

ACCOUNTING: AN AID IN BUSINESS MANAGEMENT  
A CASE STUDY

by

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## ABSTRACT OF THE THESIS

A case study of the financial position and accounting records of "City Printers Limited" was undertaken in order to support the contention that an accounting system has little constructive value as an aid in business management unless specifically designed to meet the requirements of the particular enterprise concerned. Detailed analyses of the accounting system and financial statements presently in use in that Company clearly disclosed the extent to which an improperly devised accounting system may fail to provide information vital to the intelligent and scientific direction of business activities.

A revised accounting system, illustrated by the use of actual data taken from the books of account of "City Printers Limited", was designed so as to eliminate the specific weaknesses inherent in that Company's present "system". The accounting system revision also shows how a properly designed system of accounts may provide an effective means of exercising control over business activities thereby serving as a valuable aid in business management.

NOTE.

Pages 11, 12, and 14 will be found  
in the pocket at the end of this  
volume.

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## CHAPTER I

### PURPOSE AND OBJECTIVE OF THE THESIS

The financial position of "City Printers Limited"<sup>1</sup> will be studied from the point of view of accounting controls. It must be appreciated by the reader at the outset that unsuccessful operations may result from a multiplicity of interrelated factors which cut across the whole of the business' internal organization, and may also include such external factors as increased competition and costs over which little direct influence can be exerted. It must not be supposed, therefore, that this thesis presents a full analysis and a solution of all the unfavourable conditions currently being faced by the Company as no attempt has been made to isolate and study such conditions. Furthermore, because of the highly technical nature of the printing business, it would be presumptuous to make any detailed study of technical procedure and plant efficiency, as such indeed are admittedly outside the competency of this writer.

It will be the purpose of this thesis:

1. to show, that in general, an accounting system has little value as an aid to business management unless specifically designed to meet the requirements of the particular enterprise concerned,
2. to point out weaknesses existing in the present accounting system of "City Printers Limited" in order to substantiate, by means of a case study, the aforementioned contention, and

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<sup>1</sup> The Company name and names of personnel referred to throughout are fictitious.

3. to provide the management of that Company with the means, through a revised accounting system, by which an added measure of control over operations may be effected.

In achieving the aforesaid objectives, the following expository outline will be used:

1. The history of "City Printers Limited", and its personnel and their activities will be outlined as a necessary background to an understanding of the size, type and scope of the business conducted.

2. The Company's accounting system as presently constituted will be described so that the reader will have knowledge of the general pattern of accounting procedures, and the purposes for which they were originally designed.

3. In order to isolate procedural and technical inadequacies in the accounting system of "City Printers Limited", a detailed study and critical analysis will be made of the accounting records and statements for a period of one month during the 1952-1953 fiscal year.

4. An accounting system revision will be undertaken using as its basis the findings developed in (3) above. This accounting system revision will have as its specific objectives:

(i) the elimination of procedural and technical weaknesses in the Company's accounting system, and

(ii) the provision of accurate statistical data and financial statements with which management may evaluate the results of their business activities.

## CHAPTER II

### HISTORY OF "CITY PRINTERS LIMITED"

"City Printers Limited", located in Vancouver, British Columbia, is presently engaged in the manufacture of letterpress and lithographic printing on a job-order basis. In the opinion of the owners, the Company has been reasonably profitable during the thirty-six years of its existence, although for the fiscal year ended March 31st, 1953, the net profit was less than 1/2 per cent on sales, a return of only .85 per cent on invested capital.<sup>2</sup>

Mr. Roy Marcus founded the business in March, 1918 as a sole proprietorship under the trade name of "Elite Printers" with offices and plant situated in a downtown office building. Mr. John Wate, a qualified press operator, joined the staff of "Elite Printers" in 1920 and provided the capital to purchase equipment required as a result of a moderate but continued expansion in sales volume.

From this small beginning, what was later to be "City Printers Limited", passed through a series of developmental stages. In 1925, "Elite Printers" was incorporated as a private company under the laws of the Province of British Columbia with the trade name of "City Printers Limited". Mr. Marcus, holding the majority interest was elected President, and Mr. Wate, the largest minority shareholder, was elected to the position of Vice-President.

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<sup>2</sup> All financial data is based upon Company records and/or information supplied by the management.

As general operations increased in complexity with expansions in sales volume, neither Mr. Marcus nor Mr. Wate were able to continue their formerly active part in the productive aspects of manufacture. It therefore became necessary to increase the number of plant employees from time to time as actual requirements dictated. Mr. Marcus thereafter devoted his time to sales promotion, while Mr. Wate supervised general office and operating routines. This division in the respective areas of interest between these two men is still clearly evident in the organization today.

In 1943, due primarily to a lack of adequate space for expansion of productive capacity, "City Printers Limited" built its present office and plant at a suburban location and moved from the small "downtown" premises which it had occupied since 1918.

During 1945, Messrs. Marcus and Wate desired to expand the scope of their operations to include lithographic printing. Pursuant to this plan, Mr. Thomas Baxter, who had previously owned and operated a small lithographic printing shop of his own, joined the Company. In exchange for a small equity in "City Printers" he furnished most of the equipment requisite in the various lithography processes, thereby obviating the large capital outlay that otherwise would have been necessary in order to start the new department. It was further agreed at that time that Mr. Baxter was to receive an hourly wage for his services in supervising all lithographic operations at "City Printers Limited".

## CHAPTER III

### THE COMPANY'S PERSONNEL AND THEIR ACTIVITIES

#### I. EXECUTIVES

The executive functions of management at "City Printers" are carried out jointly by Messrs. Marcus and Wate, President and Vice-President of the Company respectively. Although Mr. Marcus holds the controlling stock interest, it has been characteristic of the management of the Company that all policy decisions are made only after consultation and mutual agreement between these two men. As has been previously stated, some distinguishable separation in this dual management can be seen in Mr. Marcus' sales activities, and also in Mr. Wate's general office and plant responsibilities. However, problems requiring immediate attention, regardless of their nature, are usually resolved by whichever executive is available.

#### II. EMPLOYEES

Plant. The Company currently employs twelve men, most of whom are qualified journeymen in one or other of the various printing trades. In addition, three women are employed who divide their time and activities between bindery and shipping operations as required. Included in the above numbers are two working foremen, Mr. Robert Silvers, who is in charge of all letterpress printing, and Mr. Baxter, who supervises the Lithography Department. Within the Letterpress Department, however, there is a considerable degree of functional authority exercised by Mr. Baxter because of the utilization of certain letterpress operations at various stages in the lithographic processes which require his personal attention and direction. Of the total numbers employed, four are directly engaged in

lithographic processes, four in letterpress operations, and seven in various functions which may be described as being common to both.

Office Staff. In addition to Mr. Wate, there are two women employed in the general office, Mrs. Barbara Johnson, the bookkeeper, and Miss Julia Brown, who performs miscellaneous clerical duties.

Sales Force. Besides Mr. Marcus, there is only one other salesman currently employed at "City Printers Limited".



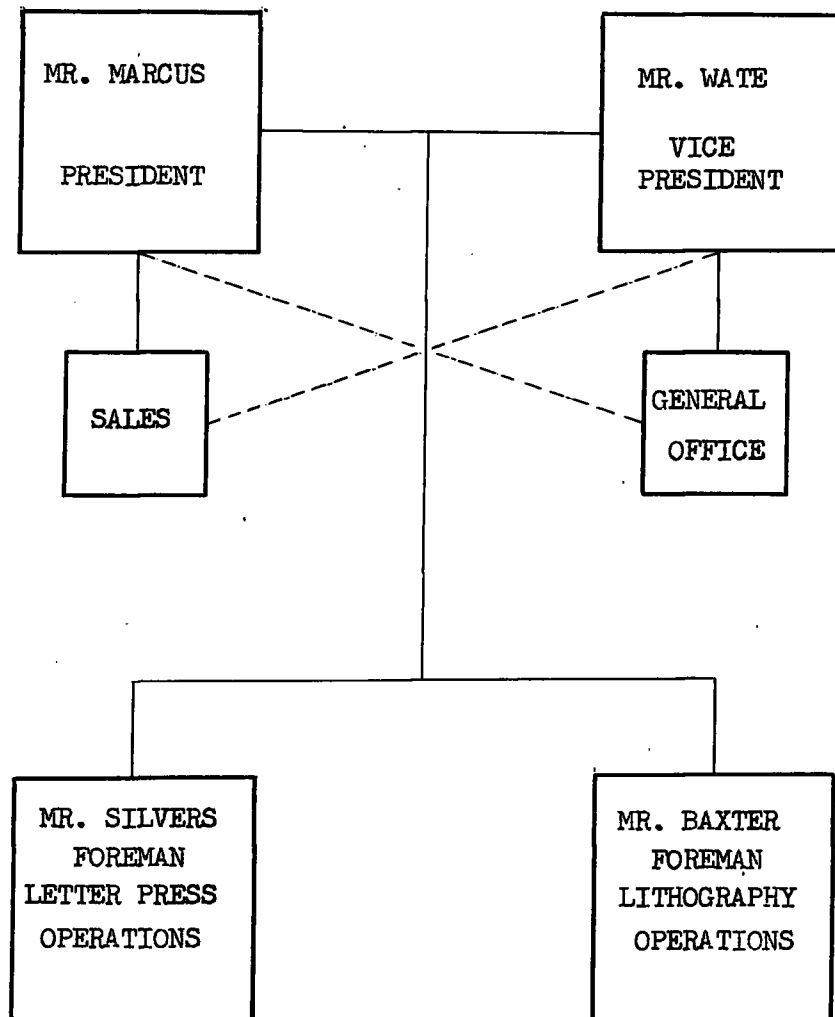


FIGURE 1

ORGANIZATION CHART

## CHAPTER IV

### THE ACCOUNTING SYSTEM USED AT "CITY PRINTERS LIMITED"

For descriptive purposes, the accounting system presently in use at "City Printers Limited" will be divided into two parts. Firstly, it is essentially a financial system of accounts employing in this Company a synoptic journal, a general journal, and a general ledger with a subsidiary accounts receivable ledger. Through these records, charges and credits arising out of business transactions are accumulated for use in the preparation of financial statements. Secondly, there are certain features characteristic of a 'job-order' cost accounting system used as an adjunct to the above-mentioned records although these do not form an integral part of the whole system as there is no accounting "tie-in" between the two.

#### I. FINANCIAL SYSTEM OF ACCOUNTS

The routine and technical formation characterizing the first-, mentioned part of the system embody no significant departures from basic and familiar accounting principles and therefore will only be described briefly.

Synoptic Journal. The Synoptic journal serves the combined functions of cash receipts and cash disbursements books. Into its design are incorporated a control column for accounts receivable, summary account columns for cash, bank and paper stock purchased respectively, classification columns for selling expenses and administration expenses, and a miscellaneous debit and credit column. This journal is maintained on a cash basis, that is, expenses are recorded only at the time when payment is made.

Postings are made monthly to the general ledger from columnar totals of cash, bank and accounts receivable. Details of accounts receivable on which payment has been received are posted from this source as credits to the subsidiary accounts receivable ledger. The various classification columns as well as the miscellaneous account column, for which no control accounts are maintained, are analyzed monthly, and the detail posted to the appropriate general ledger accounts.

General Journal. The general journal is used to record accounting entries which cannot be journalized in the synoptic journal because of its restrictive design. The monthly total of sales, being the total of duplicate invoices for the period, is recorded in this journal. Detailed postings to accounts receivable subsidiary ledger are made from the duplicate invoices.

Statement Preparation.<sup>3</sup> Due to the fact that the synoptic journal is maintained on a cash basis, certain liabilities and their expense counterparts remain unrecorded at the end of every month when operating statements are drawn. In order to adjust the operating statements so drawn, the outstanding liabilities are totalled and added under the classification of "expenses-per payables". In like manner provisions for depreciation and bad debts expenses are incorporated onto the monthly statements without being recorded in the books of account. At the year-end, outstanding liabilities and the full amount of such non-cash expense items as depreciation effecting profit and loss are recorded.

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<sup>3</sup> Detailed explanations covering the methods of determining sales, plant wages expense and inventory valuations are contained in the following chapter.

## II. COST ACCOUNTING RECORDS

It is necessary to give a more detailed description of the cost accounting features of the system so as to familiarize the reader with their purpose and use. This subject can be treated effectively under the following headings which are common to all "jobs" handled by the Company whether of a letterpress or lithographic nature.

1. Receiving the Order
2. Manufacturing
3. Costing and Pricing
4. Billing

Receiving the Order. Orders are received in one or other of the following ways:

- (i) through salesmen,
- (ii) from telephone orders,
- (iii) from customers who come to the office, and
- (iv) by mail order.

When an order is received, regardless of origin, the procedure for recording it is the same. The complete details of the order, including customer's name and address, description of the work and quantity to be produced, date ordered and date required, are transcribed onto a customer's job order form, or as it is referred to in the Company, a "Yellow Sheet" (Figure 2). This form is prenumbered and designed so as to provide on its face, spaces and blocks for recording all necessary information required for use in manufacture. A copy of this data is transferred by means of a carbon onto a like numbered and similarly ruled "Work Docket" envelope (Figure 3, page 12) into which are placed sketches, samples or copies of the work to be done. When this function is completed, the "Work Docket"

is taken to the plant where it serves as a work order to be allocated by the foreman to the appropriate department or manufacturing process. The "Yellow Sheets" are retained in the office in numerical sequence as a record of the "jobs in process" in the plant, and also for a use which will be outlined later.

Manufacture. As a "job" progresses through the plant, passing from one workman or operation to the next, the "Work Docket" containing the instructions for manufacture is similarly forwarded. Each workman as he completes his part of the required work records on his "Daily Time Sheet" (Figure 4) the job number, and the type of work performed as indicated by a code number. These time sheets are collected daily and sent to the office where they serve as the basis for weekly payroll computations, and also for charging direct labour time to the jobs worked on during the day by the respective workmen. The details of the direct labour time chargeable to the various jobs as recorded on the "Daily Time Sheets" are posted daily to the "Yellow Sheets" by an office clerk according to the individual's department where the work was done. This data is recorded in the appropriate spaces provided on the back of the form. When the "job" has been completed and shipped, the "Work Docket" is returned to the office by the shipping clerk.

Costing and Pricing. The "Work Docket", returned to the office when a job is completed, together with the corresponding "Yellow Sheet" taken from the file of jobs in process, are placed on Mr. Wate's desk for costing and pricing. The actual paper material cost is calculated by using suppliers' catalogues and the descriptive information recorded on the "Yellow Sheet". Other direct materials, for example, ink, camera

supplies and lithographic plates are allowed for at estimated cost. The recorded chargeable labour time, which has been posted to the "Yellow Sheet" and classified departmentally, serves as the basis upon which composite direct labour-overhead expense rates are applied. The total of the cost so calculated, covering materials used and labour-overhead charges, together with the cost of work subcontracted, if any, is the estimated cost of the completed job. To this cost figure is usually added a 25 per cent markup considered necessary to cover selling and administrative expenses and provide a reasonable profit. Where individual job prices are on a quoted basis, costing serves only as a memorandum of profitability for future reference.

Billing. When the priced "Yellow Sheets" are received by the bookkeeper, the 10 per cent Dominion Sales Tax and the 5 per cent British Columbia Social Security and Municipal Aid Tax are calculated and the invoices are prepared for mailing to the various customers. When the "job" is invoiced, the "Yellow Sheet" is filed according to invoice date in a binder which will contain all other billings made during that particular month. The "Work Docket" is then filed in numerical sequence for future reference in anticipation of a similar order being received from the customer.

## CHAPTER V

### CRITICISM AND ANALYSIS OF THE COMPANY'S ACCOUNTING SYSTEM

The financial statements currently being prepared from information supplied in the records, made available through the present accounting system are as follows:

1. A cumulative monthly profit and loss statement prepared by the Company's bookkeeper, and
2. A certified profit and loss statement and balance sheet which are prepared annually by the Company's auditors.

The Profit and Loss Statement for the fiscal year ended May 31st, 1953 is accepted as being accurately drawn, and is shown (Exhibit A) only for purposes of substantiating the low rate of profit earned by the Company for that period.

In order to determine the degree of accuracy and adequacy of the profit and loss statements drawn by the Company, which statements could be a valuable aid to policy formulation, this writer has carried out a detailed analysis of the Company's operating statement for a period of one month. The month chosen for study and analysis was September, 1953, and two reasons for this choice are outlined briefly below:

1. The month of September, 1953 was regarded by management as being highly profitable on the basis of the information contained in the Company's Cumulative Profit and Loss Statement. It was felt, therefore, that if inaccuracies were present, such would appear in the subsequent analysis as significant variations from amounts recorded as income and expenses in the records presently maintained.

## EXHIBIT A

CITY PRINTERS LIMITED  
 PROFIT AND LOSS STATEMENT  
 FOR THE YEAR ENDED MAY 31, 1953.

Sales			\$132,788.59
Paper Materials used			
Stock on hand May 31, 1952	\$ 5,622.00		
Purchases	<u>40,693.84</u>		
	\$ 46,315.84		
Stock on hand May 31, 1953	<u>5,645.00</u>	\$40,670.84	
Stock Expenses			
Power	\$ 516.37		
Repairs	1,021.76		
Supplies and sundry	910.68		
Wages	<u>53,188.97</u>	55,637.78	
Overhead Expenses			
Depreciation	\$ 6,026.36		
Insurance	640.42		
Interest on mortgage	69.35		
Janitor service	1,009.16		
Light, heat and water	1,187.53		
Property tax	486.94		
Workmens compensation	<u>240.00</u>	9,659.76	
Selling and Delivery Expense			
Advertising	\$ 441.80		
Delivery postage express	1,025.02		
License and business tax	193.53		
Salaries	9,502.45		
Travelling	<u>2,194.09</u>	13,356.89	
Office and Administration			
Bad debts provision	\$ 587.65		
Donations	109.00		
Group insurance	1,092.70		
Interest and exchange	302.94		
Legal and audit	645.95		
Postage and excise	247.25		
Salaries - office	7,492.37		
Stationery and office supplies	674.20		
Subscriptions and dues	356.48		
Sundry	402.86		
Telephone	430.13		
Unemployment insurance	<u>478.48</u>	12,820.01	
Total cost of production and expenses			<u>132,145.28</u>
Net Profit on Operations			\$ <u>643.31</u>



2. The information and records requisite to this study could be obtained readily and with a minimum of inconvenience to the management of the Company.

The financial statements of the Company are drawn on a period basis.<sup>4</sup> In addition, it is assumed that for a fiscal period the failure to recognize the value of work in process in the preparation of year-end operating statements is compensated by a similar omission in the prior year.

Adjustments made to the September operating statement in the following analysis are made so as to make that month complete and severable in itself, and consistent in content for purposes of percentage comparisons with the results of operations for a fiscal period as disclosed under the present accounting procedures employed in the Company.

The objective of the following critical analysis is to show that the monthly financial statements presently drawn by the Company are unreliable measures of operating profitability due to:

1. certain procedural weaknesses in the accounting system, and
2. the use of the period basis of drawing financial statements and recording expenses.

The Cumulative Monthly Profit and Loss Statements for the periods June 1st to August 31st, 1953, and June 1st to September 30th, 1953 as

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<sup>4</sup> Period basis - the recording of income and expenses solely on the basis of a given time period. With specific regard to expenses - the recording of expenses during any given period of time without allocation to inventory.

prepared by the Company's bookkeeper are shown on Exhibit B. The segregation of the data for the month of September, 1953 was done by this writer. A preliminary scrutiny of the 'statements' shows that they are little more than a summary of the General Ledger operating accounts with provision for some anticipated year-end expenses. Failure to segregate the detail of each month's operations from the cumulative totals, and the failure to present such data in a properly drawn form, result in two rather serious weaknesses becoming inherent in these so-called statements of profit and loss. Firstly, by using cumulative totals, operating income and expenses for any specific month cannot be determined readily. It is therefore difficult to recognize unusual fluctuations in items of income or expense which might otherwise be of significance to management. Secondly, by failing to classify the operating data, such important information as cost of sales and gross profit are neither apparent nor readily available.

Acceptance of the Profit and Loss Statement in its present form would indicate that management places little reliance on that source for information. The only figure watched from month to month is the cumulative effect of operations on profit and loss. Apparently, changes in this figure are regarded as the sole check available on the results of operations. The real fault, therefore, cannot be attributed to the absence of formal statement preparation, which has been criticized above, but would appear to be due to management's exhibited lack of knowledge concerning the value and uses of operating statements in general. This criticism applies equally to management's failure to make use of the year-end statements which are properly drawn within the recognized limits of the general system of accounts currently employed.

## EXHIBIT B

CITY PRINTERS LIMITED  
 CUMULATIVE MONTHLY PROFIT AND LOSS STATEMENTS FOR THE PERIODS  
 JUNE 1, 1953 TO AUGUST 31, 1953  
 JUNE 1, 1953 TO SEPTEMBER 30, 1953  
 AND  
 DERIVED PROFIT AND LOSS STATEMENT FOR THE MONTH OF SEPTEMBER, 1953.

	June 1, 1953 to August 31, 1953.	June 1, 1953 September 30, 1953.	September 1953.
Inventory, May 31, 1953	\$ 5,645.00	\$ 5,645.00	
Building maintenance	37.80	37.80	
Property tax	156.25	206.25	\$ 50.00
Business tax	34.13	44.13	10.00
Unemployment insurance	109.43	153.33	43.90
Merchandise purchases	7,777.40	9,832.38	2,054.98
Sales	(31,909.44)	(43,677.04)	(11,767.60)
Bad debts recovered	(150.00)	(200.00)	(50.00)
Advertising	31.50	56.50	25.00
Collection bad debts	15.00	20.00	5.00
Fuel	17.24	17.24	
Group insurance	130.14	219.81	89.67
Interest and discounts	22.41	40.19	17.78
Light, power and gas	174.06	256.35	82.29
Office expense	185.84	239.48	53.64
Office salaries	1,950.00	2,590.00	640.00
Neon products	14.40	21.60	7.20
Overhead	216.00	252.00	36.00
Plant expense	118.39	310.52	192.13
Plant wages	13,856.19	17,682.18	3,825.99
Postage	34.00	45.00	11.00
Salaries-selling	2,784.68	3,524.68	740.00
Selling and travelling expense	920.40	1,213.47	293.07
Delivery expense	177.01	258.81	81.80
Subscriptions, dues and sundries	106.25	152.50	46.25
Water	11.30	11.30	
Workmen's compensation		29.87	29.87
Expenses-per payables	3,105.43	4,159.14	1,053.71
Inventory-estimated	(5,500.00)	(5,500.00)	
Depreciation	1,500.00	2,000.00	500.00
Insurance	150.00	200.00	50.00
Profit or (loss)	<u>(1,720.81)</u>	<u>157.51</u>	<u>1,878.32</u>
	<u>\$39,280.25</u>	<u>\$49,377.04</u>	<u>\$11,817.60</u>

Each item of recorded income and expense for the month of September, 1953 was analyzed, and adjustments made where deemed necessary. The procedures used and the results of this study are presented below under the various profit and loss statement classifications examined.

## I. SALES

In carrying out this work, the first item to be verified was the sales figure for September, 1953 which was recorded at \$11,767.60.

Examination disclosed that the sales figure for any month is the total price (before taxes) of the "jobs" billed during that period represented by priced "Yellow Sheets". By determining dollar sales volume in this manner, with no allowance being made for work in process, the result is that the cumulative profit and loss statement prepared is obviously in error. During certain periods when specific work in process extends over several months, the resultant information is grossly distorted by failing to associate cost with the corresponding revenue on a period basis consistent with the content of the fiscal period.

A scrutiny of the "Yellow Sheets" representing recorded sales for the month of September, 1953 disclosed the following inconsistencies in so far as the above mentioned cost-revenue associations were concerned:

1. Certain jobs on which work was done in September or in prior months but completed during the first week of October were priced and included as a part of the sales.
2. Of the remaining jobs billed in September, many contained material and labour-overhead charges arising in prior months.
3. A price adjustment of \$38.00 on a job billed in prior month was included in the sales figure.

Therefore, what was considered by this writer to be a logical and necessary extension of this examination was made to include the billings or "sales" of August, as well as October and subsequent months. The following information was thereby obtained:

1. Charges arising in, and therefore applicable on a period basis, to September, appeared on billings in each subsequent month, October to December inclusive.

2. Jobs billed in the latter part of August contained charges also properly applicable to September's operations. It was apparent from this cursory examination that by the failure to record the value of work in process, and also by the practice of back-dating invoices, the determination of profit or loss could be misstated materially for any month by the retention of an erroneous sales figure.

A detailed analysis of all job orders not included in September billings but bearing charges incurred in that month was therefore undertaken. In addition, charges appearing on September's billings other than those incurred in that month were similarly analyzed and segregated. The purpose of this procedure was to determine the basis upon which to adjust the recorded September sales figure so as to reflect only the actual sales, or alternatively stated, the sales value on a period basis of work done in that month. Because much of the pricing detail for individual job orders was not recorded on their respective "Yellow Sheets", it became necessary to accumulate the details of the recorded direct labour time which were available, and also to secure from management, where necessary, specific cost valuations for materials used in the manufacture of each job. This information was assembled according to the billing period in which it appeared and according to the department in which each operation was

completed. The latter, it will be remembered, was the unit for accumulating labour time against which management applied their so-called standard labour-overhead rates. The specific details of all such analysis, as condensed and transcribed from this writer's work sheets, appear on Schedules I and II.

Complicating the sales adjustment calculation and requiring further procedural considerations were the following factors:

1. There was no consistency in the application of labour-overhead rates even in those few instances where such extensions were made (Schedule III, page 26). This necessitated the determination of a method for costing direct labour and overhead separately and independently of any rates used by management.

2. Percentage markups on aggregate cost for each job were not always recorded or readily determinable from the data shown on the "Yellow Sheet". However, where detailed pricing information was available, a 25 per cent markup on cost was found to be the usual practice.<sup>5</sup>

These problems were resolved:

1. by using actual wage rates in extending the charged labour time on each job so as to reflect a direct labour cost.<sup>6</sup>

2. by basing the cost value of overhead as a percentage of the actual

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<sup>5</sup> A 25 per cent markup on cost is equal to a 20 per cent gross profit on sales.

<sup>6</sup> Where more than one employee worked in a single department, an average wage rate (mode) was used.

# SCHEDULE I

## ESTIMATED COST OF DIRECT LABOUR TIME CHARGES USED IN ADJUSTING SEPTEMBER'S SALES FIGURE

Department	Wage Rate	Recorded Direct Labour Time and Estimated value thereof arising in September but included in the billing of:				Recorded Direct Labour Time and Estimated value thereof included in September's billing but arising from:			
		Prior Months		Subsequent Months		Prior Months		Subsequent Months	
		Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount
Composition	\$1.80	2.1	\$ 3.78	24.0	\$ 43.20	171.6	\$ 308.88	2.1	\$ 3.78
Hiedelberg	.60			5.9	3.54	2.5	1.50		
Platen	.60					1.4	.84		
Harris	2.22	6.8	15.10	29.5	65.49	46.1	102.34	1.4	3.11
Kelley	2.17			1.2	2.60	39.25	85.17	7.2	15.62
Jigger	1.70	10.2	17.34	14.8	25.16	12.6	21.42	11.1	18.87
Shipping and Delivery	.95	4.1	3.90	5.9	5.60	9.1	8.64	2.4	2.28
Folding	2.50	.6	1.50	4.4	11.00	7.5	18.75		
Bindery	1.00	4.0	4.00	16.7	16.70	54.0	54.00	8.8	8.80
Cutting	1.50	3.1	4.65	2.2	3.30	19.3	28.95	1.7	2.55
Plate	.85	1.2	1.02	22.7	19.30	32.7	27.80	.7	.60
Camera	2.50			15.4	38.50	28.35	70.88		
Opaque	2.50			27.4	68.50	15.7	39.25		
Layup	2.50			28.6	71.50	31.75	79.38		
Art Work	1.78			43.8	77.96	36.0	64.08		
Total			\$51.29		\$ 452.35		\$911.88		\$55.61

## SCHEDULE II

ESTIMATED COST OF PAPER MATERIALS USED IN ADJUSTING  
SEPTEMBER'S SALES FIGURE

	Prior Months	Subsequent Months	Total
Estimated Paper Material Costs arising in September But included in billings of	\$ 22.75	\$ 478.93	\$ 501.68
Estimated Paper Materials Costs included in September billings but arising from	\$975.10	\$ 19.60	\$ 994.70



## SCHEDULE III

INCONSISTENCY IN THE APPLICATION OF  
LABOUR - OVERHEAD RATES DETERMINED BY  
THE CALCULATION OF STANDARD DEVIATIONS

Department	Number of Rates Examined	Arithmetic Mean	Standard Deviation
Composition	29	\$ 7.21	\$ 10.68
Hiedelberg	1	3.33	-
Platen	2	1.94	.90
Harris	11	4.95	7.43
Kelley	12	5.00	.08
Jigger	10	3.02	.36
Shipping and Delivery	25	4.10	3.17
Folding	4	5.98	9.60
Bindery	3	5.97	17.79
Cutting	17	5.27	2.99
Plate	11	6.84	2.07
Camera	6	5.33	2.99
Opaque	5	5.53	6.44
Layup	4	8.38	20.14
Artwork	1	5.00	-

direct labour cost,<sup>7</sup> and

3. by employing a markup of 25 per cent on aggregate cost so as to reflect the sales value of the direct labour and overhead. Material costs used in adjusting the sales figure, whether derived directly from the priced "Yellow Sheets" or estimated by management, were also marked up on the same basis in arriving at a sales valuation.<sup>8</sup>

An outline and summary of the requisite calculation and the method used to determine "sales" arising out of the foregoing analysis is presented in Schedule IV.

## II. MERCHANDISE PURCHASES AND MATERIAL INVENTORIES

The recorded merchandise purchases for the month of September, 1953, were made up entirely of paper stock purchases. This figure however, is not the total cost of paper purchases made during the month. As expenses are recorded in the books of account only when paid, a practice which is common in many smaller businesses, the bookkeeper has given effect to the unrecorded September paper purchases in the total "expenses-per payables" which appears

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<sup>7</sup> The percentage of overhead/direct labour cost for the fiscal year ended May 31st, 1953 was 22.76 per cent. This percentage was used as the basis for calculation of overhead to be applied in the valuation of work in process in the absence of more specific information.

<sup>8</sup> Not only was the 25 per cent markup on total cost said to be employed but also proved to be a fact materially substantiated by past experience as reflected in the Gross Profit Percentage on sales of 20.20 for the fiscal year ended May 31st 1953; and further by the Gross Profit Percentage of 20.03 on sales for the sixteen month period May 31st, 1952 to September 30th, 1953.

## SCHEDULE IV

SALES ADJUSTMENT CALCULATION  
FOR MONTH OF SEPTEMBER, 1953.

September Sales (as per Company's records) \$11,767.60

Additions:

1. Sales value\* of work done in September

But included in prior month billings:

	<u>Cost</u> <u>Price</u>	<u>Selling</u> <u>Price</u>	
(a) Direct labour	\$ 51.29**	\$ 64.12	
(b) Materials:			
Paper	22.75***	28.44	
Ink	3.00	3.75	
(c) Overhead:			
(.2276 x \$64.12)		<u>14.59</u>	\$ 110.90
2. Credit-Chargeable to prior period			38.00

3. Sales value of work in process
- 
- arising in September as determined
- 
- from subsequent months' billings:

	<u>Cost</u> <u>Price</u>	<u>Selling</u> <u>Price</u>	
(a) Direct labour	\$452.35**	\$565.51	
(b) Materials:			
Paper	478.93***	598.67	
Ink	4.20	5.25	
(c) Overhead			
(.2276 x \$565.51)		<u>128.71</u>	<u>1,298.14</u>
			<u>1,447.04</u>
			\$13,214.64

Deductions:

1. Sales value of work done in subsequent
- 
- months but included in September's
- 
- billings:

	<u>Cost</u> <u>Price</u>	<u>Selling</u> <u>Price</u>	
(a) Direct labour	\$ 55.61**	\$ 69.51	
(b) Materials			
Paper	19.60***	24.50	
Ink	2.40	3.00	
(c) Overhead			
(.2276 x \$69.51)		<u>15.82</u>	\$ 112.83

2. Sales value of work in process from
- 
- prior months appearing on September's
- 
- billings:

	<u>Cost</u> <u>Price</u>	<u>Selling</u> <u>Price</u>	
(a) Direct labour	\$911.88**	\$1,139.85	
(b) Materials			
Paper	975.10***	1,218.88	
Ink	6.60	8.25	
(c) Overhead			
(.2276 x \$1139.85)		<u>259.43</u>	<u>2,626.41</u>
			<u>2,739.24</u>

Adjusted September Sales

\$10,475.40

Recorded September Sales

11,767.60

Net Debit Adjustment required

\$ 1,292.20\*Sales value was calculated by applying a 25 per cent markup  
on the costs of materials, labour and overhead.

\*\*Schedule I, page 24.

\*\*\*Schedule II, page 25.

as a non-ledger account debit on the Cumulative Profit and Loss Statements. At the end of any period, therefore, actual paper purchases are represented by the ledger account balance to date plus the total unpaid paper purchases liability. The aggregate net change arising in these respective totals between August 31st and September 30th, 1953 represents the actual cost of paper stock purchases for the month of September, 1953. The derivation of this total is shown in the following calculation:

Merchandise Purchases Account		
Total as at September 30th, 1953	\$9,832.38	
Unrecorded Paper Purchases		
Total as at September 30th, 1953	<u>4,159.14</u>	\$13,991.52
Merchandise Purchases Account		
Total as August 31st, 1953	\$7,777.40	
Unrecorded Paper Purchases		
Total as at August 31st, 1953	<u>3,105.43</u>	<u>10,882.83</u>
<u>Paper Purchases for September, 1953</u>		<u>\$ 3,108.69</u>

The total paper purchases of \$3,108.69 is reconciled with the following totals appearing on the Company's Profit and Loss Statement for September, 1953.

1. A net increase in liabilities during the month (Expenses-per payables)	\$ 1,053.71
2. Paper purchases recorded and paid for during the month	<u>2,054.98</u>
<u>Paper Purchases for September, 1953</u>	<u>\$ 3,108.69</u>

It is the practice of the Company, in so far as is possible, to make only such paper purchases as are required to meet current manufacturing commitments. During the year, an average inventory of paper of \$5,500.00 is deemed to be on hand at all times. The value of stock purchases for any month, therefore, constitutes the cost of paper materials used in that month's production, and it is that amount which appears as the materials debit on the operating statements. Physical inventory is taken once a year at cost and the books of account are then adjusted accordingly.

It is difficult to dispute the accuracy of this average inventory and the September cost of paper materials used without having taken, or having available, actual valuations of the paper materials inventory for August 31st and September 30th, 1953. With no information to the contrary, there appears to be no alternative available to accepting as adequate, the cost of materials used and the average inventory valuations of management.

There are circumstances under which the use of average inventory figures can be defended in the determination of monthly material costs, for example, where material costs constitute a negligible part of the total cost of manufacture. In general, however, such a practice should be regarded as an expediency which is justifiable perhaps only by the prohibitive cost or impracticability of recording the necessary details. Such is not the case at "City Printers Limited". Paper material cost constitutes a significant part of the total cost of any particular job, as well as the overall cost of sales. Furthermore, these costs are calculated as a part of the procedure used in arriving at the selling price for each job, and the "Yellow Sheets", as presently drawn provide both the space and vehicle for accumulating the necessary data. By crediting the materials account with the total value of paper materials used on the various job orders, as would be readily determinable from properly costed "Yellow Sheets", a more accurate cost of materials used in manufacture would be available for the purpose of drawing monthly operating statements.

Once again, as was discovered in analyzing sales, the lack of information available, coupled with the absence of accurate data for use in preparing monthly statements, are in large measure attributable to management's failure to utilize facilities available in the present accounting system and currently at their disposal.

### III. PLANT WAGES EXPENSE

Plant payroll, exclusive of overtime considerations, is calculated and paid once a week on the basis of actual hours worked by each employee. Payments for overtime are made only once a month. Total weekly wages may, however, include holiday pay because of the practice of recording these expenditures as a part of the payroll for the week in which payments are actually made.

Upon examination, it was found that the amount of \$3,825.99 recorded as paid to plant employees in wages for the month of September 1953 consisted of three major parts:

1. the total of overtime payments made during the month,
2. the total of the weekly payrolls whose payment dates fell within the calendar month, and
3. an amount representing the annual holiday pay of one employee.

The total of August's overtime payments were made on the fourth of September, and the overtime wages for September were paid on the second of October. It can readily be seen that both of these charges were recorded in periods other than when incurred, and therefore contributed to the distortion of September's plant wages expense.

The four weekly payroll periods falling in September did not cover exactly or exclusively all the calendar days during which the plant was operating in that month. Due to this fact one day's pay which was properly chargeable to August's operations was recorded as a part of September's wage cost. For the same reason, the cost of three days wages applicable to September has been taken up in error as a part of October's wages expense.

Holiday pay is currently treated as an expense solely in the period in which it is paid. This procedure is contrary to good accounting practice.

The amount of this expense is specifically set by law at 2 per cent of an employee's gross annual wage which is approximately the equivalent of one week's wages per employee per year. Even where employment is terminated during the year, holiday pay must be paid at the rate of 2 per cent on the gross earnings to date. For these reasons, holiday pay can therefore properly be described as accruing during each month of the year. In view of the foregoing it is definitely wrong from an accounting point of view to load both holiday pay and wages of relief employees onto those few months in which holidays are usually taken. It is a further error to conclude, as is the present case, that wage expenses are higher during those months than during other months of the year.

In the calculations giving effect to the foregoing adjustment considerations, it is well to point out the two methods of procedure followed. Firstly, actual hours worked by each employee exclusively in September were obtained from daily time summaries. These totals of labour time so classified were costed by using appropriate hourly and overtime wage rates in order to arrive at the total amount of actual wages properly chargeable against the period under review. Secondly, an adjustment was made to give effect to the accrual of holiday pay as a monthly expense item. This was done by eliminating the amount of holiday pay paid in September, and by setting up an amount calculated to have accrued during that month. The two per cent of gross payroll method of calculation was not used because of the Company's policy which provides for holiday pay to employees in excess of this statutory minimum after certain stated periods of continuous employment. The additional amount required to be provided by reason of the Company's policy respecting employees' holiday pay is of material importance, and this writer has, therefore, made due allowance for this in his calculations.

The plant wages expense account total, arrived at by the methods

outlined above, was used to determine the variance between the recorded and the calculated September wages expense. This variance constitutes the net adjustment deemed necessary in order to reflect the amount of plant wages properly chargeable as an expense against the September operating period. The actual calculation is shown on Schedule V.

#### IV. WORKMEN'S COMPENSATION

Although assessments and payments are made periodically under current government legislation at the applicable rate of 4/10 per cent, the liability of the Company for workmen's compensation insurance accrues on the basis of gross payroll expended. The recorded September charge for workmen's compensation of \$29.87 should be eliminated from September's expenses as it is properly chargeable as an expense of prior month's operations. Workmen's compensation assessment expense of \$16.02, based on the calculated adjusted wages of \$4,005.38, has been provided in order to reflect the amount applicable to September's operating period.

#### V. PERIODIC AND NON-RECURRING EXPENSE ITEMS

In viewing the net result of a single month's operations as the basis upon which generalizations regarding profit trends are to be made, it would be unrealistic if certain major items of expense were not taken into consideration although they may perhaps be largely of a periodic or seasonal nature. If such items are not estimated and subsequently given effect on operating statements, some subjective provision or mental reservation must be made in the interpretation of such statements. By failing to make adequate provision for these items of expense in profit margins, for example, amounts which appear as accumulated monthly profits



## SCHEDULE V

PLANT WAGES EXPENSE ADJUSTMENT CALCULATION  
FOR THE MONTH OF SEPTEMBER 1953

Employee	Weeks					Regular Time	Overtime	Rate	Amount
	I hrs.	II hrs.	III hrs.	IV hrs.	V hrs.				
A	32	42	40	44	24	182		\$ 2.50	\$ 455.00
B	32	40	36	40	24	172		2.50	430.00
C	32	44.5	44	44	24	176	12.5	2.22	432.35
D	32	40	40	40	24	176		2.17	381.92
E	32	40	40	39	24	175		1.75	306.25
F	32	40	40	40	24	176		1.70	299.20
G	32	40	40	40	24	176		1.80	316.80
H	26	34	32.3	32	18	142.3		1.50	213.45
I	32	40	40	40	24	176		.85	149.60
J	32	40	40	35	24	171		.60	102.60
K	32	11	40	40	16	168		1.00	168.00
L	32	40	40	36	16	164		.95	155.80
M	32	40	32	16	8	128		.90	115.20
N	32	40	24	40	24	160		1.00	160.00
O	32	-	40	40	24	136		1.78	242.08

Actual September Payroll	\$3,928.25
Less-amount of Holiday pay paid	40.00
	<u>\$3,888.25</u>
Add-Monthly Provision for Holiday pay	117.13
Adjusted Wages Expense for September	<u>\$4,005.38</u>
Less-Plant Wage Expense as per books	3,825.99
Net Debit Adjustment required	<u>\$ 179.39</u>

may be dissipated rapidly in meeting such charges in periods when actually incurred. In addition, this writer, believing that what is not shown is often not considered in subsequent analysis and evaluations, has therefore made the requisite adjustments directly to the Profit and Loss Statement for September so as to reflect thereon, in so far as is possible, a complete and realistic picture of the results of September's operations.

With specific regard and reference to "City Printers Limited", it was felt that the following items of expense were largely of the nature and type referred to above.

Legal and Audit Expenses. No provision has been made on the Company's Profit and Loss Statements for legal and audit expenses. Therefore, an amount of \$53.83, being one twelfth of the prior year's expense was allowed as a charge against September's operations.

Heat, Light, Power, and Water. In order to provide for seasonal and periodic variations in the amounts paid for the expense items of heat, light, power and water, an amount based on the Company's average monthly experience during prior year was calculated and shown as an expense on September's Profit and Loss Statement. The adjustment was determined in the manner illustrated below:

Profit and Loss Statement for the year ended

May 31st, 1953:

Power

\$ 516.37

Light, Heat and Water

1,187.53

\$1,703.90

Average monthly expense-1952/1953

\$ 141.99

Amount paid during month of September 1953

82.29

Debit adjustment required:

\$ 59.70

## VI. MISCELLANEOUS PROFIT AND LOSS STATEMENT ADJUSTMENT CONSIDERATIONS

In viewing the other items of expense on the Company's operating statement for September 1953, not specifically referred to in the foregoing series of adjustments, this writer satisfied himself, firstly, as to their adequacy, and secondly, where supporting evidence was available, that such expenses were applicable to that month. Most of these remaining expense items, however, reflect amounts recurring regularly and which are approximately the same for each month, for example, group insurance and telephone and telegraph expenses. As was stated previously, significant variations, and not small dollar amounts or small percentage changes were being sought as proof of the inadequacy of the present accounting system and the statements drawn therefrom.

The adjustments made to the Company's Profit and Loss Statement for the month of September, 1953 have been summarized and are shown on working papers contained in the Appendix (Schedule VI, page 95). The adjusted Profit and Loss Statement for September, 1953 thus derived is illustrated in Exhibit C. Also shown on Exhibit C are the following Statements:

1. The Cumulative Profit and Loss Statement for the period June 1st to September 30th, 1953,
  2. The unadjusted Profit and Loss Statement for the month of September, 1953, and
  3. The Profit and Loss Statement for the fiscal year ended May 31st, 1953.
- Significant percentages have been calculated for all of the statements mentioned above for purposes of comparison.

## EXHIBIT C

CITY PRINTERS LIMITED  
COMPARATIVE PROFIT AND LOSS STATEMENTS

	June 1 - September 30, 1953		September, 1953 (Unadjusted)		September, 1953 (Adjusted)		For the Year End May 31, 1953	
Sales	<u>\$43,677.04</u>	<u>100.00%</u>	<u>\$11,767.60</u>	<u>100.00%</u>	<u>\$10,475.40</u>	<u>100.00%</u>	<u>\$132,788.59</u>	<u>100.00%</u>
Cost of Jobs Sold								
Paper materials used	14,136.52	32.40	3,108.69	26.40	3,108.69	29.68	40,670.84	30.63
Plant wages	17,682.18	40.50	3,825.99	32.50	4,005.38	38.24	53,188.97	40.06
Plant overhead								
Maintenance	\$ 37.80							
Insurance	200.00						\$ 1,021.76	
Property tax	206.25				\$ 50.00		640.42	
Heat, light, power, water and gas	284.89				50.00		486.94	
Miscellaneous	252.00							
Plant expense	310.52				141.99		1,703.90	
Depreciation	2,000.00				36.00		980.03	
Workmen's compensation	29.87				192.13		1,009.16	
	<u>3,321.33</u>	<u>7.60</u>	<u>940.29</u>	<u>8.00</u>	<u>500.00</u>		<u>6,026.36</u>	
Gross Profit	<u>\$ 8,537.01</u>	<u>19.50%</u>	<u>\$ 3,892.63</u>	<u>33.10%</u>	<u>986.14</u>	<u>9.41</u>	<u>12,108.57</u>	<u>9.11</u>
Selling Expenses					<u>240.00</u>	<u>22.67%</u>	<u>\$ 26,820.21</u>	<u>20.20%</u>
Salaries	\$ 3,524.68		\$ 740.00		\$ 740.00		\$ 9,502.45	
Advertising	56.50		25.00		25.00		441.80	
Traveling expenses	1,213.47		293.07		293.07		2,194.09	
Business tax	44.13		10.00		10.00		193.53	
Delivery expense	258.81		81.80		81.80		1,025.02	
Office and Administration								
Postage and excise	\$ 45.00		\$ 11.00		\$ 11.00		\$ 247.25	
Group insurance	219.81		89.67		89.67		1,092.70	
Interest expense	40.19		17.78		17.78		302.94	
Legal and audit					53.83		645.95	
Miscellaneous							402.86	
Bad debts	20.00		5.00		5.00		587.65	
Telephone							430.13	
Office expense	239.48		53.64		53.64		674.20	
Office salaries	2,590.00		640.00		640.00		7,492.37	
Neon products	21.60		7.20		7.20		465.48	
Subscriptions and dues	152.50		46.25		46.25		478.48	
Unemployment insurance	153.33		43.90		43.90			
	<u>\$ 3,481.91</u>		<u>\$ 914.44</u>					
Bad debts recovered	200.00							
	<u>3,281.91</u>	<u>7.40</u>	<u>864.44</u>	<u>7.30</u>	<u>968.27</u>	<u>9.24</u>	<u>12,820.01</u>	<u>9.65</u>
Net Profit	<u>\$ 157.51</u>	<u>.40%</u>	<u>\$1,878.32</u>	<u>16.00%</u>	<u>\$ 257.05</u>	<u>2.45%</u>	<u>\$ 643.31</u>	<u>.49%</u>

## VII. CONCLUSION

Aside from any consideration of the degree to which it may fail to reflect certain expenses until they are actually paid, the Company's Cumulative Profit and Loss Statement, by the nature of its construction, becomes a more reliable measure of profitability as the fiscal period progresses. Inaccuracies incorporated into cumulative monthly totals become less significant as the year-end approaches so that in the latter months of the year, the Statement is a fairly reliable measure of operating profitability to date and perhaps even a good indication of the results which may be expected for the full operating period subject of course, to the materiality of unrecorded work in process. In the early months of the year, however, serious misstatements of cost and profit trends are possible, which if present can be attributed largely to incorrect sales and cost of sales figures. The net result of these misstatements, cumulative from month to month, could be favourable or unfavourable when such are finally given full effect on properly drawn statements at the end of the fiscal year. A comparison of the cost percentages to sales shown on the Cumulative Statement with those on the unadjusted Profit and Loss Statement for September, clearly illustrates the unreliability of results portrayed on an improperly drawn statement of this kind based on operations over a short period of time.

In evaluating the percentages contained on September's Adjusted Profit and Loss Statement, it must be remembered that the cost of materials is only an estimate. The calculated percentage for September's adjusted net profit is somewhat higher than that shown on either the cumulative four months' Statement or the prior year's audited Statement, and would indicate, prima facie, a comparatively profitable month of operations. However, a

small unfavourable variation in the cost of materials or in some expense provision could eliminate this profit figure completely.

What is significant, however, in comparing the four months' cumulative Statement with both the adjusted September and the fiscal year-1952/1953 operating statements, is that the management of "City Printers Limited" has been able to approximate closely its stated and desired 25 per cent markup on aggregate cost. Also apparent is that such a markup is not sufficient to cover administrative and selling expenses and leave anything but a small and rather uncertain amount of profit at the present volume of sales.

Aside from establishing the unreliability of the operating statements drawn by the Company, the analysis of the records for September's operations indicated that the costing aspects of the accounting system were not being carried out as originally intended.

The costing aspects of the Company's accounting system as presently designed have as their objectives the accumulation of costs for each job as the basis upon which subsequent pricing calculations are to be made. In reality, however, details of recorded labour time and material descriptions constitute in large measure the extent to which the costing procedures are carried. Rates based on chargeable labour time, theoretically used in the application of direct labour and overhead to the various jobs, were not used consistently if indeed at all. Where complete pricing details were available, it was noted that in a few instances markup percentages were substantially below the 25 per cent necessary to maintain a breakeven point. This fact casts some doubt on the consistency with which labour - overhead rates are used in costing, and also on the uniformity of individual job prices. based thereon when it is remembered that an average markup on cost of 25 per cent is obtained.

The above factors are not readily apparent by studying the various statements alone because there is no real connection between the financial books of account and the cost system as presently constituted. Such a connection could be made, however, with minor revisions in technique and in the physical form of the accounting system. Failure to connect the two parts of the accounting system, and the fact that costing details are not available, renders it virtually impossible to make either valuations for work in process or more accurate estimates of paper inventories, both of which are prime requisites to drawing an accurate profit and loss statement of any kind.

If a single reason was being sought in an attempt to explain why the costing aspects of the accounting system are not operating as designed, this writer would attribute the cause to the excessive amount of the required daily to carry through the complete costing operations in relation to the subsequent use of the information obtained. Aside from the time required to post details of direct labour time to the individual "Yellow Sheets", management's exhibited ability to average a 25 per cent markup on cost, apparently without making costing extensions or utilizing uniform labour-overtime rates, is an important contributory factor to the frustration of the system as a whole. The failure to use a standard markup percentage and the excessive amount of time required to operate the system as designed have tended to negate any potential value which that accounting system may have had as a barometer of business activities.

An increase in the markup percentage used by management in pricing jobs, while it may for a time provide a sufficient margin of profit for the overall operations, makes no less important and desirable the existence of properly drawn operating statements. It is largely through these statements

that much of the information necessary in effecting good management is provided. By using budgets and other sources of comparative data, standards of efficiency and expectations can be utilized in the constant exercise of control over production costs and operations in general. The existence of grossly inaccurate statements are less desirable than no statements at all because management, relying on faulty information may make unprofitable decisions which in the light of the true facts would not be made.

Where there are inventories of work in process extending over several months and carried over from one fiscal period to another, the period basis of maintaining financial records fails to provide the means of associating costs with corresponding revenues. No value is given to work in process under the present accounting system and hence, in periods where work in process at the end of any accounting period differs significantly with the opening work in process, the difference being reflected in recorded sales, profits will be materially misstated.

By associating costs with revenues on a job-order basis, this limitation of the present accounting system on the period basis will be eliminated. Although adjustments were made to September's sales figure on a period basis, thereby giving a sales value to work in process consistent with the content and scope of the year-end operating statement for comparative purposes, the effect of non recognition of a value for work in process is adequately illustrated in the distortion of September's profit figure prior to adjustment.

Believing that the existence of accurate financial and statistical information is essential in order to effect intelligent and co-ordinated control over the operations at "City Printers Limited", this writer has undertaken an accounting system revision to correct the weaknesses discovered



in the survey made of the system presently used by that Company.

## CHAPTER VI

### ACCOUNTING SYSTEM REVISION

As was indicated in the description of the accounting system of "City Printers Limited", there are two formal books of original entry, namely, the synoptic journal and the general journal. In the synoptic journal are entered cash receipt, and disbursements made in respect of materials purchased and operating expenses.

In order to achieve a greater degree of accounting control and a more realistic recording of expenses this writer, in his accounting system revision, has recommended the use of the following books of original entry to replace the synoptic journal:

1. a combined Purchases and Expense Register, and
2. a Cash Receipts and Disbursements Book.

The use of the above mentioned books of original entry will permit a better allocation of accounting work among the office staff. These books will also form an integral part of the revised accounting system which anticipates the use of cost controls.

#### I. PURCHASES AND EXPENSE REGISTER (Figure 5)

From an examination of the proposed Purchases and Expense Register's form and design, it can be seen that there are four control account columns, three summary account columns and a miscellaneous expense column. Into one or other of the above named account columns all expenses of the Company will be recorded as the liability is incurred and not on a cash payment basis as formerly.

All the control accounts operate in the same manner, and at the end of each monthly period columnar totals are to be posted to the respective

DATE	ACCOUNT NAME	METAL PURCHASES DEBIT	PAPER PURCHASES DEBIT	PLANT WAGES DEBIT	PLANT OVERHEAD DEBIT	OFFICE & SUNDRY EXPENSES DEBIT	SELLING EXPENSES DEBIT	MISCELLANEOUS DEBIT	CREDIT	ACCOUNTS PAYABLE CREDIT

FIGURE 5

PURCHASES AND EXPENSE REGISTER

accounts in the General Ledger. Detailed classification of the various expenses falling within each control account will be posted separately on an appropriate subsidiary ledger sheet.

Plant Overhead Expense Control Account.<sup>9</sup> Classified as properly chargeable in this account are all expenses represented as operating supplies, for example, ink, solvents and sundry lithographic materials, together with non-material items associated with the productive operations in general, such as insurance, heat, light, power and water. In other words, this account will contain all expenses associated with the productive processes with the exception of paper materials, metal and direct labour costs.

The subsidiary ledger account classifications will contain, however, a breakdown of the plant overhead expenses under the following captions:

- (a) Operating Supplies
- (b) Equipment Repairs and Maintenance
- (c) Plant Repairs and Maintenance
- (d) Heat, Light, Power, Water and Gas
- (e) Non-chargeable Wages
- (f) Provision for Depreciation-Plant
- (g) Workmen's Liability Insurance (Compensation)
- (h) Unemployment Insurance
- (i) Insurance
- (j) Property Taxes
- (k) Paper materials wastage
- (l) Provision for Depreciation - Equipment

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<sup>9</sup> The control account total, as posted in the General Ledger will be used in co-ordinating the financial records with the cost accounting records of the system. Its specific use in this regard will be shown when the "costing" operations of the revised accounting system are more fully explained and illustrated.

Office and Sundry Expense Control Account. This control account will contain all expenses incurred in the general administrative operations of the business. To be included under the separate subsidiary ledger classifications are these specific items of expense:

- (a) Office Salaries
- (b) Office Supplies
- (c) Legal and Audit Expense
- (d) Bad Debts Expense
- (e) Postage
- (f) Subscriptions and Dues
- (g) Interest and Discounts
- (h) Business Tax
- (i) Donations
- (j) Group Insurance
- (k) Telephone and Telegraph

Selling Expense Control Account. All expenses incurred in the selling functions of the Company will be recorded in this account. Subsidiary account classifications under the control will be:

- (a) Salesmen's Salaries
- (b) Advertising Expenses
- (c) Selling and Travelling Expenses

Plant Wages, Paper Material Purchases and Metal Purchases Accounts. Monthly columnar totals for the accounts, Plant Wages,

Paper Material Purchases<sup>10</sup> and Metal Purchases will be posted to their respective accounts in the General Ledger without maintaining any subsidiary classifications.

Accounts Payable Control Account: By the inclusion of an accounts payable control account in the Purchases and Expense Register, the details of expenses can be recorded in their proper accounts as incurred. Under this new method, expenses and liabilities are recorded currently and are properly classified on an accrual basis thereby making available the information required for the preparation of interim financial statements. The detail of the Accounts Payable Control column is posted to the respective creditors' accounts in a subsidiary ledger.

## II. CASH RECEIPTS AND DISBURSEMENTS JOURNAL (Figure 6)

This journal provides account columns with space for recording information for use in posting to the general and subsidiary ledger accounts.

## III. JOB ORDER COSTING REVISION

The job order costing revision of the accounting system for "City Printers Limited" has as its specific objectives:

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<sup>10</sup> No provision has been made for the use of subsidiary paper stock inventory records in the revised accounting system. As was mentioned earlier, paper is purchased largely for short-run manufacturing requirements and therefore the total value of paper stock inventory on hand at any one time is relatively small. However theoretically desirable subsidiary stock records may be, the large variety of paper stock carried, and the low unit value thereof, render the use of such records impracticable in relation to the relatively high costs of installation and operation.



1. the recording of accurate monthly<sup>11</sup> sales figures,
2. the providing of a means for the valuation and recording of work in process,
3. the recording of "costs" as one of the bases for pricing individual job orders, and
4. the providing of accurate financial and statistical data for the preparation of operating statements.

The prime objective of the costing procedures, however, must be to provide management with accurate costs of completed jobs as the basis for measuring individual job profits and for effecting control over the costs of production. This, theoretically, is the function of the system presently installed. As many selling prices are determined on a cost-plus basis, the importance of accurate job costing should be obvious.

Through a series of summary and costing schedules this writer will provide the vehicle for accumulating direct labour and materials costs as well as the provision necessary to cover overhead costs incurred directly and indirectly in the manufacture of each job order. The utilization of such schedules eliminates the necessity for daily and detailed direct labour time postings as well as subsequent labour-overhead calculations. For purposes of system organization and accounting control all productive phases of manufacture have been departmentalized under one of the following cost-centre designations:

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<sup>11</sup> A "four-week month" was chosen in order to eliminate adjustments which are required to be made in financial statements prepared on the basis of a calendar month. Where the period of a month is referred to with regard to the operations of the revised accounting system, the four week period is assumed.



1. Department A - Composition
2. Department B - Lithography
3. Department C - Hand Presses
4. Department D - Kelly Press
5. Department E - Harris Press
6. Department F - Bindery

The foregoing procedural and organizational alternations to the present accounting system will contribute toward increased efficiency in the compilation of job cost data, and will aid in effecting greater control over the costs of productive operations.

Direct Labour and Overhead Charges: The information required for charging direct labour costs to the individual jobs will originate with the employees' "Daily Time Sheet". A slight modification was made in the design of this form in order to accumulate, in addition to the data already recorded, direct labour time according to specific job orders (Figure 7).

The details of the distribution of each employee's daily labour time between the various jobs on which work was done, and non-chargeable labour time, are summarized weekly and recorded on an employees' "Weekly Time Summary" (Figure 8). The above procedure eliminates the multiplicity of postings to job-cost sheets made necessary under the old system due to the fact that the same job may have been worked on by an employee at different times during the day as well as intermittently over a period of days. On this summary schedule, labour time, both direct and non-chargeable, is costed only once a week. The respective employee's hourly wage rate is used in costing thereby providing a means of reconciling the employee's wages with the amount shown on the weekly payroll summary presently maintained.



NAME:		DEPARTMENT:					DATE:		
JOB NUMBER	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY		TOTAL CHARGEABLE TIME	AMOUNT	
	HOURS	HOURS	HOURS	HOURS	HOURS				
<p>FIGURE 8</p> <p>WEEKLY TIME SUMMARY</p>									
TOTAL CHARGEABLE									
TOTAL NON-CHARGEABLE									
TOTAL AS PER PAYROLL									

The "Weekly Time Summaries" of employees working in the same department are to be segregated from those of employees in other departments. Each plant employee's "Weekly Time Summary" thus costed and separated into its departmental classification is recapitulated on the appropriate "Departmental Labour Time Recapitulation" (Figure 9 Page 53) one of which is to be maintained for each of the six productive departments. In this manner the total value of direct labour time for each job arising during a period of one week is determined under separate departmental classifications. Summarization of direct labour charges on the "Departmental Recapitulation" obviates detailed postings of labour costs to each job order originating with different plant employees working in the same department. On each "Departmental Recapitulation" the total for each job order, therefore, represents the value of plant wages accruing as a direct labour charge to that job during the week regardless of where and/or by whom the work was done in the particular department.

On each "Departmental Recapitulation", the total of direct labour time recorded as having been expended for each "job" listed serves as the basis upon which a departmental overhead rate<sup>12</sup> is applied and the resultant

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<sup>12</sup> The method used in the determination of departmental overhead rates is discussed on pages 66 and 67.



applied overhead calculated so as to provide for the equitable allocation and subsequent absorption of overhead costs onto the units of production, the individual job orders. From each "Departmental Recapitulation", the details of direct labour cost and overhead applied are posted weekly to the various "Yellow Sheets"<sup>13</sup> as indicated by the respective job-order numbers. The columnar totals on each of the six "Departmental Recapitulation" are carried forward each week to a single "Monthly Labour and Applied Overhead Summary"<sup>14</sup> (Figure 11).

Direct Material Charges: The job-order work docket, onto which the details of the paper stock required have been transcribed, is to serve as the paper stock requisition for production. As stock is taken from inventory and cut, the details of stock cut for each job are noted on a "Daily Cutting and Wasteage Report" (Figure 12 Page 57 ). The work docket, initialed by the "cutter" signifies that the paper material is ready to enter the productive processes. Where paper stock has been spoiled in some phase of manufacture and additional materials needed, the foreman must approve the additional stock requirements by signing the "Cutting and Wasteage Report" in the appropriate place provided thereon. This form is returned daily to the accounting office where the details of stock cut for each job are compared with the details

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<sup>13</sup> The reverse side of the "Yellow Sheet" has been revised for purposes of accumulating job-cost data as obtained through the revised accounting system. See Figure 10, page 55.

<sup>14</sup> The purpose and use of the figures contained on the "Monthly Labour and Applied Overhead Summary" are explained on page 77.



DEPARTMENT	WEEK ENDING	DIRECT LABOUR		APPLIED OVERHEAD		NON CHARGEABLE LABOUR COST	
		HOURS	COST				
A		189.4	339.75		TOTAL		TOTAL
					189.40		293.24
B		164.2	237.24				
					141.21		793.07
C		197.5	265.46				
					211.33		185.28
D		126.5	274.50				
					194.81		131.89
E		154.35	342.66				
					287.09		187.31
F		349.4	450.30				
					262.05		427.55
TOTAL:		1181.35	1909.91		1285.89		2018.34

FIGURE 11

MONTHLY LABOUR AND APPLIED OVERHEAD SUMMARY



EMPLOYEE			DATE		
STOCK CUT					
JOB NUMBER	DESCRIPTION			UNIT PRICE	AMOUNT
WASTEAGE					
JOB NUMBER	OK'D	CHARGE		UNIT PRICE	AMOUNT

FIGURE 12

DAILY CUTTING AND WASTEAGE REPORT

recorded on the appropriate "Yellow Sheet", costed and noted thereon.<sup>15</sup>

#### ACCOUNTING CONTROL FOR JOB-ORDER COSTING.

1. Direct Labour and Overhead. From the "Monthly Labour and Applied Overhead Summary", the total amount of non-chargeable wages is charged to the Plant overhead control account and the non-chargeable wages subsidiary account by the standard journal entry:

Dr. Plant Overhead Control/Non-chargeable wages

Cr. Plant wages

At the time plant overhead expenses are journalized, the detail charges are distributed to the various departments, in memorandum form, on the basis of actual incurrence, or, if a specific cost association is not possible, on the basis of allocation used in the preparation of the budget. This departmental analysis of plant overhead expenses is effected by use of "Monthly Overhead Expense Analysis Sheets" (Figure 13) one of which is maintained for each item of overhead expense. The totals of distributed expense for each item of plant overhead under the departmental classification is transferred monthly to the respective "Departmental Overhead Summary" (Figure 14).

At the end of each monthly accounting period, the Plant Overhead control account is closed and charges made to each of the six productive departments' plant overhead expense accounts on the basis of the analysis and distribution of the total charge for each department as shown on their respective "Departmental Overhead Summaries".

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<sup>15</sup> For the method of treating materials wasteage contained on the "Daily Cutting and Wasteage Report" see page 62.





The subsidiary plant overhead expense accounts remain unclosed as memoranda accounts in the same way as the various distribution summaries remain as an analysis of the distribution of the total actual monthly plant overhead charge to the departmental plant overhead accounts in the General Ledger.

The "Monthly Labour and Applied Overhead Summary" provides the data necessary for recording the total labour and overhead in process during the month. From the information disclosed in the above summary, the following standard journal entry is made each month.

Dr. Labour in Process            (Total-direct labour cost for month)

Dr. Overhead in Process        (Total-overhead applied for month)

Cr. Applied Overhead Dept. A)

)

Cr. Applied Overhead Dept. B)

)

Cr. Applied Overhead Dept. C)

)

Cr. Applied Overhead Dept. D)

)

Cr. Applied Overhead Dept. E)

)

Cr. Applied Overhead Dept. F)

Amount of overhead applied for each department separately-total of which equals the amount of overhead in Process.

The differences between the actual and the applied overhead for each department reflected when the departmental overhead expense and applied overhead account balances are netted, represents the degree to which departmental operations reach or stay within budgeted monthly expectations. The resultant differences, whether favourable or unfavourable, for each department will be recorded in the General Ledger under separate departmental variance accounts by a contra debit or credit, as the case may be, to the Overhead in Process Account in the General Ledger.

Because of the importance this writer attaches to the individual job orders as the units of production for pricing in many cases, and/or for

evaluating profitability of certain types of work when prices have been quoted or set by competition, the job order cost sheets representing the subsidiary accounts: to the work in process accounts: are to be adjusted monthly for the amount of favourable or unfavourable variance on a departmental base.<sup>16</sup> This will be effected in the following manner by:

(a) determining the amount of variance for each department from the General Ledger departmental overhead variance accounts..

(b) obtaining the total number of direct labour hours worked in each department for the month from the "Monthly Labour and Applied Overhead Summary".

(c) calculating the amount of adjustment for each departmental direct labour expended by use of the following ratio:

$$\frac{\text{AMOUNT OF DEPARTMENTAL OVERHEAD VARIANCE}}{\text{DEPARTMENTAL DIRECT LABOUR HOURS}}$$

(d) effecting the adjustment on the individual job order sheet pro rata according to recorded direct labour hours recorded on a departmental basis.

2. Paper Materials. The "Daily Cutting and Wasteage Summaries" when costed

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<sup>16</sup> The largest single and potentially largest variable item of plant overhead expense is non-chargeable wages. Until such time as the factors governing the variability of this expense are more fully understood and either remedied by increased efficiency in manufacturing and scheduling techniques, or become relatively stable in nature or insignificant in amount through increased volumes of work introduced into the plant, the procedure of charging the individual jobs with overhead variances is considered highly desirable. When the amount of non-chargeable wages becomes the comparatively fixed and estimable overhead expense that the other overhead expenses appear to be, this procedure may be omitted in favour of a single apportionment of net overhead variances to cost of jobs completed and work in process at the year end.

serve as the basis for recording direct material charges and the amount of paper materials wasted. These "Daily Summaries" need to be totalled only once a month and the information recorded by the following standard journal entry:

Dr. Materials in Process

Dr. Plant Overhead Expense/Materials Wasteage

Cr. Paper Stock Account

The above journal entry records the total of paper materials used in production during the month and writes off to overhead expense, materials wasted thereby reducing the book value of the paper material inventory account to an estimated book value.

3. Job order Pricing and Billing. At the present time job prices are set either by 'firm' estimates given the customer, competitive circumstances, or on a "cost-plus" basis. The method of estimating currently in use is governed largely by management's knowledge of competitive market prices rather than by any serious attempt to calculate or predetermine costs of production. This writer has designed a "Job Estimate Sheet" (Figure 15) whose function is to act as the vehicle for recording the details of job costs estimated for individual job orders, whenever an estimate is given, for comparison with the 'actual' production costs recorded on the "Yellow Sheets". The use of "Estimate Sheets" and subsequent comparison with costed "Yellow Sheets" provides a basis upon which to evaluate the soundness of estimating procedures and techniques, and also an additional measure for gauging productive efficiency.

Regardless of the method used in determining selling price, the costed job-order sheets representing jobs completed require only the addition of the Dominion and Provincial Sales Taxes and mark-up before being complete and

MATERIALS	DATE		SIZE	COLOUR		MAKE		MISCELLANEOUS									AMOUNT	TOTAL	
DIRECT LABOUR	DEPARTMENT			DEPARTMENT			DEPARTMENT			DEPARTMENT			DEPARTMENT			DEPARTMENT			
	WORK	HOURS	AMOUNT	WORK	HOURS	AMOUNT	WORK	HOURS	AMOUNT	WORK	HOURS	AMOUNT	WORK	HOURS	AMOUNT	WORK	HOURS	AMOUNT	
TOTAL																			
OVERHEAD			OVERHEAD			OVERHEAD			OVERHEAD			OVERHEAD			OVERHEAD				
TOTAL ESTIMATED JOB COST:																			
MARKUP PERCENTAGE:																			
SELLING PRICE QUOTED:																			

FIGURE 15  
JOB ESTIMATE SHEET



ready for use in invoicing the customer and for posting to the Accounts Receivable subsidiary ledger.<sup>17</sup>

It is proposed that once a month the details of all jobs invoiced during that period be summarized under the following headings:

- (a) Total of direct labour charges
- (b) Total of overhead applied
- (c) Total of paper material charges
- (d) Net selling price
- (e) Dominion Sales Tax payable
- (f) Provincial Sales Tax payable
- (g) Gross selling price

From the above detailed information, the following standard journal entries would be made:

1. Dr. Cost of Jobs Completed (Total of materials, direct labour and applied overhead charges)  
     Cr. Materials in Process (Total of materials charges)  
     Cr. Labour in Process (Total of direct labour charges)  
     Cr. Overhead in Process (Total of overhead applied charges)
2. Dr. Accounts Receivable Control (Gross selling price)  
     Cr. Sales (Net selling price)  
     Cr. Dominion Sales Tax Payable ( Amount of Tax)  
     Cr. Provincial Sales Tax Payable ( Amount of Tax)

The effect of these journal entries is to record Sales and Taxes thereon for the period, and to adjust the work in process accounts of materials, direct

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<sup>17</sup> The retained "Yellow Sheets," representing jobs invoiced, constitute the sales record for this Company.

labour and overhead so as to reflect the cost value of work in process at the end of the period as supported by charges on individual job cost sheets representing jobs as yet not completed or unbilled.

4. The Basis for Applying Overhead to Individual Job-orders. Having established the mechanics of the costing procedures to be used in the revised accounting system as "City Printers Limited", one consideration remains to be explained. It has been recommended that direct labour hours be used as the basis for applying overhead to the various job-orders, and provision has been made for its use in the design of the various costing schedules and summaries.

Where a cost accounting system is designed so as to provide specific information concerning the profitability and/or efficiency of various segments of the overall productive operations, the accumulation and allocation of the elements of total cost to the products of manufacture is best effected through centres of accounting control known as "cost centres". The measure of profitable or efficient manufacturing operations is the extent to which actual costs do not exceed anticipated costs or budgeted standards as reflected in expense variance accounts maintained in the accounting records.

Under the above conditions of cost accounting control, the application and allocation of overhead expenses in aggregate from "cost centres" to the product of manufacture should be on some rateable basis which attempts to correlate the nature of the expenditure with the manner in which the product generally benefits. Thus it is that machine hours are usually the basis for applying overhead where the productivity of operations and the incurrence of overhead expenses are largely dependent upon the maintenance of machine volumes. Where productive processes are chiefly manual or dependent upon continued manual operation and attention, direct labour hours serve as a reasonable basis upon which to apportion overhead. Direct labour hours are also used as the

basis of overhead apportionment when incentive wages, or differential wages based on skill and experience, are paid and comparisons of the relative costs of production under these conditions are desired. For comparative purposes under these circumstances it is regarded as unequitable to make efficient workers or their productive output bear a disproportionate amount of the overhead charges. For the reasons outlined in the foregoing, it is the writer's opinion that direct labour time as a basis for applying overhead to individual job orders most closely approximates a co-relation between present conditions of manufacture and job-costing requirements at "City Printers Limited."

An overhead expense budget, on the departmental basis established earlier in this chapter, has been drawn by this writer. The elements of overhead cost as classified in the budget analysis were derived by a subjective consideration of existing conditions and by a projection of the various items of overhead expense for a fiscal period. On the basis of the departmentalized overhead expense budget departmental overhead rates calculated on direct labour hours were evolved.<sup>18</sup> The details illustrating the method of calculation and the "rates" thereby derived are contained on Exhibit D; supporting data is contained on Schedules VII and VIII, pages 96 and 97 of the Appendix.

#### IV. ILLUSTRATION OF THE REVISED ACCOUNTING SYSTEM.

The information and data compiled in the criticism and analysis of

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<sup>18</sup>

Total labour time of each plant employee was estimated for the fiscal period. Direct labour time for the year was arbitrarily set at 80 per cent of that total and subsequently used in calculating the various departmental overhead rates.

## EXHIBIT D

CITY PRINTERS LIMITED  
ANNUAL BUDGET CALCULATION

Item of Expense	Basis of Allocation	Estimated Total	Department A	Department B	Department C	Department D	Department E	Department F
Non-chargeable wages	Employee							
	A	\$ 1,494.00	\$ 373.50	\$	\$ 373.50	\$ 186.75		\$ 560.25
	B	1,244.00		933.00			\$ 311.00	
	C	1,114.44					1,114.44	
	D	940.91				940.91		
	E	758.80		758.80				
	F	737.12			737.12			
	G	780.48	780.48					
	H	539.40						539.40
	I	368.56		368.56				
	J	260.16			260.16			
	K	433.60						433.60
	L	411.92						411.92
	M	184.32						184.32
	N	433.60	433.60					
	O	771.81		771.81				
Operating supplies	Number of Employees	910.68	82.79	248.37	165.57	82.79	82.79	248.37
Equipment repairs and maintenance	Asset Values	1,021.76	157.66	130.16	224.01	161.43	207.17	141.33
Plant repairs and maintenance	Floor Space	1,009.16	258.13	271.30	93.36	43.22	64.83	278.32
Heat, light, water, power and gas	Floor Space	1,703.90	435.82	458.19	157.61	72.96	109.44	469.88
Provision for depreciation-plant	Floor Space	1,738.50	444.68	467.50	160.80	74.44	111.66	479.42
Provision for depreciation-equipment	Asset Values	3,944.50	608.77	502.28	864.85	623.31	799.90	545.39
Workmen's compensation	Payroll	187.07	28.77	50.24	24.73	20.56	24.18	38.59
Unemployment insurance	Payroll	396.24	60.06	102.18	53.82	31.59	35.10	113.49
Property taxes	Floor Space	486.94	124.54	130.95	45.03	20.85	31.28	134.29
Paper materials wasteage	Pro Rata	420.00	60.00	60.00	60.00	60.00	60.00	120.00
Insurance	Asset Values	640.42	98.86	81.53	140.42	101.20	129.90	88.51
		\$22,932.29	\$ 3,947.66	\$ 5,334.87	\$ 3,360.98	\$ 2,420.01	\$ 3,081.69	\$ 4,787.08
Estimated chargeable labour hours		22,918.4	3,937.8	6,233.6	3,148.8	1,574.4	1,656.0	6,367.8
Departmental overhead rates			\$1.00	\$ .86	\$1.07	\$1.54	\$1.86	\$ .75

the Company's accounting system for the month of September, 1953 will serve as the basis for illustrating the revised accounting system as designed by this writer. For purposes of illustration it is to be assumed that:

1. the value of work in process at the beginning of September is recorded in the books of account,<sup>19</sup>

2. all items of actual plant overhead expense<sup>20</sup> and plant wages for the month of September have been recorded in accordance with the procedures and on the forms outlined, and

3. details of applied overhead, and direct and non-chargeable labour charges have been aggregated to the end of September, such charges appearing on the "Monthly Labour and Applied Overhead Summary" (Figure 11, page 56).

Materials Used. The best estimate of the total value of direct materials used during the month of September, 1953 was the total value of

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<sup>19</sup> The details and calculation of the value of work in process at the beginning of September are contained on Schedule IX, Page 70.

<sup>20</sup> The details of actual factory overhead expenses, which would be accumulated in various plant overhead expense subsidiary accounts as well as on the respective "Departmental Overhead Expense Summaries", have been combined and summarized on Schedule X, Page 71.

<sup>21</sup> The charges appearing on Figure 11 are supported by the following Schedules:

- (a) Schedule XI, page 72.
- (b) Schedule XII, page 73.
- (c) Schedule XIII, page 74.
- (d) Schedule XIV, page 75.

## SCHEDULE IX

## WORK IN PROCESS - BEGINNING OF SEPTEMBER\*

Direct Labour	\$ 911.88
Materials	981.70
Overhead .2276 x \$911.88	<u>207.54</u>
	<u>\$2,101.12</u>

\*Source: Schedule IV, page 28

## SCHEDULE X

DEPARTMENTAL OVERHEAD EXPENSE ALLOCATION  
FOR THE MONTH OF SEPTEMBER 1953

	Actual Plant Overhead Expense	Department A		Department B		Department C		Department D		Department E		Department F	
		Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Non-chargeable wages	\$ 2,018.34	\$293.24	\$132.30	\$ 793.07	\$236.01	\$185.28	\$114.23	\$131.89	\$ 93.96	\$187.31	\$118.80	\$427.55	\$177.46
Operating supplies	36.00	6.00	6.90	6.00	20.70	6.00	13.80	6.00	6.90	6.00	6.90	6.00	20.70
Equipment, repairs and Maintenance	-	-	13.14	-	10.85	-	18.67	-	13.45	-	17.26	-	11.78
Plant repairs and Maintenance	192.13	49.18	21.51	51.68	22.61	17.68	7.78	8.26	3.60	12.30	5.40	53.03	23.19
Depreciation - Plant	167.00	42.75	37.06	44.92	38.96	15.37	13.40	7.18	6.20	10.69	9.31	46.09	39.95
Depreciation - Equipment	333.00	51.28	50.73	42.62	41.86	72.93	72.07	52.62	51.94	67.60	66.66	45.95	45.45
Workmens' Compensation	16.02	2.71	2.40	4.58	4.19	1.65	2.06	1.55	1.71	1.78	2.02	3.75	3.22
Unemployment Insurance	43.90	5.87	5.01	15.15	8.52	5.28	4.49	3.09	2.63	3.09	2.93	11.42	9.46
Property Taxes	50.00	12.80	10.38	13.45	10.91	4.60	3.75	2.15	1.74	3.20	2.61	13.80	11.19
Paper wasteage	-	-	5.00	-	5.00	-	5.00	-	5.00	-	5.00	-	10.00
Insurance	50.00	7.70	8.24	6.40	6.79	10.95	11.70	7.90	8.43	10.15	10.83	6.90	7.38
Heat, Light and Power	82.29	21.06	36.32	22.14	38.18	7.57	13.13	3.54	6.08	5.27	9.12	22.71	39.16
Total	\$2,988.68	\$492.59	\$328.99	\$1,000.01	\$444.58	\$327.31	\$280.08	\$224.18	\$201.64	\$307.39	\$256.84	\$637.20	\$398.94

## SCHEDULE XI

## DEPARTMENTAL DISTRIBUTION OF LABOUR HOURS WORKED IN SEPTEMBER

	Total Hours Worked	Chargeable September Charge	Time In Process	Total Chargeable Time	Total Non-Chargeable Time
Department A					
Employee					
N	160.00	36.30	2.70	39.00	121.00
A	75.20	33.80	9.10	42.90	32.30
G	176.00	94.80	12.70	107.50	68.50
	411.20	164.90	24.50	189.40	221.80
Department B					
Employee					
I	176.00	36.30	33.00	69.30	106.70
O	136.00	9.60	4.00	13.60	122.40
B	172.00	1.30	14.50	15.80	156.20
E	175.00	17.00	48.50	65.50	109.50
	659.00	64.20	100.00	164.20	494.80
Department C					
Employee					
F	176.00	128.20	5.40	133.60	42.40
J	171.00	58.00	5.90	63.90	107.10
	347.00	186.20	11.30	197.50	149.50
Department D					
Employee					
D	176.00	115.70	10.80	126.50	49.50
Department E					
Employee					
C	194.75	124.85	29.50	154.35	40.40
Department F					
Employee					
K	168.00	42.60	.10	42.70	125.30
L	164.00	97.00	10.30	107.30	56.70
A	106.80	56.40	4.40	60.80	46.00
H	142.30	46.70	1.50	48.20	94.10
M	128.00	78.20	12.20	90.40	37.60
	709.10	320.90	28.50	349.40	359.70



## SCHEDULE XII

## VALUE OF DIRECT LABOUR TIME - SEPTEMBER, 1953.

	Chargeable Time	Wage Rate	Amount	Total Department
Department A				
Employee				
N	39.0	\$ 1.00	\$ 39.00	
A	42.9	2.50	107.25	
G	107.5	1.80	193.50	\$ 339.75
Department B				
Employee				
I	69.3	\$ .85	\$ 58.90	
O	13.6	1.78	24.21	
B	15.8	2.50	39.50	
E	65.5	1.75	114.63	237.24
Department C				
Employee				
F	133.6	\$ 1.70	\$ 227.12	
J	63.9	.60	38.34	265.46
Department D				
Employee				
D	126.5	\$ 2.17		274.50
Department E				
Employee				
C	154.35	\$ 2.22		342.66
Department F				
Employee				
K	42.7	\$ 1.00	\$ 42.70	
L	107.3	.95	101.94	
A	60.8	2.50	152.00	
H	48.2	1.50	72.30	
M	90.4	.90	81.36	450.30
Total				<u>\$1,909.91</u>

## SCHEDULE XIII

## SEPTEMBER'S NON-CHARGEABLE WAGES-DEPARTMENTAL

	Non- Chargeable Time-Hours	Wage Rate	Amount	Total Department
Department A				
Employee				
N	121.00	\$ 1.00	\$ 121.00	
A*			48.94	
G	68.50	1.80	123.30	\$ 293.24
Department B				
Employee				
I	106.70	\$ .85	\$ 90.70	
O	122.40	1.78	217.87	
B*			292.88	
E	109.50	1.75	191.62	793.07
Department C				
Employee				
F	42.40	\$ 1.70	72.08	
A			48.94	
J	107.10	.60	64.26	185.28
Department D				
Employee				
A			\$ 24.47	
D	49.50	\$ 2.17	107.42	131.89
Department E				
Employee				
A			\$ 97.62	
C	40.40	\$ 2.22	<u>89.69</u>	187.31
Department F				
Employee				
K	125.30	\$ 1.00	\$ 125.30	
L	56.70	.95	53.86	
A		2.50	73.40	
H	94.10	1.50	141.15	
M	37.60	.90	<u>33.84</u>	<u>427.55</u>
Total				\$ 2,018.34

\*Employee A 78.3 hours @ \$2.50= \$195.75 split 1/8 to each department.

\*Employee B 156.2 hours @ \$2.50 = \$390.50 split 1/4 to each department.

·SCHEDULE XIV·

TOTAL OVERHEAD APPLIED TO JOBS

	Total	Department					
		A	B	C	D	E	F
Direct Labour Hours	1,181.35	189.4	164.2	197.5	126.5	154.35	349.4
Overhead Rate		\$ 1.00	\$ .86	\$ 1.07	\$ 1.54	\$ 1.86	\$ .75
Overhead Applied	\$1,285.89	\$189.40	\$141.21	\$211.33	\$194.81	\$287.09	\$262.05

such materials purchased in that period.<sup>22</sup> To record this information the following journal entry would be made:

Dr. Materials in Process	\$3,108.69
Cr. Paper Stock Inventory	\$3,108.69

Direct Labour. From the "Monthly Direct Labour and Applied Overhead Summary",<sup>23</sup> the total value of direct labour in process arising during the month is recorded as follows:

Dr. Labour in Process	\$1,909.91
Cr. Plant Wages	\$1,909.91

Overhead.

1. Actual. From the information recorded on Schedule X, page 71 which represents the apportionment of actual plant overhead expenses to the various departments, the following journal entry is made the purpose of which is to close the Plant Overhead Expense Control account and to record the departmental expense distribution to the various departmental plant overhead accounts:

Dr. Plant Overhead Expense - Department A	\$ 492.59
Dr. Plant Overhead Expense - Department B	1,000.01
Dr. Plant Overhead Expense - Department C	327.31
Dr. Plant Overhead Expense - Department D	224.18
Dr. Plant Overhead Expense - Department E	307.39
Dr. Plant Overhead Expense - Department F	637.20
Cr. Plant Overhead Expense Control	\$2,988.68

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<sup>22</sup> See the discussion contained on pages 27 to 30 inclusive.

<sup>23</sup> Figure 11, page 56.

2. Applied. The total value of overhead applied to the various job-orders on a departmental basis is recorded from data compiled on the "Monthly Direct Labour and Applied Overhead Summary" as follows:

Dr. Overhead in Process	\$1,285.89
Cr. Plant Overhead Applied - Department A	\$ 189.40
Cr. Plant Overhead Applied - Department B	141.21
Cr. Plant Overhead Applied - Department C	211.33
Cr. Plant Overhead Applied - Department D	194.81
Cr. Plant Overhead Applied - Department E	287.09
Cr. Plant Overhead Applied - Department F	262.05

The "variances" arising between the respective departmental actual plant overhead expense accounts and the applied overhead expense accounts are recorded in the books of account by the following journal entry:<sup>24</sup>

Dr. Overhead in Process	\$1,702.79
Cr. Plant Overhead Variance - Department A	\$ 303.19
Cr. Plant Overhead Variance - Department B	858.80
Cr. Plant Overhead Variance - Department C	115.98
Cr. Plant Overhead Variance - Department D	29.37
Cr. Plant Overhead Variance - Department E	20.30
Cr. Plant Overhead Variance - Department F	375.15

The apportionment of this additional overhead in process charge to the subsidiary records, that is, the individual job order cost sheets, is made on a departmental basis in proportion to the recorded direct labour hours for the

## SCHEDULE XV

APPORTIONMENT OF UNFAVOURABLE OVERHEAD  
VARIANCES

	Total	Chargeable September	Overhead In Process
Department A			
Direct labour time - hours	189.40	164.90	24.50
Total departmental variance	\$ 303.19	\$ 263.97	\$ 39.22
Department B			
Direct labour time - hours	164.20	64.20	100.00
Total departmental variance	\$ 858.80	\$ 335.78	\$ 523.02
Department C			
Direct labour time - hours	197.50	186.20	11.30
Total departmental variance	\$ 115.98	\$ 109.34	\$ 6.64
Department D			
Direct labour time - hours	126.50	115.70	10.80
Total departmental variance	\$ 29.37	\$ 26.86	\$ 2.51
Department E			
Direct labour time - hours	154.35	124.85	29.50
Total departmental variance	\$ 20.30	\$ 16.42	\$ 3.88
Department F			
Direct labour time - hours	349.40	320.90	28.50
Total departmental variance	\$ 375.15	\$ 344.55	\$ 30.60
Total Direct Labour Time (hours)	1,181.35	976.75	204.60
Total Variance	\$1,702.79	\$1,096.92	\$ 605.87

period.

Cost of Jobs Completed and Sold. By totalling the detail of the material, direct labour and applied overhead charges on the costed job-order sheets representing sales for the month, the following summary of charges is obtained:<sup>25</sup>

Materials	\$3,607.26
Direct Labour	2,481.42
Applied Overhead	2,374.87

This data is recorded by:

Dr. Cost of Jobs Completed	\$8,463.55
Cr. Materials in Process	\$3,607.26
Cr. Labour in Process	2,481.42
Cr. Overhead in Process	2,374.87

The residual balances remaining in the respective work in process accounts, supported by charges on uncompleted or unbilled job order cost sheets are thereby derived as follows:<sup>26</sup>

Materials in Process	\$ 483.13
Labour in Process	340.37
Overhead in Process	821.35

Sales. The value of sales recorded for the month of September 1953, in the amount of \$11,767.60, does not fully disclose the total sales of that month because of the practice of back-dating invoices. The following sales calculation was made so as to adjust sales to reveal revenue from jobs finished in September:

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<sup>25</sup> Schedule XVI, page 80.

<sup>26</sup> Schedule XVI, page 80.

# SCHEDULE XVI

## COST OF JOBS COMPLETED DURING SEPTEMBER

Work in Process Accounts				
	Total*	Materials	Direct Labour	Overhead
Work in Process-beginning of September	(a) \$ 2,101.12	\$ 981.70	\$ 911.88	\$ 207.54
Charges arising during September:				
Materials Used	(b) 3,108.69	3,108.69		
Direct Labour	(c) 1,909.91		1,909.91	
Overhead - Applied directly	(d) 1,285.89			1,285.89
- Supplemental	(e) <u>1,702.79</u>			<u>1,702.79</u>
	\$10,108.40	\$ 4,090.39	\$ 2,821.79	\$ 3,196.22
Work in Process-end of September				
Materials	(f) \$ 483.13	\$ 483.13		
Direct Labour	(g) 340.37		\$ 340.37	
Overhead	(h) <u>821.35</u>			\$ <u>821.35</u>
Cost of Jobs Completed-September	\$ 8,463.55	\$ 3,607.26	\$ 2,481.42	\$ 2,374.87

\*Source:

(a) Schedule IX, page 70.

(b) Discussion - page 27-30.

(c) Schedule XII, page 73.

(d) Schedule XIV, page 75.

(e) Schedule XV, page 78.

(f) Schedule IV, page 28.

(g) Schedule XVII, page 98.

(h) Schedule XVIII, page 99.



Recorded Sales		\$11,767.60
<u>Add:</u> Sales back-dated to August	\$150.75	
Adjustment to prior months	<u>38.00</u>	<u>188.75</u>
		\$11,956.35
<u>Less:</u> Sales of October		<u>125.80</u>
September Sales (Adjusted)		<u>\$11,830.55</u>

Preparation of the Statement of Profit and Loss. From the data contained in the operating accounts maintained in the general ledger the preparation of accurate monthly profit and loss statements is a simple process. Details of expenses incurred and charges made to the work in process accounts are readily available from the various subsidiary records without the necessity of preliminary analysis. A statement of profit and loss for the month of September, 1953, based on the information recorded in the foregoing illustration and in the non-operating expense accounts,<sup>27</sup> is contained on Exhibit E.

#### IV. UTILIZATION OF THE REVISED ACCOUNTING SYSTEM IN COST CONTROL ANALYSIS

The accumulation and presentation of financial data which makes possible the drawing of accurate and realistic operating statements is not the only advantage which accrues through the use of the procedures outlined in the revised accounting system. The procedures followed for the accumulation of job cost data also makes possible analysis which will aid in the isolation of

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<sup>27</sup> Exhibit C, page 37.

## EXHIBIT E

CITY PRINTERS LIMITED  
 PROFIT AND LOSS STATEMENT FOR MONTH OF  
 SEPTEMBER, 1953.

Sales					\$ 11,830.55
Cost of Sales:					
Materials used					
Opening Inventory	\$5,500.00				
Purchases	<u>3,108.69</u>	\$8,608.69			
Ending Inventory		<u>5,500.00</u>	\$ 3,108.69		
Direct Labour			1,909.91		
Overhead Expenses:					
Non-chargeable wages		\$2,018.34			
Plant repairs and maintenance		192.13			
Operating supplies		36.00			
Depreciation - plant		167.00			
Depreciation - equipment		333.00			
Workmen's compensation		16.02			
Unemployment insurance		43.90			
Property taxes		50.00			
Insurance		50.00			
Heat, light and power		<u>82.29</u>	<u>2,988.68</u>	\$8,007.28	
Work in process-beginning of month					
Materials in process	\$ 981.70				
Labour in process	911.88				
Overhead in process	<u>207.54</u>	\$2,101.12			
Work in process-end of month					
Materials in process	\$ 483.13				
Labour in process	340.37				
Overhead in process	<u>821.35</u>	<u>1,644.85</u>	<u>456.27</u>	<u>8,463.55</u>	
		Gross Profit on Sales			\$ 3,367.00
Selling Expenses:					
Selling salaries		\$ 740.00			
Advertising		25.00			
Travel expenses		293.07			
Business tax		10.00			
Delivery expenses		<u>81.80</u>	\$1,149.87		
Office and Administrative Expense:					
Postage		\$ 11.00			
Group insurance		89.67			
Interest expense		17.78			
Legal and audit fees		53.83			
Bad debts		5.00			
General office		53.64			
Office salaries		640.00			
Neon products		7.20			
Subscriptions and donations		<u>46.25</u>	<u>924.37</u>	<u>2,074.24</u>	
		Net Profit			\$ 1,292.76

factors and expenses contributing to unfavourable or unprofitable operating costs.

The use of the departmental plant overhead expense summaries (Figure 9) which accumulate the details of actual plant overhead expenses incurred by each department during each accounting period provides the means of comparing actual expenses with the budgeted standard in total as well as in detail. The isolation of variances between actual and budgeted items of plant overhead expenses is the first step in taking remedial or corrective action. An analysis of the unfavourable departmental variances recorded for the month of September is contained on Schedule XIX.

The largest single item of overhead expense is non-chargeable wages. Through the data accumulated in the various costing records it is possible to isolate those employees and/or departments where non-chargeable wages are excessive. The causes of non-chargeable time may, of course, be other than those over which the individual employee may reasonably be expected to have or exert any control. But knowledge of the areas of excessive idle time costs may indicate operations which should be discontinued or may even suggest reducing the number of employees. Such an analysis for the month of September, 1953 is contained on Schedule XX, page 85.

## SCHEDULE XIX

## ANALYSIS OF DEPARTMENTAL OVERHEAD VARIANCES

Department	A	B	C	D	E	F
Unfavourable Variance	\$303.19	\$ 858.80	\$115.98	\$ 29.37	\$ 20.30	\$375.15
Budget Variance						
Actual Overhead	\$492.59	\$1,000.01	\$327.31	\$224.18	\$307.39	\$637.20
Budgeted Overhead	328.99	444.58	280.08	201.64	256.84	398.94
	-\$163.60	-\$ 555.43	-\$ 47.23	-\$ 22.54	-\$ 50.55	-\$238.26
Capacity Variance						
Budget Direct Labour.						
Time (Hours)	328.20	519.50	262.40	131.20	138.00	530.60
Actual Direct Labour.						
Time (Hours)	189.40	164.20	197.50	126.50	154.35	349.40
	138.80	355.30	64.90	4.70	16.35	181.20
Overhead Rate	\$ 1.00	\$ .86	\$ 1.07	\$ 1.54	\$ 1.86	\$ .75
Variance*	-\$139.59	-\$ 303.37	-\$ 68.75	-\$ 6.83	+\$ 30.25	-\$136.89

\*Small differences due to the rounding off of the departmental overhead rates when calculated are adjusted here.

## SCHEDULE XX

## ANALYSIS OF EMPLOYEES' PRODUCTIVITY

	Productive Time to Total Hours worked Per cent	Productive Time to Budgeted Standard Per cent	Percentage of Productivity Under Standard Per cent
Department A			
Employee			
N	24.4	30.5	69.5
A	57.0	71.3	28.7
G	61.1	76.3	23.7
Department B			
Employee			
I	33.7	49.3	50.7
O	10.0	12.5	87.5
B	9.2	11.5	88.5
E	37.4	46.8	53.2
Department C			
Employee			
F	75.9	94.9	5.1
J	37.4	46.7	53.3
Department D			
Employee			
D	71.9	89.8	10.2
Department E			
Employee			
C	79.2	99.1	.9
Department F			
Employee			
K	25.4	31.8	68.2
L	65.4	81.8	18.2
A	57.0	71.3	28.7
H	33.9	42.3	57.7
M	70.6	88.3	11.7

## CHAPTER VII

### SUMMARY AND CONCLUSION

#### I. SUMMARY

It was felt that the financial difficulties being experienced by "City Printers Limited" were attributable in part at least, to a faulty accounting system which condition was further aggravated by poorly drawn and incomplete financial statements. Generalizing from the analysis of the Company's Profit and Loss Statement for the month of September, 1953, it may be said that the failure to recognize the value of work in process and accrued expenses in the preparation of interim operating statements resulted in the presentation of grossly misleading information. Although management believed that low annual profits were caused by a few 'bad months', investigation and the use of comparative operating statements disclosed that such was a chronic condition attributable to the lack of pricing procedures and inadequate cost controls.

Failure to use the accrual method of accounting was not the only structural weakness in the accounting system employed at "City Printers Limited". Technical procedures followed were circuitous to such an extent that useful and significant data was lost in a maze of unco-ordinated and often incomplete detail. It was also pointed out that the 'period' basis of drawing financial statements was not suitable to the Company's present accounting requirements, as it failed to associate costs with related revenues.

An accounting system revision was undertaken based on information

uncovered concerning the weaknesses of the present accounting system and the requirements of management for accurate operating statements. Re-designing the books of original entry, utilizing summary schedules, and employing basic cost accounting principles served as the basis upon which the revised accounting system was developed. The objective of the accounting system revision was to place the books of account on a job-order basis thereby associating costs with related revenue in lieu of the present 'period' basis which has been proved both inadequate and unrealistic for purposes of portraying the results of the manufacturing and selling operations of the business. By providing a vehicle for recording sales both accurately and systematically, and the means for determining the values of materials, labour and overhead in process, the additional components essential for drawing realistic and informative operating statements were supplied.

The derivation of departmental overhead rates and the formulation of a scientific means of applying those rates to the various job-orders should aid management in controlling the now nebulous indirect costs of operations and production. The procedures outlined for the analysis of the departmental variance accounts should also provide a measure of the effectiveness of allocating overhead expenses to the units of production.

It should be noted that the revised accounting system has been specifically designed so as to provide a large measure of cost accounting flexibility. Neither the addition of more productive departments, the employment of more or less workmen, nor the increase of productive capacity or volume of work handled will effect the general accounting pattern. Changes of the nature referred to above will of course require budget adjustments, but the forms as designed, and the procedures outlined for recording the accounting information and drawing operating statements is considered adequate for any foreseeable changes that may occur.

## II. CONCLUSION

Although the preparation of financial statements in business enterprises has become an almost universal practice, the importance of adequate accounting procedures as a guide to good business management is not fully appreciated. Too frequently, the requirements of governmental and financial agencies have determined accounting standards, with the result that the books of account and statements drawn therefrom, reflect little more than minimum information. In such circumstances it is not surprising that many executives are not aware of the useful information which could be obtained from a well-designed accounting system.

Aside from certain specific inadequacies in any particular accounting system which may be entirely attributable to faulty design, there are those inadequacies which characterize and are inherent in every system however simple or complex it may be. Financial Accounting by its very nature is the recording of facts and information which at any given point in time constitute historical data. The effect of circumstances or events which have given rise to any particular transaction is often felt by a business before becoming the basis of an accounting entry or a statistic on some report or schedule. These truisms are entirely justifiable bases of complaint against information supplied from accounting records in general. The effects of such weaknesses are mitigated by a number of procedural methods, some of which are of quite recent development in the history of accounting techniques.

The most widespread practice used to overcome the objections referred to above is to increase the currency of the data by the preparation of certain daily and weekly operating reports, and at least, monthly financial statements. In this manner management is kept reasonably up-to-date on the progress of



operations as the fiscal period develops and is able to maintain closer control over expenditures making adaptations of policies possible when such are likely to be most effective.

Of more recent development, however, has been the use of cost accounting techniques and budgetary controls as fully integrated parts of the general accounting system. Cost estimates and forecasts of anticipated business activities add significance to data accumulated in the accounting records thereby giving management not only factual data but also a method of evaluating such data in the light of events and conditions which were forecast at some previous date. The utilization of designated check points within the accounting system, often referred to as "cost centres", provides an effective means of isolating and controlling factors contributing to unfavourable business conditions, and may also although perhaps indirectly, suggest avenues for corrective measures.

When discussing accounting systems as other than subjects of academic consideration, it is important that one does not overestimate their value because of structural elaborateness or the extent to which accounting principles are utilized. Equally important, however, is the necessity to guard against the tendency to undervalue the contribution that a well-designed and efficiently operated accounting system can make towards effective management.

It must constantly be borne in mind, therefore, that any system, accounting or otherwise, is only as good as those who operate it and evaluate the information which it provides. Statistics, reports and financial statements, however accurate and valuable they may be in themselves, are of real worth only if they are utilized to their fullest extent. Too often in this day and age people become slaves to "systems" of one

kind or other, rather than make the system serve their purposes. Emphasis properly placed must always be with the individual and not with the "system".

The value of accounting as an aid in achieving or maintaining successful business operations was not, however, recognized by the management of "City Printers Limited". Minimum accounting records presently utilized did not provide sufficient information to be of constructive assistance in setting policies or in the direction of day to day operations. It was not suprising to find, therefore, that management attached little importance to the accounting functions within the business or the data provided thereby.

Although the subject matter of this thesis has dealt with a specific problem revolving about inadequacies in the accounting system of "City Printers Limited", it has been this writer's intention that certain general accounting problems confronting 'small business organizations' be developed more fully and alluded to whenever the opportunity presented itself. In the analysis and criticism of the financial statements and accounting system of "City Printers Limited", certain accounting principles have been explained and their use justified. The effect of poor accounting procedures and practices on the content of financial statements should emphasize that there is no particular sanctity to accounting per se and that only a properly designed accounting system suitable to the needs of a particular business organization can be of constructive value to its management.

The revised accounting system satisfies the present accounting requirements of "City Printers Limited". Although the procedures governing the operation of that system have been simplified so they may be followed and maintained without difficulty, such have been effected without sacrificing either utility or completeness. The accounting system revision not only

eliminates the weaknesses discovered in the present accounting system of "City Printers Limited", but also provides the management of that Company with a source of information which should prove useful in the conduct of the business and in the development of future operating policies.

This writer will be sufficiently rewarded for the time and effort expended in studying, analyzing and revising the accounting system of "City Printers Limited" if such contribute in any way to solution of the financial problems of that Company.

## BIBLIOGRAPHY

- Blocker, John G., Cost Accounting, 2nd ed., New York, McGraw-Hill, 1948.
- Church, A. Hamilton, Manufacturing Costs and Accounts, New York, McGraw-Hill, 1929.
- Devine, Carl Thomas, Cost Accounting and Analysis, New York, Macmillan, 1950.
- Dohr, James L., and Howell A. Inghram, Cost Accounting Principles and Practice, 3rd ed., New York, Roland Press, 1946.
- Gardner, Fred V., Variable Budget Control, New York, McGraw-Hill, 1940.
- Gillespie, Cecil, Accounting Systems, New York, Prentice-Hall, 1954.
- Kimball, Dexter S., "Cost Finding," in Modern Business, New York, Alexander Hamilton Institute, 1919, vol. 10.
- Kohler, Eric L., A. Dictionary for Accountants, New York, Prentice-Hall, 1952.
- Lang, Theodore, ed., Cost Accountants' Handbook, New York, Roland Press, 1954.
- Lasser, J. K., "Accounting for the Printing Industry," in Lasser, J. K., ed., Handbook of Accounting Methods, New York, Van Nostrand, 1943, pp. 976-988.
- Matz, Adolf, Othel J. Curry and George W. Frank, Cost Accounting, Cincinnati, Ohio, South-Western Publishing, 1952.
- Nelson, Oscar S., and Arthur D. Maxwell, Accounting Systems, Chicago, Richard D. Irwin Inc., 1950.
- Neuner, J. W., and Ulrich J. Neuner, Accounting Systems, Scranton, Pennsylvania, International Textbook Company, 1949.
- Paton, W. P., ed., Accountants' Handbook, 3rd ed., New York, Roland Press, 1953.
- Tarrant, Willard K., "Printing Businesses," in Lasser, J. K., ed., Handbook of Auditing Methods, New York, Van Nostrand, 1953, pp. 628-635.
- Vance, Lawrence L., Theory and Technique of Cost Accounting, New York, Foundation Press, 1952.
- Van Sickle, Clarence L., Cost Accounting: Fundamentals and Procedures, New York, Harper & Brothers, 1938.

## APPENDIX

## SCHEDULE VI

CITY PRINTERS LIMITED  
PROFIT AND LOSS STATEMENT WORKING PAPERS FOR  
MONTH OF SEPTEMBER 1953

	Cumulative to August 31, 1953		Cumulative to September 30, 1953		September, 1953 (Unadjusted)		Adjustments		September, 1953 (Adjusted)	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Paper stock inventory-May 31, 1953	\$ 5,645.00		\$ 5,645.00							
Building maintenance	37.80		37.80							
Insurance	150.00		200.00		\$ 50.00				\$ 50.00	
Property tax	156.25		206.25		50.00				50.00	
Merchandise purchases	7,777.40		9,832.38		2,054.98		(b) \$1,053.71		3,108.69	
Sales		\$31,909.44		\$43,677.04		\$ 11,767.60	(a) 1,292.20			\$10,475.40
Fuel	17.24		17.24							
Light, power and gas	174.06		256.35		82.29		(e) 59.70		141.99	
Overhead	216.00		252.00		36.00				36.00	
Plant expenses	118.39		310.52		192.13				192.13	
Plant wages	13,856.19		17,682.18		3,825.99		(c) 179.39		4,005.38	
Water	11.30		11.30							
Expenses-payables	3,105.43		4,159.14		1,053.71			(b) \$1,053.71		
Paper stock inventory-closing		5,500.00		5,500.00						
Depreciation	1,500.00		2,000.00		500.00				500.00	
Workmen's compensation			29.87		29.87		(h) 16.02	(g) 29.87	16.02	
Business tax	34.13		44.13		10.00				10.00	
Bad debts recovered		150.00		200.00		50.00	(f) 50.00			
Advertising	31.50		56.50		25.00				25.00	
Collection-bad debts	15.00		20.00		5.00				5.00	
Legal and audit fees							(d) 53.83		53.83	
Group insurance	130.14		219.81		89.67				89.67	
Interest and discounts	22.41		40.19		17.78				17.78	
Office expense	185.84		239.48		53.64				53.64	
Office salaries	1,950.00		2,590.00		640.00				640.00	
Neon products	14.40		21.60		7.20				7.20	
Postage	34.00		45.00		11.00				11.00	
Salaries-selling	2,784.68		3,524.68		740.00				740.00	
Selling and traveling expenses	920.40		1,213.47		293.07				293.07	
Subscriptions, dues and sundry	106.25		152.50		46.25				46.25	
Unemployment insurance	109.43		153.33		43.90				43.90	
Delivery expense	177.01		258.81		81.80				81.80	
Profit or loss		1,720.81	157.51		1,878.32				257.05	
Adjustments account							(g) 29.87	(a) 1,292.20		
							(c)	179.39		
							(d)	53.83		
							(e)	59.70		
							(f)	50.00		
							(h)	16.02		
	\$39,280.25	\$39,280.25	\$49,377.04	\$49,377.04	\$11,817.60	\$11,817.60	\$2,734.72	\$2,734.72	\$10,475.40	\$10,475.40

## SCHEDULE VII

ESTIMATED ANNUAL VALUE OF DIRECT AND  
NON-CHARGEABLE LABOUR TIME

Employee	Hourly Wage Rate	Maximum Days of Employment	Hours Worked Per day	Normal Hours Worked Per Annum	Estimated Annual Overtime (Hours)	Total Hours	Annual Holidays (Hours)	Maximum Actual Hours Worked Per Annum	Percentage of Productive Labour Time	Productive Labour Time	Value of Productive Labour Time	Value of Non- Chargeable Labour Time	Total Value of Labour Time
A	\$2.50	256	8	2008	500	2508	120	2388	80	1910.4	\$ 4,776.00	\$ 1,494.00	\$ 6,270.00
B	2.50	256	8	2008	-	2008	120	1888	80	1510.4	3,776.00	1,244.00	5,020.00
C	2.22	256	8	2008	150	2158	80	2070	80	1656.	3,676.32	1,114.44	4,790.76
D	2.17	256	8	2008	-	2008	40	1968	80	1574.4	3,416.45	940.91	4,357.36
E	1.75	256	8	2008	-	2008	40	1968	80	1574.4	2,755.20	758.80	3,514.00
F	1.70	256	8	2008	-	2008	40	1968	80	1574.4	2,676.48	737.12	3,413.60
G	1.80	256	8	2008	-	2008	40	1968	80	1574.4	2,833.92	780.48	3,614.40
H	1.50	256	6.4	1638	-	1638	40	1598	80	1278.4	1,917.60	539.40	2,457.00
I	.85	256	8	2008	-	2008	40	1968	80	1574.4	1,338.24	368.56	1,706.80
J	.60	256	8	2008	-	2008	40	1968	80	1574.4	944.64	260.16	1,204.80
K	1.00	256	8	2008	-	2008	40	1968	80	1574.4	1,574.40	433.60	2,008.00
L	.95	256	8	2008	-	2008	40	1968	80	1574.4	1,495.68	411.92	1,907.60
M	.90	128	8	1024	-	1024	-	1024	80	819.2	737.28	184.32	921.60
N	1.00	256	8	2008	-	2008	40	1968	80	1574.4	1,574.40	433.60	2,008.00
O	1.78	256	8	2008	-	2008	40	1968	80	1574.4	2,802.43	771.81	3,574.24
										22918.4	\$36,295.04	\$10,473.12	\$46,768.16



## SCHEDULE VIII

## ASSET VALUES AND SPACE OCCUPANCY OF EACH DEPARTMENT

Department	Floor Space		Asset Values	
	per cent	square foot	per cent	amount
A	25.6	896	15.4	\$ 5,860.00
B	26.9	942	12.8	4,835.00
C	9.2	324	21.9	8,325.00
D	4.3	150	15.8	6,000.00
E	6.4	225	20.3	7,700.00
F	27.6	966	13.8	5,250.00
	100.0	3503	100.0	\$37,970.00

## SCHEDULE XVII

## SEPTEMBER'S DIRECT LABOUR IN PROCESS - MONTH END

	Work in Process Hours	Wage Rate	Amount	Total Department
Department A				
Employee				
N	2.70	\$1.00	\$ 2.70	
A	9.10	2.50	22.75	
G	12.70	1.80	22.86	\$ 48.31
Department B				
Employee				
I	33.00	\$ .85	\$28.05	
O	4.00	1.78	7.12	
B	14.50	2.50	36.25	
E	48.50	1.75	84.88	156.30
Department C				
Employee				
F	5.40	\$1.70	\$ 9.18	
J	5.90	.60	3.54	12.72
Department D				
Employee				
D	10.80	\$2.17	\$23.44	23.44
Department E				
Employee				
C	29.50	\$2.22	\$65.49	65.49
Department F				
Employee				
K	.10	\$1.00	\$ .10	
L	10.30	.95	9.78	
A	4.40	2.50	11.00	
H	1.50	1.50	2.25	
M	12.20	.90	10.98	<u>34.11</u>
Total				<u>\$340.37</u>

SCHEDULE XVIII

OVERHEAD IN PROCESS - END OF SEPTEMBER

Overhead Applied Directly\*:

	Hours	Rate	Amount
Department A	24.50	\$1.00	\$ 24.50
Department B	100.00	.86	86.00
Department C	11.30	1.07	12.09
Department D	10.80	1.54	16.64
Department E	29.50	1.86	54.87
Department F	28.50	.75	<u>21.38</u>
Total			\$ 215.48

Overhead - Supplemental Apportionment \*\*: 605.87

Overhead in Process - end of September \$ 821.35

\* Schedule XI, page 72.

\*\* Schedule XV, page 78.

☐ STOCK CUT

# WORK ORDER DOCKET

NAME \_\_\_\_\_

ADDRESS.

Customer's Order No.

**CREDIT**

**Deposit.**

## DESCRIPTION

# SET JOB.....UP

### PREVIOUS ORDER

No.

**PRESS SIZE**.....up.....x

**EXACT TRIMMED SIZE.....x.**

STOCK  
ORDERED

COLUMBIA

**BARBER-ELLIS**

S.D.&W.

## Bindery

STOCK	SIZE				WT.	KIND OF STOCK	COLOR
Orig.	Sheets	X	—	lbs.			
Dup.	Sheets	X	—	lbs.			
Trip.	Sheets	X	—	lbs.			
Quad.	Sheets	X	—	lbs.			
Quin.	Sheets	X	—	lbs.			
Sex.	Sheets	X	—	lbs.			

# STOCK

# BINDERY and PRESS

## DELIVERY

	BINDERY RULE	PRESS RULE	PRINT	PERFORATE PRESS BIND.	PUNCH	NUMBERING	
ORIG.						No.	up
DUP.						<b>INK</b>	
TRIP.						Colour.....	
QUAD.						REORDER No.....	
QUINT.							
COLATE	FOLD	SCORE	R. C.	INDEX	STRING	PAD IN	WRAP IN

## BINDING.

FIGURE 2

YELLOW SHEET

SHIP TO.

WHEN

BY FRT..... MAIL..... MESSENGER..... F.O.B.

No.

Date Received.

**Invoiced Date.**

Price Quoted	
INVOICE IN	
Dup.—Trip.—Quad.	\$.....

INVOICE IN PT  
Dup.—Trip.—Quad.

३

COST

No. **FEDERAL SALES TAX**

# PROVINCIAL SALES TAX

Mail, Freight, Etc.

**TOTAL**

Press No.

Lino.

Typeface.

**Art Work:**

### Cuts.

## Photos

Hold Form.

Plate to be filed.

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

SIZE	SQ. INS.	LINE	SCREEN	CONTACT	PRINTS
4 X 5	20				
8 X 5	40				
8 X 10	80				
10 X 12	120				
11 X 14	154				
12 X 18	216				
14 X 17	238				
16 X 20	320				
20 X 24	480				

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		Hrs.		
STOCK				
CUTS				
RULING				
ART WORK				
HANDLING				
<b>TOTAL</b>				
LINO				
COMPOSITION—HAND				
MACHINE				
CHANGES				
METAL				
LOCK-UP				
MAKE READY				
RUNNING	KELLY			
RUNNING COVER	AUTOMAT.			
	PLATEN			
INK				
ART WORK				
CAMERA				
OPAQUE				
LAYOUT				
POSITIVES				
PHOTO OR OTHER MATERIALS				
PLATE (Kind)				
PRESS MAKE READY	WEB or HAR.			
RUNNING	DAVIDSON			
WASH UP				
INK				
CUTTING				
PERFORATING				
PUNCHING				
NUMBERING				
COLATING				
FOLDING, MACHINE				
FOLDING, HAND				
PADDING				
RULING				
BINDING				
STITCHING				
TRIMMING				
WRAPPING				
DELIVERY				
COST				
MARGIN				
SELLING PRICE				

☐ STOCK CUT

# WORK ORDER DOCKET

No. 12

Date Received

NAME

ADDRESS

Customer's Order No.

CREDIT

Deposit

DESCRIPTION

☐ PROOF

## Delivery Date

DAY AND DATE

SET JOB UP

PREVIOUS ORDER

No.

PRESS SIZE up x

EXACT TRIMMED SIZE x

STOCK  
ORDERED

☐

COLUMBIA

☐

BARBER-ELLIS

☐

S.D.&L.

☐

Bindery

☐

SIZE

WT.

KIND OF STOCK

COLOR

STOCK

Orig.	Sheets	X	-	lbs.
Dup.	Sheets	X	-	lbs.
Trip.	Sheets	X	-	lbs.
Quad.	Sheets	X	-	lbs.
Quin.	Sheets	X	-	lbs.
Sext.	Sheets	X	-	lbs.

BINDERY  
RULE

PRESS  
RULE

PRINT

PERFORATE  
PRESS BIND.

PUNCH

NUMBERING

ORIG.

DUP.

TRIP.

QUAD.

QUINT.

No.

up

INK

Colour

REORDER No.

COLATE

FOLD

SCORE

R. C.

INDEX

STRING

PAD IN

WRAP IN

BINDING

FIGURE 3

WORK DOCKET

SHIP TO

WHEN

BY FRT. MAIL MESSENGER F.O.B.

Press No.

Lino

Typeface

Art Work

Cuts

Photos

Hold Form

Plate to be Filed

14

[illegible]