

analysis of processes of manufacture and machinery available for the embodiment of the most economic processes and the most desirable rate of production to be maintained, it is found that the minimum capital requirements in respect of the rate of production or sales are as follows:

Annual sales	\$1,000,000
Fixed assets	250,000
Current assets	300,000

then these requirements constitute a proper base from which to measure the effectiveness of management. Should fixed assets be increased without effecting a corresponding increase in productive capacity or increasing capacity not warranted by sales demand, then an ineffective employment of capital has occurred. Likewise, if inventory is increased beyond the required amount for the same rate of sales, then management is inefficient.

The funds through which the assets of a corporation are acquired are derived from two sources: (1) short term creditors (vendors, banks, etc.); (2) long term creditors (bond holders, stockholders in particular). Accordingly it is a province of management to keep funds from short term creditors within the bounds permitted by the current assets and to provide long term funds at most advantageous rates and least hazardous terms.

The range between desirable and hazardous, of the units of the financial structure may be set up in terms of

		DESIRABLE	HAZARDOUS
Sales	=	A	XA
Fixed assets	=		
Sales	=	B	YB
Current assets	=		
Current assets	=	C	ZC
Current liabilities	=		
Bonds	=	D	QD
Stocks	=		

and other similar ratios.

Accordingly, if the status of the financial structure as expressed by units of the above nature, at any given time is found to be at certain points between the desirable ratio and the hazardous ratio, then the effectiveness of management from that time on may be measured by the rate at which these ratios approach the desirable figures. Some further study is required to determine the units

of measurement by which the effectiveness of management in this particular may be recorded.

The Profits

The successful management of any business must be founded upon a knowledge of its economic characteristics. An excellent manager may make only 5 per cent profit on sales and 10 per cent on the capital invested in a given business, while a poor manager operating another business of an entirely different nature may make 10 per cent profit on sales and 20 per cent on the capital invested in his business. Accordingly any judgment of management with respect of profits earned must be based on a knowledge of the profit possibilities of the particular business handled. It has been shown that the law of profits of a given business may be stated:

$$\text{Profit} = X(1-b) - a$$

where X = sales in dollars
a = constant total costs
b = $\frac{\text{Variable total costs}}{\text{corresponding sales}}$

Thus in a given business

$$a = \$90,000 \text{ per month}$$

$$b = .4$$

If the sales are \$200,000, the profit should be

$$\text{Profit} = 200,000(1-.4) - 90,000$$

$$= \$30,000 \text{ per month}$$

If in another business the constant total costs are \$120,000 per month, due to the inherent characteristics of the business, then monthly sales of \$200,000 would yield no profit for the business breaks even at this point.

Having established the economic characteristics of the business and determined the profit possibilities at varying volume of sales, a measure of the efficiency of management in respect of profits is found.

It may also be suggested that another factor in the rating of management is the ratio of sales to plant productive capacity, for obviously it is the responsibility of management to maintain production at capacity.

The writer at one time was chief executive of a number of plants and established for each a basis of measurement of management which proved very helpful. There is given herewith a monthly report of one of these plants.

PLANT No. 1

Month ending August 31, 1929

SCHEDULE F Analysis of Plant Efficiency

No.	Acct.	ITEM	ACTUAL	BUDGET
1	.01	Raw materials used	\$12,966.04	\$15,114.82
2	.02	Direct Labor	5,197.24	5,690.50
3	.03	Foremen's Salaries	832.60	810.00
4	.04	Operating Supplies used	807.51	1,177.50
5	.05	Packing Supplies used	2,721.00	2,466.00
6	.06	Repairs Productive Depts.	1,626.00	1,660.00
7	.07	Fuel	1,088.13	1,443.75
8	.08	Steam Dept.—Labor and Expense ..	1,238.80	1,165.00
9	.09	“ “ —Repair and Maintenance ..	378.00	378.00
10	.10	“ “ —Insurance, etc.	114.83	97.00
11	.13	Power Purchased	2,322.54	2,740.60
12	.14	Elec. Power Dept.—Labor and Expense ..	810.15	625.00
13	.15	“ “ “ —Repair and Maintenance ..	171.00	171.00
14	.16	“ “ “ —Insurance, etc.	97.33	84.00
15	.19	Refrigeration—Labor and Expense ..	309.02	522.70
16	.20	“ “ —Repair and Maintenance ..	208.94	204.00
17	.24	Salaries—Supervision of Plant	883.59	1,015.00
18	.25	Fixed Charges—Supervision of Plant ..	2,026.50	2,800.00
19	.26	General Repairs and Maintenance	525.00	525.00
20	.27	Plant Office Expense	712.79	825.00
21	.28	Trucking—Salaries and Expense	398.41	466.00
22	.29	“ “ —Insurance, etc.	65.82	88.27
23	.30	Yard Labor and Expenses	506.55	600.00
24	.31	Liability and Compensation Insurance ..	81.57	93.18
25	.32	Experimental	1,250.00	400.00
26	.33	Traveling Expenses	478.40	200.00
27	.34	General Expenses	125.96	170.60
28	.36	Taxes	258.31	203.51
29	.37	Fire Insurance	471.01	381.65
30		Depreciation	2,450.07	2,569.00
31		Total Plant Expenses	41,123.11	44,687.08
32	G-24	Pounds Raw Material Used	642,566	758,125
33	G-25-26	Fillers Added	29,795	31,887
34		Goods Produced (without fillers)	464,571	486,863
35	B-1	Goods Produced (including filler)	494,366	518,750
36		Yield (34/32 x 100) %	72.30%	64.00%
37		Plant Capacity Utilized (%)	57.34%	60.18%
38		Ratio Goods Produced to Budget	95.30%	100.00%
39		Budget in Dollars		44,687.08
40		Operating Ratio Budget (38 x 39)		42,586.79
41		Plant Efficiency (40/31 x 100) %	103.56%	100.00%

ANNUAL MEETING

New York, December 3, 4 and 5, 1930

Papers already definitely scheduled: Presidential Address by Henry P. Kendall; Technological Unemployment by Paul H. Douglas; Report of the Industrial Code Committee by Morris L. Cooke, Chairman, with general discussion following the report; Maintenance of Standards by Victor S. Karabasz.