PROFIT PLANNING OR: MANAGEMENT ACCOUNTING (Part 1)

by
Murray Rumack, FCA, MIMC

(The following is the first of a two-part series which represents an address given by Mr. Rumack, a principal in the Toronto chartered accountants' firm, Murray Rumack, Stern & Cohen, to the Association's annual meeting at Windsor, on February 12, 1970. The second part of the series will be carried in the next issue of the publication.)

In order to understand something about this subject, I will give you what I think is a definition of Management Accounting.

Definition

Accounting is a means of collecting, analyzing and interpreting in currency (in Canada and the United States, in dollars), information about business. It therefore follows that Management Accounting is collecting, analyzing and interpreting of the above information for use of management.

Use

How do we use this information? I would say that the purpose and function of Management Accounting is to help one earn a satisfactory return on both time and money invested in a business, consistent with maintaining a sound financial position. In order to determine that this is so, one has to know at least the following:

(a) How much money will be required to be invested in offices, plants, inventories and other assets, including cash for working capital?

(b) Is there a satisfactory return?

(c) One should try to maintain a sound financial position at all times, and along with this;

(d) Other information, such as location, availability of labour, availability of raw material, market requirements, etc. which should be up to date.

All of the above information should be kept up to date at all times.

(a) **Money Invested**

You should be able to quickly ascertain - what does the business own and how much of it has been paid for by the creditors; and how much by you, the proprietors or shareholders. This would cover such items as accounts receivable, inventories, equipment, land, buildings, account payable, loans receivable and owners' equity etc.

(b) **Sastifactory Return**

Under the first heading, one wants to know - is there a satisfactory return? What does this mean? This may mean, very simply, is there a profit, or loss? How much of this profit or loss is made up of sales, or fees billed out; or what is the cost of producing the above revenue, in labour, overhead, subcontracting, etc.?

Where more than one type of department is operated by a company, the records should be designed as to tell you what each department (or branch) is earning for the overall results of the business.

You should be able, without any trouble, to quickly ascertain what trend of each department will show, as well as the trend of the overall business.

You should know where money can be saved by reduction in costs and **you should certainly know what it costs you to open the door of your business every morning** — in other words, **what is your break-even point?**

(c) **Sound Financial Position**

Definition - Balance Sheet (See Figures 1A & 1B)

In order to determine the soundness of a business, we have to study that business' balance sheet.

What is a balance sheet? A balance sheet is a financial document that portrays the financial condition of that company as at a given date in a manner similar to taking a picture that would show you the condition and position of certain objects as at a certain moment.

For your convenience, you have here Figure 1A and 1B of hypothetical companies showing their respective financial positions as at certain dates. Note — they do not have to be December 31st; it is more logical to have a balance sheet as at the end of a business cycle.

On the balance sheet, you should be prepared to understand, first of all, what is an asset; what is a liability and what does one mean by equity?

There are various forms of assets, various forms of liabilities and several items that could comprise the overall group of accounts that make up equity. Let us quickly define some of these basic concepts:

Assets

Assets are items owned by a company or a proprietor. For a small business, they commonly include cash, acounts receivable, inventories (which could include work-in-process), land, buildings, machinery, equipment and other investments.

Liabilities

Liabilities are amounts of debts owing by the company to the suppliers for services or goods or money; these suppliers are also called creditors.

Among the more common liabilities are accounts payable, notes payable, accrued liabilities, corporation income taxes payable, various forms of sales taxes, mortgages payable etc.

Under this set of circumstances, you would ask yourself, how accurate are the stated amounts of the assets?

— When will they be realized in cash?

— How soon must the debts be paid and how do they compare with the assets that will be turned into cash to pay for them?

What was the trend for each of these elements in successive periods?

(d) **Other Information**

From an operational point of view, some of the other questions, in addition to location and feasibility are availability of materials, availability of skilled and unskilled labour (as may be required), transportation, etc., as well as answering the following questions:

(1) What has happened to the cash received during any one period?

(2) What money is available to the proprietors or shareholders for either dividends or expansion?

(3) What is likely to happen in succeeding periods to sales or fees rendered for services, direct costs, such as productive labour and/or materials and the cash resulting from same?

There is no intent on my part to teach you today how to become bookkeepers or to understand bookkeeping per se. However, I have to urge you to accept the fact that there are many qualities that make a good manager and a successful businessman or a successful professional man.

One of these factors is management's ability to make use of tools that are staring you in the face when you look at a balance

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"A SURVEYING AND ENGINEERING COMPANY LIMITED" **Figure 1A**

BALANCE SHEET

AS AT APRIL 30, 19.....

ASSETS

(Dollars Only)

Currents assets			
Cash		$ 42,082	
Deposit receipt		10,000	
Accounts receivable		263,148	
Advance to shareholders		8,280	
Prepaid expenses		627	$324,137
Investments, at cost			17,794
Fixed assets, at cost			
Fixtures and equipment	$ 5,623		
Leasehold improvements	440	6,063	
Less — accumulated depreciation and amortization		2,468	3,595
Other assets			
Goodwill		12,000	
Incorporation expense		476	12,476
			$358,002

LIABILITIES

Current liabilities			
Accounts payable and accrued expenses		230,227	
Progress billings on uncompleted contracts	304,897		
Less — inventory, contracts in progress, at cost	292,713	12,184	
Payroll deductions and sales tax payable		2,931	
Corporation income taxes payable		1,566	
Directors' fees and management salaries payable		24,000	
Dividend payable		10,500	281,408
Shareholders' equity			
Capital stock			
Preference shares:			
authorized, 74, 6%, non-cumulative, redeemable shares, par value $10 each;			
636 shares issued during year	6,360		
(636) shares redeemed during year	(6,360)		
Nil balance issued		—	
Common shares:			
authorized, 2,000 shares, without par value;			
issued and fully paid, 21 shares		239	
Retained earnings			
Balance, May 1, 19.....	69,037		
Add — net income for the year	25,303		
Less — election, Section 105 — Income Tax Act			
To tax paid surplus $6,375			
15% tax on $7,500 1,125	(7,500)		
— Dividend on common shares	(10,500)		
Balance, April 30, 19.....		76,340	
Tax paid undistributed income			
Transfer from retained earnings	6,375		
	6,360	15	76,594
			$358,002

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sheet or a statement of income, or (as it is called) an operating statement.

Equity or Ownership

Equity or proprietorship represent the investments of the owners. The usual equity accounts for a small company or professional firm is either "proprietor's capital account" or in the case of a corporation, "capital stock", plus surplus (earned and capital surplus).

Some of the more important facts that you can extract from a balance sheet that should be significant to you, in my opinion, are the following:

(a) **Balance Sheet Ratios**

The Current Ratio:

The current ratio is the fraction resulting from placing current assets over current liabilities. This helps indicate the adequacy of funds that would be made available (within a reasonably short period of time) to in turn be used to pay the creditors, who have to be paid within a short period of time. In other words, it indicates the amount of life blood in a business, metaphorically speaking. For example, if a company has accounts receivable, inventories and a bank balance totalling two million dollars and accounts payable and bank loans

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"A SURVEYING AND ENGINEERING COMPANY LIMITED" **Figure 1B**

BALANCE SHEET

AS AT DECEMBER 31, 19.....

ASSETS

(Dollars Only)

Current assets			
Cash		$ 90,344	
Due from a shareholder		475	$ 90,819
Investments, at cost			
Bonds, Government of Canada and Ontario Hydro (par value $165,000)		148,112	
Marketable securities (market value $60,025)		55,735	
Other securities and advances		28,100	231,947
Fixed assets, at cost			
Automobile	$ 7,943		
Furniture, equipment and improvements	15,283	23,226	
Less — accumulated depreciation and amortization		16,460	6,766
Goodwill			37,500
			$367,032

LIABILITIES

Current liabilities			
Payroll deductions payable		39,211	
Corporation income taxes payable		8,918	48,129
Shareholders' equity			
Capital stock			
Preference shares: authorized, 7,000 5%, non-cumulative, redeemable shares, par value $10 each; issued, nil			
Common shares: authorized, issued and fully paid, 10,000 shares, without par value		10,000	
Retained earnings			
Balance, January 1, 19.....	273,531		
Add — net income for the year	35,372		
Balance, December 31, 19.....		308,903	318,903
			$367,032

Approved on behalf of the Board: ..... Director ..... Director

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totalling one million dollars, the current ratio appears to be 2:1. This means that for every dollar of debt of a current nature, there are $2.00 of current assets available to meet these obligations. Generally, this is a healthy ratio.

On the other hand, it also tells one that even if the assets were to be devalued, deteriorated, or otherwise lost to the extent of 50%, the creditors would still be paid, as there would still remain $1.00 of assets for $1.00 of liabilities.

(b) **The Acid Test or Quick Ratio**

Another ratio that a good manager should be familiar with is the "acid test" which is the same as a current ratio with the exception that inventories are removed from the assets. This obviously supplies a tougher test to the financial adequacy of a business. Quick assets, generally speaking, include cash, temporary investments, which can be quickly and safely converted into cash such as marketable bonds, current accounts receivable, etc. It is presumed that these items could be realized quickly and practically in full, unlike the principal current assets that should be excluded from the "acid test" such as inventories. This ratio indicates the availability of the most liquid assets for meeting obligations, that are, or will become due shortly.

(c) **The Accounts Receivable Collection Ratio**

The next ratio is accounts receivable ratio, arrived at by taking net credit sales (as distinguished from cash sales) and dividing the net credit sales figure by accounts receivable. This shows the promptness of collection of credit sales or credit billings. This too, is often expressed as a percentage of net sales or average net sales (exclusive of cash sales). It also shows the number of days of fees cr sales that are outstanding. This is secured by multiplying 365 by this percentage.

Statement of Income Ratios (See Figures 2A & 2B)

A statement of income is a financial document that shows the components of income and expenses resulting in a net profit (or loss) for a period of time, such as a month or a year. This can be compared to a movie that shows a series of acts from one moment of

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"A SURVEYING AND ENGINEERING COMPANY LIMITED" **Figure 2A**

STATEMENT OF INCOME

FOR THE YEAR ENDED APRIL 30, 19.....

(With comparative figures for 19.....)

(Dollars Only)

	19.....		19.....	
Income				
Contract revenue and consulting fees	$915,759		$635,243	
Sundry Income	2,503	$918,262	698	$635,941
		(100%)		(100%)
Direct costs				
Inventory, contracts in process beginning of year	407,081		146,966	
Material purchases	589,591		710,728	
Salaries — draftsmen	48,367		50,435	
Drafting services	40,925		6,961	
Less — inventory, contracts in process end of year	(292,713)	793,251	(407,081)	508,009
Gross profit		**$125,011**		**$127,932**
		(.....%)		(.....%)
Indirect costs and expenses				
Salaries and allowances				
- management	42,301		48,493	
- office	9,525		9,944	
Directors' fees	15,000		15,000	
Rent	4,828		3,152	
Office supplies and expenses	2,102		1,035	
Telephone	3,446		2,030	
General expenses	3,879		3,996	
Employees' insurance and benefits	2,356		2,088	
Professional services	1,875		1,761	
Advertising and clients' promotion	1,546		2,287	
Travel and salesmen's expense allowance	2,135		3,765	
Insurance	1,008		847	
Janitorial services	640		567	
Business tax	298		284	
Hydro	116		84	
Depreciation and amortization of fixtures, equipment and improvements	697		509	
Allowance for doubtful accounts	125		—	
	91,877	885,128	95,842	603,851
		(.....%)		(.....%)
Net income for the year, before income taxes		**33,134**		**32,090**
		(.....%)		(.....%)
Provision for corporation income taxes		7,831		7,403
Net income for the year		**$ 25,303**		**$ 24,687**

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time through to another period of time.

I am not concerned with showing you how this statement is developed and prepared. However, I am more concerned with showing you that you can extract certain groups of items from these statements and by comparing them and forming ratios, you will arrive at certain guides. For example, if you employ a number of people to do direct work, (their remuneration is called gross wages. If you should have to buy materials, which most of you do **not** have to acquire a great deal of,) then the material costs, too, become a part of your direct cost.

(a) **Gross Profit Ratio**

When you deduct from the gross fees the cost of labour and materials (or subcontract work) applicable to the respective jobs, then you get a figure of gross profit. The ratio of gross profit to sales is quite often expressed as a percentage of sales, which indicates the margin of dollars available for covering expenses (overhead) and profits after providing the cost of acquiring the services that were rendered and billed (or invoiced).

(b) **Expense Ratio**

Calculate your expenses as a ratio to fees billed. This indicates the proportion of the percentage of sales used to cover expenses in earning the above fees.

Your expenses may be divided into one or more classes, such as selling and promotional costs, administrative costs, and financial costs. Each of these groups of expenses, too, may be expressed as percentages of fees earned.

(c) **Net Profit Ratio**

The net profit expressed as a ratio of sales (or fees) indicates the portion or percentage of revenue left as net profit after providing for the cost of acquiring what was sold as a service or as a product and the expenses of selling it. These are by no means all of the ratios that can be prepared but merely some of them.

What is most important are not the ratios per se, but how these ratios stand in relation to other companies in your industry or profession; and even more important is, what is the trend of your business?

In what direction is it headed? Is your efficiency going up or is your profit picture going down? How closely do you watch these results? When do you

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learn about this turn-around in your operation? How soon do you determine that your opeartions are going downward, stagnating or going upward? By constantly watching these percentages and ratios and others like these, you will be in a position to know where you are going, before it is too late.

Cash Flow Statement

On the screen, I am showing you what is known as a cash flow statement (see Figure 3). Please note that we start with the source of cash by indicating to you under the headings of source of cash how increases in liabilities were used to generate some of the cash; how profits were retained in the business to further generate some cash; and subsequently, how the cash was used by application in the form of acquiring further assets, such as accounts receivable, inventories, or the corollary by the reductions of various liabilities. The net result is a summary or reconciliation showing how the opening and closing cash positions at the beginning and end of any one period were reconciled.

If you study the above type of statement, you can then answer for yourself (and perhaps with some assistance from some of your professional advisors, such as your chartered accountant) a question such as, "Where did the cash go?" Quite often, somebody will tell the Board of Directors (or partners) that they have made money and yet the cash position seems to have deteriorated.

There may be many good reasons for a company to earn money and at the same time, have cash deteriorate; similarly, there could be situations where at a given time, while the company is losing money, their cash position may appear to be stronger than at other times. This should indicate to you that profit flow is not the same as cash flow. One has to take into consideration, amongst other things, the depreciation and (other non-cash outlay expenses) for the difference between net profit as per financial statements and the cash that becomes available from the business transactions. Another example may be the heavy drain for payment commitments that have been made for equipment.

The payment of equipment drains dollars, but does not affect profit or financial statements (except for depreciation on same which is based on equipment acquisition rather than equipment payment).

Break-Even Point (See Figures 4A & 4B)

We can show you how you can determine what it costs you to open your door of business in the morning. This is known as break-even point. One can plot a chart wherein he indicates what the fixed costs are, regardless of how much business one does in a day or a year. In other words, these are the costs that remain constant regardless of volume and they may also be known as standby costs.

On Figure 4A, one can see the horizontal line indicating the fixed costs; these remain constant regardless of the volume of business.

There are also costs known as variables. These are the costs that do vary in a certain proportion in relation to the volume of business being written or work performed. If one plots the variables on the ordinate portion of a graph, one can see that as these costs are added to the fixed costs, one can then project the point at which the volume will be sufficient to merely meet all these costs. This critical point is known as the break-even point.

A break-even point may also be converted from dollars to units or product or time. For example if the businessman knows that he is producing cars he can convert this into language which will tell him how many cars he has to produce in a day or in a year to break even. On the other hand, another example is where somebody is producing a certain type of furniture or clothing. By converting the dollars of break-even point to the equivalent number of units of the product that they produce or trade in, they can also predetermine the number of units of production and shipment at prearranged prices that they will need to break even.

However, one should be cautioned that any change in either the fixed or variable costs will change the break-even point. Once you have determined the break-even point and you find that a change in any costs has taken place, such as rent or production salaries, etc., you should recalculate the break-even point. (See Figure 4B).

To summarize, a break-even point is an equation which says that the volume of revenue required to neither make profit, nor suffer losses, is equal to the fixed costs in dollars plus a percentage, that the variable costs are of that break-even point, perhaps known as "X".

Another way of expressing the break-even point as an equation is to say that the break-even point is

$$= \frac{\text{fixed costs in Dollars}}{1 - \text{the variable cost per X\$ of sales (expressed as a \%)}}$$

For example, if a merchant has total **fixed** costs (such as rent and salaries) in any one month of $1,000.00 and his average gross markup on sales is 25% (and his variable costs are 75%), his break-even point would be calculated as follows:

$$\text{Break-even point } \frac{\$1000}{1 - .75} = \frac{\$1.000}{.25} = \$4{,}000$$

If one has fixed expenses of $2,000.00 and variables of 75%, by this formula the break-even point is $8,000.00. If one has fixed costs of $2,000.00 and variable expenses of 80%, the break-even point goes to $10,000.00.

I am sure that you would agree that in arriving at a break-even point, you should not only include expenses in the sense that we think of them, but as well make provision for salaries for the proprietors, or principal shareholders of the company who are working in this company.

In addition, you should be aware of the fact that if you really want to project a realistic total volume of sales that is necessary to successfully manage your business, then you must provide for sufficient funds (left after income taxes) for retirement of debts, such as mortgages.

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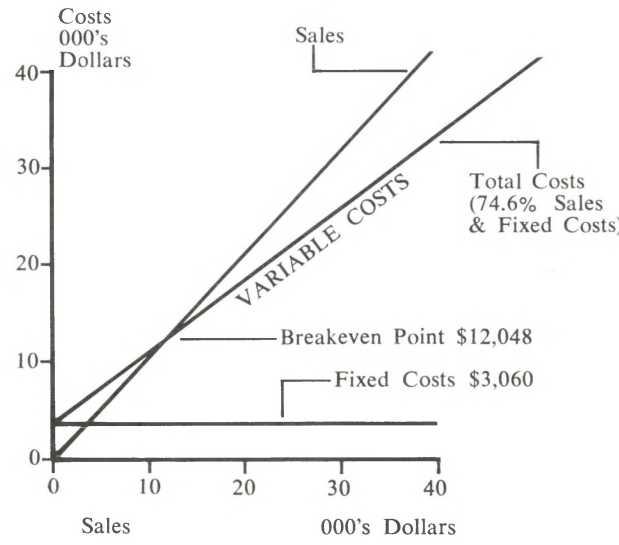
Figure 4A

BREAK-EVEN CHART

CORPORATION XYZ LTD.

BASED ON 1970 OPERATIONS



"A SURVEYING AND ENGINEERING COMPANY LIMITED" **Figure 2B**

STATEMENT OF INCOME

FOR THE YEAR ENDED DECEMBER 31, 19.....

(With comparative figures for 19.....)

(Dollars Only)

Income				
Fees received	$388,125		$326,738	
Interest, dividends and sundry	11,050	$399,175	7,815	$334,553
Expenses				
Salaries and wages — drafting	200,438		162,004	
— executive	68,760		50,620	
— office	7,072		5,899	
Directors' fees	20,000		10,000	
Pension fund expense — current and past service	6,546		27,858	
Employees' benefits	4,570		3,012	
Fees to consultants	—		2,105	
Rent	11,315		11,399	
Advertising and client relations	5,520		4,928	
Drafting supplies	4,867		3,378	
Automobile — expenses	1,806		1,597	
— depreciation	1,400		2,000	
— recovery from director	(475)		(475)	
Office and general expenses	2,129		1,643	
Telephone	2,429		2,378	
Carfare, travel and convention expenses	2,674		1,935	
Insurance	2,047		2,048	
Professional services	980		819	
Employees' meal allowance	576		356	
Donations	2,950		1,275	
Books, subscriptions and association fees	830		695	
Municipal business taxes	1,114		1,055	
Director's life insurance (net)	—		(102)	
Depreciation — furniture and equipment	705		591	
Amortization — leasehold improvements	472	348,725	426	297,434
Net income for the year before provision for income taxes		**50,450**		**37,119**
Provision for income taxes		15,078		7,921
Net income for the year		**$ 35,372**		**$ 29,198**

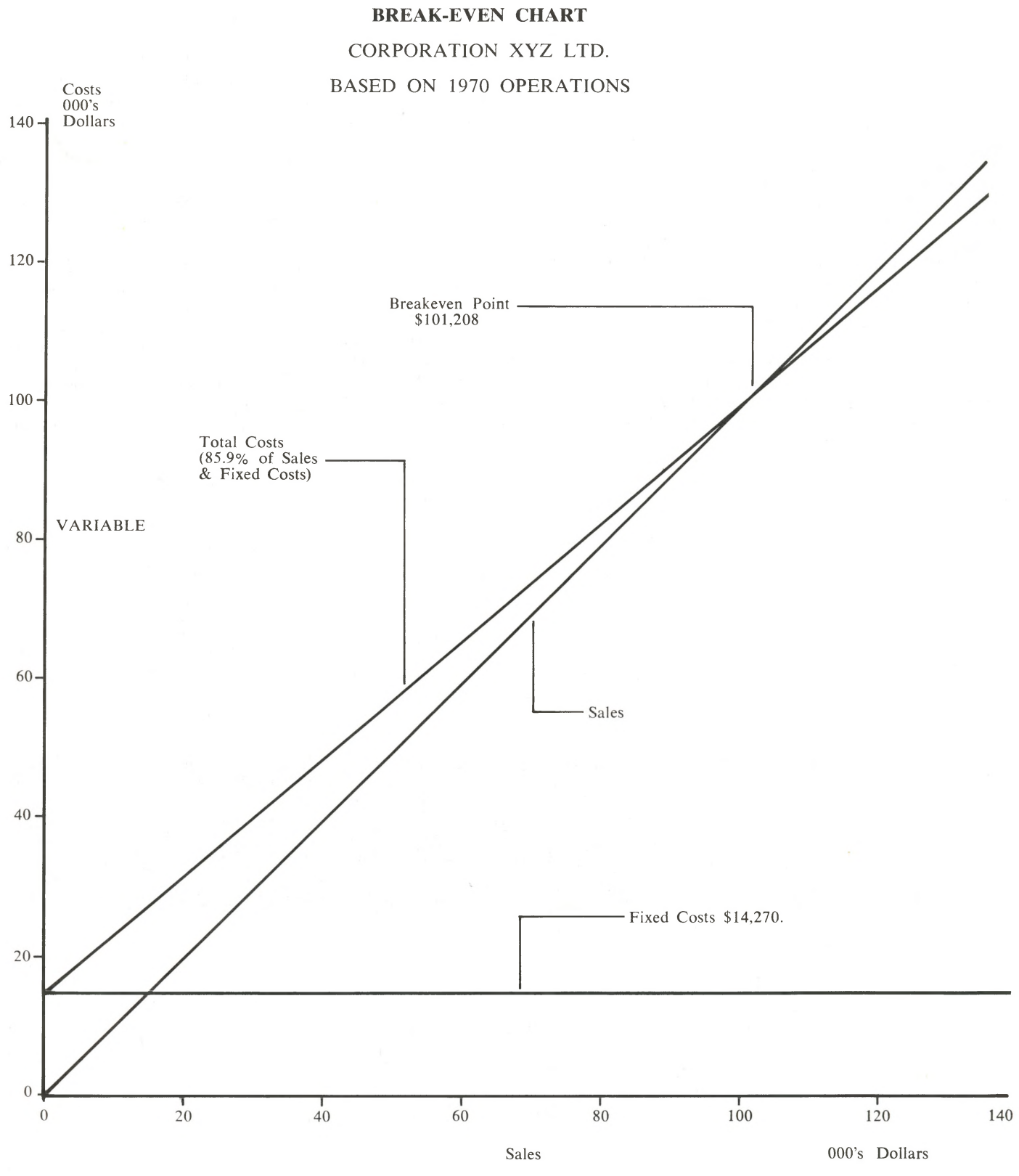
"A SURVEYING AND ENGINEERING COMPANY LIMITED" **Figure 3**

CASH FLOW STATEMENT

JANUARY 1, 19..... TO DECEMBER 31, 19.....

Sources of cash			
Increases in liabilities			
Accounts payable			$ 30,000
Bank loans			31,350
Personal loans			2,500
Interest payable			900
			64,750
Profits retained in the business			
Net profits during period		$18,850	
Items charged agains net profits which did not require the outlay of cash-depreciation		9,000	
		27,850	
Less owner's withdrawals — dividends		8,500	19,350
Total			**84,100**
Applications of cash			
Increase in assets			
Accounts receivable	$ 45,000		
Inventories	32,000	77,000	
Reductions in long-term liabilities			
Mortgages and liens		12,400	
Total			**89,400**
Proof:			
Decrease in cash			
Opening balance		6,300	
Closing balance		1,000	($ 5,300)

Figure 4B



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For the purposes of this type of break-even point calculation, you should include as "costs" income taxes and mortgage principal in a "fixed" position. In this manner, you will be able to determine the sales turnover that is required to generate the dollars that you need for same.

This same calculation will apply for projecting the volume of business required in order to be able to pay dividends. As you can see, there can be continued variations ad infinitum for this purpose.

(The second and concluding part of Mr. Rumack's paper will be carried in the next issue.)