

Chapter 10: Financial Accounting

Entire textbooks, high school and college courses, and college degrees are devoted to the topic of accounting. The section included here is only included as a brief review of the basics of accounting. If these topics are new to you or difficult for you, then you may need to acquire additional knowledge on the subject from classes, lectures, or textbooks specifically on accounting. This section summarizes the basics of accounting and the basic accounting cycle of 1) recording a transaction in a journal, 2) posting from a journal to a ledger, 3) preparing adjusting entries, and 4) preparing financial statements.

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INTRODUCTION

This chapter is a brief review of the fundamentals of accounting. The information in this chapter has been adapted from the Rural Transportation Accounting manual prepared by the Transportation Accounting Consortium in 1986. For further details or information, consult the Transportation Accounting Consortium manual, an accounting textbook, or take a bookkeeping or accounting course.

An accounting system is designed to record the financial transactions of an organization and summarize these transactions into various financial reports. The accounting cycle can be summarized as: transactions are recorded into journals, which are then posted to ledgers, from which the financial statements of the organization are prepared. The journals represent a chronological record of the business transactions of the organization. In order to provide useful information, the journal entries need to be classified and summarized. Transactions of a similar nature are grouped into a general ledger account. This process is called posting. Then general ledger accounts of a similar nature are summarized into financial statement line items. For example, all the cash accounts (a checking account, a savings account, etc.) are combined into the Cash line item in the financial statements.

A recommended Chart of Financial Accounts, developed by the Transportation Authority Consortium, is presented in Appendix A. This Chart of Accounts is meant to be truncated or expanded (but not materially altered) according to the needs of the local transportation system; in other words, this Chart of Accounts is meant to be flexible and adaptable. For example, special local categories of fares (Account Code Number 401) can be inserted between numbers 401.06 and 401.99. Similar flexibilities exist in the labor expense category (Account Code Number 501) and many others. The point is that this is a system that can be tailored to local needs without violating the overall structure of the Chart of Accounts.

THE ACCOUNTING EQUATION

The accounting equation which is the basis of all accounting practice is:

$$\text{Assets} = \text{Liabilities} + \text{Capital}.$$

Assets

Assets are economic resources that can provide potential future benefits. Assets are divided into current assets, fixed assets and other long-term assets. Current assets represent resources which

are expected to be consumed or converted to cash within one year. Fixed assets represent property, plant (buildings) and equipment which are used in the production of a good or the performance of a service. For transportation providers, any vehicles which are owned would be classified as fixed assets. Other long-term assets represent any other asset which does not fit into the current asset or fixed asset categories.



Liabilities

Liabilities are obligations of the organization which will result in the probable future outlay of an asset. If you owe a gas station money on a credit card, then this is a liability. If you borrow money from a bank, then this is also a liability. Liabilities are divided into current liabilities, long-term debt, and other long-term liabilities. Current liabilities represent obligations which will become due within one year. Long-term debt is money that has been borrowed which will need to be repaid after one year. Other long-term liabilities represent any other liability which does not fit into the current liability or long-term debt categories.

Capital

Capital accounts represent the ownership accounts of the organization. If the organization is a partnership and each partner contributed a certain amount of money, then these cash contributions would be included in the capital accounts. Also included in the capital section is the accumulated earnings or losses of the organization since its inception, along with the current year's revenue and expense accounts.

THE DOUBLE ENTRY SYSTEM

Financial transactions are recorded in the accounting records using a double entry system in which each transaction affects at least two accounts. At least one account is debited and at least one other account is credited in every transaction.

A debit is used to record:

<u>Increases In:</u>	<u>Decreases In:</u>	-	+
Asset accounts	Liability accounts		
Expense accounts	Capital accounts		
	Revenue accounts		

A credit is used to record:

<u>Increases In:</u>	<u>Decreases In:</u>	+	-
Liability accounts	Asset accounts		
Capital accounts	Expense accounts		
Revenue accounts			

Regardless of the number of accounts involved in any transaction, the total dollar amount of the debits must always equal the total dollar amount of the credits. Normally asset and expense accounts will have debit balances and liability, capital and revenue accounts will have credit balances.

BASIS OF ACCOUNTING

Transactions can be recorded on either a cash basis or an accrual basis. Under the cash basis, revenues and expenses are not recorded until cash is received or paid out. Under the accrual basis, revenues and expenses are recorded when earned or incurred. Several examples will make this distinction more clear.

Assume that your organization picks up a number of elderly people and transports them to a senior citizens center. You are paid \$2 on the fifth of each month for every passenger that you provided service to during the previous month. During the month of December, your organization transported 600 people under this program and you received a check for \$1,200 on January 5th. Under the cash basis, you would record the \$1,200 of revenue in January when the cash was actually received. Under the accrual basis, the \$1,200 of revenue would be recorded in December when it was earned by providing the transportation service.

As a second example, assume that your drivers charge all of their gasoline purchases on the system's credit card. On January 18th, you receive your credit card bill for \$91.67 with the following charges on it:

Dec 19 - \$19.00
Dec 26 - \$24.50
Dec 31 - \$18.50
Jan 10 - \$15.00
Jan 13 - \$14.67.

On February 3rd, you pay the entire bill of \$91.67. Under the cash basis, the entire bill of \$91.67 would be recorded as an expense in February when it was paid. Under the accrual basis, \$62.00 of the bill would be recorded as an expense in December (the \$19.00, \$24.50 and \$18.50 charges were incurred in December) and \$29.67 of the bill would be recorded as an expense in January (the \$15.00 and \$14.67 charges were incurred in January).

The advantage of the cash basis is that it is easier. However, the accrual basis is the only acceptable basis for most reports. Therefore, all entities should use the accrual basis.

THE ACCOUNTING CYCLE IN SUMMARY

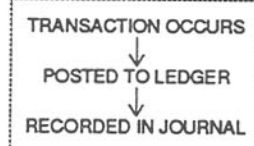
The accounting cycle was described briefly in the introduction to the accounting section.

The cycle begins when a transaction occurs.

The transaction is then recorded in one of the journals. At month-end (or more often), the journals are posted to the ledgers and the

amounts from the ledgers are used to prepare

the financial statements. If you are using a computerized accounting package, then the computer will perform the posting and summarizing that is necessary to go from the transactions that are input to the financial statements.



RECORDING A TRANSACTION IN A JOURNAL

Once an event occurs which needs to be recorded, a source document should be either obtained or generated. A source document is a permanent record of the transaction showing all relevant details and can come from outside the organization (e.g. a vendor invoice) or from within the organization (e.g. time sheets). If a problem with the transaction develops, the source document will be your record of the

transaction. Therefore, care should be taken that source documents are well-prepared, complete, accurate, and filed in a safe place.

The next step is to use the source document to record the transaction in a journal. A number of different journals can be prepared and used to facilitate this process. Typical journals are the general journal, the cash receipts journal, the cash disbursements journal and the payroll journal.

Any transaction can be recorded in a general ledger. Below is an example of a cash receipt being recorded in a general ledger.

GENERAL LEDGER

Date	Account Title and Explanation	PR	Debit	Credit
Jan 31	Cash		5,000	
	Revenue from Day Care Program (to record cash received for transporting children to day care)			5,000

A cash receipts journal is a specialized journal that is only used to record receipts of cash. Below is an example of the same transaction being recorded in a cash receipts journal.

CASH RECEIPTS JOURNAL

Date	Explanation	Debit	Credit		
		Cash	Fare Revenue	Senior Citizen Revenue	Day Care Revenue
Jan 31		5,000			5,000

A cash disbursements journal is a specialized journal that is used to record only disbursements of cash. Below is an example of a transaction being recorded in a cash disbursements journal.

CASH DISBURSEMENTS JOURNAL

Date	Explanation	Debit			Credit
		Labor Expense	Fuel & Oil Expense	Vehicle Maint. Expense	Cash
Feb 17		3,267			3,267
Feb 18			639		639



POSTING FROM THE JOURNALS TO THE LEDGERS

Please consult a beginning accounting or bookkeeping textbook (or even the Transportation Accounting Consortium manual referred to above) for additional examples of these journals and how to record a transaction in a journal.

One ledger card needs to be prepared for each general ledger account. The ledger card will show the account description, account number, transaction date, explanation, debit and credit amount for the transaction, and a running balance. At the end of each month, or more often, the transactions recorded in the journals need to be posted to the ledgers. This means that the date of the transaction, debit or credit amount and page number of the journal are recorded in the ledger for the account number being affected. Depending on the journal being used, each individual transaction may not need to be recorded in the ledger. For example, in the cash receipts journal, there will be a separate column in which to record all the debits to cash. This column can be totalled and only the total will be recorded in the ledger.

An example of a ledger card for the cash account follows. Note that the entries shown in the journal earlier have been posted to the ledger card.

CASH LEDGER CARD

Date	Posting Source	Transaction		Ending Balance	
		Debit	Credit	Debit	Credit
Jan 1	Beginning Balance			3,162	
Jan 31	Cash Receipts Journal	5,000		8,162	
Feb 17	Cash Disb. Journal		3,267	4,895	
Feb 18	Cash Disb. Journal		639	4,256	

Again, consult a beginning accounting or bookkeeping textbook (or even the Transportation Accounting Consortium manual referred to above) for additional information and examples of the posting process.

ADJUSTING ENTRIES

If the accrual basis of accounting is being used, then adjusting entries need to be prepared. The adjusting entries are recorded in the general journal and are then posted to the ledger. The adjustments would be for items such as:

- Expenses incurred, but not yet paid.
- Expenses paid, but not yet incurred.
- Depreciation expense.
- Revenue earned, but not yet received.
- Revenue received, but not yet earned.

An expense that has been incurred (i.e. the organization has received the benefit from the item), but has not yet been paid, needs to be accrued. An example would be gasoline charges put on a credit card. If \$55 of gasoline was charged in March and the bill paid in April, the \$55 should be accrued for in March. The entry would be to debit gasoline expense and credit accounts payable (a current liability account).

Expenses Paid, But Not Yet Incurred

Sometimes, a payment will be made for which the transportation organization has not yet received the service. In this case, an asset is recorded for the unused portion of the payment. An example would be an insurance payment. Assume that on February 1st, \$3,000 is paid for a six-month insurance policy. At the end of February, only one-sixth of the policy has been used, so only \$500 of the payment should have been expended. When the \$3,000 payment was made on February 1, the entry would be to debit prepaid insurance (a current asset account) and credit cash for \$3,000. At the end of February, an adjusting entry would be made to debit insurance expense and credit prepaid insurance for \$500 (one-sixth of \$3000). The remaining prepaid insurance balance at the end of February would be \$2,500.

Depreciation Expense

Depreciation represents the process of allocating the cost of a fixed asset over its estimated useful life. Depreciation attempts to match the cost of the asset to the revenues that are generated by using the asset. Generally accepted accounting principles require that both for-profit and not-for-profit organizations record depreciation. To record depreciation, an adjusting entry is made at the end of each month to debit depreciation expense and to credit accumulated depreciation (an account that reduces the fixed assets balance). The most common methods of depreciation are straight-line units of service, double declining balance and sum-of-the-years digits. We will illustrate the straight-line and units of service methods here. Any basic accounting or bookkeeping book will have illustrations of the other methods if you need to use them.

Straight-Line Method

Assume that a small bus costing \$70,000 is purchased in May of 1990. The bus is expected to last for seven years. The entry to record the purchase would be to debit a fixed asset account and credit cash for



\$70,000. The annual depreciation amount would be \$10,000 per year (calculated as \$70,000 cost divided by seven year estimated useful life) and monthly depreciation would be \$1,428.57. In the year the asset is acquired, only one-half of one year's depreciation can be taken. The fixed asset cost, accumulated depreciation, net book value (cost minus accumulated depreciation) and current year's depreciation at the end of each year would be as shown in Table 10-1.

STRAIGHT-LINE DEPRECIATION: SMALL BUS EXAMPLE

End of Year	Cost	Accumulated Depreciation	Net Book Value	Current Year's Depreciation
Purchase	\$70,000	\$0	\$70,000	-
1990	70,000	5,000	65,000	\$5,000
1991	70,000	15,000	55,000	10,000
1992	70,000	25,000	45,000	10,000
1993	70,000	35,000	35,000	10,000
1994	70,000	45,000	25,000	10,000
1995	70,000	55,000	15,000	10,000
1996	70,000	65,000	5,000	10,000
1997	70,000	70,000	0	5,000

Please note, however, that even though you depreciate the entire cost for accounting purposes, you can usually only report for reimbursement purposes depreciation on the portion of the cost that the transportation provider actually paid for.

Units of Output Method

The units of output method allocates the cost of the vehicles based on the number of units of output in the period. For transportation vehicles, the most common unit of output would be vehicle miles or vehicle hours. For illustrative purposes, we will use vehicle miles as our unit of output. A depreciation rate is determined by dividing the cost of the vehicle by the estimated number of miles the van is expected to travel before it has to be replaced. The depreciation for a month is then calculated by multiplying this depreciation rate by the actual number of miles the bus traveled during the month. Assume the following for an example:

Original cost of vehicle	\$70,000
Total estimated number of miles to be traveled during the bus's life	100,000 miles
Miles traveled during the current month	2,500 miles.

Using this information, we would first calculate the depreciation rate as the cost divided by the estimated miles:

$$\frac{\$70,000}{100,000 \text{ miles}} = \$0.70 \text{ per mile.}$$

The depreciation for the current month would then be calculated as the depreciation rate times the number of miles actually traveled:

$$\$0.70 \text{ per mile} \times 2,500 \text{ miles} = \$1,750.$$

The depreciation expense for the current month for this bus would be \$1,750. This method is only suitable when the total miles to be traveled over the entire life of the vehicle can be estimated with reasonable accuracy.

Revenue Earned, But Not Yet Received

Many of the entities which the transportation operator will provide service to will pay the operator after the transportation service has been provided. For example, assume that your system picks up a number of elderly clients and transports them to a senior citizens center as part of a project funded by the local government. You are paid \$2 on the fifth of each month for every passenger that you provided service to during the previous month. During the month of December, your system transported 600 clients under this program and you received a check for \$1,200 on January 5th. An adjusting entry would be made at the end of December to record \$1,200 of revenue and record an accounts receivable from the local government.

Revenue Received, But Not Yet Earned

In rare circumstances, the transportation operator may receive funding prior to the actual service being performed. Assume the same facts as in the above example except that the local government has agreed to pay you on the 25th of each month for the estimated number of passengers that will be transported during the following month. If you expect to transport 500 passengers during June, you would receive a check for \$1,000 on May 25. Since revenue should be recorded in the month that the service is provided under the accrual basis of accounting, the \$1,000 of revenue from this contract should be recorded in June when the transportation is provided rather than in May when the cash is received. As a result, a deferred revenue account (a current liability) should be credited and cash debited in May when the cash is received. In June, the deferred revenue account is debited and revenue is credited.

Four financial statements need to be prepared at the end of every fiscal year, and should be prepared at the end of each month. The four financial statements are:

- Balance Sheet.
- Income Statement.
- Statement of Changes in Retained Earnings.
- Cash Flow Statement.

In practice, retained earnings is also referred to as accumulated earnings or, if the balance is negative, accumulated deficit. Often, the income statement and statement of changes in retained earnings will be combined into one statement. Each of these statements will be discussed briefly and examples of each of these statements are in Tables 10-2, 10-3, and 10-4 (the second example combines the income statement and statement of changes in retained earnings).

The Balance Sheet

The balance sheet shows the financial status of the organization at a particular point of time. All the assets, liabilities, and capital accounts of the organization are included in the balance sheet, although certain general ledger accounts will be combined into one balance sheet line item. For example, both the checking and savings accounts would be included in the "Cash" line item on the balance sheet. The balance sheet is divided into two broad categories. The first category is "Assets" and the second is "Liabilities and Capital". Remember the equation $\text{Assets} = \text{Liabilities} + \text{Capital}$. This means that the total of the Assets section of the balance sheet **must** equal the total of the Liabilities and Capital section of the balance sheet. The Assets section is then further divided into "Current Assets", "Fixed Assets" and "Other Assets". The Liabilities and Capital section is further divided into "Current Liabilities", "Long-Term Debt", "Other Liabilities" and "Capital". The Accumulated Earnings amount in the Capital section is calculated in the Statement of Changes in Retained Earnings.



Table 10-2

**GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM
BALANCE SHEETS**

<u>ASSETS</u>	<u>December 31,</u>	
	<u>1991</u>	<u>1990</u>
<u>CURRENT ASSETS:</u>		
Cash	\$ 1,202	\$ 891
Accounts receivables	530	575
Prepaid expenses	<u>712</u>	<u>659</u>
	<u>\$ 2,444</u>	<u>\$ 2,125</u>
<u>FIXED ASSETS:</u>		
Transportation vehicles	\$145,721	\$145,721
Office equipment	2,078	2,197
Repair equipment	<u>8,954</u>	<u>6,733</u>
	\$156,753	\$154,651
<u>Less - Accumulated depreciation</u>	<u>29,111</u>	<u>17,624</u>
	<u>\$127,642</u>	<u>\$137,027</u>
<u>OTHER ASSETS:</u>		
Organization costs	<u>\$ 10,361</u>	<u>\$ 11,682</u>
TOTAL ASSETS	<u>\$140,447</u>	<u>\$150,834</u>
<u>LIABILITIES AND CAPITAL</u>		
<u>CURRENT LIABILITIES:</u>		
Current portion of long-term debt	\$ 4,187	\$ 4,009
Accounts payable	1,811	1,609
Accrued expenses	<u>925</u>	<u>1,107</u>
	<u>\$ 6,923</u>	<u>\$ 6,725</u>
<u>LONG-TERM DEBT:</u>		
Less current portion	<u>\$ 18,903</u>	<u>\$ 23,090</u>
<u>CAPITAL:</u>		
Local government investment	\$ 20,000	\$ 20,000
Federal government capital grant	70,000	70,000
Local government capital grant	20,000	20,000
Accumulated earnings	<u>4,621</u>	<u>11,019</u>
Total capital	<u>\$114,621</u>	<u>\$121,019</u>
TOTAL LIABILITIES AND CAPITAL	<u>\$140,447</u>	<u>\$150,834</u>

The Income Statement

An income statement summarizes the financial results of the transportation system over a period of time. All the revenue sources are listed first, then all the expense items. Total revenue less total expenses equals the system's net income or loss for the time period.

The Statement of Changes in Retained Earnings

The statement of changes in retained earnings shows exactly what the name implies -- the changes that occurred during the time period in the retained earnings account of the transportation system. The format used is:

	Beginning Retained Earnings
+	Net income for the period
-	Net loss for the period
-	<u>Dividends declared</u>
=	Ending Retained Earnings.

This statement is often included at the bottom of the income statement.

Table 10-3

GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM STATEMENTS OF INCOME AND RETAINED EARNINGS

	December 31,	
	1991	1990
<u>REVENUES:</u>		
Full adult fares	\$ 18,140	\$ 19,700
Senior center contract fares	16,700	17,210
Community college contract fares	24,910	25,700
State general operating assistance	<u>13,150</u>	<u>11,550</u>
	<u>\$ 72,900</u>	<u>\$ 74,160</u>
<u>EXPENSES:</u>		
Operator wages	\$ 23,412	\$ 22,808
Administrative wages	10,848	10,012
Fringe benefits	8,710	8,321
Professional services	6,099	5,850
Gasoline purchases	8,838	8,302
Utilities	5,074	4,212
Depreciation and amortization	13,229	11,012
Other operating costs	<u>3,088</u>	<u>2,970</u>
	<u>\$ 79,298</u>	<u>\$ 73,487</u>
NET INCOME (LOSS)	(\$6,398)	\$ 673
Accumulated earnings, beginning of year	<u>\$ 11,019</u>	<u>\$ 10,346</u>
Accumulated earnings, end of year	<u>\$ 4,621</u>	<u>\$ 11,019</u>

The Cash Flow Statement

The cash flow statement shows the cash flow from operating activities, investing activities, and financing activities. This is the most complicated of the four financial statements. The other three statements can be prepared without the cash flow statement being prepared. However, the financial statements will not be in compliance with generally accepted accounting principles unless a statement of cash flow is prepared. If a cash flow statement is desired, a CPA may be needed to assist in the preparation.

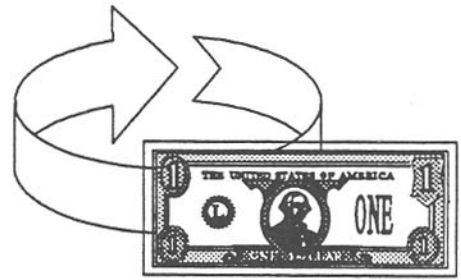


Table 10-4

GORDON COUNTY COORDINATED TRANSPORTATION SYSTEM STATEMENTS OF CASH FLOWS

	December 31,	
	1991	1990
Cash flows from operating activities:		
Net income (loss)	\$ (6,398)	\$ 673
Adjustments to reconcile net income (loss) to net cash provided by operating activities -		
Depreciation	13,229	11,012
Change in assets and liabilities -		
Accounts receivable	45	(87)
Prepaid expenses	(53)	(12)
Accounts payable	202	62
Accrued expenses	(182)	211
Net cash provided by operating activities	<u>\$ 6,843</u>	<u>\$ 11,859</u>
Cash flows from investing activities:		
Capital expenditures	<u>\$ (2,523)</u>	<u>\$ (8,363)</u>
Cash flows from financing activities:		
Payments of long-term debt	<u>(4,009)</u>	<u>(3,981)</u>
Net increase (decrease) in cash	\$ 311	\$ (485)
Cash at beginning of period	<u>891</u>	<u>1,376</u>
Cash at end of period	<u>\$ 1,202</u>	<u>\$ 891</u>

CONCLUSION

This chapter has outlined the basic fundamentals of accounting in a financial sense. The following chapter describes non-financial accounting considerations, those that deal with measuring the performance of a transportation system in terms of the amounts of services produced and consumed.