

9-1922

Cost Systems and Operating Statistics

A. F. Wagner

Follow this and additional works at: <https://egrove.olemiss.edu/jofa>



Part of the [Accounting Commons](#)

Recommended Citation

Wagner, A. F. (1922) "Cost Systems and Operating Statistics," *Journal of Accountancy*. Vol. 34: Iss. 3, Article 5.

Available at: <https://egrove.olemiss.edu/jofa/vol34/iss3/5>

This Article is brought to you for free and open access by the Archival Digital Accounting Collection at eGrove. It has been accepted for inclusion in Journal of Accountancy by an authorized editor of eGrove. For more information, please contact egrove@olemiss.edu.

Cost Systems and Operating Statistics

By A. F. WAGNER

Business conditions during 1921 again impressed executives with the fact that timely operating and balance-sheet information is indispensable to intelligent and, consequently, profitable management. Observation leads to the conclusion that adequate current statistics in many instances enabled executives to determine policies which not only prevented losses but often resulted in a considerable net profit.

In almost every field of business during the deflation period there have been a few outstanding concerns which, by reason of their profitable operation or avoidance of operating losses common to the trade, have earned the respect of their stockholders, bankers and less fortunate competitors. The marked contrasts in operating results (which public accountants have recently been privileged to witness) can be largely attributed to disparities in managerial ability. Furthermore, foresighted executives have been consistently fortified with accurate statements of operation and financial position received at frequent, regular intervals.

The aim of this paper is to point out the statistical inadequacy of many cost systems designed and installed before the United States entered the world war and to propose a simple supplement to existing cost records by means of which valuable additional statistics can be easily prepared for executives.

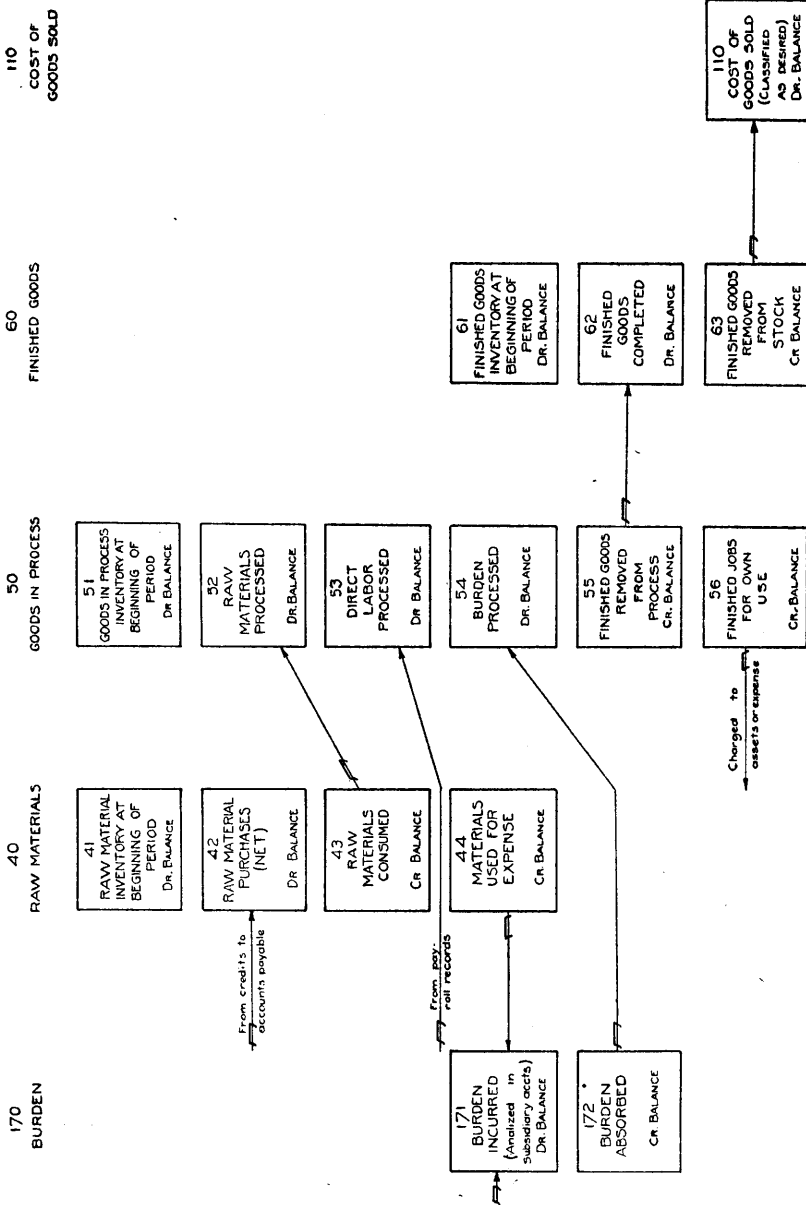
The directing heads of large or even moderate-sized manufacturing enterprises do not and cannot profitably take the time to study all detailed costs of separate articles or jobs; but they should have monthly statements from which they can determine the ratio of the various component elements entering into the cost of product manufactured, that is, materials, labor and overhead. Furthermore, is it not desirable for a manufacturer to know from month to month the average rate at which his inventories of materials and finished goods are being turned and the average length of time that goods remain in process of manufacture? All real merchants closely watch the turnover of their goods in order to avoid excessive investment in inventories, but many manufacturers apparently forget that one of their functions is merchandising materials as well as changing their form.

Established maximum and minimum quantities of materials or general instructions concerning such limits may be disregarded by purchasing agents—how can the management judge the efficiency of such subordinates unless current statistics reveal the average length of time that articles are on hand or in process of manufacture? Managers should be constantly striving to shorten the period of time between receipt of raw materials and shipment of finished product; accountants should provide executives with data which indicate the results of changes in policies and whether or not additional steps are necessary to accomplish a desired end.

Data described in the foregoing may be easily obtained from most “tied in” cost systems now in operation if proper analyses of accounts be made. The writer suggests that the classification of general and cost-ledger accounts be so changed that the necessary details will automatically appear in the company’s records. A chart (exhibit “A,” page 200) illustrates the operation of such a classification of accounts. The arrangement therein set forth consists simply in running analyses of the usual perpetual inventory accounts. This classification can be expanded to include as many kinds of materials, work-in-process and finished goods as may be desirable in a particular case and can be readily fitted to any plan of departmental operations. The accounts listed in the chart may be further amplified so as to subdivide the balances of goods in process, finished goods and cost of goods sold into their component parts, namely, materials, labor and burden. Account number 44, materials used for expense, has been included on the chart because some manufacturing companies purchase materials which are used both directly in the product and indirectly in factory operations.

With the operating details of a manufacturing plant perpetually analyzed as indicated in the chart, monthly statements similar to the specimen presented in exhibit “B” (page 201) can be promptly prepared. Such statements, when furnished executives, should contain comparative figures for the corresponding periods of the preceding year. The relationship between inventories and movement of goods is brought forcibly to the attention of a manager studying reports in this form. The data on turnover submitted at the bottom of exhibit “B” are calculated in the usual manner by dividing average inventories into cost of

EXHIBIT "A"
CHART ILLUSTRATING OPERATION OF SUBSIDIARY COST LEDGER ACCOUNTS



NOTE: Account captions at head of chart indicate general ledger accounts which control the subsidiary accounts directly thereunder. Accounts 40, 50 and 60 are the usual perpetual inventory accounts. The balance in account 170 represents the amount of burden over or under-absorbed. Account numbers hereon are the same as those listed in Exhibit "B".

Cost Systems and Operating Statistics

EXHIBIT "B"

Specimen Statement of Cost of Goods Sold (With account numbers referring to chart presented in exhibit "A")

	Month of July, 1920	Twelve Months ended July 31, 1920
Raw materials:		
Inventory at beginning of period (No. 41).....	\$298,910.00	\$ 238,840.00
Net purchases (including inward freight) (No. 42).....	68,730.00	649,340.00
Less: Expense materials (No. 44).....	367,640.00	888,180.00
Inventory at end of period (No. 40).....	316,580.00	320,300.00
Materials used in manufacturing (No. 52)	51,060.00	567,880.00
Manufacturing burden:	26,130.00	330,220.00
Indirect labor (No. 53)	4,810.00	56,120.00
Superintendence (No. 171a).....	2,500.00	29,750.00
Loose tools, etc. (No. 171c).....	2,830.00	29,930.00
Power (No. 171d).....	1,020.00	16,930.00
Fuel (No. 171e).....	970.00	12,370.00
Repairs (No. 171f).....	1,130.00	12,590.00
Depreciation of plant (No. 171g).....	1,300.00	15,560.00
Other manufacturing expenses (No. 171h).....	1,410.00	16,460.00
Total burden incurred (No. 171).....	15,970.00	189,710.00
Plus: Burden over-absorbed (No. 170).....	660.00	9,980.00
Burden charged into process (No. 54).....	16,630.00	199,690.00
Total goods processed.....	93,820.00	1,097,790.00
Deduct: Goods manufactured for own use (No. 56).....	3,950.00
Total goods processed for sale.....	93,820.00	1,093,840.00
Add: Inventory of goods in process at beginning of period (No. 51).....	178,910.00	155,750.00
Deduct: Inventory of goods in process at end of period (No. 50).....	272,730.00	1,249,590.00
Cost of goods completed (No. 62).....	210,650.00	210,650.00
Add: Inventory of finished goods at beginning of period (No. 61).....	62,080.00	1,038,940.00
Deduct: Inventory of finished goods at end of period (No. 60).....	113,210.00	148,990.00
Percentages of elements of total goods processed:		
Raw materials.....	54.4%	51.5%
Direct labor.....	27.9	29.9
Manufacturing burden.....	17.7	18.6
Approximate data on turnover of goods:	100.0%	100.0%
Raw materials.....	Average Inventory	Average Inventory
Goods in process.....	\$307,640.00	\$298,720.00
Finished goods.....	73,370.00	171,250.00
	Turnover	Turnover
	2.0	1.9
	5.8	6.1
	23.2	10.2

goods moved and may also be stated in terms of *average* length of time that goods are on hand or in process, as follows :

	Rate of movement of goods in terms of average number of months on hand	
	Month of July, 1921	Twelve months to July 31, 1921
Raw materials	6.0 Mo.	6.3 Mo.
Goods in process.....	2.1 “	2.0 “
Finished goods	0.5 “	1.2 “
Average total period from receipt of raw materials to shipment of product manufac- tured therefrom		
	8.6 Mo.	9.5 Mo.

Statistics similar to the foregoing (especially when compared with like data for prior years) are of real value to managers. Furthermore, they can be prepared from almost any good, existing cost system. The only additional records required are the subsidiary accounts set forth in the appended chart, and these may be dispensed with by the use of multi-column ledger sheets.

The classification and analyses suggested in this paper have one additional advantage, namely, that the treasury department's requirements as to form of the statement of cost of goods sold on annual returns of income can be strictly followed without hurried analyses of accounts at the end of the year. The suggestions presented in this paper are offered, not with a view of eliminating unit costs, percentages of normal production and other valuable data now secured from cost systems, but rather with the idea that analyses be added which will afford executives additional indices of the efficiency of operations. Actual experience with records such as those described herein has demonstrated that they require no greater time than was necessary before the running analyses were added and, furthermore, that real operating statistics and annual returns of income are now more expeditiously prepared than was the case before the records were changed.