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The Accounts of an Oil Company

IV

BY H. G. HUMPHREYS

By way of amplifying explanations given in previous papers of this series as to the basis of depletion (and depreciation) and the rule for determining the unit rate and amount, the following is submitted:

Basis

- Leasehold—returnable through depletion.
- Development—returnable through depletion, if not previously written off 100% in the year in which incurred.
- Material—returnable through depreciation.

(1) The accumulated cost of investment as at the close of the accounting period (current year to date) less (2) amount of depletion (or depreciation) sustained thereon in prior fiscal years.

Unit Rate

$$\frac{(a+b)-c}{(d+e\pm f)-g} = r$$

- r.* Rate of depletion (or depreciation) per barrel of oil produced.
- a.* Cost of investment at basic date—the date of completion of the first producing well.
- b.* Subsequent costs, down to the close of the accounting period.
- c.* Amount of depletion (or depreciation) sustained to the beginning of the current fiscal year.
- d.* Estimated recoverable barrels of oil at basic date.
- e.* Additions to “d” in respect of further productive wells completed.
- f.* Increase or decrease of “d” based upon facts ascertained subsequent to basic date.
- g.* Barrels of oil produced from basic date to the beginning of the current fiscal year.

Amount

$$p \times r = x$$

- p.* Barrels of oil produced during current period.
- r.* Unit rate, as above.
- x.* Amount of depletion (or depreciation) for the current period.

In oil-accounting circles, considerable interest has been aroused by a recent decision of the supreme court of the United States in the case of *The United States vs. Dakota-Montana Oil Company*, which (reversing the board of tax appeals and the court of claims) sustains the commissioner in holding that capitalized cost of

preliminary development and drilling is returnable through depletion and not through depreciation.

This decision does not affect the position of the taxpayer who has followed what appears to be the best policy among the following:

- (a) Amortizing leasehold cost over the term of the lease.
- (b) Writing off exploration cost in the year in which incurred.
- (c) Depleting unamortized balance of leasehold cost in ratio to decline of recoverable oil through production.
- (d) Writing off development and drilling costs in the year in which incurred.
- (e) Depreciating material cost on the unit basis—as in (“c”) above.

However, it may seriously affect the position of the taxpayer who has done all of these things excepting (“d”), in respect of which he has elected (f) to capitalize development and drilling cost, anticipating its return through depreciation, only now to find that he is restricted to (g) its return through depletion.

An illustration of the different results in capital deductions of the three methods—(d), (f) and (g), in the first two years’ operation of a given lease, is appended:

Lease ABC

Recoverable oil reserves	1,000,000 barrels
Recovered in first year	400,000 barrels at \$1
Recovered in second year	200,000 barrels at \$.50
Leasehold cost, \$50,000	per barrel \$.05
Development cost, \$150,000	per barrel \$.15
Material cost, \$150,000	per barrel \$.15

(NOTE.—The word “recoverable” applied to oil reserves is significant of the oil in the ground. The engineer will estimate from, say, 20% to 50% as being recoverable, based on historical records and prevailing operating conditions.)

First year	(d)	(f)	(g)
Gross income	\$400,000	\$400,000	\$400,000
Operating expense and overhead	32,000	32,000	32,000
Development cost 100%	†150,000		
Development-depreciation of cost	†	* 60,000	
Material-depreciation of cost	† 60,000	60,000	60,000
Total deductions	242,000	152,000	92,000
Net income	158,000	248,000	308,000
50% of net income	79,000	124,000	154,000
27½% of gross income	110,000	110,000	110,000

* Disallowed in this position; see (g).

† Capital deductions.

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Development-depletion of cost			\$ 60,000
Leasehold-depletion of cost	\$ 20,000	\$ 20,000	20,000
Depletion deductible	† 79,000	110,000	110,000
Total capital deductions	289,000	230,000	170,000
	Second year	(d)	(f)
		(g)	
Gross income	\$100,000	\$100,000	\$100,000
Operating expense and overhead	20,000	20,000	20,000
Development cost—100% (written off in first year)			
Development-depreciation of cost	†	* 30,000	
Material-depreciation of cost	† 30,000	30,000	30,000
Total deductions	50,000	80,000	50,000
Net income	50,000	20,000	50,000
50% of net income	25,000	10,000	25,000
27½% of gross income	27,500	27,500	27,500
Development-depletion of cost			30,000
Leasehold-depletion of cost	10,000	10,000	10,000
Depletion deductible	† 25,000	10,000	40,000
Total capital deductions	55,000	70,000	70,000

Will the reader kindly turn to page 356 of his May JOURNAL and delete the word "depreciation" in the line which reads: "1103 Development (depreciation)," and, on page 358, change the word "depreciation" to "depletion" in the line which reads: "Depreciation of intangible drilling cost (100% or less)." One never knows.—H. G. H.

Having closed the discussion of oil and gas properties, per se, we shall now give some attention to the combined operations of departments, namely:

1. Oil and gas properties (producing department)
2. Crude oil storage department
3. Pipe line department
4. Natural gasoline department
- 5a. Refinery department
- 5b. Lubricating department
6. Tank car department
7. Distributing stations-retail marketing
8. Internal utilities

The tables of figures which immediately follow have been put together so as to represent, in a condensed manner, the entire operations of an oil company for a given period. The figures in themselves are insignificant, but, as symbols considered as thousands of dollars, they will probably serve to explain transactions more clearly than would the written word.

* Disallowed in this position; see (g).

† Capital deductions.

In pages 190-195 of the March issue of the JOURNAL will be found a skeleton form for each of the above-named departments into which the figures given in the tables may be posted. (External and internal charges would be combined and component oils purchased would be reduced by inventory increase.) It is thought that by so doing the reader may have the figures in a more familiar setting.

The tables mentioned consist of:

- I. External earnings
- II. Inventories
- III. Costs—cash or equivalent
- IV. Internal transactions
- V. Recapitulation

I. External earnings	Total	Departments							
		1	2	3	4	5a	5b	6	7
Gasoline (gals.)	\$4,950					\$2,450			\$2,500
Kerosene (gals.)	480					160			320
Distillates (gals.)	180					90			90
Gas oil (gals.)	160					160			
Fuel oil (barrels)	40					40			
Natural gasoline (gals.)	650				\$650				
Butane, propane, solvents (various)	100				100				
Lubricants (gals. & lbs.)	1,150						\$550		600
Refined products	\$7,710				\$750	\$2,900	\$550		\$3,510
Crude oil (barrels)	\$ 1,100	\$1,000	\$100						
Casinghead gas (M. cub. ft.)	40	40							
Residue gas	90				90				
Pipage	20			\$20					
Car rentals	5							\$ 5	
Mileage	85							85	
Repairs for outside concerns	5							5	
Miscellaneous	126	5	1	5	5	5		5	100
Total	\$9,181	\$1,045	\$101	\$25	\$845	\$2,905	\$550	\$100	\$3,610

Crude oil inventory on leases is valued at posted prices prevailing at date of balance-sheet, according to gravity.

Price of crude oil in storage is the average book price as the result of charging storage at the gravity price prevailing at the date when the oil was run to storage. Cost of sales would be charged at this average price. Sales to refinery would represent crude oil run to stills at the gravity price prevailing at the date of run.

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Refined products are valued at cost. (Costs are to be explained later). Every inventory item is adjusted to the lower as

II. Inventories	Opening	Closing	Increase (Decrease)
Natural gasoline	\$ 148	\$ 150	
Butane, propane, solvents	30	40	
Natural gasoline department	\$ 178	\$ 190	\$ 12
Gasoline	\$2,270	\$2,250	
Kerosene	320	400	
Distillates	115	160	
Gas oil	140	200	
Fuel oil	70	100	
Refining department	\$2,915	\$3,110	\$195
Gasoline	\$1,000	\$1,005	
Kerosene	5	4	
Distillate	10	8	
Lubricants	300	305	
Miscellaneous	40	50	
Distributing stations	\$1,355	\$1,372	\$ 17
Lubricating department			
Finished oils and grease	\$ 130	\$ 125	\$ (5)
Component stocks	100	110	10
Oil and gas properties			
Crude oil in lease stock tanks	50	60	10
Crude oil storage	2,500	2,590	90
Total	\$7,228	\$7,557	\$329

Costs— III. Cash or equivalent	Total	Departments									
		1	2	3	4	5a	5b	6	7	8	
Casinghead gas	\$ 100				\$100						
Lubricants	200						\$200				
Gasoline	100								\$ 100		
Miscellaneous merchandise	50								50		
Freight on purchases	500								500		
Commodities purchased	\$ 950				\$100		\$200		\$ 650		
Operating and maintenance expense	2,463	\$193	\$45	\$75	400	\$ 500	100	\$50	1,000	\$100	
Direct departmental expense	305	50	25	10	40	70	20	5	80	5	
Apportionable selling expense	817				60	647	110				
Apportionable general expense	325	150	25	10	30	40	40	5	20	5	
Total	\$4,860	\$393	\$95	\$95	\$630	\$1,257	\$470	\$60	\$1,750	\$110	

between cost and market for balance-sheet purposes; the adjustment, per contra, being a general profit-and-loss or surplus item. This adjustment is ignored for the purposes of this paper.

Crude oil in the pipe line system is mainly the property of the crude oil storage department, and some of it may be held for outside concerns for which the pipe line department would be responsible as to barrels and gravity, the remainder being pipe line allowance oil which is offset by a reserve for losses, excluded from the above table.

Inventories of materials, chemicals and sundry supplies are carried at cost or lower and deliveries are made on requisition—.

It is noteworthy that no crude oil has been purchased here (table III). The available oil in the ground must therefore be the equivalent of cash.

IV. Internal transactions	Departments								
	1	2	3	4	5a	5b	6	7	8
Crude oil	\$ (2,192)	\$ 2,192							
Casinghead gas	(50)			\$ 50					
Crude oil		(2,000)			\$2,000				
Pipage			\$ (200)		200				
Natural gasoline				(100)	100				
Component oils					(145)	\$ 145			
Gasoline					(625)			\$625	
Kerosene					(160)			160	
Distillate					(20)			20	
Lubricants						(150)		150	
Commodities purchased		\$ 2,192		\$ 50	\$2,300	\$ 145		\$955	
Burning fuel					\$ (25)				
Residue gas	\$ 10			\$ (10)	{ 25				
Power, water, etc.	{ (5)								
	5								
Tank car rental				70	150		\$ (220)		
Inter-department sundries	2	\$ (1)	(5)	4	(5)	5	(5)		
					5				
Services of internal utilities	40	5	5	15	20	5	5	55	\$ (150)
Expense	57	5	5	89	200	10	5	55	
Internal earnings	\$ (2,247)	\$ (2,001)	\$ (205)	\$ (110)	\$ (980)	\$ (150)	\$ (225)		\$ (150)

Commodities purchased	\$5,642
Expense	426
Internal earnings	<u>(\$6,068)</u>

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V. Recapitulation	Total	Departments									
		1	2	3	4	5a	5b	6	7	8	
I. External earnings.....	\$ 9,181	\$1,045	\$ 101	\$ 25	\$845	\$2,905	\$550	\$100	\$3,610		
II. Inventory increase.....	329	10	90		12	195	5		17		
IV. Internal earnings.....	6,068	2,247	2,001	205	110	980	150	225		\$150	
Total credits.....	\$15,578	\$3,302	\$2,192	\$230	\$967	\$4,080	\$705	\$325	\$3,627	\$150	
IV. Internal purchases.....	\$ 5,642		\$2,192		\$ 50	\$2,300	\$145		\$ 955		
IV. Internal expense.....	426	57	5	5	89	200	10	5	55		
III. Cash, etc. commodities purchased.....	950				100		200		650		
III. Cash, etc. operating and maintenance expense.	2,463	193	45	75	400	500	100	50	1,000	\$100	
III. Cash, etc. direct departmental expense.....	305	50	25	10	40	70	20	5	80	5	
III. Cash, etc. apportionable selling expense.....	817				60	647	110				
III. Cash, etc. apportionable general expense.....	325	150	25	10	30	40	40	5	20	5	
Total debits.....	\$10,928	\$ 450	\$2,292	\$100	\$769	\$3,757	\$625	\$ 65	\$2,760	\$110	
Net credit.....	\$ 4,650	\$2,852	\$(100)	\$130	\$198	\$ 323	\$ 80	\$260	\$ 867	\$ 40	

External earnings (I).....	\$9,181
Inventory increase (II).....	329
Together.....	\$9,510
Deduct: costs—cash or equivalent (III)	4,860
Net, before depletion, depreciation, etc.	<u>\$4,650</u>

This net credit (\$4,650) would now be accounted for through the statement of the disposition of funds. This statement, in its most practicable form, first develops the amount of net resources (cash or equivalent) for the period, from which are deducted capital expenditures, special deposits, etc., leaving a balance representing increase or decrease in net working assets for the period.

The following expense classifications are given so as to explain, in a general way, the composition of the expenses shown in table III:

- Operating and maintenance expense*
- (Applicable to all operating departments)
- Salaries and wages
- Commissions
- Transportation

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Operating supplies
Light, heat and power
Maintenance, materials and sundries
Insurance
Taxes and licences
Royalty
Rent
Telephone and telegraph
Traveling and incidental
Proportion of district expense
Unclassified expense (analyzed in detail)
Credit: expense charged to outside concerns

Selling and general expenses

(Applicable to selling and administrative departments and their divisions)

Salaries	Donations
Commissions	Maps and drawing materials
Transportation	Advertising and sales promotion
Light, heat and power	Repairs
Postage	Rents
Stationery and office supplies	Taxes and licences
Telegrams	Insurance
Telephone	Corporate expense
Traveling and incidental	Employee welfare
Auto expense	Bond premiums
Newspapers, periodicals and books	Unclassified (analyzed in detail)
Membership dues	Credit: expense charged to outside concerns

The foregoing expense classifications may suffice for small concerns, but in the case of a large organization many of the items would be detailed on a separate sheet—for example, labor, traveling, advertising, taxes, insurance.

Direct departmental expense is divided by operating departments. A fourteen-period sheet is assigned to each department in the expense auxiliary. This expense includes only such items as can not be directly allocated to specific units of a department.

Apportionable selling expense (wholesale) is divided by sales offices, districts, etc.—a separate sheet assigned to each division. At the close of the accounting period, in the light of experience, the aggregate may be apportioned through the trading accounts relating to each manufacturing department, as indicated in table III.

Apportionable general expense is divided according to administrative and service departments (executive, legal, purchasing accounting, etc.). To the aggregate of this expense may be

added net non-operating expense (interest expense, etc., less sundry credits) and the sum may then be apportioned, in the operating summaries only, over departments, respectively, in ratio to average book investment (say, properties and inventories) employed. See table III.

GENERAL DESCRIPTION OF AUXILIARY RECORDS

Each sheet of the auxiliary records has fourteen columns—close of previous year, each month of current year and close of current year—with appropriate vertical classification in each case. The vertical classification of each sheet would include a brief summary showing changes in property investment. Complete details of properties are carried in separate records.

The following description covers only the elements of operation—from sales to operating and maintenance expense.

Oil and gas properties

The auxiliary of this department is described on page 352 of the May issue of THE JOURNAL OF ACCOUNTANCY.

Crude oil storage

Sales—barrels, gravities, prices and amount.

Inventory—purchases and deliveries—barrels, gravities and amount.

Operating and maintenance expense in detail.

A separate sheet is maintained for oil in pipe line system, each tank farm or other locations, and the aggregate is carried to the departmental summary (See form, page 191, March JOURNAL).

Pipe line department

To study the accounting system of a common carrier, one should consult the *Classification of Investment in Pipe Lines, Pipe Line Operating Revenues and Pipe Line Operating Expenses of Carriers by Pipe Lines, prescribed by the Interstate Commerce Commission*, which may be had from the government printing office, Washington, D. C.

In the case of a small intra-state pipe line system, constructed merely to connect a number of oil pools to a refinery, the accounting procedure is comparatively simple. The journal of transactions shows, in respect of each receipt, the owner's name, barrels and gravity to be accounted for, and the rate and barrel allowance for loss; and on each delivery it shows owner, barrels

and gravity. The pipage charge is recorded with each transaction. A ledger account is carried with each owner (a) under "barrels," barrels and gravity received and delivered and (b) under "amount" charges for transportation, dr. or cr. gravity adjustments, other charges and cash settlements. Most transactions are intra-company—with the crude oil storage department. The external transactions represent courtesy or reciprocal services for sundry local concerns.

The auxiliary contains the necessary barrelage controls showing receipts and deliveries, shrinkage or expansion, B. S. & W. deductions and opening and closing inventories, with particulars of operating and maintenance expense, which "tie in" to the departmental summary (See form, page 191, March JOURNAL).

Natural gasoline department

Refinery department

Lubricating department

The control auxiliaries of these departments, respectively, are given on pages 192–193 of the March JOURNAL.

Sales auxiliaries by plants are divided by states and show commodities, gallons and amount.

Cost auxiliaries, divided by plants and certain units in the plants, show quantities and cost of charging stock consumed in each process with details of direct operating and maintenance expense and depreciation. Also, divided by units, are the details of plant utilities and overhead expenses, plus depreciation, and the aggregate is apportioned over the several processing units. This combines all costs in the latter. The complete costs of each processing unit are then apportioned, respectively, over the several products of each unit, according to the particular method that has been adopted by the company. The product costs thus developed remain constant in the stock ledger.

These departments will be discussed in more detail in a later article.

Tank car department

The summary form for this department given on page 193 of the March JOURNAL broadly describes this auxiliary, but expenses are given in more detail. Complete comparative monthly statistics are kept of each railroad carrier's mileage—loaded and empty—also details of repairs to individual cars. Any income shown by this department, after all charges, might be apportioned

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over departments served, in the form of a rebate, on the basis of respective mileage.

Distributing stations

Auxiliary sheets are assigned to (a) all stations, (b) all tank stations, (c) totals of tank stations by states, subdivided by respective units, (d) all service stations, (e) total of service stations by states, subdivided by respective units.

Each sheet will show its sales gallons by commodities, total sales dollars, deductions from sales, freight inward and direct station expenses; also sales and cost of miscellaneous merchandise.

In a later article on manufacturing and marketing departments, this subject will be fully discussed.

Internal utilities

In actual practice most of these utilities would be assigned to and directly operated by operating departments. In any event, a separate auxiliary sheet would be given to each utility, showing, as in all other such sheets, investment, earnings (in this case from charges to other departments), expenses, etc. Any income, after all charges, shown by these utilities might be rebated equitably against the charges to other departments.

General

The monthly operating summaries given in pages 190-195 of the March JOURNAL may be checked directly to the general ledger. These summaries are broken down into details by means of the auxiliaries which have been described. The posting of the auxiliaries and examination as to consistency in amounts are simultaneous operations. Adjustments are made promptly. Auxiliaries are also maintained for the general balance-sheet, general income and surplus account, statement of the disposition of funds, gross property additions, etc. Thus every statement issued by the accounting department may be said to have been copied from the books. Every statement regularly prepared is bound in a permanent record.

Let me refer again to table V "recapitulation," which shows "actual" operating results before depletion, depreciation and other capital extinguishments, for a given period, at a figure of \$4,650. I am going to set up that table in comparison with a "forecast" of \$4,510, assumed to have been made for the same

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period. For illustrations I shall use dollars only, although in actual practice quantities and prices of commodities would be essential.

The comparison between "forecast" and "actual" is given in four tables, as follows:

- VI. Crude oil operations
- VII. Manufacturing and marketing
- VIII. Tank car department and utilities
- IX. Summary and general

VI. Crude oil operations	Total		Departments		
	Forecast	Actual	1	2	3
External earnings	\$1,120	\$1,171	\$1,045	\$ 101	\$ 25
Inventory increase		100	10	90	
Internal earnings	2,250	4,453	2,247	2,001	205
Total credit	\$3,370	\$5,724	\$3,302	\$2,192	\$230
Internal purchases		\$2,192		\$2,192	
Internal expense		67	\$ 57	5	\$ 5
Cash, etc., operating and maintenance expense		313	193	45	75
Cash, etc., direct departmental expense		85	50	25	10
Total debit	\$ 490	\$2,657	\$ 300	\$2,267	\$ 90
Net credit	\$2,880	\$3,067	\$3,002	\$ (75)	\$140

VII. Manufacturing and marketing	Total		Departments			
	Forecast	Actual	4	5a	5b	7
External earnings	\$7,800	\$7,910	\$845	\$2,905	\$550	\$3,610
Inventory increase		229	12	195	5	17
Internal earnings	275	1,240	110	980	150	
Total credit	\$8,075	\$9,379	\$967	\$4,080	\$705	\$3,627
Internal purchases		\$3,450	\$ 50	\$2,300	\$145	\$ 955
Internal expense		354	89	200	10	\$ 55
Cash, etc., purchases and freight		950	100		200	650
Cash, etc., operating and maintenance expense		2,000	400	500	100	1,000
Cash, etc., direct departmental expense		210	40	70	20	80
Total debit	\$5,525	\$6,964	\$679	\$3,070	\$475	\$2,740
Net credit	\$2,550	\$2,415	\$288	\$1,010	\$230	\$ 887

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VIII. Tank cars and utilities	Total		Departments	
	Forecast	Actual	6	8
External earnings	\$ 90	\$100	\$100	
Internal earnings	350	375	225	\$150
Total credit	\$440	\$475	\$325	\$150
Internal expense		\$5	\$5	
Cash, etc., operating and maintenance expense		150	50	\$100
Cash, etc., direct departmental expense		10	5	5
Total debit	\$160	\$165	\$ 60	\$105
Net credit	\$280	\$310	\$265	\$ 45

IX. <i>Summary and general</i>	<i>Forecast</i>	<i>Actual</i>
Table VI	\$2,880	\$3,067
Table VII	2,550	2,415
Table VIII	280	310
	<u>\$5,710</u>	<u>\$5,792</u>
Apportionable selling expense	\$ 850	\$ 817
Apportionable general expense	350	325
	<u>\$1,200</u>	<u>\$1,142</u>
Net credit	<u><u>\$4,510</u></u>	<u><u>\$4,650</u></u>

Forecasts are generally detailed by groups, lease operations by districts or pools, wholesale sales by states, station operations by states, etc. The historical record of past performance afforded by the auxiliaries is a good aid in forecasting.

Forecast—Table VI

In this case the company decided to carry out commitments for the sale of crude oil to outside concerns without purchasing any crude from them. By arrangement with the manufacturing and marketing group (VII), certain quantities and predetermined values of crude oil and casinghead gas to be transferred were set. The forecast may be explained thus:

Crude oil production	\$3,100	
Less: transfer to storage	2,000	
	<u> </u>	
Crude oil sales to outside concerns	\$1,100	
Pipage for carrying outside oil	20	
	<u> </u>	
External earnings		\$1,120

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Crude oil—storage to refinery stills	\$2,000	
Pipage—crude oil to refinery	200	
Casinghead gas—production to gasoline plants . . .	50	
Internal earnings		\$2,250
Total earnings		\$3,370
Oil and gas properties	\$ 50	\$ 260
Crude oil storage	30	50
Pipe line department	10	90
Operating and maintenance expense		\$400
Direct departmental expense		90
Income forecast		\$2,880

The forecast makes no provision for sales external from storage nor for inventory fluctuation; and, quite naturally, predicating its expense on auxiliary figures, it does not divide operating and maintenance expense as between internal and "cash."

Forecast—table VII

This forecast was determined as follows:

Sales through distributing stations		\$3,500	
Less: "Cash" purchases of gasoline and miscellaneous merchandise plus freight	\$ 200		
Freight on oils from plants	500		
Operating and maintenance expense	990		
Direct departmental expense	65	1,755	
Station net-back, including profit on miscellaneous sales . .		\$1,745	
Wholesale sales:			
Gasoline department	\$ 800		
Refinery department	3,000		
Lubricating department	500	4,300	
Sales credit			\$6,045
Costs by departments:	4	5a	5b
Internal purchases			
Casinghead gas	\$ 50		
Crude oil		\$2,000	
Pipage		200	
"Cash"—Purchases	90		\$140
"Cash"—Operating and maintenance expense	350	475	95
"Cash"—Direct departmental	30	50	15
Natural gasoline	(100)	100	

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Lubricating stocks.....	(150)	150		
Refinery fuel.....	(25)			
	25			
	\$420	\$2,675	\$400	3,495
Income forecast before wholesale selling expense.....				\$2,550

It will be seen that no provision is made for the cost of commodities to be transferred from plants to stations. This point will be discussed in the next article. Again, the forecast makes no provision for inventory fluctuation nor for the division of operating expense as between internal and "cash." Had the program contemplated an increase in plant stocks it would doubtless have been added to "sales credit" and, per contra, crude oil purchases and fuel consumption would have been increased. Had it been planned to decrease stocks, crude oil and fuel consumption would, of course, have been decreased correspondingly.

Forecast—table VIII

The budget controller, on assembling the figures, discovers that forecasts VI and VII include in operating and maintenance some internal items—which he estimates at \$350. In table VIII he sets up an internal credit to offset those items.

By departments:	Total	6	8
External earnings.....	\$ 90	\$ 90	
Internal earnings.....	350	210	\$140
Total credit.....	\$440	\$300	\$140
Operating and maintenance.....	\$150	\$ 55	\$ 95
Direct departmental.....	10	5	5
Total debit.....	\$160	\$ 60	\$100
Forecast—Net credit.....	\$280	\$240	\$ 40

Forecast IX

Commodity turnover, operating and maintenance and direct departmental figures have now been forecast and summaries of them have been made and entered in table IX. To complete the forecast, the apportionable selling and general expense estimates remain to be made. There are many reasons for leaving these items for final and special consideration, as for example—the

determining of the advertising program. Forecasts of these apportionable expenses would be prepared by divisions, in the classification already given, which in this case are assumed to have been the following aggregate sums:

Apportionable selling expense . . .	\$850
Apportionable general expense . . .	350

Conclusion

In writing these paragraphs I have had in mind that ideal state wherein the operator would devote his entire time to playing the game, while the accountant would devote his entire time to keeping tally and their minds would come into agreement through the concerted study of "forecast" and "actual."

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