Expected Machine Time (5)	Machine Cost Number (6)=(4)/(5)	Actual Machine Time (7)	Cost of Machine Time (8)=(7)x(6)	Actual Shop Expense (9)	DM Rate (10)=(9)/(8)
A	$10,000	$15,000	$2,000	$27,000	9,000 hrs.	$3	600 hrs.	$1,800		
B	20,000	25,000	3,000	48,000	12,000	4	1,000	4,000		
Total	$30,000	$40,000	$5,000	$75,000				$5,800	$11,600	2

1. Estimated building, machine, and power expenses for the year are to be allocated on the bases of space occupied, acquisition cost of machine, and the machine horse power, respectively.
2. The determined cost numbers are to be applied for the year.
3. The determined DM rate is a monthly rate applied to the specific month.

Table B

Shop Expense Distribution

For the Month ....

Material	Machine Time Used			Machine Time Cost[1]			Shop Expense Distributed[2]
	Machine A (1)	Machine B (2)	Total (3)	Machine A (4) = (1)x$3	Machine B (5) = (2)x$4	Total (6)	(7) = (6)x2
L	200 hrs.	200 hrs.	400 hrs.	$ 600	$ 800	$1,400	$ 2,800
M	300	500	800	900	2,000	2,900	5,800
N	100	300	400	300	1,200	1,500	3,000
	600 hrs.	1,000 hrs.	1,600 hrs.	$1,800	$4,000	$5,800	$11,600

Note: 1. Machine time cost is the product of the cost number of a machine and the machine time used during the month.
2. Shop expense distributed is the product of the machine time cost and the DM rate of the month.

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PUBLIC ACCOUNTING IN 1929

Abstract: Shortly before the beginning of the Great Depression, certified public accountants were struggling for both an acceptable definition of their role as well as professional recognition. This paper describes the environment in which CPAs worked as well as their concerns. Areas reviewed include training and entry into the field, ethical and legal standards, conduct of practice, financial rewards, professional concerns, and perceptions of the future. The purpose of the paper is to increase our appreciation of the challenges and opportunities facing CPAs in 1929.

Just before the start of the Great Depression, certified public accountants were few in number and struggling for professional recognition. This paper describes the nature of their world: training and entry into the field, ethical and legal standards, conduct of practice, financial rewards and perceptions of the future. The picture that emerges contributes to our appreciation of the challenges and opportunities facing CPAs fifty years ago.

College and the First Job

The accounting class of 1929 was small by today's standards. In fact, there were only about 56,000 students enrolled in accounting courses. Only about 10% of these were majoring in accounting. Many college graduates did not even consider a career in public accounting: the profession was not well known. Of those graduates who did opt for public accounting careers, most initially took jobs with private corporations.[1] There were several reasons for this preference: students desired to gain some practical accounting experience before going with public accounting firms, accounting employees in public practice experienced seasonal layoffs that were particularly widespread among inexperienced juniors, and there was "still a great deal of prejudice among accountants against the green college graduate."[2]

To attract more and better graduates into the profession, the American Institute of Accountants (later to change its name to the AICPA) organized its Bureau for Placements in 1926. By 1929, more than 10,000 college students had received the Bureau's pamphlets

describing opportunities in accounting. Sending Bureau speakers to colleges and universities, the Institute was maintaining ties with more than 136 institutions of higher education.[3]

To overcome the problem of seasonal staff layoffs, each firm hiring through the Bureau had to agree to employ the college graduate for three years even if the firm's activity level declined. The new junior assistant was guaranteed an initial salary of $125 per month—"the smallest amount on which a boy can live decently in most cities if he does not live at home."[4] By August 1929, 950 college men had applied for jobs through the Bureau and 172 had been placed.[5] The magnitude of these numbers indicates that most new entrants into the profession were starting with only a high school education.

The Institute recognized the advantages of attracting college men with "natural qualifications" who had made an "outstanding record."[6] To be considered for the Bureau's program, the student need not have majored in accounting—in fact, he need not have taken any courses in accounting. The qualifications sought were intelligence, a good appearance and deportment, the ability to express ideas concisely and understandably, moral stamina, and ambition.[7]

The Bureau advised member firms, "It is generally believed that a college graduate requires a year or more to become acclimated, after which he should progress rapidly."[8] Some firms had schools for juniors, but generally they were trained by "putting them through the mill."[9] Suggesting that these college graduates not be treated "any differently from other boys employed as juniors," the Bureau advised, "If they are made of the right stuff, they will catch on rapidly enough."[10]

Once placed, a successful junior could, on the average, expect to be promoted to senior in five years. Some firms had an intermediate training level called semi-senior. Attaining the rank of senior, "proclaimed one a master in his field."[11]

Becoming Certified

In 1929, the recent college graduate rarely took (much less passed) the CPA examination. In the words of an examiner, "The holder of a CPA certificate is supposed to be qualified as an expert auditor and accountant from the start, and the examiner submits that it is his duty to the public and to the profession to ascertain that the candidate has at least the minimum qualifications of such an expert."[12]

Public accounting experience was essential to passing the examination. In his May 1930 study of Chicago area public accounting employees, Lay found that college graduates who had taken accounting courses needed an average of four years of experience to pass. Those who were not college graduates, but had taken special courses, required an average of just over six years of experience to pass. For those who had taken no accounting courses, an average of almost ten years of experience was necessary to become certified.[13]

In the 1920's more than one out of five certificates issued by examination were from New York. The New York requirements, as set forth in the state's new CPA law signed in April 1929 by Governor Franklin D. Roosevelt, were as follows: between seven and ten years of experience, a high school education or ten years of public practice, U. S. citizenship or the intention to become a U. S. citizen, and payment of a $25 examination fee.[14]

Eleven states, including New York, prepared, administered, and graded their own examinations. The other thirty-seven states and the territories used questions prepared by the Institute—a service which had been provided since 1917. Only ten of these jurisdictions, however, used the Institute's grading service. As a result, there was "a lack of uniformity and the significance of the certificates issued . . . depended upon the conditions of each individual state."[15]

In May 1929 only about 15% of the roughly 800 candidates who took the Institute's examination passed. The Board of Examiners decided to withhold the Elijah Watt Sells Scholarship Prize of $50 because no examination was thought worthy of the award. Only 9% of the 552 candidates taking the Institute's November examination passed. (In November 1978 there were 54,720 candidates taking the examination.)[16]

According to an examiner writing in the *Journal of Accountancy,* the low passing rate was caused by too many impatient candidates taking the test as soon as they met their states' experience requirements. Five to ten years was thought necessary to become "a qualified public accountant."[17]

The state of the art of testing at that time left room for improvement in the construction of the Institute's examinations. Eric Kohler suggested that better advance review of the examinations would do much to reduce the number of "ambiguities" and "obscure or incomplete points."[18] He pointed out that the November 1929 exam "contained a problem that could not be solved from the information furnished."[19]

By June 30, 1929, despite the difficulties imposed by the experience requirements and the examination itself, 11,846 individuals (including about sixty women) had been certified. The growth in numbers of CPAs had been fairly slow since the first state (New York) had passed a CPA law in 1896. Before 1908 fewer than 100 individuals per year had become certified. Starting in 1924 more than 1,000 people per year were gaining certification. In 1929 there were an estimated 9,000 CPAs in the United States. (In 1977 there were an estimated 175,000 CPAs.)[20]

Ethics and the Legal Environment

The professionally active CPA could become a member of the American Institute of Accountants (membership in 1929: 1,742 members plus 443 associates; in 1979: 146,000), the American Society of Certified Public Accountants (membership in 1929: 2,613; later merged into the Institute), and/or his state society. (The New York State Society of CPAs had 1,231 members in 1929.) Also, interested persons could join the National Association of Cost Accountants (membership in 1929: about 6,000; in 1979: 91,400) and the American Accounting Association (membership in 1929: 633; in 1979: 12,000).[21]

Members of the Institute, the Society, or certificate holders in states with societies or licensing agencies that had disciplinary powers were subject to codes of ethical conduct. Eric Kohler explained that these standards were "designed to restrain the inevitable minority among professional men from encroaching on the rights of others, and from performing improper services. . . ."[22]

Unethical behavior such as fee splitting, engaging in other business, violating the law, soliciting, and advertising was not uncommon. One reason given for the extent of unethical activity was the large number of public accountants who were neither members of one of the national accounting organizations with professional codes of conduct nor subject to disciplinary proceedings of their state society or licensing agency.[23]

In his annual report for 1929, the Chairman of the Institute's Committee on Professional Ethics was "of the opinion that a fair proportion of the membership does not know about the rules of professional conduct."[24] He suggested that these rules be reprinted in the Institute's *Bulletin.* Commenting on the rules of professional conduct, the editor of the *Journal of Accountancy* remarked, "The next generation of accountants will probably be unanimous in acceptance of the dictates which are so often the subject of argument and bitterness today."[25]

As seen by the courts, the accountant was not recognized as a member of a learned profession but only as a skilled laborer. In 1927, however, the accountant's status as an independent contractor who owned his working papers had been confirmed.[26]

The CPA was expected to perform with the ability of an average public accountant. As long as he exercised reasonable care and caution, he would not be held liable for errors of judgment.[27]

The auditor was "justified in believing tried servants" of his client company if the company itself placed confidence in them. A careful CPA was "entitled to assume that they are honest and to rely upon their representations."[28] If, however, a defalcation by an employee remained undetected because an audit was incompetently or negligently performed, the auditor could be required to refund any fees received in connection with the engagement.[29]

Reliance on written representations of management concerning the validity of accounts receivable and the quantity, quality, and condition of inventory was common. The best practice of the day was embodied in the Institute's newly revised (May 1929) "Instructions for Verification of Financial Statements" published by the Federal Reserve Board. Although these instructions said, "It is best to verify open [receivables] balances by confirmation from customers," this practice was generally considered too costly and not especially important.[30]

The "Instructions" indicated that the auditor should assume responsibility for the clerical accuracy and pricing of inventory. With respect to quality, quantity, and condition, however, the auditor was generally expected to rely upon written representations by his client's officers and employees. Unless there were reason for suspicion, the auditor was not expected personally to inspect or observe the counting or classifying of inventory.[31]

George O. May, senior partner of Price Waterhouse, stated the generally accepted view of the profession when he wrote that verification of physical inventories was not within the special competence of auditors. Except in cases arousing suspicion, the costs of reducing the risks of inventory overstatements were thought too large. "Grantors of credit should find their protection in the distribution of risks and rely on the law of averages. . . ."[32] Participating, or even appearing to participate, in an inventory count and classification was labelled "unwise."[33]

Unable to find any American cases on the subject, one writer cited the English Kingston Cotton Mill case to illustrate the American accountant's responsibility for inventories. In that case, Lord Justice

Lopes had stated that unless "an ordinary careful examination of the books" arouses suspicion,

> it is not the duty of an auditor to take stock; he is not a stock expert; there are many matters in respect to which he must rely upon the honesty and accuracy of others. . . .[34]

Other accountants, however, argued that auditors should not merely accept full responsibility for inventory verification, but should demand it.[35] Debate on the extent of auditors' responsibilities for receivables and inventories would continue until October 1939 when, as a result of the McKesson & Robbins situation, the membership of the Institute would vote to require confirmation of receivables and observation of inventories as requisites for an unqualified report.

In 1927, in an action described by the *New York Times* as "novel" and "unusual," two third party creditors had brought suit against Touche, Niven and Co. Two banks were asking that an accounting firm be held liable for losses on loans made in reliance on negligently audited financial statements.[36] A similar action was brought by another creditor, the Ultra Mares Corporation.

In June 1929, a verdict for Ultra Mares was set aside by New York State Supreme Court Justice Walsh. Although the defendants had " 'negligently performed their work,' " and knew their audited statements would be used to obtain credit, Walsh found no breach of duty between Touche and Ultra Mares and therefore no cause of action.[37]

Commenting on this decision, the *Journal of Accountancy's* editor stated that the ruling was "legal and sensible." "In . . . Ultra Mares . . . the court decides, as it has always seemed inevitable that a court would decide, against the rather preposterous theory that an accountant . . . has a pecuniary or even a moral responsibility to persons outside the contract who subsequently may have . . . an interest in the fruit of the contract."[38] Ultra Mares, unsatisfied with the decision, indicated it might take the case to the Appellate Division.

Suits against accountants were sufficiently common to interest CPAs in obtaining legal liability policies that were being developed by insurance companies. Many British accountants had already obtained such protection. Carrying such insurance was controversial. Eric Kohler wrote, "No worse contravention of [the accountant's] duties to third parties could be conceived."[39]

Practice

Besides insurance, another way to cope with the risks of professional practice was development of standard forms of practice.

Such forms could provide practitioners with a stronger justification for the degree of responsibility assumed and with a better defense than personal opinion. Once agreement was reached on the classifications, individuals would be less likely to misinterpret the product of the CPA's efforts. An auditor could simply fix his degree of responsibility by referring to the particular service category in which his work fell. The CPA's client as well as the junior or senior on the job would have a better understanding of what was to be done.[40]

Committees of both the American Society and the American Institute prepared classification schemes. The latter's, developed by John R. Wildman, first President of the American Accounting Association, was based on the practice of a major CPA firm. There were fourteen service categories:

1. general audits
2. balance sheet audits
3. cash audits
4. general examinations
5. limited examinations
6. investigations
7. preparation of statements from books or records without verification
8. tax engagements
9. general accounting and record systems work
10. development of cost finding systems
11. preparation and installation of budget systems
12. performance of bookkeeping work
13. rendering opinions on accounting and financial matters
14. other work, e.g., liquidations, arbitration, expert testimony.[41]

This listing well illustrates the types of services available from the CPA in 1929. Robert Montgomery, founder of the firm of Lybrand, Ross Brothers & Montgomery as well as a professor of accounting at Columbia University, opposed adopting any classification of services. He said "Instead of more limitations we should seek more freedom of speech, greater opportunities for unlimited service."[42]

The annual corporate audit was still a relatively rare phenomenon: only 892 firms out of 15,000 companies listed in the industrial section of "one of the well-known manuals" took advantage of this service.[43]

One type of general examination was performed in connection with the issuance of securities. The accounting profession faced particularly acute problems in this area. Investors were frequently

asked to buy on the strength of the underwriter's reputation rather than on the basis of information contained in the full prospectus. Frequently only an abridged prospectus was issued. Often this included a statement that the books had been audited by a specifically named and well-respected CPA firm. Omitted was the firm's certificate or any mention of what the auditors had concluded. A. P. Richardson, the *Journal of Accountancy's* editor, lamented the absence of laws against this practice.[44]

Understanding the financial statements and certificates that were publicly available, however, took no little expertise. Certificates could be "long," "short," "qualified," or "unqualified." They could refer just to the balance sheet, just to the income statement, or to both. "The ideal certificate," Professor David Himmelblau of Northwestern University suggested, "is one that conveys precisely the right shade of meaning to anyone who studies carefully every word, and at the same time creates the correct general impression in the mind of anyone who reads it casually."[45]

The editors of both the *Journal of Accountancy* and the *Accounting Review* lamented the lax definitions, confused and nonuniform usage, and absence of generally accepted definitions of words in financial statements and certificates. Henry Rand Hatfield, a noted author and faculty member at the University of California's College of Commerce, observed, "In order to be understandable, a language must possess a clearly defined terminology, and the lack of this is the chief defect of accounting."[46] He explained that some well-known accountants presented "net income" without having subtracted interest on bonds. Others, equally well-respected, subtracted bond interest before arriving at "net income." "Profits," "net income," and "income" each had a variety of definitions. Through its terminology committee, the American Institute was trying to promote development of more uniform definitions.[47]

Given the confusion in the form, content, and terminology of financial statements and auditors' certificates, it is not surprising that some bankers were known to make loans on the strength of a well-respected auditor's name, regardless of what his certificate said. Only partly in jest did the *Journal of Accountancy's* editor suggest that bankers could be found who would make a loan solely on the strength of a well-respected auditor's signature on this certificate:

> We have audited this balance sheet and say in our report
> That the cash is overstated, the cashier being short;
> That customers' receivables are very much past due;

That if there are some good ones they are very, very few;
That the invent'ries are out of date and principally junk;
That the method of their pricing is very largely bunk;
That, according to our figures, the undertaking's wrecked,
But, subject to these comments, the balance sheet's correct.[48]

Productivity and, hence, profitability, increased as new machines enabled the CPA to simplify tasks and reduce the drudgery associated with collecting, summarizing, and recording information. Many of the new machines were electrically operated and were thus more economical because, as a Burroughs ad pointed out, "A light key touch actuates the motor" and reduces operator fatigue. The new Burroughs 10 column electric calculator could add and subtract, multiply by repeated addition, and continuously display the accumulated totals on its dials. It was available for $300—just over half the cost of a six-cylinder Chevrolet that got twenty miles per gallon. Other improvements like fountain pens, mechanical pencils, carbon paper, mimeographing and Addressographing machines all were available to make the public accountant's office "the acme of modernity."[49] Generally, running a practice cost 59% of gross billings (see Table 1).

Rewards of Practice

As shown in Table 1, the average income of CPAs in public practice as partners or individual practitioners compared quite favorably with that of doctors, dentists, and lawyers although some of the state to state variations were substantial. Because median income figures are less affected by the few very large incomes earned in each profession, they give a better idea of how most partners and individual practitioners were doing.

For purposes of comparison, income estimates for 1976 are provided in Table 2. CPA partners and individual practitioners averaged more than doctors, dentists, and lawyers in 1929. By 1976, the CPA group was averaging less than these other professional groups. Gross revenue or net income statistics for individual firms in 1929 are difficult to find. Arthur Andersen reported, however, that its 1929 annual fee volume was $2,023,000. At that time the firm had seven partners.[50]

Professional Concerns

Recognition was an important issue. Although the courts did not consider accounting a "learned profession," an editorial in the

Table 1

Remuneration from Professional Practice in 1929

	Medical Doctors	Dentists	Lawyers	CPAs
Total number	152,510	69,562	141,501	9,000
Number of partners and individual practitioners	119,324	63,322	110,569	5,010
Average net income				
California	$6,513	$5,408	(n/a)	$ 5,946
Illinois	5,833	5,006	(n/a)	6,602
Massachusetts	5,471	5,549	(n/a)	7,658
New York	6,207	7,782	(n/a)	10,824
Pennsylvania	6,055	5,549	(n/a)	8,883
United States	5,602	5,020	$5,534	7,776
Median net income				
United States	3,758	3,676	3,300	5,824
% net income to gross income				
United States	57%	58%	69%	41%

Sources:

For medical doctors: **National Income, 1929 - 32,** Senate Document No. 124, 73d Congress, 2d session: pp. 148, 206, 245, 246; **Survey of Current Business** (April 1938), U. S. Department of Commerce: p. 12; **Survey of Current Business** (July 1951), U. S. Department of Commerce: p. 12.

For dentists: **National Income, 1929 - 32,** Senate Document No. 124, 73d Congress, 2d session: pp. 148, 206, 247; **Survey of Current Business** (April 1938), U. S. Department of Commerce: p. 12; **Survey of Current Business** (January 1950), U. S. Department of Commerce: p. 9.

For lawyers: Friedman, Milton and Simon Kuznets, **Income from Professional Practice** (New York: National Bureau of Economic Research, 1945): p. 6; **Survey of Current Business** (August 1949), U. S. Department of Commerce: p. 19; **Historical Statistics of the United States: Colonial Times to 1970, Part 1**, U. S. Department of Commerce: p. 176; **Survey of Current Business** (April 1938), U. S. Department of Commerce: p. 14.

For CPAs: **National Income, 1929 - 32,** Senate Document No. 124, 73d Congress, 2d Session: pp. 152, 254, 255; **Survey of Current Business** (April 1938), U. S. Department of Commerce: p. 12; Friedman, Milton and Simon Kuznets, **Income from Professional Practice** (New York: National Bureau of Economic Research, 1945): pp. 414, 415, 555, 556; Tucker, Arthur R., "Great Progress Made by Accountancy During Past Year," **The American Accountant** (May 1929): p. 253. Median income of CPAs was estimated by applying the percentage relationship between the mean income estimated in Senate Document 124 table 9, p. 255 and Friedman and Kuznets' estimated mean income to their estimated median income.

Note: All figures are estimates based on samples.

Table 2

Remuneration from Professional Practice in 1976

	Medical Doctors	Dentists	Lawyers	CPAs
Average net income				
United States				
sole practitioners	$37,493	$33,408	$19,003	$15,512
partners	57,538	27,794	47,031	39,884
combined	40,803	33,039	30,182	28,482
% net income to gross income				
United States				
sole practitioners	58%	46%	52%	48%
partners	51%	38%	49%	28%
combined	56%	45%	50%	32%

Source: **Preliminary Statistics of Income: 1976, Business Income Tax Returns—Sole Proprietorships, Partnerships** (October 1978) Department of the Treasury, Internal Revenue Service (publication number 10-78): pp. 11, 35. Note: Calculations exclude businesses operated at a loss and are estimates based on samples.

Saturday Evening Post may well have represented informed public opinion: with ever-increasing usefulness, "accounting comes into a prominence and significance that cannot be denied."[51]

Montgomery remembered the profession's earlier days when "the employment of public accountants would be looked upon as evidence of suspected fraud . . . and doubt regarding financial strength. . . . Many investigations by public accountants were made secretly, often at night and on Sundays."[52] In 1929 the work of the CPA was much more broadly defined and widely respected. Hatfield explained his conception of the role of the accountant:

> . . . to locate responsibility, to prevent fraud, to guide industry, to determine equities, to solve the all essential conundrum of business: "What are my profits?", to facilitate the government in its fiscal operations, to guide the business manager in the attempt to secure efficiency.[53]

By late 1929 a writer in the *Accounting Review* stated, "It may be safe to hazard a guess that the professionalizing of accountancy will be an experience parallel to the professionalizing of these other [medicine and law] vocations."[54]

Another concern was the purpose of the balance sheet. Was it to reflect income legally available for dividends? This was the view found in many texts and a large number of public accountants thought that this was the fundamental purpose of financial accounting.[55] Not surprisingly this "orthodox" view of the balance sheet saw conservatism as a virtue.[56] Charles Couchman, later to become President of the American Institute, cautioned that conservatism "must not take the place of skillful diligence. . . ."[57] "The complicated interests of various parties" to the financial statements place the accountant under an "absolute duty . . . to bring his statements as near the truth" as possible.[58] Montgomery stated that "in the long run, ill-advised conservatism defeats its own purpose."[59]

Others suggested that the balance sheet should show current economic values. Supporters of this view argued that "legitimate appreciation of properties" should be recognized because "stockholders are entitled to information about appreciation."[60] Accountants were well aware that their unit of measure, the dollar, had fluctuated substantially since 1913. (The Bureau of Labor Statistics' wholesale price index was 73 in 1913, 123 in 1917, 162 in 1920, 102 in 1928, and 100 in 1929.) Unsettled was the issue of whether appreciation should be recognized in the accounts and shown as an increase in surplus (but not available for dividends) or simply mentioned in a footnote disclosure.[61]

There were other controversies within the profession. Should public accountants make predictions "regarding the future results of operations . . . "?[62] Montgomery stated his view tersely, "We must not prophesy."[63] Some advocated developing and auditing special purpose financial statements as well as general purpose financials. Again, Montgomery could "see no practicable or safe way of certifying . . . more than one balance sheet of the same concern at the same date."[64]

Another concern centered on the combination of the debts and assets of two legally distinct corporations. These were combined onto the balance sheet of a non-existing entity producing something called a consolidated balance sheet. This was a new, distinctly American development and accountants were still struggling over treatment of minority interests and pre-acquisition surpluses.[65]

Accountants of '29 Predict the Future

Addressing the New York State Society of CPAs at their thirtieth anniversary dinner (in 1927), George McLaughlin, a CPA who had served as Police Commissioner of New York City and State Banking

Commissioner, ventured one prediction: ". . . the day will come when it will be almost impossible to sell a security without a certified statement prepared by a certified qualified public accountant."[66] Dean Madden of the New York University School of Commerce, Accounts and Finance made the same prediction, insisting "that the word of a bank which offered securities was not a sufficient safeguard to the investing public."[67]

As industry and commerce were expected to grow larger and more complex, the training period for the public accountant would lengthen. Few accountants would start public practice before age thirty.[68] One writer in the Institute's *Bulletin* expressed his "personal hope" that a school "designed solely to fit men for the professional practice of accountancy" would be developed "in the near future." He claimed such a school would "be of incalculable value in elevating the standards of accountancy practice" and "would be to accountancy what the Harvard and Columbia law schools are to the legal profession."[69]

The "notorious" inadequacies of governmental subdivision's accounting would be the focus of corrective measures. Accountants would be rendering "all possible assistance" to charities, libraries, hospitals, and similar organizations. Some of this work would be done at no charge.[70] Cooperation with bankers would increase and accounting would be recognized as a profession by the courts, the governmental divisions, other professions, and the public.[71]

Partly as a result of public acceptance, CPAs would replace some of the lawyers on the Board of Tax Appeals. Instead of politicians, accountants and lawyers would sit on commerce, railroad, and utility commissions.[72] Many more accountants would understand the advantages of ethical behavior and the profession would be represented by one national organization (on a par with the American Bar Association or the American Medical Society).[73]

The development of standardized terminology would enable clients and the public to better understand the meaning of auditors' reports.[74] These reports would be seen as the starting point, not the stopping place for the CPA's work.[75]

These optimistic predictions were haunted by an eerie prescience that refused to leave the editorial columns of the *Journal of Accountancy*. In December 1927, the *Journal's* editor wrote about investors' lack of interest in reforms:

> Perhaps the bull market which ran so long a course made people lose sight of everything else. If there had been a falling market, a shortage of money, a psychological or an

> actual depression in business, people would have had more time to devote to reform.[76]

In April 1928:

> If, then, we are at the beginning of a bear market, what is the accountant to do about it? Is he to shut his eyes to the facts and the probabilities . . .? Let us suppose that the prediction which people are now daring to make will prove true. The dollar will return to a value of one hundred cents of 1913, perhaps. . . . In all probability the ascent of the dollar will be a long process, accompanied by much creaking and groaning. There will be suffering because of wage reduction ahead of cost-of-living reduction. There will be distress and hard times and all the other companions of radical change.[77]

In November 1928, just before the elections:

> The action of the stock market during the past few weeks is almost without precedent. The incorrigible optimism of the investing public continues. Warnings issued by authorities have no effect and the public buys and buys; stocks rise to a market value altogether out of proportion to the companies' earnings; . . . the prophets of evil prophesy on every hill—and yet the public buys again. . . . Probably there will be no violent tumble—at any rate it is devoutly to be hoped that we shall avoid panic fear—but quite evidently something must happen.[78]

Undaunted, or perhaps seeing beyond the events that so troubled the *Journal's* editor, others saw new fields of activity for the accountant in roles such as receivers and administrators, management counsellors, and public representatives on corporate boards of directors.[79]

Perhaps the final word should be given to Theodore Sterling who reported to the President of the American Institute the "true function" of the accountant as

> financial advisor, business counsellor, constructively planning with management both the intimate details and the broader policies called for by the increasing complexity of commerce and industry, the impelling urge of competition and the consequently enforced closer study of such matters as costs, efficiency, markets, taxation, consolidations, and the multitude of economic factors that con-

stitute the daily problems to be met and solved by the business world.[80]

Public Accounting in 1929: A Summary

Education and the CPA Examination:

—Most new accountants had only a high school education.

—Passing the CPA examination is seen as evidence of qualification as an expert auditor and accountant.

—Successful candidates generally have four to ten years public accounting experience.

—Only 37 states and the territories use the American Institute's examination.

—Only ten of these jurisdictions use the Institute's grading service.

Professional Code of Ethics:

—The subject evokes much disagreement.

—A large number of competing public accountants are neither subject to the codes of conduct of an accounting organization nor subject to the disciplinary proceedings of their state society or licensing agency.

Legal Environment:

—Courts consider accountants independent contractors, not members of a learned profession.

—The accountant's liability for incompetently or negligently performed audits is generally limited to fees received for the respective engagements.

—Accountants have neither a pecuniary nor moral responsibility to third parties who may rely on audited financial statements.

—Legal liability insurance is becoming popular although some suggest it contravenes the accountant's responsibility to third parties.

Audit Procedure:

—Verification of accounts receivable balances through direct communication with debtors is generally thought too costly and not especially important.

—Except in suspicious circumstances, the auditor may rely on his client's written representation of the quality and quantity of inventory.

—"The best modern practice of the profession" is summarized by the American Institute in its revised pamphlet "Verification of Financial Statements." The general objective of the pro-

cedures contained in the pamphlet is to facilitate the credit-granting process.

Practice and its Rewards:

—Less than 6% of 15,000 large industrial corporations have annual audits.

—Audit certificates vary widely in form and content.

—Securities prospectuses frequently report the name of the auditing firm but fail to present the audit certificate or summarize the auditor's opinion.

—Accounting terminology is not uniform.

—Due to difficulties in understanding audit certificates and the audit function itself, users of financial statements often make decisions based on the auditor's reputation, not on the information contained in the financial statements.

—The median net income of CPAs is higher than that of medical doctors, dentists, or lawyers.

FOOTNOTES

[1]American Institute of Accountants, "Collegiate Courses in Accounting," p. 8. Nissley, "A Bureau for Placing Junior Accountants," p. 64.

[2]Nissley, "A Bureau," p. 65.

[3]Nissley, "Report of Special Committee for Placements," pp. 185-86.

[4]American Institute of Accountants, "An Experiment in Choice of Staff Assistants," p. 8. American Institute of Accountants, "Special Committee for Placements," p. 8.

[5]Nissley, "Report," p. 186.

[6]American Institute of Accountants, "An Experiment," p. 7.

[7]American Institute of Accountants, "An Experiment," p. 7. Mather, p. 105. Nissley, "A Bureau," p. 68.

[8]American Institute of Accountants, "An Experiment," p. 8.

[9]American Institute of Accountants, "An Experiment," p. 8.

[10]American Institute of Accountants, "An Experiment," p 8.

[11]American Institute of Accountants, "Remuneration in Accountancy," p. 8. Lay, p. 225.

[12]An Examiner, p. 446.

[13]Lay, p. 224.

[14]American Institute of Accountants, "Rules Governing Issuance of New York C. P. A. Certificate," p. 6. American Institute of Accountants, "State Legislation: New York," p. 7. Springer, "Accountancy Legislation and Administration," p. 283. *American Accountant,* "What National and State Societies Have Accomplished in Year," p. 264.

[15]Richardson, "The Obstacles Surmounted," p. 357. Richardson, "Standards of Examination," p. 356. Springer, "Accountancy Legislation," p. 262.

[16]American Institute of Accountants, "American Institute Examinations," p. 1. American Institute of Accountants, "Elijah Watt Sells Prize Withheld," p. 2. American Institute of Accountants, "Results of Examinations," p. 1. Couchman,

"Report of the Board of Examiners," p. 160. An Examiner, p. 445. Interview with AICPA Staff.

[17]An Examiner, pp. 447, 449.

[18]Kohler, "Examinations of the American Institute of Accountants," pp. 360-61.

[19]Kohler, "Professional Examinations," p. 75.

[20]American Institute of Certified Public Accountants, p. iii. Eastman, p. 140. Springer, "Accountancy Legislation," p. 260. Springer, "Review of Recent Accountancy Legislation in the United States," p. 536. Tucker, p. 253.

[21]Erdahl, p. 4. Interview with AAA Staff. Interview with AICPA Staff. American Institute of Accountants, "News of Local Societies: New York State Society of Certified Public Accountants," p. 13. American Institute of Accountants, "Report of the Secretary," p. 130. Tucker, p. 253. *American Accountant*, "What National," pp. 261-62. Zeff, p. 86.

[22]Kohler, "Ethics for the Tyro," p. 248.

[23]*New York Times*, "The Ethics of Accounting," p. 14. Peisch, p. 17. Springer, "Accountancy Legislation," p. 281.

[24]Hall, p. 166.

[25]Richardson, "Where Advertising Begins," p. 200.

[26]*American Accountant*, "Accountancy Made Noteworthy Strides in 1927," p. 6. Hamel, p. 335. Montgomery, "Accountants' Limitations," p. 263.

[27]Briggs, p. 191.

[28]Briggs, p. 191.

[29]Briggs, pp. 187, 191.

[30]Campbell, p. 12. American Institute of Accountants, "Verification of Financial Statements," p. 329. Meigs, Larsen, and Meigs, p. 445. Richardson, "Standards to Protect Profession," p. 45.

[31]American Institute of Accountants, "Verification," pp. 331-32.

[32]Richardson, "The Auditor's Responsibility for Inventories," pp. 289-90.

[33]Richardson, "Auditor's Position Should Be Definite," p. 449.

[34]Briggs, p. 186.

[35]Wellington, p. 193.

[36]*New York Times*, "Banks Sue Auditors as Cause of Losses: Claims Against Sir George Touche's Accounting Firm Exceed $300,000," p. 34.

[37]*New York Times*, "Damages Refused for Error in Audit," p. 50.

[38]Richardson, "Accountant Not Liable to Third Parties," p. 125. Richardson, "Decision Legal and Sensible," p. 129.

[39]*American Accountant*, "Accountancy Made Noteworthy Strides in 1927," p. 6. Kohler, "Protection for Auditors," p. 146.

[40]Himmelblau, "Effect of the Adoption of the Classification of Accounting Service on Accounting Instruction," pp. 298-99. Richardson, "Standards to Protect Profession," p. 45. Rossetter, p. 78.

[41]*American Accountant*, "Accounting Classification Suggested by Dr. John R. Wildman," pp. 27-29.

[42]Montgomery, "Accountants' Limitations," p. 253.

[43]Richardson, "There Is Still Plenty of Room," pp. 366-67.

[44]Campbell, p. 4. Richardson, "The Full Prospectus is Rare," p. 30. Richardson, "Legal Regulation Seems Necessary," p. 32. Richardson, "Misuse of Accountant's Name," p. 298. Richardson, "Reference to Accountant Often Misleading," p. 31.

[45]Himmelblau, "Ideal Auditor's Certificate Conveys Precisely Right Shade of Meaning," pp. 15-16.

[46]Hatfield, "What is the Matter with Accounting?" p. 271. Kohler, "Terminology for Accountants," p. 232. Richardson, "Department of Accounting Terminology," p. 34.

[47]Hatfield, "What is the Matter," p. 272. Kohler, "Terminology for Accountants," p. 232.
[48]Richardson, "Different Conditions Prevail," p. 37. Richardson, "Qualifications Gone Mad," p. 52.
[49]American Institute of Accountants, *The American Institute of Accountants: Fiftieth Anniversary Celebration: 1937,* p. 466.
[50]Arthur Andersen & Co., p. 36.
[51]*Saturday Evening Post,* p. 30.
[52]Montgomery, "What Have We Done and How?" p. 80.
[53]Hatfield, as quoted in Zeff, p. 23.
[54]Winter, p. 318.
[55]Daines, p. 94. Hatfield, "What is the Matter," p. 274.
[56]Daines, p. 96.
[57]Couchman, "Requirements of a Balance Sheet Audit," p. 23.
[58]Couchman, "Requirements," p. 22.
[59]Montgomery, "Accountants' Limitations," p. 252.
[60]Bennett, p. 427.
[61]Daines, p. 95. Montgomery, "Accountants' Limitations," p. 259.
[62]Montgomery, "Accountants' Limitations," p. 246.
[63]Montgomery, "Accountants' Limitations," p. 250.
[64]Montgomery, "Accountants' Limitations," p. 254.
[65]Hatfield, "What is the Matter," p. 278.
[66]*New York Times,* "Accountants Celebrate: George V. McLaughlin Sees Great Future for State Society," p. 37.
[67]"Accountants Celebrate," p. 37.
[68]Frazer, p. 90.
[69]American Institute of Accountants, "An Experiment," p. 8.
[70]Winter, pp. 313-14.
[71]Winter, pp. 312, 314.
[72]Frazer, p. 89.
[73]Winter, p. 313.
[74]Winter, p. 312.
[75]Frazer, p. 89.
[76]Richardson, "The Desirability of Publicity," p. 443.
[77]Richardson, "Dream of a Dollar Value," pp. 282-83.
[78]Richardson, "A Bellowing Market," p. 359.
[79]Daines, p. 110. Frazer, p. 89. Winter, p. 315.
[80]American Institute of Accountants, "Possibilities for Accountancy in the Future," p. 9.

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SOME ASPECTS OF AUDITING EVOLUTION IN CANADA

Abstract: A chronology of significant changes in Canadian auditing legislation, pronouncements and practices, from the late nineteenth century to the present, reveals the strong influence of English and American sources. The evolution of mandatory audits, of profit and loss audits, and of the wording of the standard audit report demonstrates these influences.

The sources of influence that have shaped auditing in Canada are an interesting interplay of English and American influence acting upon, and together with, the unique elements of the Canadian scene. The English influence is felt largely in the tradition of legislation found in the Canadian Companies Acts that have prescribed the role of the auditor. The American influence is felt through the proximity and pronouncements of the American Institute of Certified Public Accountants. The uniquely Canadian influence is manifested through the recommendations and pronouncements of the Institutes of Chartered Accountants, the various income tax acts, and the business and financial critics responding to corporate reporting inadequacies and business failures.

This paper will attempt to chronicle the changes that have taken place over time and to indicate, where possible, the sources of that influence. Attention is directed to the Canadian federal legislation and its forerunner in the province of Ontario. The aspects of auditing which are studied and which it is hoped will be illustrative of the influences are the evolution of the legislation that made audits mandatory, including the profit and loss (income statement) audit, and the evolution of the content of the auditor's standard report. The study begins with the Canadian legislation of the late nineteenth century and ends in the 1970s with the latest changes in the standard audit report. Evidence of the background and processes that have influenced change are obtained from the various incorporating statutes, debates of the House of Commons and the Senate that relate to incorporating legislation, committee reports—together

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with submissions and briefs by interested parties to these committees—recommending changes in incorporating legislation, financial press commentary, accountancy textbooks, professional periodicals such as *The Canadian Chartered Accountant* and the various provisions of income tax legislation. For the period 1904 to 1950 several audit reports were examined for varying periods of time in order to obtain an awareness of changes in actual audit report wording and, in particular, to monitor the actual practices of auditors with regard to the audit of profit and loss statements. From 1950 on, various studies and Institute compilations provide such evidence. The Appendix indicates the audit certificates examined.

The paper separates fairly tidily into four periods: Prior to 1910, 1910 to 1920, 1920 to 1940, and 1940 to the present. Some comments on actual profit and loss statement auditing practices are reserved for the end of the paper.

Prior to 1910

The pattern of Canadian legislation with respect to audit provisions and the auditor's duties is derived directly from the English legislation. In England, the Joint Stock Companies Act of 1844 required that an auditor be appointed.[1] In 1856, the mandatory aspect of this provision was abandoned; however, Table B of this enactment sets forth the "articles" which were to apply to all companies that did not register their own articles.

> The auditors shall make a report to the shareholders upon the balance sheet and accounts, and in every such report they shall state whether in their opinion, the balance sheet is a full and fair balance sheet containing the particulars required by these regulations, and properly drawn up so as to exhibit a true and correct view of the state of the company's affairs and in case they have called for explanations or information from the directors, whether such explanations and information have been given by the directors and whether they have been satisfactory; . . . .[2]

The English Companies Act of 1862 provided for the Board of Trade to appoint inspectors to investigate a company's affairs provided that one-fifth of the shareholders made the request and conditional upon the Board being satisfied that the applicants are not "actuated by malicious motives."[3] By 1900 the mandatory audit provisions were reinstated in the Companies Act of 1900.[4] The duties of

the auditor were an elaboration of the provisions of the 1856 Act but the "full and fair" phraseology was dropped and the "true and correct" wording, retained.[5] No substantive changes arose in the relevant audit provisions in the Companies (Consolidation) Act, 1908.[6]

The Province of Ontario reflected the English legislation more quickly than did the federal Canadian legislation. The Ontario Companies Act of 1897[7] stipulated inspection clauses similar to those of the English enactment of 1862. Additionally, the annual shareholders' audit, while not made mandatory, was contemplated if the letters patent or the by-laws of the company so directed. In the event that an audit did take place, the duties of the auditor were specified. The wording of these duties is almost identical with that of the "model articles" of the English legislation of 1856. The Ontario Companies Act of 1907,[8] following the pattern of the English enactment of 1900, made the shareholders' audit mandatory and the duties set forth in the enactment were identical with those of the English Act.

As late as 1900 there were no inspection or audit provisions in federal legislation. However, the Companies Act of 1902,[9] in the manner of the English Companies Act of 1862 and the Ontario Companies Act of 1897, allowed shareholders (representing at least one-fourth in value of the issued capital) to petition a judge to appoint an inspector to investigate the affairs and management of the company. The requirement that the judge be assured that good cause be shown for such investigation and that the applicants "are not actuated by malicious motives in instituting" the action marks the period in Canada as one of transition between the business freedom of the nineteenth century and the growing legislative concern and regulation that characterizes the twentieth century.[10] Legislative debate that preceded the passing of the Act was concerned with whether such inspection clauses would be used "to embarrass the company."[11]

By 1910 therefore, Ontario legislation, but not federal Canadian legislation, had provisions for mandatory audits and outlined in broad terms the duties of the auditor with respect to his report. These provisions have almost identical wording with that of antecedent English legislation. Two underlying features are worthy of note here. First, comments by the Under Secretary of State (Canadian) and former Assistant Provincial Secretary of the Province of Ontario, Mr. T. Mulvey, indicate that the legislative provisions for detailed disclosure in balance sheets in the federal 1917 Companies Act, ". . . were first suggested by the Board of the In-

stitute of Chartered Accountants of Ontario in the drafting of the Ontario Companies Act of 1907. . . ."[12] The inference that the Institute of Chartered Accountants of Ontario would also be more than moderately interested in advocating the compulsory audit provisions of the Ontario Act of 1907 is hard to dispel. Second, Ontario legislation predates the federal Canadian legislation by some ten years in this regard. The early provincial initiative may be because Ontario was the leading center of commercial and industrial activity in Canada and, if one is to judge by Mulvey's remarks, the Institute of Chartered Accountants of Ontario was quite active and vigorous.

1910 to 1920

Littleton and Zimmerman have outlined the contrast in the evolution of auditing between England and the United States. In the granting of the privilege of limited liability to corporations, English law has required that, in the public interest, there be disclosure of financial information and that such disclosure be attested to by auditors.[13] The American tradition for auditing, however, has arisen out of the need for an external independent commentary on credit-worthiness.[14]

The federal audit legislation of 1917 was a direct copy of the Ontario legislation of 1907 and the English legislation of 1900.[15] The speech that introduced the legislation to the House of Commons and the subsequent House debates provide little explicit reasoning for audit compulsion other than the fact that federal legislation lagged behind English and provincial (Ontario) legislation.[16] However a number of events were occurring in Canada at the time that made the English tradition for legislating in the public interest, through the vehicle of the Companies Acts, inevitable.

Undoubtedly the desire to "catch up" with the provincial legislation and to clearly indicate that incorporation matters fell within the federal domain as well as that of the provincial were important. Similarly, the banking failures and subsequent banking legislation of 1913[17] together with the rash of commercial and industrial failures in 1914 and 1915[18] would have been influential.[19] Of probably greatest significance, however, was the imposition of the Tax Acts of 1916[20] and 1917[21] and the difficulty acknowledged by the Minister of Finance due to insufficient staff, in administering these regulations.[22] Under these circumstances the desirability of the mandatory audit and the additional minimum disclosure provisions of the 1917 Act is beyond doubt. In the first place, corporate accounting would

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be made more uniform and comparable, thereby satisfying the tax need for "equity"; furthermore, corporate accounting as reflected in audited financial statements would be attested to by a respected professional, thereby decreasing the need for an expanded tax-audit department since there would be an independent and objective witnessing to the corporate financial statements. The complementarity of the audit and disclosure provisions and the Tax Acts was acknowledged by commentators of that time.[23,24]

No additional evidence of professional or commercial concern for the mandatory audit was located in a review of articles and editorials in *The Canadian Chartered Accountant* and the *Financial Post* up to 1917. It is likely that the 1917 legislation muted the effect that the publishing of *Uniform Accounting* by the Federal Reserve Board in 1917 might have otherwise had.[25] *Uniform Accounting,* set forth in fair detail the accepted auditing procedures for the "balance sheet" audit and provided a model auditor's report that included an opinion on the profit and loss statement.

The fulfilling by the auditor of the duties imposed by the English Act of 1900, the Ontario Act of 1907 and the Canadian Act of 1917 provided a ready format for the form and content of an auditor's report. R. Kettle indicates that legal advice, secured by the Institute of Chartered Accountants of England and Wales in 1908, suggested that the auditor's report take the following form:

> We have audited the balance sheet of ABC Ltd., dated the 31st December, 1908 as above set forth.
>
> We have obtained all the information and explanations we have required.
>
> In our opinion, such balance sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given us and as shown by the books of the Company.[26]

For many firms,[27] the transition to a stronger acknowledgement of the "legal" wording occurred immediately subsequent to the 1917 legislation.

1920 to 1940

The first decade of the inter-war years of 1920 - 1940 were, for England, United States and Canada, the time of "normalcy"—for "business-as-usual." However, the stock market crashes and the subsequent depression of the 1930s altered the attitude of society

towards the capitalist system prevalent in all three countries. Though England and Canada in slow, measured and evolutionary steps had, since 1850, led the way in respect to statutory, mandatory audits and the elaboration of auditors' duties relating to the financial statements, the American Securities Acts of 1933 and 1934 brought the United States quickly abreast. Indeed the Securities Acts requirement for a mandatory audit of the profit and loss statement was only imposed by legislation in England in 1947, Ontario in 1953, and Canada in 1964-65.

In Canada, much of the concern during this period related to the inclusion of the profit and loss statement in the auditor's opinion and the resolution of the auditor's standard report wording. The period 1930 to 1940 may well mark a transitional decade for Canada as it began to recognize the influence of the United States as well as that of England. The geographic proximity, the increasing investment of the United States in Canada and the articulateness of the American Institute of Accountants were all compelling reasons for this transition.

Neither the English Companies Act, 1928[28] nor the Canadian Companies Act, 1934[29] made any significant changes in the statutory audit provisions under examination. The changes in Canadian legislation dealt mostly with increasing the information content of the annual financial statement. Professor R. G. H. Smails, writing at the time, implied the influence of the English legal case involving the Royal Mail Steam Packet Company, which arose in 1930, shortly after the English legislation.[30] The case related to the profits as represented by the Company and whether the augmenting of these profits through the use of secret reserves should be disclosed in the statement. Though the influence of the case was recognized, that influence did not extend to the *requirement* to have the auditor render an opinion on the profit and loss statement; rather the influence seemed to find expression in a *desire* for more disclosure in the profit and loss and earned surplus statements. The only new auditing provision relating to the form and content of the auditor's report in the 1934 Canadian Act related to the requirement to disclose the treatment of the losses and gains of subsidiaries.[31] This provision is a direct copy of the English legislation of 1929.[32]

Despite the lack of legislative action, Canadian concern for mandatory audited profit and loss statements during the 1930s was becoming more evident. *The Verification of Financial Statements* issued jointly in 1929 by the Federal Reserve Board and the American Institute of Accountants placed much more emphasis on the importance and verification of the profit and loss statement than

did their earlier statement of 1917 in *Uniform Accounting* This emphasis, later supported by requirements of the Securities Acts, was carefully reported and scrutinized in *The Canadian Chartered Accountant.* The anomaly of rendering an opinion on the balance sheet while excluding one of its constituent aspects (albeit in summary form) had been pointed out from earliest times.[33,34]

Differences in opinion regarding the auditor's legal responsibility existed. Smails,[35] in his widely-used text, argued that the auditor was responsible only if the details of the profit and loss account were set forth in the balance sheet, whereas Clapperton,[36] using the Royal Mail case as precedent, argued the opposite. Over and above the aspects of legal responsibility, there was growing concern that legislation should explicitly require that the profit and loss statement be audited. General commentary at the annual meeting of the Canadian Institute of Chartered Accountants (CICA) in 1941 supported this position.[37]

During this period, increasing concern was evidenced for clarifying and making the auditor's report more uniform and standardized. *The Financial Times* suggested that ". . . the wording of certificates and reports should be such that double meanings are impossible and no opportunity given for drawing deductions not intended."[38] Professor C. A. Ashley writing in *The Financial Post* in 1933, indicated that the general public and some members of the accounting profession were greatly disturbed about auditors' reports. Regarding the widespread use of report qualifications, he states that ". . . it is becoming fantastic. Soon we shall be reading without surprise 'subject to the assets and liabilities being correctly stated.' "[39]

By 1940 in the United States, much of the current standard audit report had evolved. In 1929, *Verification of Financial Statements* recommended a test audit based upon review of the internal control.[40] In 1932, the Special Committee of the American Institute of Accountants on Cooperation with Stock Exchanges recommended inclusion of a note suggesting: that the accounting records had been tested but that no detailed audit was made; that the profit and loss statement be included in the audit; and that the statements should reflect accepted principles of accounting consistently maintained during the year under review.[41] With regard to the use of this model auditor's report, the Committee indicated that "the certificate is appropriate only if the accounting for the year is consistent in basis with that of the preceding year."[42] This model report was later included in the American Institute booklet *Audits of Corporate Accounts* in 1934.[43] By 1939, the American Institute pamphlet *Ex-*

tensions of Auditing Procedures suggested that the concept of "consistency with that of the preceding year" be incorporated into the audit report itself.[44] In 1941, following the report of the SEC enquiry into the McKesson and Robbins fraud, the Institute on the recommendation of the Commission suggested that the wording be revised to acknowledge that the audit was performed "in accordance with generally accepted auditing standards."[45]

The influence of American events is evidenced in an editorial in *The Canadian Chartered Accountant* in 1937 that discusses the merits of a model report recommended by the American Institute in 1934—in particular with regard to "a general review being made but not a detailed audit" and "in accordance with accepted principles of accounting consistently maintained."[46] Similarly the topics for discussion pertaining to the auditor's report at the annual meeting of the Canadian Institute in 1938 outline features which had already been agreed upon in the United States.[47] These topics related to a concern for testing transactions rather than providing a detailed audit, certifying the profit and loss statement, replacing the "true and correct" wording, and acknowledging the consistency of application of accepted principles of accounting. Additional topics related to whether or not the Canadian Institute should defer action until the English Companies Act had been revised (an event which was not to happen for nine more years!) and whether the existing wording in the American audit report should be adopted in its entirety in Canada. Debate on these matters continued at the Institute annual meeting of 1941.[48] Here there was additional acknowledgement that the report wording related less to delimiting the auditor's legal duties or responsibilities and more to the general instruction of the reader.

The war had, by this time, intervened so completely in the affairs of the country that no Institute action was possible at that time. It was not until 1951 that the Institute issued its first bulletin on the auditor's report.[49]

1940 to the Present

Though the Institute did not make recommendations on a standard auditor's report until 1951, the Canadian auditor was not bereft of guidelines. He continued to do what had been done during the 1930s; that is, he used the wording of the legislative statutes and interwove into this, often in a somewhat unmethodical manner, the changes that had been and were being introduced in the United States.

The English Companies Act of 1947[50] provided the first changes in that country since 1908 in the statutory requirements relating to the content and wording of the standard auditor's report. The auditor was now obliged to include in his report an opinion on the profit and loss statement as well as the balance sheet and to comply with the Ninth Schedule of the Act. The latter required an explicit statement by the auditors as to whether: all necessary information had been obtained; proper books of accounts had been kept; and financial statements agreed with the books. There was no requirement concerning conformity with "generally accepted accounting principles applied on a basis consistent with that of the preceding year."

The 1948 Act required rather lengthy wording which was drastically reduced in the provisions of the Companies Act, 1967. Here the auditor was simply required to state whether the balance sheet and profit and loss were "properly prepared in accordance with the provisions of the principal Act." The items contained in the Ninth Schedule of the 1947 Act are presumed to hold unless otherwise stated by the auditor.[51] Under the requirements of the Companies Act, 1967, the Institute of Chartered Accountants in England and Wales recommended the following standard report:

> In our opinion, the accounts set out on pages .... to .... give a true and fair view of the state of the company's affairs at .... and of its profit (or loss) for the year ended on that date and comply with the Companies Acts, 1948 and 1967.[52]

The Corporations Act, 1953[53] of the Province of Ontario represents the first modern corporate legislation in Canada relating to accounting and auditing matters. The audit requirements of that Act together with an amendment in 1964[54] requiring insertion in the report of the wording acknowledging adherence to "generally accepted accounting principles applied on a basis consistent with that of the preceding period" constitute the identical legislation enacted federally in 1964-1965 under the Canada Corporations Act. This legislation proceeds directly from recommendations of the Institute of Chartered Accountants of Ontario[55] and the Canadian Institute of Chartered Accountants.[56] It was in this provincial Act that the auditor was first obliged to render an opinion on the profit and loss statement.

The Canada Corporations Act, 1964-1965 is identical with the Ontario Companies Act as amended in 1964.[57] The strong influence

of the Ontario legislation and the Canadian Institute was explicitly acknowledged by the Standing Committee on Banking and Commerce that was appointed to consider changes in corporate legislation.[58] The Canadian federal legislation of 1964-1965 provided the first substantive federal changes in the auditing matters being considered in this paper, since the audit was made mandatory in 1917. It should be emphasized that it was in this 1964-1965 Act that the auditor, under federal Canadian legislation, was first obliged to render an opinion on the profit and loss statement. The federal legislation was somewhat anti-climatic in its effect since Canadian audit practices by that time had been influenced by the Ontario legislation of 1953, the CICA audit pronouncements beginning in 1951, and, since the mid 1930s, by American practices and American Institute pronouncements.

In 1951, the Committee on Accounting and Auditing Research of the Canadian Institute issued its first recommendations on auditors' reports in Bulletin No. 6. The recommended wording was:

> I have examined the balance sheet of the .... Company Limited as at ...., 19.. and the statements of profit and loss and surplus for the year ended on that date and have obtained all the information and explanations I have required. My examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as I considered necessary in the circumstances.
>
> In my opinion the accompanying balance sheet and statements of profit and loss and surplus are properly drawn up so as to exhibit a true and correct view of the state of the affairs of the company as at ...., 19.. and the results of its operations for the year ended on that date, according to the best of my information and the explanations given to me and as shown by the books of the company.[59]

The recommended report represents a careful selection and paraphrasing of the existing 1947 English and 1934 Canadian legislation. However from this time on, the increasing influence of the American tradition is felt in the evolution of the report. By 1948, the standard American audit report had evolved into its present-day form. It is repeated here because it represents the virtually identical wording toward which the CICA carefully and slowly struggled from its earliest pronouncement in 1951.

We have examined the balance sheet of X Company as of December 31, 19.., and the related statements of income and surplus for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statements of income and surplus present fairly the financial position of X Company at December 31, 19.., and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.[60]

In 1959 a revised Committee recommendation, CICA Bulletin No. 17, called for substitution of the phrase, "presents fairly" for "exhibits a true and correct view," the deletion of "having obtained all the information and explanations required," and also for the inclusion of the phrase "in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year."[61] The Committee indicated that the recommendation of 1951 contemplated the implication of the phrase and that upon reconsideration it was felt that it should be more positively disclosed.[62] The only remaining substantive differences were the inclusion in the Canadian report of a reference to "the examination included a general review of accounting procedures" and in the American report of a reference to "the examination being made in accordance with generally accepted auditing standards." In this regard, the CICA Report of the Special Committee on Shareholders' Audits in 1968 recommended that when the Accounting and Auditing Research Committee completes its study of auditing standards, the standard "Canadian short form report could then be amended, if thought desirable" to include this phrase.[63] Publication in 1975 of "Generally Accepted Auditing Standards" by the CICA[64] mirrored those of the 1963 American standards.[65] This enabled the deletion of the reference to "a review" in the Canadian report and a substitution of reference to "standards" in 1976.[66]

Actual Profit and Loss Auditing Practices

The history of balance sheet and profit and loss auditing practices is an interesting example in which actual practice initially leads

legislation, is later brought down to a lower legislative standard, and eventually reverts to a leadership role once again.

It was not until the provincial legislation of 1953 and the federal legislation of 1964-65, that the auditor was specifically obliged to render an opinion on the profit and loss statement. Audits of profit and loss statements were, however, quite commonplace before these times. In two of the five sample reports prior to 1910, and in seven of the eight reports from 1910 to 1917, an opinion was rendered on this statement. Indeed, despite the 1917 legislation which required only a balance sheet audit, the profit and loss opinion was dropped in only two of the seven instances from 1918 to 1920.

During the period 1920 to 1940, the practice of including the profit and loss statement in the report ended. None of the eight audit reports examined represents an exception to this statement. Similarly, in a report on the variety in report wording that persisted during this period, *The Canadian Chartered Accountant,* in 1938, enumerated twelve auditor's reports, of which only two rendered a profit and loss opinion.[67] It would seem therefore, that the legislation of 1917 and similar legislation of 1934 did eventually have the effect of reducing the scope of the auditor's opinion during this period.

Beginning in the early 1940s, however, and well before legislative and Institute requirements, the auditor's report began to include the profit and loss statement once again. By 1943, five of the nine reports inspected did render an opinion on that statement and, with one exception, the remainder followed the Institute recommendation of 1951 at that time. The results of an analysis of 280 firms by the Canadian Institute revealed that in 1951, two-thirds of the auditors' reports included an opinion.[68] By 1956, only nineteen of 300 firms analyzed in *Financial Reporting in Canada* did not do so.[69]

Summary

The provisions for the mandatory audit and the auditor's responsibilities in regard to financial statements as initially set out in the Ontario provincial legislation of 1907 and the federal legislation of 1917 were heavily influenced by the English legislation of the preceding decade. No significant changes in legislation occurred, nor did Canadian Institute pronouncements begin, until the early 1950s. During the early part of that intervening period, audit report wording tended to follow closely the statutory "legal" wording. After the American Institute pronouncements had begun in the 1930s, there

was an increasing tendency to be influenced from that source. All of the many American audit pronouncements during that early formative 1930-1950 period were reprinted and commented on in the Canadian journal and the wording which the American Institute was beginning to formulate was gradually creeping into the Canadian audit reports. This influence has increased to the point where by 1976, no substantive differences exist between the Canadian and American reports. Given the articulateness of the American Institute and the geographic proximity and commercial influence of the United States, including the association of American and Canadian auditing firms and the listing of many Canadian corporations on American stock exchanges, it is unlikely that the Canadian audit report would have otherwise evolved.

Neither the Ontario legislation of 1907 nor the federal legislation of 1917 required a mandatory audit of the profit and loss statement. However, prior to the 1920s, most auditors, in our sample, did render an opinion on that statement. That opinion was dropped during the 1920s and 1930s. By the early 1940s however, though no legislation nor Institutes required it, most auditors were again providing such an opinion. This particular chronology is an interesting example of legislation first serving to lower and then later, being led by existing auditing practices. Undoubtedly the American practice of reporting on this statement since 1933 was influential in Canada.

The influence of the Institute of Chartered Accountants in Canada has become of increasing importance in shaping the auditor's report since their first recommendation in 1951. Committees appointed to enquire into changes in Companies Acts have, since 1950, carefully requested the views of the Institutes. It is interesting to note that, at two of the most fateful junctures in Canadian auditing history—the introduction of the mandatory audit on the balance sheet in 1907 and on the profit and loss statement in 1953—the influence of the Ontario Institute on the Ontario legislation has been acknowledged to be of the greatest importance. In both instances, the provincial legislation predated the federal legislation by at least ten years.

Appendix

List of Audit Reports Examined

Firm Audited	**Auditing Firm**[1]	**Period**
Canadian Locomotive	Geo. A. Touche	1912-1930
Cockshutt Plow	Deloitte, Plender, Griffiths	1911-1939
Canadian Westinghouse	C. S. Scott	1904-1920

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Canadian Canners	Price Waterhouse	1923-1939
Dominion Steel & Coal	Price Waterhouse	1909-1920
Dominion Textile	P. S. Ross & Sons	1906-1920
Howard Smith Paper Mills	P. S. Ross & Sons	1926-1939
Massey-Harris Company	Clarkson, Gordon, Dilworth	1923-1939
Ogilvie Flour Mills	Creak, Cushing & Hodgson	1909-1920
Penmans	C. S. Scott	1913-1939
Steel Company of Canada	Riddell, Stead, Graham & Hutchison	1910-1939
Russell Industries	Edwards, Morgan	1920-1939
British American Oil	Clarkson, Gordon	1940-1950
Burns & Co.	Peat, Marwick, Mitchell	1940-1950
Canada & Dominion Sugar	Clarkson, Gordon	1940-1950
Consolidated Paper	Touche, Ross	1940-1950
Distillers Corporation Seagrams	Price Waterhouse	1940-1950
Dominion Bridge	Riddell, Stead, Graham & Hutchison	1940-1950
Famous Players	Price Waterhouse	1940-1950
Imperial Tobacco	Deloitte, Plender, Haskins & Sells	1940-1950
Ontario Steel Products	McDonald, Currie	1940-1950

[1]Indicates name of auditing firm for majority of time period.

FOOTNOTES

[1]Great Britain, Statutes, (1844), c. 110.
[2]Great Britain, Statutes, (1856), c. 47.
[3]Great Britain, Statutes, (1862), c. 89.
[4]Great Britain, Statutes, (1900), sec. 21.
[5]Great Britain, Statutes, (1900), sec. 23.
[6]Great Britain, Statutes, (1908), c. 69.
[7]Ontario, Statutes, (1897), sec. 77.
[8]Ontario, Statutes, (1907), secs. 123 and 130.
[9]Canada, Statutes, (1902), sec. 79.
[10]Canada, Statutes, (1902), sec. 79.
[11]Canada, Debates, (1902), p. 5059.
[12]Mulvey, (1920), p. 54.
[13]Littleton and Zimmerman, (1962), p. 81.
[14]Littleton and Zimmerman, (1962), p. 109.
[15]Canada, Statutes, (1917), sec. 11.
[16]Canada, Debates, (1917), p. 5920.
[17]Canada, Statutes, (1913), sec. 56.
[18]Urquhart and Buckley, (1965), p. 659.
[19]Goodman, (1917), p. 44.
[20]Canada, Statutes, (1916), c. 11.
[21]Canada, Statutes, Tax Act, (1917), c. 28.
[22]Canada, Debates, (1916), p. 2630.
[23]Canada, Debates, (1917), p. 5937.
[24]Parton, (1917), p. 99.
[25]United States Federal Reserve Board, (1917), pp. 5-33.
[26]Kettle, (1928), p. 337.
[27]See for example, Canadian Westinghouse Company, Ogilvie Flour Mills, Penmans Limited and Dominion Textile.

[28]Great Britain, Statutes, (1928), c. 45.
[29]Canada, Statutes, (1934), c. 33.
[30]Smails, (1934), p. 283.
[31]Canada, Statutes, (1934), sec. 114 (2).
[32]Great Britain, Statutes, (1929), sec. 126.
[33]Grant, (1912), p. 111.
[34]*The Canadian Chartered Accountant*, (1912), p. 208.
[35]Smails, (1933), p. 232.
[36]Ciapperton, (1914), p. 81.
[37]Round Table, (1941), p. 242.
[38]As reported in *The Canadian Chartered Accountant*, Vol. 16, (November, 1927), p. 193.
[39]Ashley, (1933), p. 9.
[40]Cochrane, (1950), p. 450.
[41]Staub, (1942), p. 74.
[42]Staub, (1942), p. 75.
[43]American Institute, (1934), p. 47.
[44]American Institute, (1939), p. 12.
[45]American Institute, (1941), p. 39.
[46]*The Canadian Chartered Accountant*, (1937), p. 178, and (May, 1938), p. 325.
[47]Round Table, (1938), pp. 63-65.
[48]Round Table, (1941), p. 242.
[49]Canadian Institute, (1951), p. 3.
[50]Great Britain, Statutes, (1947), c. 47.
[51]Great Britain, Statutes, (1967), sec. 14.
[52]International Study Group, paragraph 100.
[53]Ontario, Statutes, (1953), c. 19.
[54]Ontario, Statutes, (1964), sec. 2.
[55]Special Committee, Ontario, (1952), p. 2032.
[56]Canadian Institute, (April, 1953), pp. 166-167.
[57]Canada, Statutes, (1964-1965), sec. 124 (1), (2) and (3).
[58]Canada, Senate Debates, (1964), pp. 515-518.
[59]Canadian Institute, (1951), p. 3.
[60]American Institute, (1948), p. 164.
[61]Canadian Institute, (1959), p. 3.
[62]Canadian Institute, (1959), p. 2.
[63]Canadian Institute, (1968), pp. 350-351.
[64]Canadian Institute, *CICA Handbook*, Aug. 1975, sec. 5100.02.
[65]American Institute, *Statement on Auditing Procedures No. 33*, (1963), pp. 15-16.
[66]Canadian Institute, *CICA Handbook*, Dec. 1976, sec. 5400.17.
[67]*The Canadian Chartered Accountant*, (August, 1938), pp. 135-139.
[68]Canadian Institute, (July, 1953), p. 35.
[69]Canadian Institute, *Financial Reporting in Canada*, (1957), p. 106.

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THE NEW YORK SCHOOL OF ACCOUNTS— A BEGINNING

Abstract: Current developments in accounting education are the result of the vision and efforts of the early pioneers in public accounting practice. Clearly these accountants wanted to elevate public accounting to a professional level. Their belief that collegiate accounting training was the foundation on which to build the profession of public accountancy led to the establishment of the New York School of Accounts. The New York School of Accounts was a success though it operated for only one year. It illustrated a commitment to education and undoubtedly influenced the later development of university and college accounting programs.

The teaching of accounting and business subjects in universities and colleges is primarily a twentieth century phenomenon in the United States. We have recently witnessed the establishment of several schools of accountancy and increasing debate concerning professional accounting education. These developments are the culmination of a process begun approximately a century ago with the establishment of the first organization of professional accountants in the United States and its effort to establish a school of accountancy. In this paper, we trace the efforts of the American Association of Public Accountants to establish the New York School of Accounts.

Harry C. Bentley, in listing the stages of development in bookkeeping instruction in the United States, indicates that university instruction began about 1881.[1] This date was undoubtedly chosen because the Wharton School of Finance and Economy was established in 1881 at the University of Pennsylvania. No other successful schools of commerce were established until 1898, and there were only seven such institutions at the close of 1900.[2] Several unsuccessful schools of business or commerce predated the Wharton School.

A school of commerce was established in 1851 at the University of Louisiana, now Tulane University, but it was discontinued in

1857. An attempt to establish a college of commerce at the University of Wisconsin failed in 1866.[3] The University of Illinois established a school in 1868 which became the School of Commerce in 1870 and operated until 1880.[4] In 1869, General Robert E. Lee proposed a school of commerce at Washington College. The project ended with Lee's death in 1870 and because of financial limitations.[5]

Although business colleges and proprietary schools provided instruction in the art of bookkeeping, Webster stated that "up to 1891 no organization in the United States had planned to provide educational facilities for public accountants."[6]

The Accounting Profession and Education

Organized professional accounting in the United States effectively began with the American Association of Public Accountants in 1887. The Certificate of Incorporation included among the purposes of the Association: elevation of the profession of public accountants, observance of strict rules of conduct, and establishment of a high standard of professional attainment. A high standard of professional attainment was to be achieved ". . . through general education and knowledge and otherwise; . . . ."[7] What was intended by "general education" is not known, but it does indicate concern for the education of public accountants. Events within the next five years would suggest that at least some of the incorporators had envisioned the need for a collegiate-type of training for public accountants.

Webster's chronology of the first twenty years of the Association identifies 1886-1891 as a period of "promotion and organization" and 1892-1894 as a period of "reorganization and education."[8] The Association had made little progress in membership during 1886-1891. Webster stated that the minutes of the Association in the last days of 1891 indicated that some new policy or project was creating new interest and membership growth. The new policy or project was probably the effort of the Association to establish the New York School of Accounts.[9] As the result of the efforts of the Association's Board of Trustees and the Charter Committee, a two year provisional Charter to the New York School of Accounts was granted on December 14, 1892.[10] At the January 17, 1893, meeting, President James Yalden reported:

> Since we last met the Board of Regents at Albany have forwarded to us a Charter for the Incorporation of the New

> York School of Accounts. . . . The object of the New York School of Accounts is to educate young men for the profession of accountancy and also in the principles of commercial life.
>
> . . . and I think the School will be a success. If it is, it will be the foundation of our profession and be the means of putting it on the same basis as the professions of law and medicine in this city; and eventually, no doubt, when the Regents see that we have carried out this scheme to their satisfaction, legislation will ensue that will raise the accountancy business to the position which we should all like to see it occupy.[11]

Yalden's remarks provide insight into the Association's intent concerning education for the profession. The School was to provide education for public accountants, be a foundation of the profession, be a means of elevating the image of public accounting to that of the legal and medical profession, and lead to legislation for accounting.

New York School of Accounts

The New York School of Accounts had as its stated purpose:

> . . . to provide for young men special means of training and of correct and practical instruction in the knowledge and science of modern accountancy and finance, in order that, being well informed upon these important subjects, they may either serve the community skillfully as public accountants, business managers and officers of trust, or, remaining in private life, may prudently, economically and successfully manage their own affairs; in short, to establish means for imparting a liberal and practical education in all matters pertaining to the intricate science of accounts.[12]

In the prospectus, several reasons were presented to support the establishment of the School: (1) the profession had grown to the point where it should be organized as is law, medicine, engineering, and architecture, (2) there was a lack of competent and reliable personnel available for public accounting practice, and (3) no institution existed to provide the high level of business education to obtain practical information and education in the science of accounts.[13]

The Officers and Board of Trustees of the School were:

Dean
John L. N. Hunt, LL.D.

Treasurer
Richard M. Chapman

Secretary
Thomas Bagot

Board of Trustees
James Yalden, President of Board

John L. N. Hunt, LL.D.
Richard F. Stevens
Rufus G. Beardslee
Thomas Bagot
F. B. Thurber
Louis M. Bergtheil
George H. Church
Henry R. M. Cook
Richard M. Chapman
Lucius M. Stanton
John B. Woodward[14]

John L. N. Hunt was the only educator on the Board of Trustees. Rufus G. Beardslee was a lawyer, Lucius M. Stanton and F. B. Thurber were merchants, and John B. Woodward was a banker.[15] The others were practicing accountants. Several of the Trustees had been or were to serve as President of the Association: James Yalden, 1887-1888, 1891-1892; Henry R. M. Cook, 1892-1893; and Richard F. Stevens, 1893-1896. James Yalden was one of the incorporators of the Association. Richard M. Chapman served as Treasurer of the Association, 1891-1895. Thomas Bagot served as Secretary of the Association, 1892-1893. Several were to serve on the faculty of the School.

The actual teaching faculty of the School is uncertain. The Association Trustees on December 21, 1892, suggested to the School Trustees the following personnel:

Dean .... John L. N. Hunt, LL.D.
Professor of Public Accounts &c .... James Yalden
Professor of Judicial Accounts .... Louis M. Bergtheil
Professor of Transportation Accounts .... Richard F. Stevens
Professor of Insurance Accounts................ Wm. M. Brooks
Professor of Banking Accounts .... George H. Church
Professor of Mercantile Accounts .... Frank Broaker
Professor of Double Entry .... Louis Yalden
Professor of Double Entry .... Richard M. Chapman
Professor of Building Loans .... John W. Whitehead

Louis Yalden died two weeks before the School opened, and apparently W. Sanders Davies took his place. Henry R. M. Cook is also mentioned as Professor of Theory of Accounts. Except for Dr. Hunt, it is unlikely that any had experience in teaching. Stevens had graduated AB at Columbia College, and Broaker had attended the College of the City of New York but had not graduated. Brooks, Davies, and Yalden may have had some general education as part of their apprenticeship in Great Britain.[16]

In order to enter the School, an applicant was required to be a graduate of a college or university registered by the Regents of the University of the State of New York having satisfactory standards or have passed a "Regent's examination." Students stating their intention to enter public accounting were required to be a minimum age of nineteen. The age level for students not seeking a career in public accounting was left to the discretion of the Executive Committee.[17]

All faculty, except for Dr. Hunt, were to be practicing public accountants. Law, Auditing, and some unspecified courses were to be taught by the lecture method. Instruction in all other courses was to be given by dictation, assisted by blackboard illustrations and by such textbooks deemed advisable by each professor and approved by the faculty. Theoretical illustrations were not to be used. Examples of actual business transactions provided by the instructor's practice were to be exhibited, explained, and analyzed.[18]

Webster indicated that the program provided for 1,000 class hours over 40 weeks per school year with the complete program requiring two school years.[19] The school year began on the first Tuesday of October and ended on the second Friday of June. The prospectus states that regular attendance of not less than eight months was considered equivalent to a year's study.[20]

The course of study was divided into eight sections:

Bookkeeping—
- Section 1—The Science of Double Entry
- Section 2—The Keeping of Books of Mercantile Accounts
- Section 3—Corporate Accounts
- Section 4—Judicial Accounts
- Section 5—Public Accounts

Auditing—
- Section 6—The Examination of Accounts
- Section 7—The Analyzing of Accounts and Compilation of Statistics

Law—
- Section 8—The Principles of Law[21]

A written, comprehensive final examination was to be administered under the authority of the Regents. A diploma would be issued upon successful completion of the program by the University of the State of New York in its name and under its statutory power. Students not entitled to a diploma could obtain a certificate from the Dean on which was stated the length of study and attendance. The certificate would also attest to satisfactory standing in class and the student's moral character.[22]

The School began operations in October, 1893. On July 11, 1894, the faculty passed a resolution recommending discontinuance of the School of Accounts and that the Trustees consider the return of the Charter to the Board of Regents.[23]

President Richard F. Stevens reported to the Trustees on September 5, 1894, concerning the New York School of Accounts:

> A year has passed since the inception of the School of Accounts, and what has been accomplished? A class of seven pupils have gone through the year's course—that is all. Not a business man has come forward to aid us in any way, the whole burden has fallen on the shoulders of a few of our members, now disheartened and disillusioned. The Board of Regents of the University have stood silent and aloof, not a word has been said about commissioning or licensing our members, and communications addressed to them on the subject of legalizing the profession by legislative enactment have remained unanswered. The members, under this state of affairs naturally have ceased to take interest in the school, the professors have resigned or been slack in their attendance, the scholars supine and the further continuance of the school in its present state seems idle.[24]

The Charter lapsed and the New York School of Accounts ceased to exist. The Association apparently turned its attention to other matters of growth and legislation and made no more direct efforts to establish schools to train professional accountants. The discontinuance of the New York School of Accounts did not end the vision of many of the profession's leaders nor the need for professional education and elevation of the profession's image.

The School's Influence on Accounting Education

The Association leaders appeared to have been impatient. Stevens' comments indicate that the Association had expected

rapid legislative action to legalize the accounting profession. Accounting legislation might have helped to establish much earlier the need for the high school diploma as a minimum educational standard. This might have reinforced the need for the School of Accounts and have encouraged college training for entrance into the profession.

That so much was accomplished is noteworthy when one realizes that the Association membership totaled 48 Fellows and 17 Associates on January 1, 1894. No precedent existed in the United States to provide guidance in curriculum development or teaching methodology nor were adequate textbooks and teaching materials available. Problems were compounded because the faculty's primary purpose was to earn a living practicing accounting rather than teaching accounting.

John Carey states that the Association's pioneering efforts probably contributed to the establishment of several proprietary schools of accounting and the growing interest in accounting education which led to the introduction of accounting courses in the universities.[25] By 1900, accounting education in universities and colleges was growing. Thirteen universities and colleges offered accounting courses for credit, and six others provided noncredit bookkeeping courses.[26]

The foundation of collegiate accounting education had been established by 1900, and its growth and development thereafter would be phenomenal. The vision of the early public accountants who established the American Association of Public Accountants and the New York School of Accounts contributed greatly to the concept of collegiate accounting education as the basis for preparing for entrance into public accounting in the United States.

FOOTNOTES

[1]Norman E. Webster, *The American Association of Public Accountants: Its First Twenty Years, 1886-1906* (New York: Arno Press, 1978), p. 163.

[2]Jeremiah Lockwood, "Early University Education in Accountancy," *The Accounting Review*, Vol. XIII, No. 2 (June, 1938), p. 132.

[3]Webster, p. 163.

[4]Lockwood, p. 132.

[5]Webster, p. 163.

[6]Webster, p. 165.

[7]*The American Association of Public Accountants Year-Book, 1912-1913* (New York: The Ronald Press Company, 1913), p. 10.

[8]Webster, p. 21.

[9]Webster, pp. 32-34.

[10]Webster, p. 190.

[11]Webster, pp. 36-37.
[12]*Prospectus of the New York School of Accounts* (New York: The American Association of Public Accountants, 1892), p. 5.
[13]Prospectus, pp. 5-6.
[14]Prospectus, p. 4.
[15]Webster, p. 194.
[16]Webster, pp. 195-196.
[17]Prospectus, pp. 7-8.
[18]Prospectus, p. 9.
[19]Webster, p. 184.
[20]Prospectus, p. 9.
[21]Prospectus, pp. 10-12.
[22]Prospectus, pp. 13-14.
[23]Webster, p. 197.
[24]"A History of the American Institute of Accountants," *The American Institute of Accountants (1887-1937): Fiftieth Anniversary Celebration, 1937* (New York City: American Institute of Accountants, 1938), pp. 5-6.
[25]John L. Carey, *The Rise of the Accounting Profession: From Technician to Professional 1896-1936* (New York: American Institute of Certified Public Accountants, 1969), p. 42.
[26]C. E. Allen, "The Growth of Accounting Instruction Since 1900," *The Accounting Review*, Vol. II, No. 2 (June, 1927), p. 150.

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ACCOUNTING IN THE BIBLE

Abstract: This paper traces several accounting concepts in the Bible. In particular, the Bible discusses the objectives of accounting, internal control procedures and managerial accounting topics. This paper links the Bible to current accounting thought.

The beginnings of modern accounting are commonly traced to Pacioli in the 15th century. Actually many of the fundamental ideas that underlie modern accounting may be traced much further back. The Bible, which is generally viewed as covering events between 1800 B.C. and 95 A.D., contains several references, both direct and indirect, to accounting and basic accounting concepts. In particular, it discusses financial accounting, internal control, and management accounting. The purpose of this paper is to discuss the Bible's relationship to accounting thought.[1]

Financial Accounting

One of the major purposes of accounting is to monitor the performance of management. In addition, accounting serves the purpose of insuring that the accounting entity is not defrauded either by its agents or by outsiders. The Bible discusses this in a negative way in 2 Kings 12:16 which says about the building of the Temple:

> "No accounts were kept with the men to whom the money was paid over to be spent on workmen since they were honest in their dealings."

This is virtually repeated in 2 Kings 22:7. We can infer from this that accounts would have been kept if the contractors were less than honest. Thus the Bible points out that accounting is necessary to reduce fraud.

The Bible also provides the motive for monitoring agents. In the New Testament there is a parable about a steward. In the parable the owner hears that his steward is wasting money and in Luke 16:2 says:

The author appreciates the comments of C. Hagerman and R. Huefner.

> "What is this I heard about you? Draw me up an account of your stewardship."

This indicates that accounting was used as a control device to monitor performance, and also suggests that the master/owner should have insisted upon periodic accounting reports to detect the problem with the steward earlier.

Accounting also serves the purpose of resolving disputes between parties. Accounting insures that debtors and creditors agree on the amounts due and that partners and other classes of owners know their share of the earnings. The Bible makes this point in Ecclesiasticus 4:1-2 where it states:

> "These are things you should not be ashamed of—keeping strict accounts with a traveling companion."

The idea here is that these accounts will reduce conflicts between the travelers.

The Bible provides very little in the way of describing how to account for transactions. There seems to be only one place in the Bible where a particular accounting system was required. The Bible in Ecclesiasticus 14:7 states that:

> "Whatever stores you issue do it by number and weight, spending and taking put everything in writing."

This clearly indicates that a perpetual inventory system should be used. In addition, the last phrase may be interpreted as a requirement that accounts for all revenue and expenses be maintained.

The Bible does not provide much information regarding how financial reports should be prepared or how the accounting system should be set up. The Bible does discuss the motivation for financing reporting. In particular, the Bible points out that financial accounting is necessary to avoid fraud, to monitor agents, and to reduce conflicts over resources. Today, of course, we place great emphasis on the idea that accounting exists to provide information to investors. The economy, in Biblical times, did not have diffused ownership that required that accounting serve this function. Even though the Bible does not deal with the information objective of accounting, the other accounting objectives discussed still exist today.

Internal Control

The Bible provides an extensive discussion of internal control. This is not surprising since large amounts of cash were used and

control was necessary. The Bible discusses limited access to assets, separation of duties, dual custody of liquid assets, and the rationale for internal control in a very modern way.

The rationale for internal control systems is that if employees have an opportunity to steal they may succumb to the temptation. Therefore it is important to have a system that reduces this temptation. The Bible in Micah 7:5-6 says on this point:

> "Put no trust in a neighbor, have no confidence in a friend."

This is a rather negative statement about human nature but it does describe the logic behind the need for internal control systems. This statement also reflects the healthy skepticism that auditors should have.

Because of this view of man the Bible discusses how the Israelites practiced the dual custody of assets as an internal control measure. This concept is graphically described in 2 Chronicles 24:11-12 in the following way:

> "When the chest was taken to the royal office of control, run by the Levites, they would check the amount of money in it, then the king's secretary would come with a representative of the chief priest; they would take up the chest and carry it away."

In this case the king's secretary and the representative of the high priest had dual custody of the fund. It is also interesting to note that the Levites kept a control total of the funds to ensure that all the funds reached their destination.

The Bible also discusses the fact that custodians of funds should be men of integrity. In 2 Corinthians 8:16-17, St. Paul says that he is sending Titus and two brothers to collect a fund the Corinthians have gathered. He extols their virtue and says in 2 Corinthians 8:20 that he is sending three so that:

> "We hope that in this way there will be no accusations made about our administering such a large fund; for we are trying to do right not only in the sight of God but also in the sight of men."

Clearly, St. Paul knew that multiple custody by honest men would reduce the probability of fraud and would reduce the people's concern about fraud. This is consistent with the current internal control principle that the system requires competent and honest employees.

The lack of honest employees and dual custody is portrayed in John 12:7-8 in discussing Judas as the treasurer:

> "... he [Judas] was in charge of the common fund and used to help himself to the contributions."

Later experience showed that Judas was less than honorable and the lack of dual custody allowed him to steal. Thus the consequences of poor control are pointed out in the Bible.

One of the most basic internal control procedures is the physical safeguarding of assets by providing limited access to them. Ecclesiasticus 42:6-7 succinctly states this internal control principle as:

> "Where there are many hands, lock things up."

This not only summarizes the concept of physical safeguards but also again reflects a view of human nature upon which internal control systems are based.

Finally, the Bible discusses the value of surprise audits as an internal control device. In the Gospels of Luke and Matthew there are parables about how owners should make surprise inspections. Matthew 24:46 summarizes the behavioral implications of these audits or inspections as follows:

> "Happy is that servant if his master's arrival finds him at his employment."

This type of inspection is currently recommended to small businessmen who can not afford complete control systems.

The Bible provides several interesting statements regarding internal control systems for the simpler economy that existed in Biblical times. The fact that man was likely to steal unless a system was designed to prevent it was clearly understood. The concepts of physical safeguards, dual custody, surprise audits and care in selecting employees were used as internal control features. All these ideas are as relevant today as they were then.

Managerial Accounting

The Bible does not contain as much about managerial accounting as it does about internal control, but it does mention a wide range of managerial topics. The Bible has references to budgeting and the helpfulness of allowing participation in the budgeting process. In addition, the Bible provides advice on how to evaluate a product. These are, of course, all managerial topics.

An important element in business planning is the budgeting process and this subject is not neglected in the Bible. Luke 14:28-29 says:

> "Which of you here intending to build a tower would not first sit down and work out the cost to see if you had enough to complete it?"

This quotation refers not only to project budgeting but also to cash flow forecasts. The need for such budgeting is true today as it was in St. Luke's time.

Participatory budgeting is also apparently mentioned in the Bible. Proverbs 15:22 states:

> "Without deliberation plans came to nothing, where counselors are many, plans succeed."

If we assume that the counselors are sub-unit managers, then this statement is consistent with the spirit of participatory budgeting. It is surprising that this apparently recent idea appears in the Bible.

Finally, the Bible provides a very accurate description of whether to retain or drop a product. Ecclesiasticus 7:22-23 states:

> "Have you cattle? Look after them; if they are making you a profit, keep them."

This is the basic decision rule behind decisions of this type. The Bible does not discuss the need to use the contribution margin of the product or to consider externalities, but this is a simple statement of the basic principle.

The Bible contains references to current managerial accounting concepts. It recognizes the importance of budgeting and the behavioral implications of participation in that process. The Bible also shows that economic logic was used in product decisions. It is interesting to see how ideas we consider to be modern were used by an ancient civilization.

Conclusion

The purpose of this paper has been to show that many of the accounting concepts we use today were recognized a millennium ago. In particular, the rationale for accounting was known along with appropriate internal control procedures. The psychological implications of budgeting and other elements of managerial accounting were also known then. Thus, much of today's accounting thought can be traced back to Biblical times.

FOOTNOTES

[1]All Biblical references are from *The Jerusalem Bible.*

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The original aim of this three volume set was "to present the fascinating subject of business—the true romance of modern life—in a manner to add to the enthusiasm and zeal of executives and employees alike." The editor's stated purpose was "to present in compact, readable form all the essential principles of business organization and management, as well as the concrete application to the work of the various departments." Consequently, the volumes contain much more about business in 1914 than most people care to know. Thus, a complete reading of the books would be of interest only to someone desirous of a thorough background on American business during the early Wilsonian period. However, there are several accounting related chapters that might be of interest to accounting historians including the following: Taxation, Accounting, Producing Costs, Depreciation, The Balance Sheet, and Auditing. These chapters are dispersed throughout the three volumes as there is seemingly little organization of the contents.

Some chapters were of less interest than others. For instance, there were only two pages on the federal income tax, but at least a dozen pages on tariffs. This is understandable since the tax rate at that time began at one percent and went as high as six percent on income above $500,000.

The numerous photographs and illustrations of accounting records were quite interesting. According to the caption of one photo, the use of a listing adding machine eliminated all chance for error. Another machine that was mentioned (in the chapter on Labor Saving Devices) was the check-signing machine. This device consisted of ten fountain pens fastened together. Thus, whenever

the executive signed his name, ten identical signatures were produced.

Much of the chapter on depreciation was devoted to arguments as to why depreciation should be recorded. This was quite appropriate since the recording of depreciation was still not a universal practice in 1914. Five methods of depreciation calculation were discussed: straight line, declining balance, annuity, sinking fund, and annual revaluation. It was concluded that the sinking fund method was the most scientifically correct, and that the revaluation method was not advisable. Also interesting was the notion that the depreciation reserve accounts should be invested in outside securities: apparently the misunderstanding of depreciation allowances is not a new phenomenon. There were also other instances of errors or misleading statements in technical accounting areas.

In conclusion, *The American Business Manual* is now of interest only as a curiosity or for some general aspects of historical reference. Much of the content was very elementary. In essence, the volumes can not be considered as strong accounting history references, but can be useful to someone concerned with the overall business environment.

A Hamilton Church, *The Proper Distribution of Expense Burden*, (original printing by *The Engineering Magazine*, 1908. Reprinted by Arno Press, 1979, pp. 116, $10.00).

Reviewed by Jackson F. Gillespie
University of Delaware

The author's main discussion is on the allocation of "shop charges," i.e., overhead, to individual jobs. He relates the importance of this allocation, and presents in detail a "better" method of allocation.

Church divides the shop into "production centres," defined as "a machine or a bench at which a hand craftsman works." As much as possible, overhead is traced to these individual production centres, and then is allocated to jobs via a burden rate for each specific centre. The burden rate is based on full-time usage. If the machine is used at any point less than full-time, there are unallocated overhead costs. These unallocated costs are put into an account with the rest of the shop charges which could not be traced to specific production centres. At the end of each month, a supplementary rate is derived from this total and allocated to jobs.

An increase in the supplemental rate implies either slack time or inefficiency in the shop.

Church discusses how specific costs would fit into the allocation scheme. He also tells how the method could be used in mass production situations. Finally, allocation of "office and selling" expenses is examined briefly.

The author gives the reasoning behind each step taken in the development of the allocation technique. There is also a thought-provoking discussion of the pros and cons of overhead allocation based on labor hours, labor cost, or machine hours. However, there is no discussion of predetermined overhead rates. It is left to the reader to compare Church's allocation with present-day allocation used in cost accounting texts. Such a comparison should give insight into the allocation of overhead.

Robert W. Gibson, Editor, *Accounting Education in the Universities of Australia and New Zealand* (Victoria, Australia: Deakin University, 1980, pp. 74, Free on request from editor).

Reviewed by Charles W. Zwicker
Quinnipiac College

This is a collection of historical commentaries originally published in the News Bulletin of the Accounting Association of Australia and New Zealand. Unfortunately, it only covers the years through 1968, although a source material list is provided to 1976. Presumably, based on indicated trends, major advances have taken place since then, so that the monograph has a limited basis for comparison with current American accounting education.

It is interesting to note, nevertheless, that while the accounting profession is attuned to its progenitors in England, the course of accounting education follows somewhat the pattern in the United States: its original subjugation by the Economics Department and then by the Commerce (Business) School, its attempts to obtain recognition, the creation of separate Accounting Departments, and finally attempts to become autonomous schools. As in England, the Pass and Honours curricula are used, but emphasis appears to be more on managerial accounting than on public accounting, although the accounting societies have been very supportive both financially and politically.

Presented in the collection are the histories, trials and tribulations, and the curricula at eight "down under" universities. The

accounting historian will grit his teeth but enjoy reading about the efforts to create accounting programs, expand them, and to seek some degree of freedom from the tyranny of the departments of economics and commerce. It is a valiant battle, but to this observer it appears that the profession in the States is achieving greater recognition and autonomy for its educational programs.

The monograph will have interest for those who view accounting on the international level and who are striving for more uniform accounting practices and standards. Since the educational process is fundamental to achieving this goal, a study of the different approaches in different countries may serve to illuminate the variances, and we may very well learn from each other.

Gary John Previts and Richard F. Taylor, *Monograph #2: John Raymond Wildman,* 1878-1938 (University, Ala.: The Academy of Accounting Historians, 1978, pp. viii, 84, $4.50).

Reviewed by Delmer P. Hylton
Wake Forest University

Monograph #2 published by the Academy of Accounting Historians, *John Raymond Wildman 1878-1938,* is an exposition of the considerable influence of one man on the development of the accounting profession in the United States. Mr. Wildman's career included service in the academic as well as in the practicing areas of the accounting profession. The monograph details his professional bearing and demeanor and his contributions to the accounting profession.

Wildman was a prolific writer and the monograph includes a bibliography of his known writings. In addition, some 46 pages contain summaries of some of his published material. The coverage of topics is wide, ranging from "how to do it" articles to elaborations of various aspects of accounting theory.

No par stock was of particular interest to Wildman and in 1928 he and Weldon Powell published *Capital Stock Without Par Value,* a book which is still considered a classic discussion of accounting for enterprise capital. Wildman also published textbooks on accounting principles, cost accounting and auditing. An interesting note is that Wildman advocated inventory observation and confirmation of accounts receivable as required audit procedures long before their adoption by the profession.

Mr. Wildman's teaching career was at NYU, the school from which he received his degrees. His practicing experience was with Haskins and Sells (now Deloitte Haskins and Sells). During his thirty-year career he taught and/or worked with a number of persons who became leading members of the accounting profession. Among these were John W. Queenan, Maurice Peloubet, Arthur Faye, Weldon Powell, Ralph S. Johns and William H. Bell. Apparently he made a lasting impression on each of these able men.

When what is now the American Accounting Association was organized, Wildman was elected its first president. He had a keen interest in accounting and auditing research and promoted such activity both in the AAA and in Haskins and Sells where he established and headed the Technical Procedures Department. This department was responsible for staff training and for research on a firm-wide basis.

In summary, Monograph #2 honors the memory of a man who was a thorough-going professional. His influence was and is important. This monograph should be of interest to anyone who wishes to understand the development of the accounting profession. One may hope that some of our "wheeler-dealers" presently apparent in the profession can learn something about professional conduct and obligations from a treatise such as this.

Henry Francis Stabler, *George O. May: A Study of Selected Contributions to Accounting Thought* (Atlanta: College of Business Administration, Georgia State University, 1976).

Reviewed by Eugene C. Hassler
West Chester State College

The purpose of the monograph, a revision of the author's 1968 doctoral dissertation, is to catalogue and examine the philosophy contained in selected accounting thoughts of George O. May that has had a lasting impact on the accounting profession, generally accepted accounting principles (GAAP) and areas of controversy for which there are no GAAP.

The selected contributions are organized into three broad topics and chapters; Income, Changes In The Price Level, and The Balance Sheet and Significant Related Bulletins. These chapters comprise 58 percent of the monograph and are technical discussions of the accounting positions of May and the influence of his thoughts in

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the struggle to establish GAAP. The author appropriately emphasizes the pragmatic approach championed by May and his role in permitting varying accounting procedures and his opposition to uniform accounting methods and procedures.

The balance of the monograph is devoted to the philosophy of accounting and a very befitting final chapter entitled, "A Guiding Light" in which the author salutes the ideas and concepts of May which are important in current GAAP. The author concludes that May's contributions continue to permeate accounting thought through the ARB's and the AICPA whose philosophy still shows evidence of his influence.

This monograph would be primarily useful as supplemental reading for an accounting history course. It might also be used as supplemental reading in intermediate accounting to provide a conceptual discussion of income and the balance sheet as well as fulfillment of the author's hope "that this work will generate an interest on the part of the profession in its history."

Issues in Accountability No. 3: The Great Canal that Linked Edinburgh, Glasgow & London (Glasgow: Strathclyde Convergencies, 1978, pp. i, 31, 12, $3.00).

Reviewed by William G. Mister
Rider College

The monograph is an interesting historical account of a sea-to-sea canal from its start in 1768. The canal was built and administered by a private stock company—the Forth and Clyde Navigation. The canal was faced with political and financial problems not unlike those faced by modern multi-jurisdictional transportation authorities. The accounting controls and reporting systems developed by the company took on aspects of both governmental and profit oriented organizations. The Forth and Clyde Navigation, however, was not a government agency, and in fact required very little government assistance to complete the massive undertaking.

The monograph develops a picture of the adaptive financing and accounting controls employed by the Forth and Clyde Navigation during the different stages of the canal. Period and cash accounting played a novel role for this enterprise. Statistical presentations in the published accounts were adopted by the Forth and Clyde Navigation, perhaps for the first time ever. Perhaps the most significant

of the accounting developments was a "Charge and Discharge" statement which represents an antecedent of our present day sources and applications statements. The development of the statement can be traced both to the traders' double entry accounting and the stewardship accounting prevelant during the period. Thus, the origins of the sources and applications statement is traced back sixty-five years earlier than previously believed.

One incident documented in the monograph should be of particular interest to modern accountants. The first accountant hired by the Forth and Clyde Navigation was Alexander Stephen. For an annual salary of 70 pounds he was to pay wages, keep accounts and report to the Law Agent in Edinburgh weekly. After 18 years of service his accounts were found to be out of balance by a little more than 1,200 pounds. This sum was recovered from the sale of his house and from his sister and one other of his guarantors. He was not accused of dishonesty but had been able to completely control the finances of the massive canal project which was controlled from three distant centers—Glasgow, Edinburgh and London. This indicates certainly that professional responsibility is not a new concept and indeed seemed to be more severely applied in the days of the Forth and Clyde Navigation than modern standards.

The monograph suffered from two admitted defects. The quality of reproduction was poor due to limited budget of the publisher. Also admittedly, the treatment of company finance was at times pedantic. Two other defects detracted from the monograph. The material was organized by function—incorporation, organization, financing, etc.—rather than chronologically. This organization did not allow for an even flow. The reader was jumping back and forth from the early stages of construction to operating problems. The monograph should prove to be a valuable addition to the accounting history of the period when put together with other accounts of the period. However, the monograph does not stand by itself. Better explanations of how the "innovative" accounting practices documented differed from those normally employed during the period, and what effect they had on future accounting practices were needed for the reader not intimately familiar with the accounting practices of the period.

In spite of the defects, I found the monograph to be enjoyable and informative reading. The monograph should be particularly valuabie to accounting historians of the period.

DOCTORAL RESEARCH

Maureen H. Berry, Editor
UNIVERSITY OF ILLINOIS

The doctoral dissertations reviewed in this issue cover a very broad spectrum in terms of time span and focus of interest. Yet, there is a common thread running through the tapestry: the evolution of economic institutions, and their changing roles, in the American business environment.

Our survey commences, in colonial times, with Hitz's study of the development of American woolen manufacture to 1832. The colonies had depended on the mother country for much of their finished textiles, particularly fine broadcloth, and this policy was fostered after independence by the Jeffersonian view that native industry was unnecessary and uneconomical. Shifting sentiments and economic opportunity, combined with American inventiveness, provided the springboards for factories which soon overtook their transatlantic counterparts in technology and mechanization. Cost finding, and the problems of designing cost accounting systems given the various economic factors at play in those early days, are also dealt with in this research. We then move ahead some ten years or so to review Acosta's investigation of the profound changes affecting the development of financial institutions and industrial structure in the 1840's and 1850's, culminating in the financial panic of 1857. An interesting feature of this dissertation is its use of two contrasting monetary theories as tools for understanding the very rich economic history of this period.

Commencing with Posey's thesis, attention is focused on specific economic incentives for industrial development, namely the investment tax credit. This program was signed into law by President Kennedy in October 1962 after very mixed public reaction to the proposal. Posey is basically concerned with analyzing the events preceding adoption of the credit and its subsequent modifications and, once again, the reader is treated to novel research methodology: in this case, a blending of several philosophies and methods. Wunder's research leads on from Posey's by attempting to establish empirically the degree to which the investment tax credit was

related to investment during the period 1965-1974. Using information available from the Internal Revenue Service, and such methods as regression and sensitivity analysis, the author concluded that responses by the twenty-two industries examined were highly individual, suggesting a need for differential rates and further research in individual industries. The motivating factor of attention to consumer issues is an element of the economic environment which has gradually been influencing business policy in relatively recent years. Barsellotti's research contribution was to develop a set of evaluative criteria for examining management response to its social obligation. She then successfully tested these criteria in a field study, conducted in a large savings and loan institution, and was able to suggest how these criteria could be utilized in a program of social performance evaluation for both internal and external information users. The public at large is, of course, interested not only in how social responsibility is viewed by private companies but also how it is perceived and acted upon by publicly-supported institutions. Given the increasing demands on the public purse, attention has been concentrating on both the public budgeting process and the need for details about the level of service which these public bodies provide. Such output information, which is a feature of program budgeting, is often lost sight of when the budget structure remains fairly constant from year to year as is true of the incremental approach. Schick's research deals with the problem of identifying the underlying basis of budgeting prevalent in the public sector and he selected the subject of personnel allocations in a public university for a case study. His results, which supported the incremental assumption, have most significance where research and large Ph.D. programs are involved. While it does not seem surprising that personnel allocations follow research funding, an element of alarm is signalled by his finding that large Ph.D. programs suffer from personnel reallocations: a fact which highlights lack of perceived value of such personnel resources for terminal degree programs.

The social responsibility of the accounting profession, to itself and to the public it serves, is the theme underlying our last dissertation, by Lubell. This study looks into organizational conflict between certified and noncertified public accountants and speculates as to its significance on the legislative evolution of the profession in the United States. In his review of the development of the major professional associations, the American Institute of Certified Public Accountants and the National Society of Public Accountants, and their eventual troubled truce through formal committee relations, the

author points out the deleterious effect which the process of confrontation and compromise has had on both the development of uniform accountancy regulations and the professionalization of the certified public accountant. Lubell suggests that some ameliorative measures, such as membership acceptance of arrangements concurred in at interorganizational committee meetings can be effected in order to mediate this situation.

A Technical and Business Revolution: American Woolens to 1832 (New York University, 1978; 39/12, pp. 7482-3-A)[1] by Elizabeth Hitz. This monograph examines the evolution of American woolen manufacture, particularly broadcloth, cassimere, and satinet, from colonial days through 1832. From the 17th to the early nineteenth centuries, broadcloth was considered the finest of textiles and a considerable amount was imported from England as the colonists' attempt to manufacture it were not particularly successful. In England, three textile industries used woolen fiber: the basic woolen cloth industry; the worsteds and stuffs; and home manufacture whereby the basic processes of carding, spinning, and weavings were carried out in the home and a local fulling mill completed the work. Home manufacture was also very prevalent in America but began to wane after 1810. By the 1770's the English were introducing new technology and the Americans did likewise after the end of the War for Independence. Manufacturing was stimulated by the War of 1812, with its resulting shortages and high prices, and by 1820 a number of factories had sprung up in New York and New England because of such available resources as: transportation and waterpower, raw materials, entrepreneurship, and capital. By 1832, the United States had more than 300 woolen factories, and all woolen cloth manufacture had become mechanized.

In the industry's early years, some cost analysis was performed by the entrepreneurs but accounting methods became more sophisticated as mechanization was introduced into the various production processes. As machinery increased productivity, new accounting methods were devised to calculate cost savings. Major obstacles impeding the development of cost accounting and cost estimating at that time were such conditions as: the wildly fluctuating prices for fine wool; the extremely elastic market for woolen goods; and the difficulties of calculating depreciation and obsolescence when machinery was new and rapidly changing. By 1832, however, many

[1]*Dissertation Abstracts International*, volume and page references.

firms, whose technologies by this time outclassed those in England, had incipient cost accounting systems.

The Financial Panic of 1857: Two Monetary Approaches to the Economic History of the United States, 1842-59 (Washington University, 1978; 39/11, pp. 6888-9-A) by Edmundo Olvera Acosta. This study is concerned with significant changes in the industrial structure and financial institutions of the United States during the period 1842-59. These included: the gold discoveries in California; the boom in railroading during the 1850's; foreign trade growth, particularly in cotton; and the immigration waves. In the absence of a central monetary authority, units of the financial sector forged a financial system as they performed a variety of functions under a variety of state banking regulations. In his analysis of these events, the author employed two distinct techniques: the Friedman-Schwartz approach and the financial instability hypothesis. The Friedman-Schwartz approach specifies the main determinants of fluctuations in economic activity by emphasizing changes in the money supply and it identified California gold as the exogenous main source of expansion during the 1850's. Subsequent slowing in the growth of the money stock, followed by a sharp decline in money, neither of which was attributable to exogenous events, preceded the financial panic in 1857. An alternative approach is offered by the financial instability hypothesis which focuses on debt markets' practices: particularly the behavior of debtors and creditors and mainly in the financial center of New York City. Given the booming expansion of the early 1850's, banks extended credit to stockbrokers as values of securities rapidly increased. Resulting endogenous innovations in the financial system left these institutions vulnerable to the debt-deflation process typical of the 1857 panic. The study concludes by contrasting these two analytical models with more extensive use of the financial instability hypothesis advocated because of its perceived advantage in evaluating linkages and processes by going beyond the monetary aggregates emphasized by Friedman-Schwartz.

An Historical Analysis of the Events Leading to the Establishment of the Investment Tax Credit and Its Modification Through June 30, 1977 (Oklahoma State University, 1978; 39/12, pp. 7397-8-A) by Clyde Lee Posey. This history of the investment tax credit (ITC) commences immediately following World War II and concludes in June 1977. Using such library sources as the New York Times, the Congressional Record, Congressional reports, IRS rulings,

and court cases, the study explores the various social, political, and economic considerations which led to the choice of tax credits as a tool for effecting public policy. The bill enacting the ITC was signed into law by John Kennedy in October 1962 following almost two years of vigorous debate and lobbying: mainly by those who opposed this type of economic intervention. During these hearings, the Congress proved very responsive to the witnesses and other sources of public opinion, as evidenced by its adoption of various suggestions put forward. The various strategies adopted during the the legislative process were analyzed by the author as an aid to understanding the resulting decisions and policies. This research also illuminates the reversal of initial antipathy towards the ITC following the OPEC oil embargo when major power blocs, such as the AFL-CIO, threw its support to the ITC concept. In addition to the historical analysis, the study also contains a chapter which outlines some of the features of historical research methodology as well as several historical philosophies. The approach to structure and narrative technique used by the author relies heavily on Hexter, although features were also adapted from Hempel, Nagel, and Collingwood. The main conclusions were that: (1) inputs from various witnesses during Congressional hearings were acted on and implemented; and (2) the on-again, off-again nature of ITC legislation mitigates against using the tax for its intended purpose.

Capital Formation and the Investment Tax Credit: An Empirical Study (University of South Carolina, 1978; 39/10, p. 6192-A), by Haroldene Fowler Wunder. The main objective of this study was to evaluate suggestions that extension of the investment tax credit could obviate a potential shortage of capital funds in the 1980's. Five research hypotheses were formulated: three concerning the relationship between the investment tax credit and investment, and the remaining two testing for industry differences. Twenty-two industries were selected, including five major classes of industry: utilities, extractive, construction, manufacturing, and transportation, as well as a sixth "other" grouping. The Hall and Jorgenson model was used and, as surrogates for model variables, industry tax return data were obtained from the Internal Revenue Service Corporate Source Book tapes for the period 1965-1974. Application of the Hall and Jorgenson model disclosed that for eleven of the twenty-two industries, and at levels of significance up to ten percent, there was a significant relationship between investment and the change in the optimum level of capital. Using the same model, the author then selected one industry from each of the six groupings to

perform an analysis to determine sensitivity of investment functions to the credit. It was found that when a ten percent credit rate was assumed, six of the twenty-two industries displayed an increase in the significance level for the optimal-level-of-capital variable. A simple regression analysis was also performed, regressing the monetary amount of the investment credit on gross depreciable assets, and, for eight of the twenty-two industries, the investment credit was determined to be significant at levels up to ten percent. Of the three major null hypotheses, two were rejected for communication services, building construction, banking, and petroleum extraction and refining. In the author's view, this supported assumptions that a significant relationship existed between the credit and investment. Problems were encountered in attempting to use analysis of covariance in testing the two null hypotheses concerning industry differences, due to interaction between the independent variables and the concomitant variable. The two general conclusions reached were that: (1) to achieve increased capital formation, differential investment tax credit rates are necessary; and (2) future empirical research in this subject area should be carried out at the individual industry level.

Social Responsibility: Organizational Policy Evaluative Criteria with California Savings and Loan Field Test Case Study (Claremont Graduate School, 1979; 39/11, pp. 6849-50-A) by Dolores Ann Barsellotti. Social responsibility of business is the underlying concern of this study which examined organizational policies and practices with respect to consumer issues in order to derive and develop a qualitative set of evaluative criteria. The data base for developing such criteria was the considerable amount of literature, reflecting values from many segments of society, which has been gradually building up over the past three decades. From this literature survey, the author constructed forty evaluative criteria which she tested in a field study. Preceding this field study, the researcher examined particular social affairs issues affecting the savings and loan industry and notes that much of the relevant information surfaced in U.S. Congressional hearings rather than in periodicals.

The test site was Great Western Savings and Loan Association in California: the savings and loan industry having been selected because of the fact that it had attracted relatively small attention in the mass media and the periodical literature. The methodology employed basically consisted of interviewing management personnel and reviewing available documentation for evidence of response

in the way of policies, procedures, and programs, to particular issues related to consumer affairs. The results of the case study showed that organizational strengths and weaknesses in pursuing socially responsible programs could be measured and identified by the evaluative criteria, and that these criteria could also be used to develop a quantified social audit and a social performance reporting system useful for both management and the general public.

One University's Budget: The Study of Personnel Allocations to Academic Departments (University of Kansas, 1979; 39/11, pp. 6863-4-A) by Allen Gerald Schick. Studies which suggest that budgeting in the public sector is incrementally-based have come under fire from critics taking issue with the use of correlational analyses of total budgets. In their view, a preferable approach would be to analyze annual budgetary change. Accordingly, this study was undertaken to evaluate this charge as well as to determine just what factors are critical in the budgeting process. The College of Liberal Arts and Sciences, with twenty-two departments, of a public university was selected as the field site. Budgeting data were gathered for the period 1965-1978 and were statistically evaluated by multiple regression and correlation analyses, using personnel categories as the dependent variables and proposed decision criteria as the independent ones.

Because the availability of resources is a major determinant of allocation decisions, the data base period was dichotomized into periods of optimistic growth and uncertain growth. It was found that, regardless of personnel category or type of period, annual budgeting followed an incremental pattern. Such factors as patterns of student enrollment, changes in employee workload ratios, and initial levels of employee workload ratios, influenced decision criteria during optimistic growth periods. During periods of uncertain growth, personnel allocations were favored for departments with increasing enrollments and high employee workload ratios. As might be expected, departments with secured research funds received personnel allocations, but not those with large Ph.D. programs. The study concluded that environmental considerations are strong factors helpful in explaining research findings and that the criteria used in making personnel allocations were affected by the type of growth period, the increasing or decreasing nature of enrollments, and the personnel category involved. During both types of growth period, administrators appeared to be attempting to achieve workload equality across departments. Apparently the strongest and most negative impact of personnel allocation de-

cisions fell on the departments granting large numbers of Ph.D. degrees.

The Significance of Organizational Conflict on the Legislative Evolution of the Accounting Profession in the United States (University of Maryland, 1978; 39/11, pp. 6837-8-A) by Myron Samuel Lubell. Perceived organizational conflict between certified public accountants (CPAs) and noncertified accountants, and its significance with respect to the legislative evolution of the accounting profession in the United States provided the research questions for this study. Data were gathered from the following sources: interviews with officials of the American Institute of CPAs (AICPA) and the National Society of Public Accountants (NSPA); examination of the correspondence, minutes, and internal documents of these two organizations; and a review of the sociology literature concerning professional evolution, with main concentration on the topic of conflict.

The first CPA law was enacted in 1896 in New York and represented a compromise between those who supported self-regulation through national association membership and those who favored state board regulation and licensing. Several national associations were formed during the period 1896 to 1924 and the profession steadily became polarized as a result of expanding efforts to certify professionals through the CPA examination, on the one hand, and legislative attempts to attain certification without passing this test, on the other. The AICPA's role was primarily directed towards establishing a uniform CPA examination nationwide. By 1936, CPAs, represented by the American Society of Certified Public Accountants, were engaged in costly and inconclusive legislative battles with state and national societies of noncertified accountants. These conflicts initiated or fostered inconsistency in accountancy laws because of necessary compromises. In the author's view, the CPA's professionalization has been significantly hindered by the frequent conflicts engaged in since 1945 between the AICPA and state societies of CPAs and the National Society of Public Accountants. In 1959, the AICPA established formal committee relationships with the NSPA as a remedial tool. However, none of the agreements reached by committees at joint meetings have been formalized by organizational approval at the national level. Consequently, the conflict still continues.

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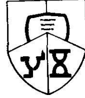

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