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Accounts of an Oil Company

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The Accounts of an Oil Company

VII

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The "code of fair competition for the petroleum industry" was signed by the president August 19, 1933, and became effective two weeks later.

The administrative machinery for the effectuation of the code consists of:

(a) The planning and coördinating committee, representing the petroleum industry and the national recovery administration. (This committee is set up to coöperate with the administrator as a planning and fair-practice agency.)

(b) A federal agency, designated by the president. (The federal agency is to make estimates of petroleum requirements, allocations, etc.)

These two bodies are empowered to call upon the petroleum industry for necessary statistical and other reports, and any refusal to supply such reports is a violation of the code.

Oil accountants are deeply interested in the forms in which information is to be supplied to the committees. This information will doubtless cover, among other subjects, personnel data, oil inventories, sales and costs. These forms should, in time, become a part of the standard accounting procedure of the industry.

Article VI of the code requires the transportation sub-committee of the planning and coördinating committee to investigate transportation practices and rates. It may be presumed that this study will embrace the operations of pipe lines, tank cars, tank wagons, tankers and barges. In due course there should be some interesting data developed and published on this subject for the information and guidance of the industry.

Rule 24 of article V of the code reads:

"Evasion of taxes in the sale of petroleum products gives to evaders an undue and unlawful advantage over legitimate marketers and is unfair competition within the meaning of the national industrial recovery act."

This rule has to do with the federal excise tax and with state and local taxes on petroleum products. A company which pays these taxes is supposed to recover the amount from sales to customers.

The administrative committees will learn a great deal about taxes that are paid by the oil industry, not only as to taxes that are paid and recovered through sales, but as to those that are paid and absorbed in the taxpayer's costs. The franchise tax and the ad-valorem tax on non-operating properties are the initial links in the chain. Immediately oil or gas emerges from a well a production (or occupation or severance) tax is levied; then comes the pipe-line transportation tax, followed by plant ad-valorem taxes, tank-car mileage taxes, gasoline pipe-line transportation tax, ad-valorem taxes on warehouses and distributing stations and contents, state automobile licences, certain local occupation taxes, federal capital-stock tax, etc. If at this point the taxpayer's income is not in the "red," federal and state income taxes are to be paid. Only by a substantial rise in the market prices of petroleum and its products will legitimately operated oil concerns, generaly speaking, be enabled to absorb these taxes and pay a fair return on investment.

One hears a great deal nowadays about vertical and horizontal classifications. The idea is susceptible of a wide variety of application to business problems. Its application to the labor question provides an interesting example. Those who favor the vertical plan hold that labor should organize within an industry, while the horizontal proponents are for unionizing labor by classes regardless of the industry which employs it.

Organization charts should be given this vertical-horizontal test before being adopted, since some of the functions are vertical (departmental) and others horizontal (general).

As to apportioning the income of an integrated oil company, there are what may be called the "horizontal" and "vertical" schools of thought. One favors the application of original costs horizontally to the exclusion of inter-departmental profits, while the other follows the vertical method and develops profits by departments so as to show the net return on the respective departmental investments. Since both factions come to agreement in the published general income account, it is not generally known that this difference of opinion exists. The following quotation (being rule 6 of article V of the code) seems to settle the question:

"Inasmuch as there are firms and corporations in the petroleum industry who severally or through firms and corporations owned or controlled constitute and comprise a complete or integrated unit in such industry or produce and refine petroleum and market the products manufactured therefrom, the business thereof shall be so conducted that the several branches of this industry, viz.: producing of petroleum, refining, and marketing of refined products may be carried on upon a profitable basis and that no one or more of the said branches shall obtain or receive excessive or disproportionate gain or profit therefrom to the exclusion of any other branch of this industry."

With the coming of the code it is perhaps timely that I subside. However, before going into innocuous desuetude, I shall complete my programme with a brief discussion of marketing. As a basis for the discussion, I have prepared the two forms which follow, viz.:

(a) Cost of sales summary.
(b) Trading summary.

For present purposes, let it be assumed that the company is doing business in (say) four states and that all the accounting is done at the head office, with the following exceptions (1, 2 and 3):

1. The production costs are compiled and detailed stock records kept at the plants (at least constructively). All summaries of charges entering into costs are approved by each respective plant superintendent before the records are closed for the month. Similarly, all invoicing of sales and transfers is done at the plants.
2. The retail division of the marketing department is divided into districts (a district being a part of a state). Each district office keeps a complete set of books embracing bulk and service station property accounts, details of stocks, operations, accounts receivable, etc. The balancing account of a district balance-sheet is a credit to the head office made up of:
   (a) Cr. Balance at beginning of year.
   (b) Cr. Merchandise, payroll cheques, imprest fund replenishments and sundries.
   (c) Dr. Cash remittances.
   (d) Cr. Current year's profit-and-loss
   ((b), (c), (d) closed into (a) at the end of the year).
3. In the central or chief district of each state is a state office, which keeps no account other than that of general state ex-

(A) Cost of Sales Summary

Q—Quantity only
D—Dollars only
QD—Quantity and dollars
( )—Decrease

Items		Natural gasoline department I	Refinery department II	Lubricating department III	Purchases for resale IV	Terminals and warehouses V	Individual distributing stations: Total VI	Bulk VI A	Service VI B
1	Casinghead gas purchased	QD							
2	Crude oil run		QD						
3	Pipage		D						
4	Casinghead gasoline bought and used		QD						
5	Component oils, containers, etc., used			QD					
6	Chemicals used	D	D	D					
7	Operating and maintenance	D	D	D					
8	Processing loss	(Q)	(Q)	(Q)					
* 9	Departmental general expense	D	D	D					
**10	Depreciation	D	D	D					
	Cost of products, etc.	QD	QD	QD	QD				
12	Opening inventory	QD	QD	QD		QD	QD	Q	Q
13	Commodities transferred	(QD)	(QD)	(QD)	(QD)	QD (QD)	QD (Q)	Q (Q)	Q
14	Stock losses	(Q)	(Q)	(Q)		(Q)	(Q)	(Q)	(Q)
15	Closing inventory	(QD)	(QD)	(QD)		(QD)	(QD)	(Q)	(Q)
***16	Cost of sales	QD	QD	QD	QD	QD	QD	Q	Q
****17	Profit on internal transfers	QD	QD	QD					

Note.—The asterisks are to connect certain items found in each of the two summaries (A) and (B).

(B) Trading Summary

Q—Quantity only
D—Dollars only
QD—Quantity and dollars
( )—Decrease

Items		Natural gasoline department I	Refinery department II	Lubricating department III	Purchases for resale IV	Terminals and warehouses V	Individual distributing stations: Total VI	Individual distributing stations: Bulk VI A	Individual distributing stations: Service VI B
18	Sales, less returns	QD	QD	QD	QD	QD	QD	QD	QD
19	Outages and allowances	QD	QD						
20	Other deductions from sales	D	D	D	D	D	D	D	D
21	Net sales	D	D	D	D	D	D	D	D
22	Tank car rent, demurrage, etc.	D	D	D		D	D		
23	R. R. freight					D	D	D	
24	Truck delivery expense						D	D	
**10	Depreciation on delivery equipment						D	D	
25	Delivery point to point					(D)	D (D)	D (D)	D
26	Total transportation costs	D	D	D		D	D	D	D
27	Net sales less transportation costs	D	D	D	D	D	D	D	D
28	Selling expense, direct					D	D	D	D
29	Selling expense, apportioned	D	D	D		D	D	D	D
* 9	Departmental general expense					D	D	D	D
30	General expense apportioned	D	D	D		D	D	D	D
**10	Depreciation					D	D	D	D
31	Retirements	D	D	D		D	D	D	D
32	Total selling expense, etc.	D	D	D		D	D	D	D
33	Net-back on direct sales	D	D	D	D	D	D	D	D
***16	Cost of sales	D	D	D	D	D	D		
34	Direct trading profit	D	D	D	D	D	D		
****17	Profit on internal transfers	D	D	D					
35	Plant profit	D	D	D					

Note.—Gasoline sales taxes—federal, state and local—are excluded from this summary.

penses paid out of an imprest fund, which is apportioned over districts at the close of each month. Each district reports to its state office (say) every five days giving a stock summary, details of sales and amount of remittances made to head office. At the close of the month each district office sends a complete report (balance-sheet, operations and disposition of funds) to the head office, where they are combined by states, and a copy of each such state report is then sent to the respective state manager.

(a) *Cost of sales summary*

I speak of a cost of sales summary because the subject under discussion is that of marketing. Strictly speaking, it is a stock control summary.

Cost of production (item 11 of columns I, II and III) has been discussed in some detail in articles V and VI of this series published in THE JOURNAL OF ACCOUNTANCY. The cost record of each plant carries an account of each product—finished, unfinished and in process—showing quantity, cost and unit cost, into which the respective production and costs are posted monthly. Purchases for resale (item 11 of column IV) covers (a) miscellaneous commodities and sundry articles that are later sold through the distributing stations, (b) gasoline, etc., simultaneously resold to jobbers and (c) "exchange" purchases from certain manufacturers of gasoline later sold through stations. These "exchange" purchases are approximately offset by "exchange" sales from plants to such manufacturers for resale by them.

Commodities transferred (item 13) from plants to other departments—terminals, warehouses and distributing stations—are charged at a fair market price, which is "cost" to such other departments, plant stock records being credited at actual cost, the balance being credited to an account called "profit on internal transfers" (explained later). The same rule is followed with regard to all transfers between departments as per columns I, II, and III.

There should be no inventory in "purchases for resale" (column IV), since commodities so purchased would be either sold to jobbers or transferred to stations simultaneously with the purchase of them, and commodities in transit would be taken into account on the books of the departments to which they were consigned.

Stocks at terminals and warehouses are available for delivery on wholesale sales or for transfer to distributing stations.

Records of stocks at bulk and service stations, kept by the respective district offices, are carried by commodities in quantities only, in balance with the district control account, which is carried by commodities in quantity and dollars.

It will be seen that no transportation charges are included in the stock accounts, other than the transportation costs that are included in production costs.

Stock accounts are adjusted only as to quantity of stock variations; they are charged at "cost" and credited at average monthly unit cost. The necessary adjustments, to bring inventories to the lower as between cost and market, for general balance-sheet purposes, are made through the general profit-and-loss account.

(b) *Trading summary*

In article IV of this series published in THE JOURNAL OF ACCOUNTANCY, the auxiliary accounting records of an oil company were described. In the general paragraph on that subject, it was stated that every statement issued by the company may be said to have been copied from the books and that every statement regularly prepared is bound in a permanent record.

The summary now under discussion is an attempt to develop a true net-back. The following is a quotation from article I on this subject:

"As to prices of crude oil, the theory is fairly well recognized that crude oil prices should be measured by the net-back to refineries—that is, the realization on refinery products less selling and general expenses. It is most important to realize that this thing called net-back represents almost all the money that comes into the industry through the sale of its products."

Having broken down the cost of sales by departments, I to VI, it becomes necessary to develop the profit similarly by departments. It will be seen that item 33 of the trading summary gives the net-back on direct sales, from which the cost of sales is deducted, leaving the direct trading profit of each department, consisting of:

Columns	
I II III	Profit on wholesale sales of company products.
IV	Profit on wholesale sales of purchased products. Since stocks are carried at market prices, the transactions of this department should result in a minor profit or loss.

V Profits on wholesale sales of company products. The stocks of this department being carried at market, the profit or loss should be a small amount.

VI Profit on retail sales of company products and purchased products, by states, divided by districts.

VI a. Net-back only, by districts, divided by individual bulk and
VI b. service stations, combined as may be necessary.

At this point, let us briefly consider the items of the trading summary.

Sales, less returns, consist of external sales, except that the sales of distributing stations include sales for consumption in company trucks and cars. External sales, column II, include "exchange" sales, which are offset by "exchange" purchases represented in item 11 of column IV.

Outages and allowances represent losses in transit. Gasoline, for example, is invoiced at a volume corrected to 60 degrees Fahr. and the consignee is entitled to the volume he pays for on that basis, within reason. Outages on transfers of gasoline are charged against "profit on internal transfers."

Other deductions from sales are to take up freight allowances and certain commission expenses, etc., that might be improperly included in selling expense.

Transportation costs are analyzed in the same classification as the stocks to which they relate. Transfers from terminals and warehouses to stations and from bulk to service stations are covered by a monthly charge, which includes a fair proportion of freight and truck delivery expense, the transportation costs not taken up in expense being the proper proportion deferred in respect of stocks on hand at the close of the month. This analysis eliminates duplicate charges, furnishes a true basis for the audit of freight rates and gives the management a complete record of transportation costs per se according to the books of account.

Selling expenses are pure selling expenses. Item 28 covers the compensation to the company's own employees and the expenses incurred by them in company-operated properties plus proper charges not incurred by them, including rent, taxes, insurance, etc.

Selling expenses, apportioned, or general selling expenses, are also pure selling expenses, the greater part being applied to the direct sales from plants and terminals. These are reviewed at the close of the year and the apportionments for the entire year, as recorded, represent the fair judgment of the departmental managers concerned.

The other expense items have been previously discussed in this series in more or less detail.

The balance of "profit on internal transfers" account represents the excess of charges to other departments for products transferred thereto over the cost of such products transferred plus allowance for outage of gasoline en route to destination. By segregating this profit, the trading summary form automatically develops the trading profit on the external sales of each department, regarding each as an independent operating unit. If we now declare a dividend, so to speak, of this profit on internal transfers, it would be distributed, pro rata, over the departments to which the commodities were transferred. Thus we should arrive at the profit of each department on an actual-cost basis. From the auxiliaries of the departmental profit-and-loss accounts, so adjusted, a detailed comparison might be made of the trading profit as between the wholesale and the retail divisions, on a cost basis.

Net-back on external sales, item 33, is not a true net-back since it includes the sales of purchased products. What is desired is the net-back to company plants on the sale of company products only. To arrive at the desired net-back, the trading in purchased products must be eliminated. As previously mentioned, the "exchange" purchases from certain manufacturers are approximately offset by "exchange" sales from company plants to those manufacturers for resale by them. These purchase and sale transactions, which, by the way, are entered into for the purpose of saving transportation costs, are so conducted that they usually balance—quantity and dollars. If there were no "exchange" transactions, the sales to manufacturers would be replaced by transfers from the company refinery to stations. If we now deduct from column II, item 33, the gallons and dollars of "exchange" purchases, eliminate from column VI, item 33, the amount of sales of miscellaneous purchased articles, also a fair deduction allowance to cover expenses incurred in trading in such miscellaneous articles, and eliminate column IV, item 33, entirely, we arrive at the net-back to company plants. This net-back might now be broken down into products, and cost of products applied thereto, as follows:

Columns I II III V VI	Individual products	
Sales, less returns, item 18	Q	D
Deduct: "exchange" purchases as from col. II offsetting "exchange" sales	Q	D

Remainder	Q	D
Deduct: Sales of miscellaneous purchased articles, col. VI		D
Sales of company products	Q	D
Deduct: Items 19, 20, 26 and 32,—less allowance for expenses on miscellaneous sales, col. VI—apportioned over individual products sold		D
Net-back to company plants	Q	D
Deduct: Cost of sales, item 16, less exchange purchases applied in col. II, and less cost of miscellaneous sales, col. VI	Q	D
Profit on individual company products	Q	D

Analytical auxiliary records of the operations of the manufacturing and marketing departments must be maintained in order to be in position to compile this statement of profit on individual company products, by departments.

Section 6 of article III of the code reads as follows:

"SECTION 6. During such periods as the production of crude petroleum in any state is within the allocation to that state, as provided in section 3, article III, of this code, it shall be an unfair practice within that state to buy, sell, receive in exchange, or otherwise acquire mid-continent crude petroleum of 30°–36.9° A.P.I. gravity during any calendar month at a price per barrel (to the nearest cent) less than that which will be determined by multiplying the average group 3 tank car price per gallon of U. S. motor gasoline of 60–64 octane rating during the preceding calendar month as ascertained and declared by the federal agency designated by the president, by the constant 18.5. The constant 18.5 represents the relationship, during the period 1928–1932, between the average price per barrel of mid-continent crude petroleum of 36°–39.9° A.P.I. gravity and the average group 3 price per gallon of U. S. motor gasoline of 57–65 octane rating or 58–60 U. S. motor gasoline. For crude petroleum of lower or higher gravity and/or different quality and/or in different locality, fair and equitable differentials between the price of 36°–36.9° mid-continent crude petroleum, determined as above prescribed, and the prices quoted for other crude petroleums shall be observed. Each company or individual purchasing crude petroleum shall file a certified copy of its price schedule and subsequent price changes with the planning and coördinating committee. Such contracts for the purchase of crude oil as were in existence on the effective date of this code shall not be affected by the provisions of this section during the period of the contract, provided that a certified copy of each such contract is filed with the planning and coördinating committee within thirty (30) days of the effective date of this code. Such contracts, however, may not be renewed except with the approval of the planning and coördinating committee."

The analysis of item 18 of column II of the trading summary gives the gross realization on gasoline and other products derived from the crude oil. The analysis of item 2 of column II of the cost-of-sales summary gives the posted market prices of crude oil of various gravities (A.P.I.). The company that operates its plants efficiently and economically and produces quality products at a low rate per barrel of throughput and then holds its transportation, selling and general expenses at a low rate per gallon will benefit under the rule adopting the 18.5 constant as described in the foregoing quotation from the code. It only remains to be said that the company which studies its costs through the medium of properly designed and maintained auxiliaries will gain all the advantages which its volume of business and the geographical positions of its properties entitle it to receive.

I said on starting this series of articles that my writing would properly come under the title of "Oil sketches," but, in deference to request, the present title was adopted. I am not unlike the Welsh sign-painter who was commissioned to paint an angel on a sign to be hung over the entrance of a new hotel—"The Angel Inn." The painter importuned the proprietor to change the name to "The Red Dragon Inn" offering to deliver the most gorgeous painting of a red dragon on a green field ever seen in Wales. He was told to paint a sign of an angel according to agreement. In due course, the sign was delivered and hung, but all who gathered at the opening of the inn remarked that the figure resembled a dragon more than it did an angel.