

BASIC FINANCE

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Abstract

A discussion of the basic measures of corporate financial strength, and the sources of the information--the Balance Sheet, Income Statement, Funds Flow and Cash Flow, Financial Ratios.

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Before an airline can buy new aircraft, it must be able to pay for the plane. The carrier can do this by using its own funds. However, few have enough cash on hand to purchase one aircraft much less a fleet. Therefore, the carrier must rely on outside sources for financial support.

What are the factors that a financial source investigates before deciding to invest or not? The basic information on the health of a carrier can be found from its balance sheet and income statement. If this information is coupled with a knowledge of the carrier's working capital and cash flow statements, an investor can compute some key financial ratios that will allow him to determine his potential risks and rewards from financing a carrier's operations.

#### ACCOUNTING PRINCIPLES

What are the basic indicators of corporate health, and how are they constructed? This is the area of the accountant so a basic knowledge of his techniques will be helpful.

Through the years, certain general rules or guides have been developed that accountants follow in preparing financial documents. These principles do not specify every detail of accounting practice, so the accountant has a great deal of freedom in tailoring his practices and procedures to the particular industry and company he serves. However, there are

some generally accepted standards.

### The Basic Accounting Conventions

Although the accountant does have a great deal of freedom in how he sets up and keeps accounts, there are several widely accepted conventions. The most important are:

1. Consistency - Once the accountant has decided how he will set up the accounts and handle particular transactions, the Consistency Convention requires him to handle all future events of the same type in the same fashion. Thus, similar transactions in different accounting periods can be compared, on a consistent basis.

Since circumstances change, accounting procedures may be altered to meet new developments. However, this is not done often, and when it is, the changes must be thoroughly described and documented.

2. Conservatism - This convention is often stated as "Anticipate no profits and provide for all possible losses." If there is an option in how a resource is to be evaluated, the accountant will ordinarily select the method that yields the lower value. For example, he would show the value of securities held by the firm at the lower of cost or market value. Although this procedure is often criticized as inconsistent, it is still widely in use and is important.

3. Materiality - often the recording of an event would cost considerably more than the information obtained in the process. Therefore, accountants will draw a line based on their experience and common sense between what is important enough to require close attention, and what can be considered immaterial and handled in a less detailed way. For example, an accountant would not require daily reports on how much fuel remains in the tanks of the aircraft in the fleet, but would use some simplifying assumption such as, "fuel is considered used when it is pumped from storage".

#### The Basic Accounting Concepts

In addition to the Accounting conventions, there are several basic concepts that underlie the keeping of accounts:

1. Business Entity Concept - Accounts are kept for businesses, and not for the people associated with them. The accounts reflect how transactions affect the business. This is true whether the business is a giant corporation or a sole proprietorship, totally merged with the personal finances of the owner. In the latter case, the law views both the business and personal transactions of the individual as his own personal property for which he is personally liable. However, the accountant treats the two separately. If the owner takes five dollars from the cash drawer to buy food, the accounts for the

business show a five dollar decrease in cash.

Since a corporation has a totally separate legal existence, corporate activities are easily distinguished from the personal actions of the owners or operators. However, there may still be areas of confusion. To keep tighter controls of activities, a corporation may treat various aspects of its operations as separate business entities and keep separate accounts. Or there may be several distinct corporations linked by stock interests. In this case, a "consolidated" accounting statement could be prepared, treating the whole group as one business entity. Because of these techniques it is sometimes difficult to separate out the information needed about a particular part of the firm.

2. Going Concern Concept - Under normal circumstances, accounting assumes that the business entity will exist for an indefinite period into the future. This eliminates the need to constantly compute the worth of the company as if it were to be liquidated, and instead concentrate on measuring performance by estimating the value of production. Market values of machinery and resources acquired, but not yet consumed are ignored since resale value is not important. Their value to the firm is through the creation of future output.

3. Cost Concept - Since the Going Concern Concept elimi-

nates the need to value the resources of a company at their going market price, the books of the company will record their worth at initial cost. This value is never changed to reflect market influences, (unless the Conservatism Convention is applied when market value is below cost). Therefore, the dollar amounts on the books of business should not be confused with the actual value of the company's holdings. Some resources such as cash or securities that could rapidly be disposed of will have a book value very close to market value. However, items such as land or equipment may be shown at values considerably below their worth in the market place.

The Cost Concept serves to remove subjective influences in evaluating the company. Two people may disagree widely on the value of a piece of property. By using original cost, a consistent measure is obtained.

4. The Money Measurement Concept - Closely allied to the Cost Concept is the Money Measurement Concept -- accounting records only include factors that can be expressed in monetary terms. Thus, a large number of diverse aspects of the firm can be reduced to a common denominator and added, subtracted or compared.

Since accounting records only reflect things that have monetary value, they will not disclose factors that cannot be

expressed in dollars. The accounts will not show potential contracts, the health of a crucial officer or internal management conflicts.

5. The Dual-Aspect Concept - The tangible and intangible resources of a business are its "assets". Claims against the business and its assets are called "equities", perhaps because they are often enforced in courts of Equity. The equities are divided into the claims of creditors -- "Liabilities" and the claims of the owners -- "Owners' Equity" (called Shareholders' Equity in a Corporation). The claims of the creditors have first priority, with the owners being entitled to everything that is left. Since the creditors' and owners' claim all the assets and since claims cannot exceed the assets, the Dual-Aspect Concept can be stated as:

$$\text{ASSETS} = \text{EQUITIES} = \text{LIABILITIES} + \text{OWNERS' EQUITY}$$

The true implication of the concept is perhaps more clearly shown by rewriting this equation as:

$$\text{OWNERS' EQUITY} = \text{ASSETS} - \text{LIABILITIES}$$

The owners are entitled to what is left of the assets after creditors' claims are satisfied.

Since any change in assets must be accompanied by a similar and offsetting change in the equities, the assets and equities are said to "balance." This balance is shown by the "Balance

Sheet".

### THE BALANCE SHEET

The balance sheet is the basic accounting report of a business entity showing the financial status of the firm at a given point in time. Every accounting transaction can be reported as a change of the balance sheet. Figure 1 shows the form of a typical although simplified, balance sheet for a small corporation. The categories are defined as follows:

#### Assets

Earlier, we defined an asset as being a tangible or intangible resource of a business. For an asset to qualify as a balance sheet entity, it must also have value, be owned by the business, and have been acquired at some measurable cost. Assets are categorized as:

1. Current Assets - Used to designate cash and other resources reasonably expected to be either consumed, sold or converted to cash during the normal accounting period -- usually one year. The most common items are:

Cash: Funds available for immediate disbursement without restriction.

Marketable Securities: Investments which can be readily sold and will be disposed of during the coming year. They are normally the types of short-term investments used to earn



FIGURE 1

TECH AIRWAYS INC.

Balance Sheet as of June 30, 1972

ASSETS

EQUITIES

Current Assets:

Cash  
 Marketable Securities  
 Accounts Receivable  
 Inventory  
 Prepaid Expenses \_\_\_\_\_

Total Current Assets \_\_\_\_\_

Fixed Assets:

Land, Buildings and  
 Equipment \_\_\_\_\_

Total Fixed Assets \_\_\_\_\_

Other Assets:

Investments  
 Intangibles \_\_\_\_\_

Total Assets \_\_\_\_\_

Current Liabilities:

Accounts Payable  
 Estimated Taxes  
 Accrued Expenses  
 Deferred Income \_\_\_\_\_

Total Current Liabilities \_\_\_\_\_

Other Liabilities:

Bonds Payable \_\_\_\_\_

Total Other Liabilities \_\_\_\_\_

Stockholders' Equity:

Common Stock  
 Retained Earnings  
 Capital Surplus \_\_\_\_\_

Total Equities \_\_\_\_\_

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interest on cash not immediately needed for business purposes.

Accounts Receivable: Money owned to the business and expected to be collected. The money is usually owed by customers, but it could be owed by employees or others. Where a note or other writing has been executed in conjunction with the transaction, it would appear under a separate category -- Notes Receivable.

Inventory: Inventory items are tangible personal property which is either held for sale in the ordinary course of business or is somewhere in the production process and will be converted into such goods. For example, aircraft awaiting delivery or on the production line would be inventory, as would stocks of sheet metal or rivets. But if the manufacturer uses one of those planes as a corporate aircraft, it is no longer an inventory item, but a fixed asset since it is actually used by the business.

Prepaid Expenses: These are often intangible assets such as insurance policies, which have limited life. Once paid, they represent value to the company. Normally, the item will be totally consumed within three to five years at most, and sometimes sooner. An example of a prepaid expense that is tangible would be heating oil purchased for the coming winter.

2. Fixed Assets - Fixed assets are tangible resources with a relatively long life expectancy. These are usually resources used in the production process such as land, buildings

and equipment. Fixed assets (except land) are gradually reduced in value through wear or obsolescence. However, they are still shown on the books at their cost with a separate entry made to show the depreciation or loss of value since acquisition. This concept will be discussed in more detail in a later section.

Note that an asset which has a potentially long life that is held for resale is not a fixed asset but an inventory item and would be listed under current assets.

3. Other Assets - All other assets are placed in this section. Two major categories are investments and intangible assets. Depending on the policy of the firm, these items could be account groupings on the balance sheet, but here we have listed them as classes of Other Assets.

Investments: Long-term holdings of securities, deposits, etc. that are not to be converted back to cash within the year (unlike Marketable Securities which will be converted).

Intangibles: Includes patents, copyrights, licenses or goodwill. In keeping with our basic definition of an asset, they must have value, be owned and have been acquired at a measurable cost. Therefore, goodwill that a company builds up through its own operations is not entered on the balance sheet. Only goodwill acquired through the purchase of another firm can be listed.

## Equities

The equities of a firm are of two types -- "Liabilities" and "Owners' Equity." In a corporation, Owners' Equity is called Stockholders' Equity.

1. Current Liabilities - Like Current Assets, Current Liabilities refer to short-term transactions. This includes long-term liabilities that will mature in the coming year as well as obligations arising from the operations of the business. The major accounts are:

Accounts Payable: The claims of suppliers, creditors and others are recorded in this account. These claims are usually unsecured. If there is a note or other written evidence of the claim, it would be listed under "Notes Payable" or a similarly titled account.

Estimated Taxes: Since taxes can be a relatively large account, they are listed separately. It is shown as an estimate since the exact amount may not be known at the time the balance sheet is prepared.

Accrued Expenses: This account represents obligations incurred by the firm but not yet paid (such as wages owed for work performed). If there is an invoice submitted, or other tangible evidence of the debt, it would be listed under Accounts Payable instead of here.

Deferred Income: If the company has received payments in advance, it is under an obligation to perform its part of the bargain or repay the advance. Therefore, such sums are shown as a Current Liability until the obligation is fulfilled.

2. Other Liabilities - These are long-term liabilities of the firm (such as bonds) which will not come due in the next year.

3. Stockholders' Equity - All the resources left after the liabilities are satisfied equal the Stockholders' Equity. This is sometimes called the residual interest, since the owners only get what remains after the interests of the creditors have been covered.

Capital Stock: In a corporation, the shares of ownership have an initial value called the "stated value" that represents either the price at which it was sold or a "par value" established in advance, or some other value reasonably fixed by the board of directors of the firm. The total represents the paid-in interest of the owners. (This is not necessarily related to the market value of the stock which is determined by owners selling their interests to new owners on the open market.)

Retained Earnings: If the company has profitable operations, it has "earnings". These are either paid out to shareholders as dividends or retained by the company for corporate uses. The

difference between the total earnings of a company from the date of incorporation to the date of the balance sheet and all dividends ever paid is shown in the retained earnings account. If this difference is negative, it is called a "deficit".

Capital Surplus: Sometimes the Owners' Equity is changed by transactions unrelated to the company's operations. Perhaps a town interested in attracting new business donates land for a site. The value of the land is shown in the Capital Surplus Account.

#### EXAMPLE

Andy Aviator has established Tech Airways Inc. to operate an air-taxi service. The corporation has authorized the issuance of 100,000 shares of common stock at a par value of \$1 per share. Only 10,000 shares have actually been issued, all purchased by Andy for \$10,000. Figure 2 shows the balance sheet at this time.

Andy's first step as president and general manager is to buy a plane for \$60,000. He uses \$5,000 of the cash as a down payment and finances the remaining \$55,000 through a \$5,000 short-term note and a long-term \$50,000 mortgage on the aircraft. Figure 3 shows the balance sheet after these transactions.

Since the remaining \$5,000 cash is not sufficient to start operations, Andy decides to issue bonds for \$20,000 and issue another 10,000 shares of stock. He finds a friend who is will-

FIGURE 2

TECH AIRWAYS INC.

Balance Sheet as of June 30, 1972

ASSETS		EQUITIES	
Current Assets:		Current Liabilities:	
Cash	\$ 10,000		
Total Current Assets	<u>\$ 10,000</u>		
Fixed Assets:		Other Liabilities:	
Other Assets:		Stockholders' Equity:	
		Common Stock	\$ 10,000
Total Assets	<u><u>\$ 10,000</u></u>	Total Equities	<u><u>\$ 10,000</u></u>
(ASSETS (\$10,000))	=	(EQUITIES (\$10,000))	

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ing to pay \$1.50 per share for 5,000 shares, and Andy himself buys the other 5,000 at the same price. Andy uses \$10,000 to buy fuel, \$5,000 for a two-year insurance policy, and \$5,000 to purchase a selection of snacks to be sold on board to passengers. Andy invests the remainder of the new capital in government short-term bonds since it is not presently needed to cover operational costs. Figure 4 reflects the effects of these transactions on the balance sheet.

Tech airways is now ready to start operations. Pete Pilot is hired as chief pilot, and flies 5 flights carrying 15 passengers over the next few weeks. Ten of the passengers pay cash for a total of \$5,000, and 5 charge their tickets to Diner's Press Cards for \$250. One of the passengers pays \$50 for a return flight he has not yet taken. In addition, Pete sold \$100 worth of snacks for \$200.

\$300 worth of fuel is used during these operations, and Pete's salary for the period is \$250 which has not yet been paid. (See Figures 5 and 6)

Tech Airways operates profitably. By June of the following year, its balance sheet looks like Figure 7.

Since there is a healthy cash balance, Tech Airways pays off the \$5,000 note. Andy also decides that the company should buy out Avonic Airways, its only competitor for \$25,000--\$10,000 in

FIGURE 4

TECH AIRWAYS INC.

Balance Sheet as of <sup>July 8</sup> ~~July 5~~, 1972

ASSETS		EQUITIES	
Current Assets:		Current Liabilities:	
Cash	\$5,000 + \$20,000 from Bonds + 15,000 from Stock	Notes Payable	\$5,000
Marketable Securities	15,000 - \$10,000 fuel		
Inventory (Snacks)	5,000 - \$5,000 for snacks		
Prepaid Expenses	- \$5,000 for insurance		
fuel	10,000 - \$15,000 for securities		
Insurance	5,000 - \$5,000 Cash		
Total Current Assets	<u>\$5,000</u> \$40,000	Total Current Liabilities	<u>\$5,000</u>
Fixed Assets:		Other Liabilities:	
1 Airplane	\$60,000	Aircraft Mortgage	\$50,000
		Bonds Outstanding	\$20,000 \$70,000
Total Fixed Assets	<u>\$60,000</u>	Total Other Liabilities	<u>\$50,000</u>
Other Assets:		Stockholders' Equity:	
		Common Stock	\$20,000 <del>\$10,000</del>
		Capital Surplus	5,000 \$25,000
		Total Stockholder Equity	<u>\$10,000</u>
Total Assets	<u>\$65,000</u> \$100,000	Total Equities	<u>\$65,000</u> \$100,000
(ASSETS (\$65,000))	=	EQUITIES (\$65,000)	

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FIGURE 5

TECH AIRWAYS INC.

Balance Sheet as of <sup>July 21</sup>~~July 8~~, 1972

ASSETS	EQUITIES
<p>Current Assets:</p> <p style="padding-left: 20px;">Cash <span style="float: right;"><i>+ \$500 from tickets</i></span></p> <p style="padding-left: 20px;">Accounts Receivable <span style="float: right;"><i>+ \$200 snacks</i></span></p> <p style="padding-left: 20px;">Marketable Securities <span style="float: right;"><i>15,000 = Cash = \$5,700</i></span></p> <p style="padding-left: 20px;"><i>Receivable</i> Inventory (Snacks) <span style="float: right;"><i>5,000 \$ 4,900</i></span></p> <p style="padding-left: 20px;"><i>\$250</i> Prepaid Expenses</p> <p style="padding-left: 40px;">fuel <span style="float: right;"><i>10,000 9,700</i></span></p> <p style="padding-left: 40px;">insurance <span style="float: right;">5,000</span></p> <p style="padding-left: 40px;"><i>40,550</i></p> <p style="padding-left: 20px;">Total Current Assets <span style="float: right;"><u><del>\$40,000</del></u></span></p> <p>Fixed Assets:</p> <p style="padding-left: 20px;">Airplane <span style="float: right;">\$60,000</span></p> <p style="padding-left: 20px;">Total Fixed Assets <span style="float: right;"><u>\$60,000</u></span></p> <p>Other Assets:</p>  <p style="padding-left: 20px;">Total Assets <span style="float: right;"><i>\$ 100,550</i></span></p> <p style="padding-left: 20px;"><u><del>\$100,000</del></u></p> <p style="padding-left: 20px;"><i>\$ 100,550</i></p>	<p>Current Liabilities:</p> <p style="padding-left: 20px;">Notes Payable <span style="float: right;">\$ 5,000</span></p> <p style="padding-left: 20px;"><i>Accrued Expenses (salary) 250</i></p> <p style="padding-left: 20px;"><i>Deferred Income (Advanced Sale) 50</i></p> <p style="padding-left: 20px;">Total Current Liabilities <span style="float: right;"><i>\$ 5,300</i></span></p> <p style="padding-left: 20px;"><u><del>5,000</del></u></p> <p>Other Liabilities:</p> <p style="padding-left: 20px;">Aircraft Mortgage <span style="float: right;">\$50,000</span></p> <p style="padding-left: 20px;">Bonds Outstanding <span style="float: right;">20,000</span></p> <p style="padding-left: 20px;">Total Other Liabilities <span style="float: right;"><u>\$ 70,000</u></span></p> <p>Stockholders' Equity:</p> <p style="padding-left: 20px;">Common Stock <span style="float: right;">\$20,000</span></p> <p style="padding-left: 20px;">Capital Surplus <span style="float: right;">5,000</span></p> <p style="padding-left: 20px;"><i>Retained Earnings \$ 250</i></p> <p style="padding-left: 20px;">Total Stockholder's Equity <span style="float: right;"><i>\$ 25,250</i></span></p> <p style="padding-left: 20px;"><u><del>25,000</del></u></p> <p style="padding-left: 20px;"><i>\$ 100,550</i></p> <p style="padding-left: 20px;">Total Equities <span style="float: right;"><u><del>\$100,000</del></u></span></p> <p style="padding-left: 20px;"><i>\$ 100,550</i></p>
(ASSETS <del>(\$100,000)</del> )	= EQUITIES ( <del>\$100,000</del> )

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FIGURE 6

TECH AIRWAYS INC.

Balance Sheet as of July 21, 1972

ASSETS		EQUITIES	
Current Assets:		Current Liabilities:	
Cash	\$ 5,700	Notes Payable	\$ 5,000
Marketable Securities	15,000	Accrued Expenses	250
Accounts Receivable	250	Deferred Income	50
Inventory (Snacks)	4,900		
Prepaid Expenses			
fuel	9,700		
insurance	5,000		
Total Current Assets	\$ 40,550	Total Current Liabilities	\$ <u>5,300</u>
Fixed Assets:		Other Liabilities:	
Airplane	\$60,000	Aircraft Mortgage	\$50,000
		Bonds Outstanding	20,000
Total Fixed Assets	\$ <u>60,000</u>	Total Other Liabilities	\$ <u>70,000</u>
Other Assets:		Stockholders' Equity:	
		Common Stock	20,000
		Retained Earnings	250
		Capital Surplus	5,000
		Total Stockholder's Equity	\$ <u>25,250</u>
Total Assets	\$ <u>100,550</u>	Total Equity	\$ <u>100,550</u>
(ASSETS (\$100,550))		=	EQUITIES (\$100,550))

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FIGURE 7

TECH AIRWAYS INC.

Balance Sheet as of June 1, 1973

ASSETS		EQUITIES	
Current Assets:		Current Liabilities:	
Cash	\$ 74,500	Notes Payable	\$5,000
Marketable Securities	15,000	Accrued Expenses	2,000
Accounts Receivable	25,000	Deferred Income	2,500
Inventory	5,000		
Prepaid Expenses			
fuel	20,000	Total Current Assets	\$ <u>9,500</u>
insurance	5,000		
Total Current Assets	\$ <u>144,500</u>		
Fixed Assets:		Other Liabilities:	
Airplane	60,000	Aircraft Mortgage	\$50,000
		Bonds Outstanding	20,000
Total Fixed Assets	\$ <u>60,000</u>	Total Other Liabilities	\$ <u>70,000</u>
Other Assets:		Stockholders' Equity:	
		Common Stock	\$ 20,000
		Retained Earnings	100,000
		Capital Surplus	5,000
		Total Stockholders Equity	\$ <u>125,000</u>
Total Assets	\$ <u>204,500</u>	Total Equities	\$ <u>204,500</u>
(ASSETS (\$204,500) =		EQUITIES (\$204,500)	

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cash and \$15,000 in stock at the stated par value of \$1.00 per share. Avonic has assets of 1 airplane worth \$10,000 and a \$10,000 hanger. The extra \$5,000 paid is for the goodwill Avonic has gained by its record of service (See Figure 8).

Tech Airways, Inc. still looks profitable. With the end of the year approaching, Andy estimates Tech Airway's tax liability, based on projected operations and \$6,000 depreciation on the first aircraft. The short-term bonds are sold to increase cash.

Since a year of the prepaid insurance has been used up, its value is decreased on the balance sheet. Since prospects for the company are still bright, a \$1 per share dividend is paid to build stockholder confidence. (See Figure 9).

Because of his huge success, Andy decides he wants to become a regularly scheduled interstate carrier and applies and receives a Civil Aeronautics Board Certificate of Public Convenience and Necessity. If Andy receives the certificate he will have to comply with CAB reporting requirements. Figure 10 shows the balance sheet accounts used by the Board and published in Title 14, Part 241 of the Code of Federal Regulations (CFR). The details of this document can be found in the CFR where each Account Grouping and each Account is described in great detail.

Figure 11 shows a typical Balance Sheet for an airline, as published in its annual report. Although it follows the C.A.B.

FIGURE 8

TECH AIRWAYS INC.

*June 15*

Balance Sheet as of ~~June 1~~, 1973

ASSETS

EQUITIES

Current Assets:		
Cash	\$74,500	<i>- \$5,000 for Note</i>
Marketable Securities	15,000	<i>- \$10,000 for Avonic =</i>
Accounts Receivable	25,000	<i>Cash \$59,500</i>
Inventory	5,000	
Prepaid Expenses		
fuel	20,000	
insurance	5,000	
Total Current Assets		<i>\$129,500</i>
		<del>\$144,500</del>
Fixed Assets:		
Airplane	\$60,000	
<i>Airplane</i>	<i>10,000</i>	
<i>Hanger</i>	<i>10,000</i>	<i>\$80,000</i>
Total Fixed Assets		<del>\$60,000</del>
Other Assets:		
<i>Goodwill</i>	<i>\$5,000</i>	
Total Other Assets		<i>\$5,000</i>
Total Assets		<i>\$214,500</i>
		<del>\$204,500</del>

Current Liabilities:		
<del>Notes Payable</del>	<del>\$5,000</del>	
Accrued Expense	2,000	
Deferred Income	2,500	
Total Current Assets		<i>\$4,500</i>
		<del>\$9,500</del>
Other Liabilities:		
Aircraft Mortgage	\$50,000	
Bonds Outstanding	20,000	
Total Other Liabilities		<del>\$70,000</del>
Stockholders' Equity:		
<i>Common Stock</i>	<i>\$35,000</i>	
Common Stock	<del>\$20,000</del>	
Retained Earnings	100,000	
Capital Surplus	5,000	
Total Stockholders Equity		<i>\$140,000</i>
		<del>\$125,000</del>
Total Equities		<i>\$214,500</i>
		<del>\$204,500</del>

*\$214,500*  
 (ASSETS (~~\$204,500~~)) = EQUITIES (~~\$204,500~~)

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FIGURE 9

TECH AIRWAYS INC.

Balance Sheet as of June <sup>30</sup>~~15~~, 1973

ASSETS		EQUITIES	
Current Assets:		Current Liabilities:	
Cash	\$59,500	Accrued Expenses	\$ 2,000
<del>Marketable Securities</del>	<del>15,000</del>	Deferred Income	2,500
Accounts Receivable	25,000	<i>Estimated Taxes</i>	<i>\$ 40,000</i>
Inventory	5,000		
Prepaid Expense			
Fuel	20,000		
Insurance	<del>5,000</del> <i>\$2,500</i>		
	<i>\$92,000</i>		
Total Current Assets	<u>\$129,500</u>	Total Current Liabilities	\$ <del>4,500</del> <i>\$44,500</i>
Fixed Assets:		Other Liabilities:	
Airplane (Depreciation <i>\$6,000</i> )	<del>\$60,000</del> <i>\$54,000</i>	Aircraft Mortgage	\$50,000
Airplane	10,000	Bonds Outstanding	20,000
Hanger	10,000		
	<i>\$74,000</i>		
Total Fixed Assets	<u>\$80,000</u>	Total Other Liabilities	\$ <u>70,000</u>
Other Assets:		Stockholders' Equity:	
Goodwill	\$ 5,000	Common Stock	\$ 35,000
		Retained Earnings	<del>100,000</del> <i>\$16,500</i>
		Capital Surplus	5,000
Total Other Assets	<u>\$ 5,000</u>	Total Stockholders' Equity	<del>\$140,000</del> <i>\$56,500</i>
	<i>\$171,000</i>		
Total Assets	<u>\$214,500</u>	Total Equities	<u>\$214,500</u>
	<i>\$171,000</i>		
(ASSETS (\$214,500))	=	EQUITIES (\$214,500)	

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**BALANCE SHEET CLASSIFICATIONS**  
Section 3—Chart of Balance Sheet Accounts

Name of account	General classification	
	Operating	Nonoperating
<b>Current assets:</b>		
Cash	1010	
Special deposits	1030	
United States Government securities	1110	
Other temporary cash investments	1120	
Accounts receivable—U.S. Government	1220	
Accounts receivable—foreign governments	1230	
Accounts receivable—general traffic	1240	
Notes and accounts receivable—associated companies	1250	
Notes and accounts receivable—company personnel	1260	
Notes and accounts receivable—other	1280	
Reserve for uncollectible accounts	1290	
Flight equipment expendable parts	1310	
Obsolescence and deterioration reserves—expendable parts	1311	
Miscellaneous materials and supplies	1330	
Short-term prepayments	1410	
Other current assets	1420	
<b>Investments and special funds:</b>		
Investments in associated companies	1510	
Investments in subsidiary companies	1510.1	
Investments in other associated companies	1510.2	
Advances to nontransport divisions	1520	
Other investments and receivables	1550	
Special funds—self-insurance	1560	
Special funds—other	1550	
Property and equipment	1600-1700	
Airframes	1601	1701
Aircraft engines	1602	1702
Aircraft propellers	1603	1703
Aircraft communications and navigational equipment	1604	1704
Miscellaneous flight equipment	1606	1706
Improvements to leased flight equipment	1607	1707
Flight equipment rotatable parts and assemblies	1608	1708
Aircraft parts and assemblies	1608.1	1708.1
Aircraft engine parts and assemblies	1608.2	1708.2
Other parts and assemblies	1608.3	1708.3
Flight equipment	1609	1709
Reserve for depreciation—airframes	1611	1711
Reserve for depreciation—aircraft engines	1612	1712
Reserve for depreciation—aircraft propellers	1613	1713
Reserve for depreciation—aircraft communication and navigational equipment	1614	1714
Reserve for depreciation—miscellaneous flight equipment	1616	1716
Reserve for depreciation—improvements to leased flight equipment	1617	1717
Reserve for depreciation—flight equipment rotatable parts and assemblies	1618	1718
Aircraft parts and assemblies	1618.1	1718.1
Aircraft engine parts and assemblies	1618.2	1718.2
Other parts and assemblies	1618.3	1718.3
Reserve for depreciation—flight equipment	1619	1719
Flight equipment airworthiness reserves	1620	1720
Passenger service equipment	1630	1730
Hotel, restaurant and food service equipment	1631	1731
Ramp equipment	1632	1732
Communication and meteorological equipment	1633	1733
Maintenance and engineering equipment	1634	1734
Surface transport vehicles and equipment	1635	1735
Furniture, fixtures and office equipment	1636	1736
Storage and distribution equipment	1637	1737
Miscellaneous ground equipment	1638	1738
Buildings and other improvements	1640	1740
Maintenance buildings and improvements	1640.1	1740.1
Other buildings and improvements	1640.2	1740.2
Ground property and equipment	1649	1749
Reserve for depreciation—passenger service equipment	1650	1750
Reserve for depreciation—hotel, restaurant and food service equipment	1651	1751
Reserve for depreciation—ramp equipment	1652	1752
Reserve for depreciation—communication and meteorological equipment	1653	1753
Reserve for depreciation—maintenance and engineering equipment	1654	1754
Reserve for depreciation—surface transport vehicles and equipment	1655	1755
Reserve for depreciation—furniture, fixtures and office equipment	1656	1756
Reserve for depreciation—storage and distribution equipment	1657	1757
Reserve for depreciation—miscellaneous ground equipment	1658	1758

See footnotes at end of tables.

**BALANCE SHEET CLASSIFICATIONS—Continued**  
Section 3—Chart of Balance Sheet Accounts—Continued

Name of account	Operating	Nonoperating	General classification
<b>Property and equipment—Continued</b>			
Reserve for depreciation—buildings and other improvements	1660	1760	
Maintenance buildings and improvements	1660.1	1760.1	
Other buildings and improvements	1660.2	1760.2	
Reserves for depreciation—ground property and equipment	1669	1769	
Land	1679	1779	
Construction work in progress	1689	1789	
<b>Deferred charges:</b>			
Long-term prepayments		1820	
Developmental and preoperating costs		1830	
Unamortized discount and expense on debt		1840	
Unamortized capital stock expense		1850	
Property acquisition adjustment		1870	
Other intangibles		1890	
Other deferred charges		1890	
<b>Current liabilities:</b>			
Current notes payable		2010	
Accounts payable—general		2020	
Collections as agent—traffic		2030	
Collections as agent—other		2040	
Notes and accounts payable—associated companies		2050	
Accrued personal compensation		2110	
Accrued vacation liability		2120	
Accrued Federal income taxes		2131	
Other accrued taxes		2139	
Dividends declared		2140	
Air travel plan liability		2150	
Unearned transportation revenue		2160	
Other current liabilities		2190	
<b>Noncurrent liabilities:</b>			
Long-term debt		2210	
Advances from associated companies		2240	
Advances from nontransport divisions		2245	
Pension liability		2250	
Company stock purchase plan liability		2250	
Other noncurrent liabilities		2290	
<b>Deferred credits:</b>			
Unamortized premium on debt		2330	
Deferred Federal income taxes		2340	
Deferred investment tax credits		2345	
Reserve for self-insurance		2350	
Other deferred credits		2390	
<b>Stockholder equity:</b>			
Preferred stock		2820	
Common stock		2840	
Capital stock subscribed and unissued		2860	
Other paid-in capital		2890	
Premium on capital stock		2890.1	
Discount on capital stock		2890.2	
Other capital stock transactions		2890.3	
Miscellaneous paid-in capital		2890.4	
Appropriations of retained earnings		2930	
Unappropriated retained earnings		2940	
Treasury stock		2990	

1 Prescribed for Group II and Group III air carriers only.

2 At the option of the air carrier these accounts may be assigned numbers 2629 and 2729, respectively, for accounting purposes.

NOTE: Digits to right of decimals and italicized codes established for OAB control purposes only.  
[ER-327, 26 F.R. 4223, May 16, 1961 as amended by ER-425, 30 F.R. 745, Jan. 23, 1965;  
ER-546, 33 F.R. 18696, Dec. 18, 1968]

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FIGURE 11

Continental Air Lines, Inc.

Balance Sheet December 31, 1968 with comparative figures for 1967

Assets	1968	1967	Liabilities and Stockholders' Equity	1968	1967
<b>Current assets:</b>			<b>Current liabilities:</b>		
Cash . . . . .	\$ 17,063,705	\$ 12,463,157	Long-term debt, portion due within one year . . . . .	\$ 22,694,131	\$ 9,131,722
United States Government and other securities . . . . .	2,019,632	16,766,066	Accounts payable:		
Accounts receivable:			General . . . . .	10,532,205	11,584,054
United States Government . . . . .	5,266,613	6,431,546	Airline traffic . . . . .	8,384,589	7,491,016
Airline traffic . . . . .	14,405,401	11,123,574	Transportation taxes and payroll deductions . . . . .	2,831,582	1,499,621
Other, net . . . . .	2,564,214	2,420,910	Total accounts payable . . . . .	21,748,376	20,574,691
Total accounts receivable . . . . .	22,236,228	19,976,030	Accrued liabilities . . . . .	5,259,556	4,278,505
Spare parts and supplies, at average cost . . . . .	11,602,801	8,608,378	Federal income taxes . . . . .	690,635	488,549
Prepaid expenses . . . . .	3,014,443	928,766	Unearned transportation revenue . . . . .	1,385,399	785,320
Total current assets . . . . .	55,938,809	59,742,399	Total current liabilities . . . . .	51,778,097	35,258,787
<b>Investments and special funds:</b>			Long-term debt, less portion due within one year (note 2) . . . . .	219,832,298	151,265,390
Advance payments on equipment purchase contracts (note 5) . . . . .	14,439,276	32,899,273	Reserves for overhaul of flight equipment, net . . . . .	8,807,338	7,395,223
Investment in subsidiaries and affiliates, at cost . . . . .	3,984,760	3,540,310	Deferred income taxes . . . . .	10,340,723	6,639,408
Other investments and deposits . . . . .	2,010,427	1,399,558	Unamortized investment tax credits (note 3) . . . . .	9,737,975	11,061,076
Total investments and special funds . . . . .	20,434,463	37,839,141	Other deferred credits and non-current liabilities . . . . .	1,400,862	1,467,793
<b>Property and equipment, at cost (note 1):</b>			<b>Stockholders' equity:</b>		
Flight equipment . . . . .	323,554,928	208,717,681	Common stock of \$0.50 par value per share.		
Less accumulated depreciation . . . . .	58,690,271	37,984,497	Authorized 15,000,000 shares; issued 10,050,867		
Flight equipment, net . . . . .	264,864,657	170,733,184	shares, 1968; 10,015,907 shares, 1967 (notes 2 and 4) . . . . .	5,025,434	5,007,953
Other property and equipment . . . . .	47,420,872	28,012,781	Capital in excess of par value . . . . .	19,202,794	18,848,260
Less accumulated depreciation . . . . .	13,593,176	10,638,234	Retained earnings (note 2) . . . . .	53,401,387	54,237,353
Other property and equipment, net . . . . .	33,827,496	18,176,547	Total stockholders' equity . . . . .	77,629,625	78,143,566
Construction in progress . . . . .	935,558	5,115,712			
Net property and equipment . . . . .	289,627,711	194,045,443			
<b>Deferred charges:</b>					
Contribution to the development of supersonic aircraft, net of amortization, \$600,000 . . . . .	2,400,000	-			
Other . . . . .	1,125,935	604,250			
Total deferred charges . . . . .	3,525,935	604,250			
	<u>\$379,526,918</u>	<u>\$291,231,233</u>		<u>\$379,526,918</u>	<u>\$291,231,233</u>

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classifications, the accounts have been condensed for ease of reading by the stockholders.

### THE INCOME STATEMENT

Before the Income Statement can be explained, a few more accounting concepts must be mentioned.

#### The Accounting Period

The Balance Sheet reflects the status of a business at a point in time. Balance Sheets are prepared on a periodic basis, usually once per year. This is called the Accounting Period. The Income Statement reports flows during the Accounting Period rather than status at a point in time. Since management needs information updated more frequently than annually, there may be "interim" reports prepared at the required time intervals.

#### The Accrual Concept

Income is associated with a change in Stockholders' Equity and not necessarily with changes in the cash account of the business. In our earlier example, one of the transactions was the sale of \$100 worth of snacks for \$200. Since the business did not incur additional liability by the sale, the changes in assets must be balanced by changes in the Stockholders' Equity. When the Cash Account is increased by \$200, Stockholders' Equity is increased by the same amount. Likewise, Stockholders' Equity

is decreased by \$100 to offset the removal of \$100 worth of goods from the Inventory Account.

Any increase in the Stockholders' Equity from the operation of the business is called "revenue." Any decrease is an "expense". "Income" is the excess of revenue over expenses. If expenses are greater than revenue there is a "loss". The sale of the snacks thus represented \$200 of revenue, \$100 worth of expenses and \$100 income. The cash change and the income are not the same.

1. Expense vs. Expenditure - An Expenditure occurs when an asset is obtained either by the payment of cash, by the exchange of another asset or by the assumption of an additional liability. An Expense arises when an asset is used up and reflects a corresponding decrease in Stockholders' Equity. When \$5,000 cash is used to purchase an inventory of snacks, there is an "Expenditure" of one asset for another -- cash for inventory. There is no "Expense" since there is no change in equity. When \$100 worth of snacks are removed from inventory, there is no "Expenditure" since no new asset is acquired. However, there is an "Expense" since the decrease in assets must be reflected by a decrease in Stockholders' Equity Account.

2. Revenue vs. Receipts - A "Revenue" arises when Stockholders' Equity increases. A "Receipt" occurs when one asset is received in place of another. When an air ticket is sold on

credit, Accounts Receivable are increased. This is a "Revenue" since Stockholders' Equity is increased by a corresponding amount. When the obligation is paid, there is a "Receipt" but no "Revenue" since equity stays the same. The only transaction is an increase in Cash offset by a decrease in Accounts Payable.

The Accrual Concept holds that income is measured as the difference between revenues and expenses and not between receipts and expenditures.

#### The Realization Concept

The Realization Concept is closely connected with the Actual Concept. Broadly stated, a revenue is recognized when it is realized, that is when the product is delivered or the service performed. The revenue and expense accounts are updated, not when the contract is signed or the goods manufactured, but when the actual transfer of value takes place.

Since the Accrual Concept requires revenues and expenses to be compared, expenses are recognized in the same accounting period that the revenue arises. (The Matching Principle) Thus, the costs of manufacturing an item for inventory are not expenses until the item is sold. They are then recorded as "Cost of Goods Sold."

Some expenses cannot be connected to a particular revenue transaction. These are entered into the accounts during the

period when they are incurred--which is not necessarily when they are actually paid for.

Figures 12 and 13 demonstrate these principles. In the first transaction, goods manufactured in January are sold on credit in February, and actually paid for in March. Following the principles outlined, all bookkeeping entries are made in February, the month when the goods were transferred.

In the second case (Figure 13), the goods are paid for in advance in January, and manufactured in February. But all bookkeeping entries are made in March when actual transfer takes place.

#### The Income Statement

The Income Statement (or Profit and Loss Statement or Statement of Earnings) reports on the revenues and expenses which have accrued during the accounting period. Normally, the preceeding year's information is also given for comparison purposes. Figure 14 shows a sample of a carrier statement of Earnings from an annual report. Like the Balance Sheet shown in Figure 11, the major categories follow the Civil Aeronautics Board regulations, but the subaccounts have been condensed and show less detail than the statements filed with the Board.

Figure 12

ACCRUAL CONCEPT

JAN.	FEB.	MARCH
GOODS MANUFACTURED	GOODS SOLD ON CREDIT	CREDIT PAID
	<p data-bbox="953 857 1364 954">REVENUE ACCOUNTED FOR IN FEBRUARY (ACCRUAL CONCEPT)</p> <p data-bbox="953 1110 1378 1208">EXPENSES ACCOUNTED FOR IN FEBRUARY (MATCHING PRINCIPLE)</p>	

Figure 13

ACCRUAL CONCEPT

JAN.	FEB.	MARCH
CASH PAID IN ADVANCE	GOODS MANUFACTURED	GOODS DELIVERED
		REVENUE ACCOUNTED FOR IN MARCH (ACCRUAL CONCEPT)  EXPENSES ACCOUNTED FOR IN MARCH (MATCHING PRINCIPLE)

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Figure 14

Continental Air Lines, Inc.

**Statement of Earnings**

Year ended December 31, 1968 with comparative figures for 1967

	1968	1967
<b>Operating revenues:</b>		
Passenger . . . . .	\$138,769,984	\$107,101,678
Mail . . . . .	2,689,949	2,155,930
Express . . . . .	713,771	683,806
Freight . . . . .	6,354,749	5,038,256
Excess baggage . . . . .	266,140	178,655
Aircraft interchange rentals, net . . . . .	—	45,200
Charter and contract services . . . . .	57,865,758	71,263,689
Miscellaneous, net . . . . .	1,534,240	1,700,627
<b>Total operating revenue . . . . .</b>	<u>208,194,591</u>	<u>188,167,841</u>
<b>Operating expenses:</b>		
Flying operations . . . . .	54,410,014	44,367,712
Ground operations . . . . .	23,174,429	20,083,117
Maintenance and repairs . . . . .	37,045,607	31,081,921
Passenger service . . . . .	21,662,004	17,995,883
Reservations and sales . . . . .	10,922,710	8,204,667
Advertising and publicity . . . . .	8,397,102	5,017,587
General and administrative . . . . .	9,262,464	8,004,931
Depreciation and amortization . . . . .	28,367,869	21,028,121
<b>Total operating expenses . . . . .</b>	<u>193,242,199</u>	<u>155,783,939</u>
<b>Operating income . . . . .</b>	<u>14,952,392</u>	<u>32,383,902</u>
<b>Non-operating expenses and income:</b>		
Interest expense . . . . .	10,129,202	6,208,524
Other, net . . . . .	(275,598)	(327,624)
<b>Total non-operating expenses and income . . . . .</b>	<u>9,853,604</u>	<u>5,880,900</u>
<b>Earnings before Federal and State     income taxes and extraordinary items . . . . .</b>	5,098,788	26,503,002
Federal and State income taxes . . . . .	966,684	11,572,061
<b>Earnings before extraordinary items . . . . .</b>	4,132,104	14,930,941
Extraordinary items — gains on major dispositions of flight equipment, less income taxes, \$2,329,407 . . . . .	—	2,376,466
<b>Net earnings . . . . .</b>	<u>\$ 4,132,104</u>	<u>\$ 17,307,407</u>
<b>Net earnings per share of common stock:</b>		
Before extraordinary items . . . . .	\$0.41	\$1.49
Extraordinary items . . . . .	—	0.24
<b>Total . . . . .</b>	<u>\$0.41</u>	<u>\$1.73</u>

## FUNDS FLOW STATEMENTS

Funds can be defined in general terms as economic values, or in specific terms as cash. The latter is a subset of the former. The balance sheet shows the financial position of the firm at a gross point in time and reflects the firm's investments (assets) and the claims against it (equities). In general the assets side of the balance sheet shows how funds have been used, while the equities side reflects their source.

### The Funds Flow Concept

An understanding of the flow of funds through the business enterprise is essential to sound financial management and proper allocation of available resources. The financial manager must know where he can obtain funds on the best terms and how to allocate them within his company to maximize the return on the investment.

The process of funds flow analysis compares two successive balance sheets. The differences between individual accounts shows the flows of funds resulting from management decisions. Analysis will indicate where management has decided to connect funds (uses), to liquidate assets (sources), to acquire additional funds (sources), and to reduce claims against the firm (uses).

### Circulating Capital and Working Capital

Figure 15 shows day to day cycle of funds flow in a company. Sales are made from inventory. In return, the company receives either a direct cash payment, or extends credit which is shown as an addition to Accounts Receivable. In turn, the company buys supplies to produce more inventory. It makes cash payments or shows its debts in Accounts Payable. Eventually, cash transfers occur that close out either Accounts Receivable or Payable.

This process is on a continuous state of flux. For some purposes, it is easier to lump current assets and current liabilities and refer to these accounts as the "Circulating Capital" of the firm. The difference between the current assets and current liabilities of the firm is referred to as "Working Capital" and is an important indicator of the firm's ability to meet short term obligations.

### Cash Flow Statement

A Cash Flow Statement is a detailed breakdown of the changes in Working Capital. In particular, it concentrates on those transactions that affect the Cash Account. Figure 16 shows these various transactions grouped as operational transactions that arise from the day to day business; financial transactions that raise funds and retire debts; and other transactions. The latter includes discretionary transactions not necessary to the operation or regular finances of the firm.

CIRCULATING CAPITAL FLOW

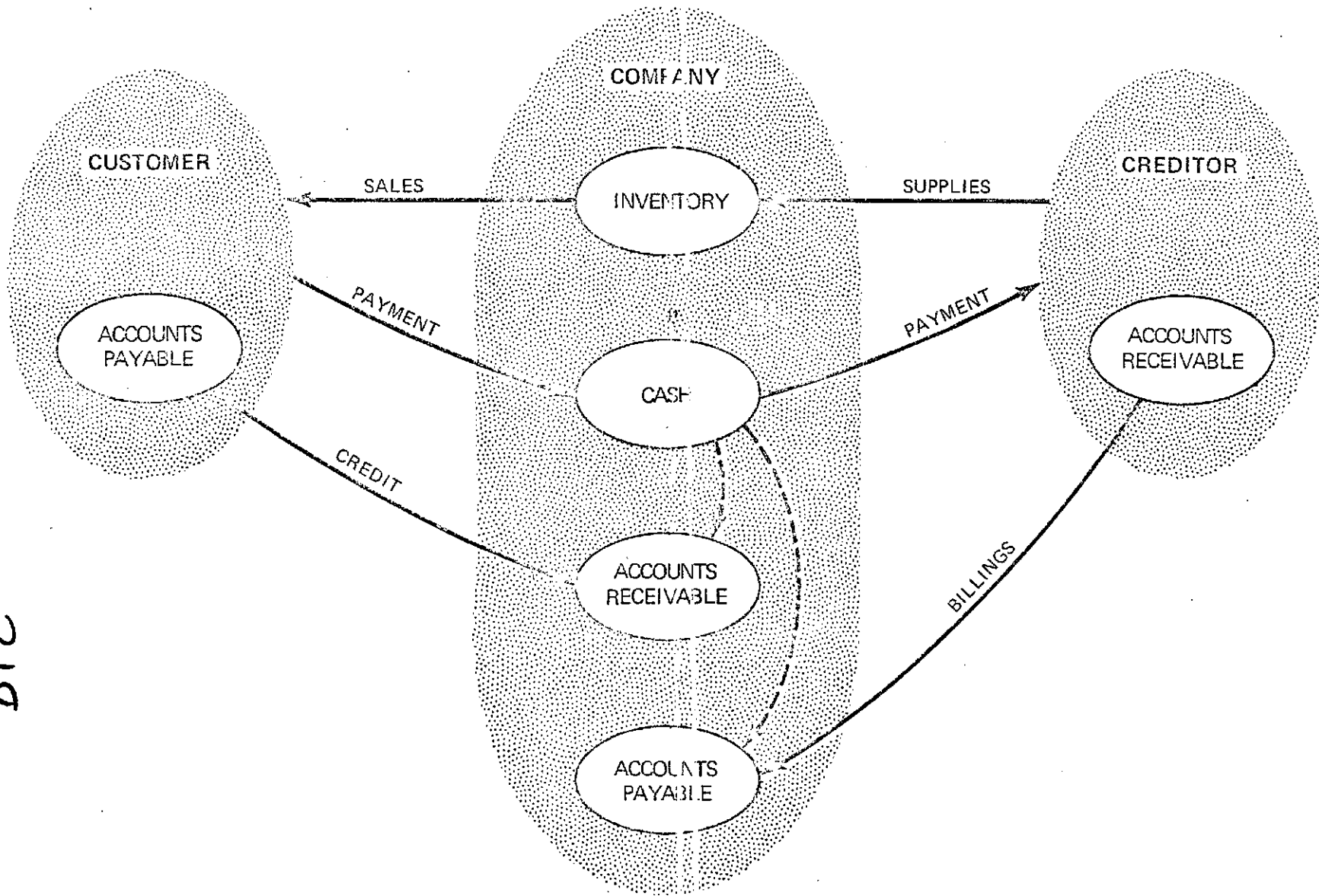


FIGURE 15

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# CASH FLOW

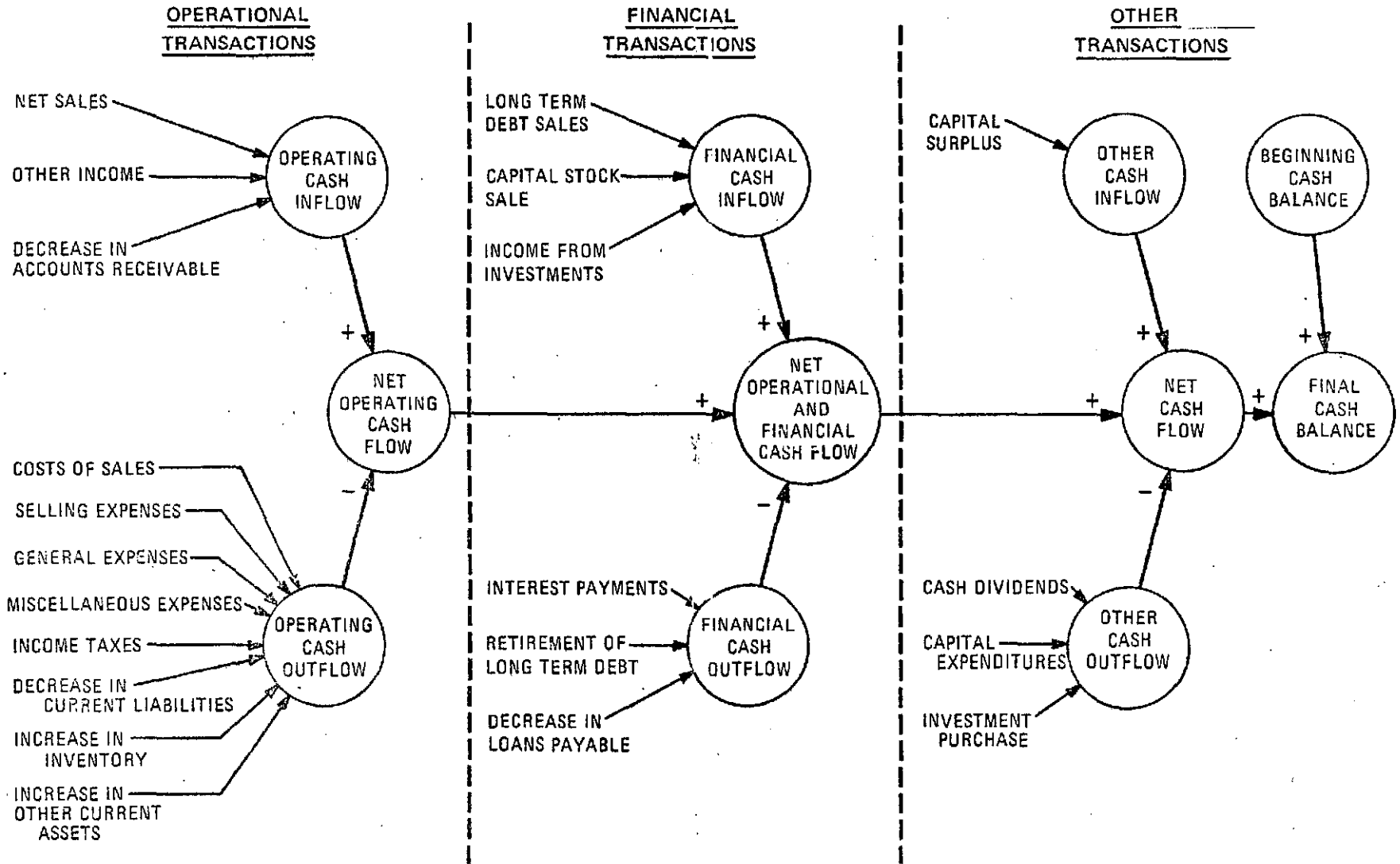


FIGURE 16

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### The Funds Flow Statement

The Funds Flow Statement concentrates on the sources and uses of capital in a more aggregate sense. Rather than concentrating on fluctuations in working capital, it reflects changes in long term capital commitments in both the assets and equities of the firm. Only the net change in working capital over the accounting period is shown.

Figure 17 shows a typical funds flow statement. Sources of funds come from increase in equities, (e.g., issue of new stock) or decreases in assets (e.g., depreciation). The uses of funds decrease equities (e.g., retirement of bonds), or increase assets (e.g., purchase of aircraft). Since the dual aspect concept requires assets and equities to balance, sources must equal uses, or

$$\text{Equity Increases} + \text{Asset Decreases} = \text{Equity Decreases} + \text{Asset Increases}$$

Figure 18 diagrams the Funds Flow Concept.

FIGURE 17

ABC INC.  
FUNDS FLOW STATEMENT

YEAR ENDED JUNE 30, 1972

SOURCES OF FUNDS:		
NET INCOME	\$ 20,000	
ADD BACK: DEPRECIATION	<u>6,000</u>	
FUNDS FROM OPERATIONS		26,000
CAPITAL STOCK ISSUED		20,000
BONDS ISSUED		<u>10,000</u>
TOTAL FUNDS ACQUIRED		<u>\$56,000</u>
USES OF FUNDS:		
PURCHASE OF HANGER		\$10,000
PURCHASE OF AIRCRAFT		10,000
RETIREMENT OF BONDS		10,000
CASH DIVIDENDS PAID		10,000
NET ADDITION TO WORKING CAPITAL		<u>16,000</u>
		<u>\$56,000</u>

SCHEDULE OF WORKING CAPITAL CHANGES

	1971	1972	INCREASE (DECREASE)
CURRENT ASSETS	100,000	98,000	(2,000)
CURRENT LIABILITIES	<u>50,000</u>	<u>32,000</u>	<u>18,000*</u>
WORKING CAPITAL	<u>          </u>	<u>          </u>	<u>\$16,000</u>

\*NOTE: Since a decrease in liabilities is an increase in working capital, it is shown as an increase and not a decrease as it would on a comparative balance sheet.

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# SOURCES AND USES OF FUNDS

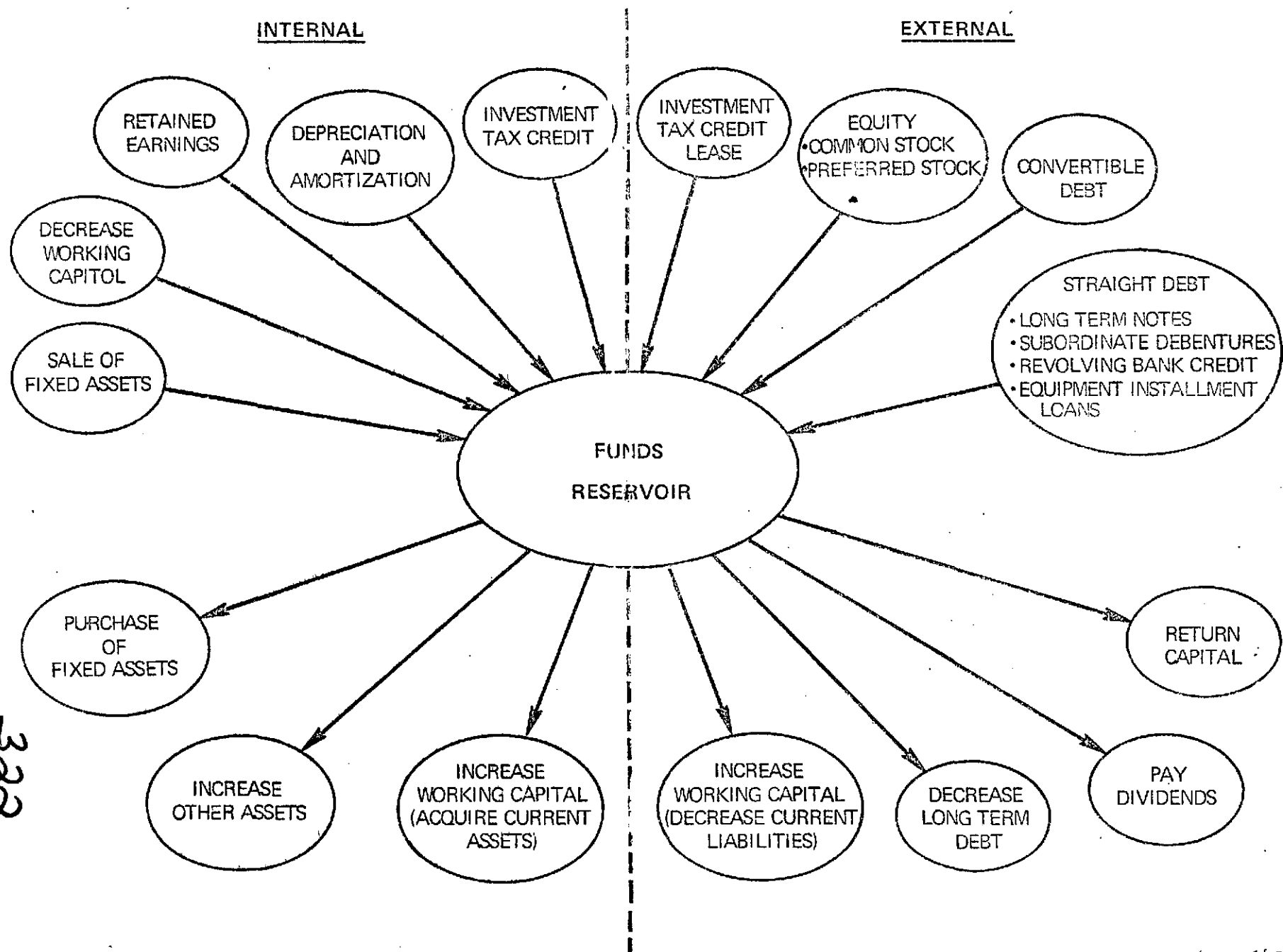


FIGURE 18

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Sources and uses of funds can be divided into "internal" and "external" categories. External transactions affect the relationships between the firm and other parties. The firm incurs debt from lenders, it makes payments to its shareholders, etc. In contrast, internal transactions depend solely on management decisions and do not affect liability to outside parties. For example, management can decide to use cash to purchase assets. This does not affect the external debts of the firm.

Most categories of Figure 18 are self-explanatory. However, some need further clarification.

#### Internal Sources

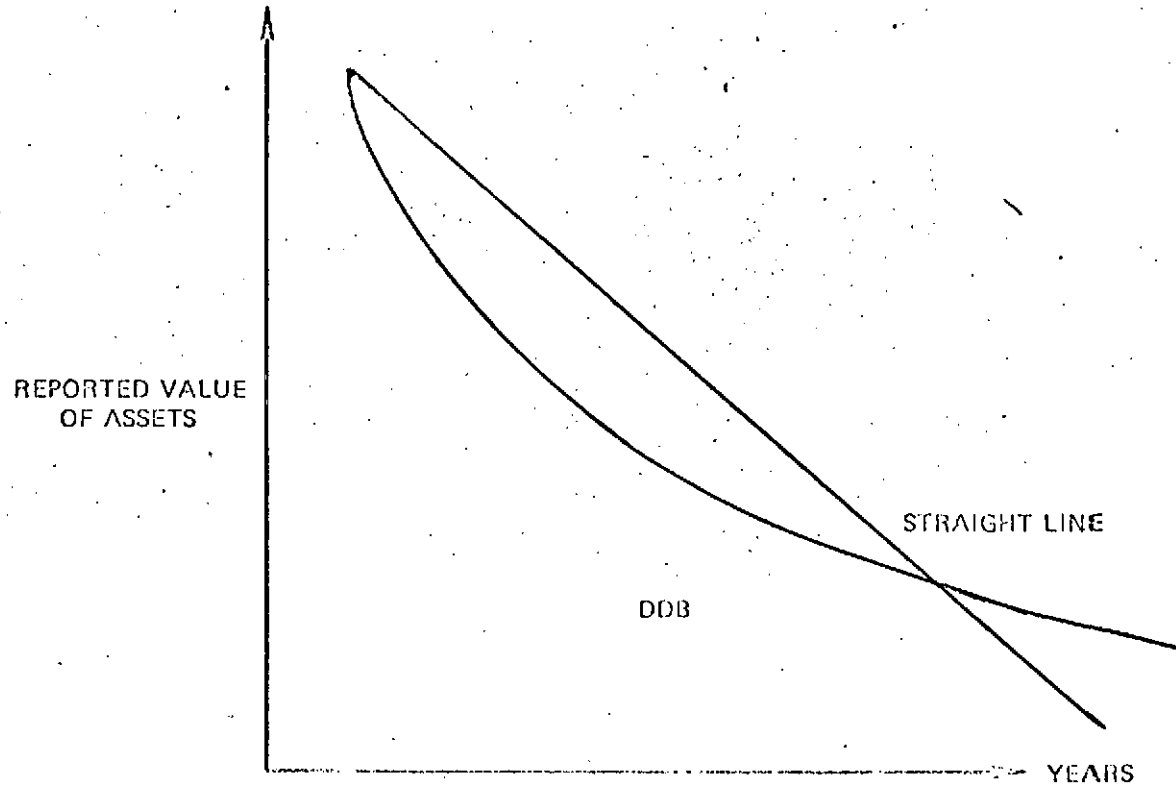
1. Depreciation and Amortization. Many assets are used for years after they are paid for. It is common practice to spread the cost over the entire lifetime rather than show a one-time large expense. In fact, tax laws require a long term write off in many instances. But, in fact, payment has already been made. So when depreciation or amortization appears as an expense, it does not actually represent a funds outlay. So these amounts which lower accounting income (profits) must be added to other sources of funds to see how much is actually available for use. (See figure 17).

Depreciation refers to the write off of tangible assets such as flight or group equipment, while Amortization applies to the write off of intangibles such as pilot training or good will. Together, depreciation and amortization amount to almost 40% of the total financial resources of major U.S. carriers in 1969.

The straight-line method is used by almost all of the major U.S. airlines to depreciate their flight equipment for bookkeeping purposes. The residual value and the period of depreciation varies within the range of 10-15% and 10-15 years. Recently some of the carriers have increased the depreciable life of their flight equipment for several reasons: first, certain aircraft have longer useful lives than was first assumed; second, an increase in the depreciable life improves reported earnings in future years since from an accounting point of view, it costs the carrier less to provide the same service; and third, the resulting short term higher profits can be offset against the carrier's accumulated investment tax credits.

For tax purposes, major airlines use accelerated depreciation in their accounting for the Internal Revenue Service. A typical accelerated depreciation is the double declining balance method. The carriers depreciate their assets over 8 years to a 5% residual value. During the early years, a greater proportion of the asset is expended on the books kept for tax purposes than in

METHODS OF DEPRECIATION  
STRAIGHT LINE VS. DOUBLE DECLINING BALANCE



14412/068 6/72

FIGURE 19

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those kept for the general operations the stockholders reports, which use a straight line method. This insures that the income, as reported to IRS, is lower and hence the taxes actually paid are less than those stated in the stockholders reports. Later on, the trend reverses, and more taxes have to be paid than reported to the stockholders. This eventuality is provided for by the liability account "deferred taxes." (See figure 19). Under this system, a carrier has the use of the cash credited to Deferred Taxes until that cash is actually needed. However, since fleet acquisition is a continuous process, deferred taxes are a relatively permanent source of funds for the industry.

In cases where there are no before-tax-profits, or actual before tax losses, there would be no expense. Consequently there would be no difference between publicly reported tax payments and actual IRS tax liability. In this case, therefore, no deferred tax "source" of funds. Unless there are profits, there will be no deferred tax "source."

(In the case of an actual loss, there could be a tax loss credit that could be used to offset future tax liability but only if and when there are positive earnings.) In addition to tax and internal depreciation methods, a third scheme is imposed by the Civil Aeronautics Board for rate-making purposes. When the Board computes the rate of return on investment, it uses a straight line method to determine the investment value of the equipment

(owned by the carrier. Table 1 shows the service life and residual values used by the Board).

2. Investment Tax Credit - The investment tax credit was initiated in 1962 to provide an incentive for the industry to modernize its facilities through the purchase of capital equipment. Carriers were allowed to claim a tax deduction of up to 7% of their investment in qualifying property. The qualifications were; first, the property had to be tangible, depreciable and have a useful life of at least four years; and second, the property had to be placed in service during the year in which the tax credit was claimed. The credit is 7% on assets with useful lives of at least 8 years, 4.7% for assets having useful lives of 6 to 7 years, and 2.3% for assets with a 4 to 5 year useful life.

Up until October 10, 1966, when the ITC was suspended for 5 months, the tax deduction could be used to offset tax liability dollar-for-dollar for the first \$25,000, but only at 25¢ to the dollar above that level. Unused credits could be carried back 3 years and forward five. On March 10, 1967, the ITC was restored with expanded provisions. Effective January 1, 1968, the limit on the amount of tax liability that could be offset above \$25,000 was raised from 25 to 50 ¢ on the dollar and the carry-forward period was extended to seven years.

TABLE 1

FLIGHT EQUIPMENT DEPRECIATION AND RESIDUAL VALUES  
AS SET BY THE CAB FOR RATE-MAKING PURPOSES

	<u>SERVICE LIFE</u> <u>IN YEARS</u>	<u>RESIDUAL VALUE AS</u> <u>% OF COST</u>
<u>TURBO-FAN EQUIPMENT</u>		
4-ENGINE	14	2
3-ENGINE	14	2
2-ENGINE	14	2
<u>TURBO-JET EQUIPMENT</u>		
4-ENGINE	10	5
2-ENGINE	10	5
<u>TURBO-PROP EQUIPMENT</u>		
4-ENGINE	12	5
2-ENGINE	10	15
<u>WIDE-BODY EQUIPMENT</u>		
4-ENGINE	14	10
3-ENGINE	16	10

SOURCE: CAB, "PART 399 - STATEMENTS OF GENERAL POLICY: TREATMENT OF FLIGHT EQUIPMENT DEPRECIATION AND RESIDUAL VALUES FOR RATE PURPOSES," APRIL 9, 1971

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There are two options for handling investment tax credits. The first is the "flow-through" method that allows the entire amount of the credit to be taken in the year the capital expenditures are made. The second is "service-life flow-through" which reduces the tax liability over the service lives of the related assets. The first method concentrates the full effect of the credit in one year, while the "service-life" method provides for a more even distribution.

The investment tax credit can only be used if there is tax liability. Whereas the 25% limitation prevented full utilization of the ITC before 1966, in recent years the downward trend in profits has limited its usefulness.

Table 2 summarizes the major internal sources of funds for the major U. S. carriers, and their amounts.

### External Sources

1. Straight Debt - There are four basic types of straight debt financing employed by the airlines: long-term notes, subordinated debentures, revolving credit and equipment installment loans.

#### 1.1 Long Term Notes

Senior long term notes are by far the most widely used debt instruments in the airline industry. They are typically sold to institutional investors (banks and insurance companies) and have

TABLE 2

INTERNAL SOURCES OF FUNDS  
MAJOR U.S. AIR CARRIERS - 1969

<u>SOURCE</u>	<u>FUNDS</u> <u>(\$MILLIONS)</u>	<u>PERCENTAGE</u>
EARNINGS AFTER TAXES BUT BEFORE ITC	318	21.1
DEPRECIATION & AMORTIZATION	808	53.7
DEFERRED TAXES	341	22.7
INVESTMENT TAX CREDIT	37	2.5
	<hr/>	<hr/>
TOTAL	1504	100.0

SOURCE: ATA, "MAJOR U.S. AIRLINES, ECONOMIC REVIEW AND FINANCIAL OUTLOOK",  
 JUNE, 1969

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maturities of 20 to 40 years. Some of these notes are secured by specific equipment pledged as collateral. Holders of unsecured notes have priority against unpledged assets of the carrier in case of bankruptcy, but no specific assets are mentioned in the terms of the loan agreement. All long term notes have indentures specifying the details to the financial agreement, and any protective covenants that exist.

### 1.2. Subordinated Debentures

A subordinated debenture is an unsecured debt. In the event of liquidation, the holder has a claim on the assets left after the unsubordinated or senior debt is satisfied. Banks and insurance companies supplying senior debt often require subordination of other debts in order to protect their investment. In contrast to senior debt subordinated debentures are often sold in the securities markets in comparatively small denominations (\$1000).

### 1.3. Revolving Credit

Revolving credit loans are short term credit arrangements between the carrier and bank or group of banks. The financial source guarantees that it will provide up to some amount of dollars to the carrier on demand. In return, the carrier may pay a basic service charge, or more often, a premium rate for the funds it actually uses.

#### 1.4. Equipment Installment Loans

Equipment installment loans are similar to automobile financing arrangements. They provide the smallest contribution to the air carriers' debt. These notes represent the willingness of the various manufacturers to participate in the financing of equipment orders and are usually secured by the equipment purchased.

2. Equity - In equity financing, the carrier sells additional shares in its own ownership through the issuance of preferred or common stock.

##### 2.1. Preferred Stock

Preferred stockholders usually have the first option on dividends when available, and a preference over the common shareholders if the company is liquidated. The disadvantages of holding preferred stocks are first, that the dividend, when paid, is usually fixed and not proportional to corporate profits; and second, that the preferred stock usually has no voting rights.

Unlike interest payments on debt, preferred stock dividends are not deductible from income before taxes which is one reason that it is seldom used by airlines today.

##### 2.2. Common Stock

Common stock offers many advantages as a source of funds. First, there are no fixed charges, interest or dividends that

must be paid. Second, there is no maturity date when the debt must be retired. Third, common stock provides an "equity cushion" against losses for senior creditors since it is subordinate to their claims. Fourth, common stock may be more appealing than bonds to certain investor groups, since it has the potential of high dividends and rapid appreciation if the company is successful.

The disadvantages are that a new issue of common stock further divides ownership in the airline. Second, the new owners expect to share in the profits, which can put pressure on management to reduce retained earnings by dividend payments. Third, the cost of underwriting and distribution common stock is usually higher than for an equal dollar amount of bonds. Finally, like preferred stock, dividends paid are not deductible from pre-tax income.

3. Convertible Debt - A convertible debenture is a hybrid security having characteristics of both straight debt and common equity. It is issued as a subordinate debenture carrying a fixed interest provision. In addition, the holder is given the option of converting his debenture into a specified number of shares of the airline's common stock at a specified price (usually considerably above the present market price of the common stock). Because

of the conversion privilege with its potential for capital appreciation, the bond carries a lower interest rate than comparable straight debt obligations. (See Table 3). On the other hand, convertible debentures provide greater present income and security than common stock.

The airlines have found this type of financing very attractive. Since the debenture is a debt, interest payments are tax deductible until the bond is converted. Because of the conversion privilege, the airline can get a lower interest rate than if it were forced to use straight debt financing. And once conversion takes place, the carrier's obligation to pay interest and repay principle is over. The book value is shifted to the common equity account, reducing the carrier's debt/equity ratio which improves the chances of further borrowing on more favorable terms.

4. Investment Tax Credit Lease - A financial intermediary with a high marginal tax rate (usually a large commercial bank or a group of wealthy investors) purchases an aircraft and simultaneously leases it on a long term basis to an airline. Normally the intermediary itself provides only 20% of the aircraft's purchase price selling equipment trust certificates to finance the remaining 80%. In the event of default, the equipment trust certificates are secured by the aircraft in question which can be repossessed by the certificate holders. They do not have a claim against the

TABLE 3

COST OF EMBEDDED DEBT CAPITAL AS OF 12/31/69 (%)

	<u>CONVERTIBLE</u>	<u>NONCONVERTIBLE</u>	<u>TOTAL</u>
AA	4.68	5.06	4.90
EA	5.07	6.04	5.84
TW	4.71	6.08	5.62
UA	4.70	5.93	5.61
DL	-0-	7.99	7.99
NW	-0-	6.97	6.97
CO	3.63	5.87	5.48
NA	6.00	6.90	6.90

SOURCE: CAB DOCKET 21866-8, "DOMESTIC PASSENGER-FARE INVESTIGATION-RATE OF RETURN," APRIL 9, 1971.

financial intermediary under these circumstances. Generally the trust certificates are purchased by a syndicate of life insurance companies or in some cases, a bank or a group of banks will simply pay the full price of the aircraft without creating the equipment trust at all.

By leasing the aircraft, the air carrier usually pays a lower effective interest rate. The rental payments need only cover the repayment (interest + principal) of the equipment trust certificates, which represent only 80% of the cost of the aircraft. (However, the airline has no claim to any residual value at the end of the lease). The intermediary, being the legal owner of the aircraft, receives the full investment tax credit and depreciation tax shield in return for his 20% investment. In addition, he gets title to the aircraft at the end of the lease, although the airline often has the option to purchase the airplane for its residual value.

Table 4 summarizes the major external sources of funds for the major U. S. carriers and their amounts, while Table 5 shows the capital structure of several specific airlines.

TABLE 4

EXTERNAL SOURCES OF FUNDS  
MAJOR U.S. AIR CARRIERS - 1969

	<u>FUND</u>	<u>PERCENTAGE</u>
SENIOR DEBT	2626.6	39.3
REVOLVING CREDIT		
AVAILABLE	1710.0	
USED	503.2	7.5
STRAIGHT SUBORDINATED DEBT	153.3	2.3
EQUIPMENT NOTES	108.7	1.6
CONVERTIBLE SUBORDINATED NOTES	1484.4	22.2
ESTIMATED CAPITAL VALUE OF LEASED AIRCRAFT	<u>1806.9</u>	<u>27.0</u>
TOTAL IMPUTED DEBT	6683.1	100.0

TABLE 5

COMPONENTS OF CAPITAL STRUCTURE AS OF 12/31/69  
(MILLIONS OF \$)

	TOTAL BOOK	DEBT			TOTAL
	EQUITY	CONVERTIBLE	NONCONVERTIBLE	TOTAL	CAPITAL
AA	403.3	282.8	398.4	681.2	1084.5
EA	225.0	127.4	498.7	626.1	851.1
TW	361.8	250.0	507.2	757.2	1119.0
UA	588.1	230.2	649.9	880.1	1468.2
DL	241.4	-0-	236.3	236.3	477.7
NW	426.8	-0-	112.0	112.0	538.8
CO	96.3	35.0	164.8	199.8	296.1
NA	130.5	0.5	65.7	66.2	196.7

SOURCE: CAB DOCKET 21866-8, "DOMESTIC PASSENGER-FARE INVESTIGATION-  
 RATE OF RETURN," APRIL 9, 1971.

COMPONENTS OF CAPITAL STRUCTURE AS OF 12/31/69 (%)

	TOTAL BOOK	DEBT		
	EQUITY	CONVERTIBLE	NONCONVERTIBLE	TOTAL
AA	37.2	26.1	36.7	62.8
EA	26.4	15.0	58.6	73.6
TW	32.3	22.3	45.7	67.7
UA	40.1	15.7	44.2	59.9
DL	50.5	-0-	49.5	49.5
NW	79.2	-0-	20.8	20.8
CO	32.5	11.8	55.7	67.5
NA	66.3	0.3	33.4	33.7

SOURCE: CAB DOCKET 21866-8, "DOMESTIC PASSENGER-FARE INVESTIGATION- RATE OF RETURN",  
 APRIL 9, 1971



## FINANCIAL RATIOS

The various financial statements discussed contain a great deal of information. A large amount of additional information can be gained by studying the relationships between the items in the basic statements. Financial analysts often find that these relationships are best expressed as ratios which provide additional insight into the operations of the firm. Ratios can also provide a method of quick analysis that isolates a problem area for further study.

Any ratio in itself is meaningless. There must be a standard of comparison. Often these standards are based on the historical trends of the firm. Often the performance of competing firms can be used. Other standards can be derived from industry performance, or performance of the economy as a whole. Another valuable source of comparison comes from the general background and experience of the analyst and his feelings for what various financial ratios ought to be.

Although innumerable ratios could be formed from the various items on the financial statements, several of particular value have been standardized through usage and experience. In general, these can be grouped into those that are useful in making short term financial decisions, long term financial decision and investment decisions. Ratios may also be an aide in evaluating management performance or market performance of a firm's stock.

## Short Term

Before a financial source makes a short term loan, it must determine the liquidity of the firm - its ability to repay on a short term basis. The lender is not concerned with the overall assets of the firm, but with its ability to pay its bills without liquidating long term holdings. Some of the ratios commonly used to evaluate debt paying ability to potential creditors are:

1. Current ratio - The current ratio is a very rough measure of the ability to meet short term obligations. It is defined as current assets divided by current liabilities. As a rule of thumb for industry on the average, a healthy firm should have a current ratio of about 2 to 1. However, industries with a large fixed investment like utilities or hotels have satisfactory working capital at a current ratio of 1. The airlines typically have a current ratio of 1.2 to 1.5.

2. Acid Test Ratio - Since current assets include monitories which may be hard to sell in an emergency, the current ratio may not really reflect liquidity. The acid test ratio is often used as a better measure. It is defined as current assets minus monitories, divided by current liabilities. For an airline, it would be computed on the basis of current assets minus spare parts and supplies, and might run between .8 and 1.

3. Cash and Equivalent Ratio - This ratio only compares cash on hand and assets quickly convertible to cash (such as government securities) to current liabilities. This may be too extreme a measure of ability to repay a short term obligation since it is doubtful that all current liabilities would fall due at once. For an airline, this ratio might typically fall between .3 and .5.

#### Long Term

An investor who considers purchasing a long term obligation from an airline is not as concerned with liquidity as he is with his overall security. This is typically measured by the Debt Ratio, long term debt divided by stockholders equity. Table 6 shows typical debt ratios for the airlines and for other transportation firms. In general, the lower the ratio, the more secure the investment.

#### Investment

Investment in this context is the original purchase of stockholder's equity in the firm, contrasted with market transactions between stockholders. It applies to original issues only. In deciding whether or not to buy a new stock, the investor is concerned with the potential rate of return, and the risk involved.

Rate of return is a ratio of net income to total equity - that is, liabilities plus stockholder's equity. Tables 7 and 8 show

TABLE 6

LONG-TERM DEBT/TOTAL STOCKHOLDER'S  
EQUITY FOR 1969

<u>INDUSTRY</u>	<u>RATIO</u>
AIRLINES:	
ALL TRUNKLINES	1.50
BIG 4 (AA, EA, TW, UA)	1.87
LITTLE 4 (CO, DL, NA, NW)	0.69
TRUCKING:	
CONSOLIDATED FREIGHTWAYS	1.04
McLEAN TRUCKING COMPANY	0.92
RAILROADS:	
PENN CENTRAL TRANSPORTATION COMPANY	0.59
CHESAPEAKE AND OHIO RAILWAY COMPANY	0.27
BUSSING:	
GREYHOUND	0.83

SOURCE: MOODY'S TRANSPORTATION MANUAL (NEW YORK, 1971) CAB

TABLE 7

RATES OF RETURN ON INVESTMENT (CAB)

	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961
TOTAL TRUNKS, DOMESTIC	1.07%	5.28%	5.67%	8.85%	10.36%	12.04%	9.62%	4.20%	4.10%	1.46%
BIG 4, DOMESTIC	-1.58	4.87	3.84	7.35	7.48	9.76	7.79	2.97	2.66	1.32
OTHER TRUNKS, DOMESTIC	5.72	6.05	9.92	12.74	17.58	18.50	15.10	7.74	8.48	1.92
PASS./CARGO, INT'L & TERR.	2.58	4.42	10.82	14.21	15.02	16.28	13.29	13.11	8.69	3.14

TABLE 8

RETURN ON INVESTED CAPITAL FOR THE  
500 LARGEST INDUSTRIAL CORPORATIONS (INDUSTRY MEDIANS)

	1968	1967	1966
PHARMACEUTICALS .....	17.9%	18.0%	18.4%
SOAPS, COSMETICS .....	16.9	15.9	15.7
MINING .....	16.8	16.4	16.2
DOMESTIC TRUNKLINES* .....	10.0	15.0	20.0
TABACCO .....	14.7	13.4	13.2
PUBLISHING, PRINTING .....	14.1	12.5	14.8
APPAREL .....	13.0	12.3	14.5
MEASURING, SCIENTIFIC, PHOTOGRAPHIC EQUIPMENT ....	13.0	14.3	14.7
METAL PRODUCTS .....	12.4	13.0	13.3
AIRCRAFT AND PARTS .....	12.2	12.0	14.8
FARM, INDUSTRIAL MACHINERY .....	12.2	12.0	14.5
FOOD AND BEVERAGE .....	12.1	10.0	11.1
SHIPBUILDING AND RAILROAD EQUIPMENT .....	12.0	10.5	12.6
PETROLEUM REFINING .....	11.8	11.2	12.3
APPLIANCES, ELECTRONICS .....	11.7	11.6	13.3
MOTOR VEHICLES AND PARTS .....	11.6	10.4	14.3
OFFICE MACHINERY (INCLUDES COMPUTERS) .....	11.3	14.2	14.0
RUBBER .....	11.3	9.1	11.2
PAPER AND WOOD PRODUCTS .....	10.0	9.0	10.4
METAL MANUFACTURING .....	9.9	8.8	10.8
CHEMICALS.....	9.7	10.0	12.6
GLASS, CEMENT, GYPSUM, CONCRETE .....	8.7	8.3	11.0
TEXTILES .....	8.3	7.2	11.4
ALL INDUSTRY .....	11.7	11.3	12.7

\* APPROXIMATE VALUES

SOURCE: "THE FORTUNE DIRECTORY OF THE 500 LARGEST INDUSTRIAL CORPORATIONS,"  
 FORTUNE, 1968, 1969

rates of return for airlines and for various other industries over a several year period. An investor would be interested in both the trend and size of returns in the firm he is considering as well as what would be available to him from other firms in the same or other industries.

The mixture of debt and equity financing is very important in determining the risk. This is measured by the Debt Ratio previously mentioned. The ratio of debt to stockholder's equity determines the leverage of the firm. Leverage involves the use of borrowed funds in expectation that the earned rate of return will be higher than the cost of those funds.

Table 9 shows the effect of different debt ratios on the stockholder's return on investment. In all cases, a total investment of \$1,000,000 and a 10% cost of servicing the debt is assumed. The higher the debt ratio, the more sensitive is the stockholder's return to the overall rate of return of the firm.

#### Management Performance Ratios

Financial ratios can be used to compare the effectiveness of management. The better the management, the more profits it can make on the investment and the lower the expenses with respect to revenues. Table 10 shows some of the ratios used to evaluate management performance and some typical values for the airline industry.

TABLE 9

LEVERAGE EXAMPLE

TOTAL INVESTMENT	DEBT RATIO	DEBT	SHAREHOLDERS EQUITY	RATE OF RETURN	NET INCOME BEFORE INTEREST	INTEREST (at 10%)	NET INCOME	RETURN ON STOCKHOLDERS EQUITY
\$1,000,000	1	\$500,000	\$500,000	12%	\$120,000	\$50,000	\$70,000	14%
\$1,000,000	1	\$500,000	\$500,000	15%	\$150,000	\$50,000	\$100,000	20%
\$1,000,000	1	\$500,000	\$500,000	7.5%	\$ 75,000	\$50,000	\$25,000	5%
\$1,000,000	3	\$750,000	\$250,000	12%	\$120,000	\$75,000	\$45,000	18%
\$1,000,000	3	\$750,000	\$250,000	15%	\$150,000	\$75,000	\$75,000	30%
\$1,000,000	3	\$750,000	\$250,000	7.5%	\$ 75,000	\$75,000	- 0 -	0%
\$1,000,000	1.5	\$600,000	\$400,000	12%	\$120,000	\$60,000	\$60,000	15%
\$1,000,000	1.5	\$600,000	\$400,000	15%	\$150,000	\$60,000	\$90,000	22.5%
\$1,000,000	1.5	\$600,000	\$400,000	7.5%	\$ 75,000	\$60,000	\$15,000	3.75%



TABLE 10

MANAGEMENT PERFORMANCE RATIOS (1968)

	INDUSTRY	BIG 4 (AA, EA, TW, UA)	LITTLE 4 (CO, DL, NA, NW)
TURNOVER = $\frac{\text{OPERATING REVENUES}}{\text{GROSS ASSETS}}$ (%)	60.9%	59.5%	63.9%
$\frac{\text{OPERATING EXPENSE}}{\text{OPERATING REVENUE}}$ (%)	91.2%	94.5%	82.3%

SOURCE = AIRLINE INDUSTRY DATA: DOUGLAS AIRCRAFT CO. SEPT. 1968

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## Internal Rate of Return

When management plans a financial investment, it has traditionally evaluated the potential rate of return on the investment base. This process can be confusing, however, particularly where the useful life of the investment and its depreciation period are not the same. As an alternative, airlines are starting to use the "Internal Rate of Return" method to evaluate investment alternatives. This method is based on discounted cash flows and not on the investment base, depreciation, etc.

If  $A_0$  is the initial investment, and  $A_i$  is the expected net cash flow, in or out during the  $i$ th time period, the equation can be formulated as:

$$A_0 = \frac{A_1}{(1+r)} + \frac{A_2}{(1+r)} + \dots + \frac{A_n}{(1+r)^n}$$

$r$  then represents the rate of return on the initial investment,  $A_0$ , earned from the future total cash flow  $\sum_{i=1}^n A_i$  discounted over the appropriate time periods. By comparing the various internal rates of return that can be expected from different investment strategies, the firm can decide which project offers the best return on the money presently available.

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## Market Performance Ratios

Market performance is important when one purchases stock in the market from a prior stockholder, rather than from the company itself as part of an initial stock issue. The market investor is concerned with the health of the company whose stock he is buying. But he is also interested in how the stock compares with other stocks he might purchase in the market place.

1. Earnings Per Share - this is the ratio of the net income of the firm to the number of shares outstanding and gives some measure of the worth and earning power of the stock.

2. Price-Earnings Ratio - The market price of the stock is divided by the earnings per share as computed above. This relates the earning power of the stock to how much it costs.

3. Yield (Dividend Yield) - To determine the return on his investment, the stockholder is not only interested in how large a dividend is paid on a share, but how much the share costs. Yield is defined as dividends per share divided by the price per share and represents the percentage return on investment in the stock.

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