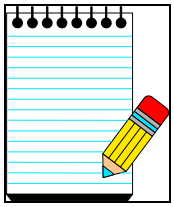
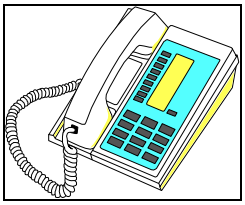
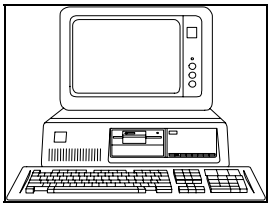
SECTION VIII

THE APPRAISAL OF BUSINESS PERSONAL PROPERTY


The Appraisal of Business Personal Property

The objective in the appraisal of business personal property which includes machinery & equipment, is to determine the market value of the property for ad valorem tax purposes. Before we can do this however; we must first determine the elements that constitute value and what appraisal concept we need to use.

What is Value

The economic concept of value is identified as the relative worth of a commodity when compared to all other substitutes for the commodity, and is affected by scarcity and utility of the property. In the appraisal of personal property, there are many different levels of value, and it is important to consider the reason for determining value. Each of these levels has meaning to the appraiser.

Value in Use - The value of property to its' owner or the one who enjoys its' use, based on the utility and productivity of the property.

Value In Exchange - The most probable value that can be reasonably expected in a sale transaction.

Liquidation Value - The price which the individual assets of an operating unit would bring if dismantled and moved to another location.

Residual Value - A minimum value of property still usable by the owner at which no further depreciation is allowed.

Salvage Value - The value of property when the utility of the property has ended. This is usually the lowest of all of the valuation concepts.

Going Concern Value - The value of property determined by consideration of the business as an operating entity, in an established market and functioning in an efficient and economical manner.

The North Carolina Legal Requirement

The North Carolina general statutes contained in the Machinery Act require the appraiser to consider certain legal requirements in the valuation of property for ad valorem taxation.

G.S. 105-283 Provides the standards for appraisal and assessment. The standard requires uniformity in appraising and provides that "all property, real and personal, shall as far as practicable be appraised or valued at its true value in money. **True value** is defined as meaning market value, that is, the price estimated in terms of money at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell and both

having reasonable knowledge of all the uses to which the property is adapted or which it is capable of being used.

One of the most important cases dealing with property tax in North Carolina is the AMP INC. case which was heard by the North Carolina Supreme Court in 1975. The N. C. Supreme Court in re: Appeal of AMP, Guilford County made the following statements :

1. Implicit in G. S. 105-294 (now G.S. 105-283) is the going-concern assumption." The court further stated that failure to assign a going-concern value ignores the provision of law relative to the true value standard provided by G.S. 105-283.

2. However , the mere fact that there is no market for a particular property does not deprive it of "market value," "true value," or "cash value."

3. We believe that the proper valuation standard would be the cost of replacing the inventory, plus labor and overhead. In terms of a formula, this equals replacement cost plus labor and overhead.

4. In order for a taxpayer to rebut the presumption of correctness of an ad valorem tax assessment, he must produce competent, material and substantial evidence that the county tax supervisor used an arbitrary or illegal method of valuation and that the assessment substantially exceeded the true value in money of the property.

G.S. 105-317.1 Provides a list of elements that the appraiser must consider in appraising personal property.

105-317.1 Appraisal of personal property; elements to be considered.

(a) Whenever any personal property is appraised it shall be the duty of the persons making appraisals to consider the following as to each item (or lot of similar items):

(l) The replacement cost of the property;
(2) The sale price of similar property;
(3) The age of the property;
(4) The physical condition of the property;
(5) The productivity of the property;
(6) The remaining life of the property;
(7) The effect of obsolescence on the property;
(8) The economic utility of the property, that is, its usability and adaptability for industrial, commercial, or other purposes; and
(9) Any other factor that may affect the value of the property.

(b) In determining the true value of taxable tangible personal property held and used in connection with the mercantile, manufacturing, producing, processing, or other business enterprise of any taxpayer, the persons making the appraisal shall consider

> any information as reflected by the taxpayer's records and as reported by the taxpayer to the North Carolina Department of Revenue and to the Internal Revenue Service for income tax purposes, taking into account the accuracy of the taxpayer's records, the taxpayer's method of accounting, and the level of trade at which the taxpayer does business.

The true value standard and elements to be considered in appraising personal property are the primary topics of the following discussions.

Appraisal

Our function as appraisers is to determine value under the **True Value Standard** required by law. It is our task to consider all of the elements that affect value and determine the true value in money of the property in question.

In making an appraisal of any property, the best method is to examine each item in detail and then determine an appropriate valuation. In the mass appraisal process, this is a luxury few jurisdictions will be able to afford. We must therefore determine what valuation methodology will most accurately determine true market value, provide uniformity, equity, and remain cost effective.

Highest and Best Use: Each item of property should be appraised as though it were being put to its perceived most profitable use given probable legal, physical, and financial constraints.

Approaches To Value

There are three recognized approaches to be considered in the appraisal of property.

The Income Approach
The Market Approach
The Cost Approach

Each of the methods should be considered in the appraisal of personal property. A brief discussion of each method follows.

Income Approach

There are two commonly used ways to apply the income approach to machinery and equipment valuation. The first is the gross income multiplier method (which is actually more closely related to the comparative sales approach). The appropriate gross income multiplier is calculated by dividing the selling price of items comparable to the subject by their gross rental incomes. By analyzing sales and rentals of equipment comparable to the subject property, a representative multiplier can be developed. The multiplication of this factor by the rental income of the subject item can yield an estimation of value. This is illustrated by the following:

Comparables	Sale Price	Gross Annual Rental	Gross Income Multiplier
A	$13,000	$8,666	1.500
B	$13,500	$8,800	1.534
C	$14,000	$8,917	1.570

Using a gross income multiplier of 1.53, and a gross annual rental of the subject of $9,800 yields:
$9,800 x 1.53 = $14,994

The gross income multiplier method is simple and easily understood. Care must be taken, however, to choose comparable machines or equipment carefully, since the difference in obsolescence between subject and comparables must be taken into consideration.

The more recognized income approach is to capitalize net income into a determination of value. **The income approach formula is:**

Value = Income / Rate

To apply this approach, the net income that the item is capable of generating must first be estimated. This involves examining lease terms and expense estimates, including maintenance, insurance, advertising, taxes, and management. This analysis must be done for both the subject property and the comparables. Next, the appraiser must determine the proper capitalization rate to apply to the net income estimate. This step requires the analysis of rates of return on investments, economic life estimates, and property tax rates. The capitalization rate is made up of three components, the discount rate, the recapture rate, and the effective tax rate.

The discount rate is the return on the investment and is the investors compensation for their efforts and risk involved in the investment. The discount rate is made up of an interest rate and an equity yield rate. The discount rate is usually determined from the market.

The recapture rate is the return of investment which is for capital recovery. In order to determine the recapture rate the appraiser must estimate the years of remaining economic life. Below is an example of how to calculate a recapture rate for a machine with a 5-year remaining economic life.

Years of Remaining Economic Life	Recapture Rate Return on Investment
5 years	(1/5) = .20
4 years	(1/4) = .25
3 years	(1/3) = .33
2 years	(1/2) = .50
1 years	(1/1) = 1.00

The third part of the capitalization rate is **the effective tax rate**, which is the actual tax rate multiplied by the assessment level of the taxing jurisdiction. If the actual tax rate is 50 cents per $100 of value and the assessment level of the jurisdiction is 90% the effective tax rate is: .50 x .90 = .45 or 45 cents per $100 of value. In North Carolina personal property is assessed at 100% of its appraised value so the actual tax rate and the effective tax rate is the same.

The final step, estimating the value of the item, is accomplished by dividing the net income by the chosen capitalization rate. **The income approach formula is V = I/R.**

For example, assume that the subject property to be valued is a group of thirteen photocopiers owned by a leasing company. These copiers are all on lease in the same city under two-year net leases of $1,375 per copier. The lessee pays for all delivery costs, the toner and developer fluids, and paper. In addition to this flat fee, a charge of $.016 per copy is made, and the machines make an average of 25,000 copies per month each. The cost of operating the machine or the expenses for the year are 12% of gross revenue.

From the illustration above, the total annual rental income generated by these photocopiers is $214,500 ($1,375/month/machine x 13 machines x 12 months) and the total per copy charge is $62,400 ($.016 copy x 25,000 copies/machine/month x 13 machines x 12 months), resulting in a gross annual income of $276,900. Reducing this by 12 percent to account for service, maintenance, and overhead results in a net income of $243,672 ($276,900 x 0.88).

The machines have a 10-year life and are three years old (this may be increased by extensive reconditioning) and, due to the type of leasing company, the appropriate discount rate is considered equivalent to the yield on AAA corporate industrial bonds, which currently pay 12.2 percent. The effective property tax rate in this jurisdiction is $1.20 per $100.00 of value. These figures result in an overall rate of 0.277 (0.122 discount rate + 0.012 effective tax rate + 0.143 recapture rate).

Using the standard income approach formula of V = I/R, the value of the subject machines is $879,680 ($243,672 divided by 0.277), which represents the present worth of the anticipated income stream.

Pros and Cons of the Income Approach

Advantages

Recognizes economics
Reflects actual investment criteria.
Can be used to help support the cost approach.

Disadvantages

Subjectivity of income data
Requires knowledge of complex financial methods

CASE PROBLEM

INCOME APPROACH

Boone Copying Company leases photocopiers to businesses across the state. The company has 20 copiers located within your county and receives $1250/month for the rental of each machine. The expenses for leasing and maintaining these machines are on average around 10% per year. The machines have an eight year life and are three years old. The county tax rate is 50 cents per $100 of value. What is the appraised value of this property using the income approach and a discount rate of 7%.

The Market Approach

The market approach assumes that a prudent investor can purchase an operating facility at a reasonable price. Clearly, with the rash of mergers and acquisitions which took place during the 1980's, there is some evidence to support this conclusion.

The market approach when used in the valuation of machinery and equipment is no different than when applied to the appraisal of real property. The key to both rests on the **principle of substitution** which states that no commodity has a value greater than that for which a similar commodity offering similar uses, utility, and function can be purchased within the reasonable time limits that the buyers' market demands. The appraiser must compare the subject property to similar equipment which has recently sold. Any adjustments are made to the comparables, not the subject.

If new equipment being sold today is exactly the same as the subject, the market value of the subject can easily be determined. If the new equipment being sold today is different than the subject, comparisons are more difficult. Unfortunately, certain types of equipment rarely, if ever, are sold in the secondary market and thus no data on this equipment may be available, making the comparative sales approach meaningless. We must also consider the value-in-use concept. Attempting to equate machinery sold as a commodity with machinery installed and in use can lead to an invalid comparison.

Highest and best use, an extremely important concept in real property appraisal, is not as critical in the appraisal of machinery and equipment. Ordinarily, machinery and equipment are designed for specialized functions and also because the property usually is not in a fixed location.

When sufficient data on secondary market sales is available, and the appraiser has a thorough familiarity with the property under appraisal, the comparative sales approach may be the most appropriate, accurate, and reliable method to use in valuing the subject property.

The reliance on sales of comparable equipment requires the adjustment of the selling price for time, physical condition, and obsolescence. The value of the subject property can be determined by an analysis of the sales data with heavier weight given to the most comparable property.

With regard to adjustments for time of sale, they are frequently the reverse of those normally found in real estate -- sales occurring prior to the valuation date will generally require a negative (less than 100 percent) adjustment and those occurring after the valuation date will likely require a positive (greater than 100 percent) time adjustment. This not always the case, but it is especially true when valuing electronic data processing (EDP) and photocopier/duplicator (P/D) equipment, since the tendency has been for new EDP and P/D equipment to become less costly over time.

To illustrate the comparative sales approach, assume that we want to value a 2000 Model B computer that is in average condition as of January l, 2004. Assume that the market indicates that the time adjustment is 1/2 percent per month and that "good" condition commands a 10 percent

premium while "poor" condition requires a 10 percent deduction. Three sales of comparable Model B computers have been found, as follows:

Sale 1 - Average condition; sold March 1, 2004 for $971,000.
Sale 2 - Good condition; sold May 1, 2003 for $1,048,000.
Sale 3 - Poor condition; sold August 1, 2003 for $983,000.

The adjustments would be made as follows:

Sale	Sale Price	Time Adjustment	Time Adjusted	Condition Adjustment	Adjusted Price
1	971,000	1.00%	980,710	n/a	980,710
2	1,048,000	-4.00%	1,006,080	-10.00%	905,472
3	983,000	-2.50%	958,425	10.00%	1,054,268

Thus, the value of this 2000 Model B computer on January 1, 2004 is estimated at $980,710, giving most weight in the final analysis to comparable sale 1.

Elements to be Considered in the Market Approach

1. Comparability with the subject property
2. Timeliness of the market data
3. Realistic comparisons (i.e. capacity, maintenance)
4. General market conditions
5. Profitability of the seller
6. The real cash price (debt assumed etc.)
7. Sale price should represent going concern value

Pros and Cons of the Market Approach

Advantages

Reflects current economic conditions

Disadvantages

Difficulty in obtaining market data
Number of adjustments
Limited market existence

Case Problem

COMPARATIVE SALES OR MARKET APPROACH TO VALUE

You are to estimate the value of a subject property using the comparative sales approach. The subject property is a widget making machine owned by Boone, Martin, and Duty.

The machine is a 2005 model and we wish to value it as of January 1, 2007. The subject machine is in average condition as of the valuation date. The subject can produce 200,000 widgets per day.

You have analyzed the market and determined that the time adjustment for date of sale is 1/2 percent per month. You have also determined that a machine in good condition carries a 10% adjustment while a machine in poor condition carries a 15% adjustment. The number of widgets a machine can produce over 200,000 carries a 5% adjustment for each 25,000 widgets over 200,000.

The three sales below are to be used to appraise the subject machine.

Sale #1 Average condition, sold June 1, 2006 for $750,000: 200,000 widgets per day.

Sale #2 Good condition, sold March 1, 2007 for $900,000: 225,000 widgets per day.

Sale #3 Poor condition, sold November 1, 2006 for $750,000: 250,000 widgets per day.

The Cost Approach

The cost approach is the most effective methodology for the appraisal of personal property. Typically, business machinery and equipment is not traded regularly in the market. Most commercial and industrial property is acquired by a business which intends to use the property for the entire useful economic life of the asset. We seldom find business taxpayers who will purchase new equipment merely to update to the latest model available. For this reason, the cost (accounting method) approach is the recommended method for the valuation of business personal property. In our opinion, for the appraisal of personal property, the cost approach most closely approximates market value.

Elements to Consider

In using the cost approach, the appraiser must determine four critical elements:

1. The original (historical) installed cost
2. The current replacement cost new (RCN)
3. The useful economic life of the property
4. The loss in value (Depreciation)

Original Cost

Cost is defined in the glossary of terms in this manual as "the amount of consideration exchanged for the acquisition of an asset or group of assets." It is an amount that can typically be found in a business taxpayer's accounting records. In appraising, utilizing the cost approach to value, **historical cost** is used interchangeably with **cost** and **original cost.** However, a distinction should be drawn between historical cost as being the cost of an item at the time it was initially acquired by the original user. Original cost may be the cost to the present owner at a used purchase price. The cost approach, for the purpose of this discussion assumes the use of **historical cost.**

In addition, the appraiser should consider the **installed cost.** This term is defined in the glossary as capitalized cost --invoice cost and all other costs necessary to achieve normal utility of an asset or group of assets within an operating unit, but it does not include maintenance or other operating expenses. Costs such as freight, taxes, installation, interest during construction, and betterments (repairs which extend the useful life of the asset), are costs which should be included in the appraisal and valuation estimate. These costs normally are capitalized by the taxpayer for accounting purposes and are reflected in the asset records. However, the appraiser would need to verify this by an examination of the taxpayer's records.

Another concept which has to be considered in determining what cost to use in appraising business personal property, is **Level of Trade.** There are three levels of trade which property may be at during its life. They are: manufacturer, wholesaler or distributor, and retail. As property moves through each of the levels, the cost of the previous level determines the market value to the buyer. As each level is reached, the cost increases in the form of incremental costs (such as freight,

overhead, handling and installation). In review, as property moves through each of the levels, the lowest level is that of the manufacturer and the highest level is that of the retailer.

Business personal property is appraised at the retail or consumer level of trade. Since inventories are no longer taxable, all taxable property is held at the ultimate consumer or retail level. There are manufacturers who use the products they produce. An example of this would be a computer manufacturer who uses the computers in its offices. The cost that is listed by the manufacturer should be the retail cost of the equipment and not the manufacturer's cost.

Another example of a taxpayer where the appropriate level of trade must be determined is that of leasing companies. Like the computer manufacturer example above, many leasing companies also manufacture the products they lease. The cost listed for the leased equipment should be the cost at which the equipment would be purchased by a **retail** consumer. The leasing company may transfer the equipment from its manufacturing division at a cost less than retail. The leasing company may be a separate entity and purchase the property from its affiliated manufacturing company or from an unaffiliated manufacturer at a wholesale level of trade. In any of these scenarios there would be a level of trade adjustment necessary to provide the correct cost figure to be used in the appraisal. It is important that the appraiser be confident that the cost reported is at the accurate level of trade. If the appraiser has questions as to the reported cost these should be raised with the taxpayer and resolved prior to beginning the appraisal calculations. Third party vendors of the equipment can be consulted to provide information to confirm the correct amount to be listed.

Replacement Cost New (RCN)

It has been determined that historical cost represents the first cost of an asset new. The appraiser will also need to know the current cost to replace the asset under examination. This **current replacement cost new** is the cost to replace property with assets which are comparable and have equivalent utility. RCN is not to be confused with **reproduction cost,** which is the cost incurred to construct an exact replica of the item. As a practical matter, reproduction cost is seldom used in the valuation of machinery and equipment. The only significance in the use of reproduction cost data is in the valuation of properties where the "look and feel" can only be maintained by the use of an exact replica.

There are many sources of data available to assist the appraiser with the determination of RCN such as cost manuals, dealer catalogs, quotes from equipment dealers, internet searches, etc. The best source for replacement cost data is found in vendor catalogs. There are, however, serious drawbacks with the dependence on this source.

First, it requires the appraiser to subscribe to a mass of vendor publications on a large variety of commercial and industrial equipment. Secondly, frequently the technology for specific types of equipment has changed to such an extent that it is difficult to find a suitable unit on which a comparison can be made. Additionally, the particular machinery and equipment under appraisal may be out of production. Finally, it is very time consuming for the appraiser to search through

catalogs for every piece of machinery and equipment being appraised even if the information was available, and therefore, would not be economically feasible in the mass appraisal process.

Fortunately, techniques have been developed that track the increases or decreases in the costs of specific types and classes of machinery and equipment which are available to the appraiser.

Trending to Arrive at Replacement Cost New

One of the most effective and efficient methods for determining current RCN is the use of indexes. These index factors represent the overall price level changes in various classes of property. The **trending process,** which is defined in the glossary as "the process of applying percentage adjustments to historical cost data to arrive at a cost to replace. This then becomes the basis to which the appraiser applies his estimate of depreciation." For the mass appraiser, trending becomes the most cost efficient methodology to determine RCN.

Trending tables reflecting cost index factors by industry category have been developed by the Property Tax Division of the N. C. Department of Revenue and are enclosed in this appraisal manual. Trending tables are also available from other sources such as Marshall and Swift, American Appraisal Company, Boeckh's, and from trade associations.

The indexes are published by industry type or class of assets. They represent composite percentage adjustments of periodic changes in the sales price of assets as reported by the producers of the assets. For example, an industry that produces restaurant equipment may produce multiple types of restaurant equipment. Some individual sales prices may be increased or decreased differently from others. The overall weighted average increase or decrease in sales price of all assets becomes the restaurant equipment cost index factor. Normally the index factor will increase as the property moves away from the base year. There are however, instances where the index factors have actually decreased.

Replacement cost new tables are valuable for the appraiser as other methods of determining RCN prove impracticable in mass appraisal. The following illustration demonstrates the use of trending factors in determining an estimation of RCN:

Triple S Hotel-Business Listing 2004

Year Acquired	Cost	Index Factor	RCN
2003	$ 4,000	100	$ 4,000
2002	10,000	101	10,100
2001	84,000	102	85,680
2000	37,000	104	38,400
1999	20,000	106	21,200
1998	32,000	108	34,560
1997	448,000	109	488,320
	$635,000	(overall adj. of 7%) increase	$759,920

Having determined the replacement cost new (RCN) for our equipment through the use of trending tables, we must now modify this cost to reflect the correct value of the equipment in its' current place and condition.

Note: The North Carolina valuation methodology is based on the use of trending. Using trending to arrive at estimated RCN satisfies the requirements of G.S.105-317.1(a),(1) & (2).

Depreciation

There is an important distinction between the accountant's and the appraiser's concept of depreciation. The accountant is interested in depreciation as a function of cost apportionment. To the appraiser, accrued depreciation is the difference between replacement cost new of the property being appraised, and its true market value, and represents losses in value from all causes.

There are generally three recognized types of depreciation: (l) Physical deterioration, which results from wear and tear, decay, and structural failures; (2) Functional obsolescence, which results from inadequate design and style or changes in technology; (3) Economic obsolescence, which results from economic forces, such as legislative enactments or changes in supply and demand relationships.

The "classical" approach in measuring depreciation of machinery and equipment is to first determine the economic life, or expected useful life of the equipment. The next step is to determine its remaining economic life which normally is the difference between its expected life and the number of life years which have expired since the year of acquisition and installation.

Useful Economic Life

The rate of depreciation by which the appraiser arrives at the loss in value from replacement cost new in his appraisal, depends upon the estimated useful life he has selected for an asset or group of assets. The useful economic life is the period over which an asset or group of assets may reasonably be expected to maintain utility in the taxpayer's trade or business. It is not necessarily the expected physical life of the asset, but it is the expected functional or economic life. Anticipated normal physical, functional, and economic depreciation are inherent in most published useful-life guides. Factors affecting useful life schedules as reflected by the Internal Revenue Service Asset Depreciation Range (ADR) are stated in their regulations to include:

(1) wear, tear, decay or decline from natural causes (physical)
(2) normal progress of the art (functional)
(3) normal economic changes (economic)
(4) current developments within the asset industry (functional)

Abnormal conditions which may be peculiar to a trade or industry, such as climate or other factors which do not represent normal physical, functional or economic conditions must be treated separately by the appraiser in his depreciation adjustment.

When selecting a useful economic life, the appraiser looks at the class of assets being appraised based on industry type. For example, machinery and equipment used to manufacture beer would fall under the category of brewery equipment. Within a brewery, the appraiser may find types of equipment which are not unique to a brewery operation such as material handling equipment, truck washing equipment, vending equipment, etc. Useful-life schedules may reflect a different useful life for the various classes, however, he should adopt the life which supports the dominant class. The supporting equipment probably does not represent a sufficient element of the total value to warrant a separation under the mass-appraisal process. Classes such as computer equipment, office furniture and fixtures, small tools, dies and molds, normally need separate attention in the appraisal. Motor vehicles and mobile construction equipment are generally appraised separately. There are published guides that are useful to the appraiser in the valuation of this type property as it is regularly traded in the market place.

The useful-life schedules as reflected by the Department of Revenue publication, as a rule, represent the mid-point of the asset depreciation ranges extracted from publications of the Internal Revenue Service. The schedules are intended to be used as a guide, and will serve as useful tools in the appraiser's effort to maintain uniformity in the appraisal of personal property within a taxing jurisdiction. If the schedules are applied by all counties, then uniformity will be achieved state-wide. Modifications to the tables may occasionally need to be made in certain cases. This will be the judgment of the appraiser. There may also be classes of property not identified in the schedules. When the appraiser encounters this situation, best judgement should be used.

Physical Depreciation

Physical depreciation is defined in the glossary as "loss in value due to physical wear and tear." In machinery and equipment such depreciation results from the normal use of the property. In the cost approach to value, using a mass-appraisal methodology, physical depreciation is simply assumed to occur as the equipment ages from original installation date to the appraisal date. Such depreciation is incorporated within the application of depreciation based on the expected useful economic life adopted by the appraiser. To truly measure physical depreciation, the appraiser would be required to physically inspect each item and compare the sales price of comparable items in the market place. As a general rule, machinery and equipment is not traded on a regular basis. Because of this, sufficient data is not normally available to make this comparison. However, at some point, the appraiser should actually visit the location where the equipment is located to observe its' utility and its physical condition. Industry practice is to keep all equipment in good physical condition or to salvage it when it is no longer serviceable. If production equipment is not properly maintained, it will soon become non-productive; a competitive industry can ill afford to operate in this manner.

The appraiser should recognize that additional depreciation may be justified when it can be demonstrated that the physical condition of the equipment is below average as a result of damage or excessive use. In such cases, the specific equipment should be considered and appraised separately.

Since depreciation for appraisal purposes is concerned primarily with loss in value due to physical deterioration, the appraiser must consider whether the deterioration can be reversed.

There are essentially two types of physical deterioration:

(a) Curable physical
(b) Incurable physical

Curable physical deterioration is measured by the net cost to cure and is temporary. Incurable physical depreciation occurs when the cost to cure exceeds the value of the property after the repairs have been completed. If the cost to cure would result in a net savings to the owner over the expected remaining life of the equipment, it would be curable. If the cost to cure would result in a net loss over the remaining economic life, the difference between the net loss and cost to cure is incurable.

The investments incurred by property owners which better the property or increase its productive life are usually capitalized and therefore reported in the year that the investment occurred. When utilizing the cost approach, these betterments should be included in the valuation process.

Economic Obsolescence

Another form of depreciation that the appraiser may need to recognize is economic obsolescence. This represents a loss in value of property due to adverse influences arising from causes external to the machinery and equipment. Examples of this are:

1. Social and legislative changes
2. General economic changes
3. Supply and demand
4. Price changes and profitability

Functional Obsolescence

Another form of depreciation, which affects the value of machinery and equipment, is functional obsolescence. This is a loss in value due to impairment of functional capacity and is inherent in the equipment itself. Examples of this are:

1. Over capacity
2. Inadequacy or changes in the state of art
3. Poor design

Residual Value

Frequently, business equipment will continue to have utility beyond its original anticipated useful life. Under the value-in-use (going concern) concept, equipment will retain value regardless of age or condition as long as it is in use. This value is referred to in appraisal as the residual value and usually represents 20-25% of RCN.

Case Problem

Cost Approach

Baker Beer and Wine Inc., is in the business of producing strange, but wonderful beverages. Their business personal property listing for the current year is listed below. They also have documented and convinced you that the machinery and equipment suffers functional obsolescence in the amount of 10%. Using the information provided below determine the appraised value of the property.

	Trend Factor	Life	Age
$1,000,000 in Machinery & Equipment	1.10	10	4
$ 200,000 in Furniture & Fixtures	1.04	10	2
$ 100,000 in Computers	1.03	5	3

Case Problem

Appraise the following using the Cost Approach.

1) A manufacturer of bicycles purchased an item of equipment 5 years ago at an invoice cost of $4,500. Taxes were $250, Freight was $250, and installation was $500. The equipment has a 10-year life. The trend factor for the equipment is 1.20.

2) A restaurant chain purchased a used meat processor. It has been determined that the meat processor has an 8-year life. The cost of the equipment to the restaurant is $20,000, however the original cost to the original owner was $30,000. The index factor for the two-year old equipment is 110.

3) Big Brown Computer Company installed a new assembly line. The assembly line cost $500,000 to install and begin operations. The assembly line has 6 years remaining in its useful economic life and it is 2 years old. The trend factor, or index factor, is 1.05.

4) T or F: When appraising property using the Cost Approach, you never need to see the property since you can get cost and useful life information on paper.

5) T or F: When appraising property using the Cost Approach, the appraiser needs to apply the index factor to the total installed cost first to arrive at Replacement Cost New and then the appraiser depreciates the property according to its useful economic life and it's age.

6) T or F: When using the Cost Index and Depreciation Schedules, provided by the North Carolina Department of Revenue, the appraiser does not need to apply the index factor because the percent good factors provided in the schedules already has the index factor incorporated in them.

The Department of Revenue schedules reflect 25% of original cost as the suggested residual value. The decision to apply the residual percentage to original cost rather than RCN was an attempt to be conservative in the valuation of older equipment and to further recognize obsolescence factors that are brought about through advances in technology in newer equipment. Also, the confidence level in index factors used to arrive at RCN is much less for older equipment as it is difficult to find comparable equipment being manufactured by vendors to determine price trends which are relative.

The Department of Revenue Trending Tables

The percent good tables published by the Department of Revenue for indexing and depreciation can often be confusing unless the appraiser understands the process used to develop the factors. The percent good factor represents a combination of the index factor and the amount of allowable straight-line depreciation based on the vintage year of the asset. It is expressed in this manner to eliminate additional mathematical computations in the appraisal process. The term percent good represents the remaining percentage of replacement value new after depreciation.

The following example demonstrates the computations necessary to incorporate trending and straight-line depreciation into an expression of percent good.

Schedule A - 10 Year Useful Life

Acquisition Year	Straight-Line Depr.	-	% Good	x	Trend Factor	=	Trended % Good Factor
2003	10	-	90		100		90
2002	20	-	80		102		82
2001	30	-	70		104		73
2000	40	-	60		106		64
1999	50	-	50		109		55
1998	60	-	40		111		44
1997	70	-	30		113		34
1996	80	-	20		115		25
1995							25 (Residual)

Pros and Cons of the Cost Approach

Advantages
- Sound Methodology
- Readily available data
- Taxpayers relate well to the concept

Disadvantages
- Difficult to measure depreciation
- Difficult to measure obsolescence

Case Problem

SELECTING THE APPROPRIATE SCHEDULE IN APPRAISING

During the listing period, you will receive many listings that may or may not have a good description of the type of business being conducted in your county. Consider the following business types and select the appropriate schedule you would use when appraising the business equipment. Also, be prepared to discuss ways to determine which schedule to use.

	Principle business in county	Schedule
1)	Sawmill	_____
2)	Convenience Store	_____
3)	Body Shop	_____
4)	Physician	_____
5)	Textile Manufacturing	_____
6)	Warehouse	_____
7)	One-hour photo lab	_____
8)	Grocery Store	_____
9)	Photographer	_____
10)	Brake Pad Manufacturing	_____
11)	Pizza Parlor	_____
12)	Internet Service Provider	_____
13)	Satellite Dish Leasing	_____
14)	Laundromat	_____
15)	Lease Security Systems	_____
16)	Granite Quarry	_____
17)	Printing	_____

Case Problem

Appraising Using the Department of Revenue's Trending Tables

Using the completed listing form located in section six and the Department of Revenue's trending tables located in section nine, appraise the property for 2007.

Measuring Obsolescence

Economic Obsolescence

The most common causes of economic obsolescence in machinery and equipment are the changes in market demand for products being manufactured by the equipment and also the general economic conditions that are present. Although economic obsolescence is generally not difficult to identify, the process of translating observed obsolescence into a mathematical estimate of accrued depreciation is difficult. The measurement of loss in value is generally computed by either of the following methods;

1. Market sales comparison of similar equipment, or
2. Capitalization of income losses

In either case, the availability of pertinent data is frequently difficult to obtain.

The shortage of current market data in comparable sales has caused appraisers to search for other ways to quantify economic obsolescence in machinery and equipment. Market data often does not represent true value transactions and at times, include other considerations such as land, buildings and inventories. Most equipment in the used equipment market is there because of liquidation, bankruptcy or other causes which could very well influence the sales price of the equipment. Many observations must be made in using market sales data as indicators of comparable values. It should be noted that many of the sales transactions on used equipment will not reflect true market value and as such, are not appropriate for ad valorem tax valuations.

As has been stated, machinery and equipment derives its value from its ability to generate a normal, profitable income to its owners during the expected useful life of the equipment. When the market demand for a product drops, causing income to be less than normal, the value of the equipment is affected.

If market demand for a product drops, the degree to which the lack of product demand affects the value of the equipment (or the economic obsolescence), can be calculated by analyzing the current operating statements of the business and comparing them to expected statements at normal demand levels.

One method that is useful in measuring the effect of adverse economic conditions on property valuation is to capitalize the net loss caused by the economic situation. This net loss can then be used as a form of additional depreciation. This methodology is demonstrated in the example on page 32 of Section 8.

The table (Present Worth of One Per Period) on the following page shows the present value of the right to receive $ 1 per period for a given number of periods at a stated interest rate. This table is constructed by subtracting compound interest. Calculators and computers are frequently used today rather than tables or charts.

Present Value of an Annuity of $1 Per Period for n Periods

Number of Payments	4%	5%	6%	7%	8%	9%	10%	12%	14%	15%
1	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.8929	0.8772	0.8696
2	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.6901	1.6467	1.6257
3	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4018	2.3216	2.2832
4	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.0373	2.9137	2.8550
5	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6048	3.4331	3.3522
6	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.1114	3.8887	3.7845
7	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.5638	4.2883	4.1604
8	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	4.9676	4.6389	4.4873
9	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.3282	4.9464	4.7716
10	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.6502	5.2161	5.0188
11	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	5.9377	5.4527	5.2337
12	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.1944	5.6603	5.4206
13	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.4235	5.8424	5.5831
14	10.5631	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.6282	6.0021	5.7245
15	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607	7.6061	6.8109	6.1422	5.8474
16	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126	7.8237	6.9740	6.2651	5.9542
17	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436	8.0216	7.1196	6.3729	6.0472
18	12.6593	11.6896	10.8276	10.0591	9.3719	8.7556	8.2014	7.2497	6.4674	6.1280
19	13.1339	12.0853	11.1581	10.3356	9.6036	8.9501	8.3649	7.3658	6.5504	6.1982
20	13.5903	12.4622	11.4699	10.5940	9.8181	9.1285	8.5136	7.4694	6.6231	6.2593
25	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226	9.0770	7.8431	6.8729	6.4641
30	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737	9.4269	8.0552	7.0027	6.5660
40	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574	9.7791	8.2438	7.1050	6.6418
50	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617	9.9148	8.3045	7.1327	6.6605
60	22.6235	18.9293	16.1614	14.0392	12.3766	11.0480	9.9672	8.3240	7.1401	6.6651

Depreciation for Economic Obsolescence
Machinery & Equipment Appraisal

Wankle Widget Company purchased and installed new equipment to be used in its widget constructing and finishing operation in Pitt County. The installed cost of the equipment was $6,500,000. The building in which the equipment is located is leased.

The income forecast at the time consideration was given to the purchase of this equipment was that a net operating income of $800,000 could be anticipated annually over the expected useful life of the equipment. The expected useful life was estimated to be 15 years.

Due to a decline in widget production in the last two years, the net operating income in 2006 was only $500,000. The expectation is that this will remain stable during the remaining life of the equipment. Assuming a discount rate of 8%, the following is an example of the computations involved in calculating the effect of obsolescence.

Economic Obsolescence Analysis

Anticipated net operating income annually	$800,000	
Actual net operating income annually	500,000	
Loss in net operating income annually	$300,000	
Remaining economic life of equipment	6 years	(15-9)
Discount rate	8%	
Capitalization factor: (Present value of 1 per period, 6 years)	4.6229	

Computation of Obsolescence

	Less NOR		Capitalization Factor		Eco. Obsol.
(l)	300,000	x	4.6229	=	$1,386,870

Computation of Value

	Cost installed	$ 6,500,000
	Index factor	x 1.18
	RCN	$ 7,670,000
	Depr % Good	x .40
	RCNLND	$ 3,068,000
(1)	Less economic obs.depr.	(1,386,870)
Est. true value 1-1-07		$ 1,681,130

Functional Obsolescence

Functional obsolescence in machinery and equipment can usually be measured in terms of (1) the impact that the cost of operating a machine has on the income that the equipment yields, (2) the impact of a machine's reduced production capacity or (3) the income that it is capable of yielding.

In the recent past, the textile industry was adversely affected by foreign imports. Foreign competitors have been able to manufacture goods at a lower cost than domestic firms due primarily to lower labor and overhead expenses, and a strong U.S currency. The net effect was lower prices for the imported goods than domestic firms could offer to the consumer. The result of this situation has encouraged many domestic textile firms to look for ways to cut manufacturing costs in order to compete with imports.

The cost of domestic labor has been a large factor in the cost of manufacturing. In order to reduce this cost, textile firms have been replacing perfectly sound, quality equipment with new state-of-the-art equipment. The new equipment requires less labor to operate but may be more expensive to purchase. A decision to purchase the new equipment usually hinges on the economic factors to be considered such as the overall measurement of cost and cash flow projection, income tax considerations, etc.

Depreciation for Functional Obsolescence
Machinery & Equipment Appraisal

Central Textile Company is in the business of manufacturing fabric for drapery products. Equipment used in their manufacturing process was purchased and installed at a cost of $1,500,000. The expected useful life of the equipment was estimated to be 8 years. Present annual labor cost to operate this equipment is $125,000. New equipment, which is similar to the subject equipment in all respects except that the labor cost to operate is estimated to be only $100,000 annually, is available in the market place today. Assuming an estimated 8% annual discount rate over the next four years, the measurement of functional obsolescence in the subject equipment is computed as follows:

Computation of Obsolescence

Excessive labor cost annually	$ 25,000
Capitalization factor	3.312127
(Present value of 1 per period, 8% discount rate, 4 years remaining life)	
Functional obsolescence	
(25,000 X 3.312)	= $82,800

Computation of Value

Cost installed	$ 1,500,000
% Good	x .61
(E)Physical value	$ 915,000
Less funct. obsol.	(82,800)
(E)True value 1-1	$ 832,200

This illustration measures the loss in value by capitalizing the annual loss over the remaining estimated useful life of the equipment. The discount rate is the estimated rate of return that could be expected from a normal safe investment in today's market.

The appraiser usually finds himself in a situation of having to rely on information submitted by the taxpayer in measuring functional obsolescence. Careful analysis of this information is important especially in dealing with the equipment which the taxpayer may be using as a comparable. Generally, the new state-of-the-art equipment will have a cost much greater than the replacement cost of the equipment being appraised. If in the example above, the cost of the new equipment had been $50,000 more than the subject equipment replacement cost estimate, then the obsolescence adjustment would have only been $32,800. (82,800 - 50,000)

Computation of Functional Obsolescence by Comparison Method.

	Existing Equipment	New Equipment
Age	5 years	New
Useful Life	10 years	10 years
Historical cost	$500,000	$650,000
Index Factor	1.10	NA
Estimated down time	10%	8%
Maximum Production Capacity	5000 units per day	7500 units per day
Actual Production Capacity	4500 units per day	NA

Looking at the information on the two types of equipment, the only items that can be compared as like items are the maximum production capacity and the historical cost. The estimated down time could be looked at, if it was not included in the maximum production capacity numbers. For this

example we assume that the down time is reflected in the capacity numbers. First the appraiser must calculate the investment per unit of production by dividing the cost new of the equipment by the maximum production capacity.

$$\frac{\text{Cost of equipment}}{\text{Production capacity}} = \text{Investment per unit of production}$$

New equipment

$$\frac{\$650{,}000}{7500 \text{ units}} = \$86.67 \text{ investment per unit of production}$$

Old equipment

$$\frac{\$500{,}000}{5000 \text{ units}} = \$100.00 \text{ investment per unit of production}$$

$$\frac{\text{New investment per unit of production}}{\text{Old investment per unit of production}} = \text{Factor}$$

$$\frac{\$\ 86.67}{\$100.00} = .8667 \text{ or } 86.67\%$$

This means that the old equipment is only 86.67% as efficient as the new. The amount of obsolescence due to a loss of productivity is 13.33% (100 - 86.67). Now the old equipment (subject property) can be appraised.

Cost	$500,000
Trend factor	x 1.10
RCN	550,000
% Good	x .50
Normal value	275,000
Less Obsol.	x .8667
Value	$ 238,342

Case Problem

Measuring Functional Obsolescence

Trinor Corporation, a manufacturer of environmentally safe cartons and containers has recently requested a reduction in value on a portion of its production line equipment. The equipment in question is 5 years old.

The product line of Trinor has been gaining in popularity since the company began 5 years ago. Because of the need for expanded capacity, Trinor recently purchased three new production machines and had them installed.

The three new machines have a production capacity nearly equal to the capacity of the five machines that Trinor started the business with.

Based on this information, Trinor contends that the five older machines have suffered severe functional obsolescence. Trinor has also produced sufficient evidence to show that no improvements can be made to the five machines to increase capacity.

The following facts are known by the appraiser:

Existing Equipment

Age 5 years
Useful life 10 years
Historical cost (ea) $374,200 (installed)
Index factor 1.18
Estimated down time due to maintenance and malfunction 8%
Maximum production capacity 8,000 units per day
Actual average production capacity 7,896 units per day

Recently Purchased Equipment

Age New
Useful life 10 years
Historical cost (ea) $432,000
Estimated down time 6%
Maximum production capacity 12,000 units per day
Actual average production capacity (not available)

Please render your opinion of value on the five older machines as of 1/1/07 considering the information available to you.

Review of Appraisal Concepts

The cost or accounting approach to value is the most common and widely used method of appraisal for business equipment. There is a considerable amount of written material, including past court cases and governmental regulations which relate to, and support the cost approach. The appraiser necessarily relies upon the reporting of cost information by the taxpayer and assumes the taxpayer's accounting conforms with the elements needed in the appraisal process. This is not always the case, and the examination of accounting records should be a periodic task of the appraiser. The audit is a necessary part of an accurate, acceptable and uniform assessment system utilizing the accounting (cost) approach.

The comparative sales approach can on limited occasions be used to compare with values derived from the more traditional cost approach. It sometimes is useful in supporting depreciation for economic or functional obsolescence. When the comparative sales approach is used, the appraiser should be careful to make the proper adjustments to arrive at a comparable value using the going-concern value required by N. C. law (in re AMP case). Machinery and equipment by it's nature is not purchased for re-sale. It is purchased for use in connection with a business activity and in most cases will never reach the used equipment market. The equipment that is made available to the used market is usually there because of forced situations such as bankruptcy or liquidation, or as a result of excessive obsolescence.

The income approach to value is probably the least applicable approach to the appraisal of business equipment and is seldom used by personal property appraisers. Very few types of machinery and equipment can be measured in terms of the revenue that they produce for the owner.

Special Situations in Appraisal

The appraisal of personal property is a complex task which requires extensive knowledge of many different industries. We have encountered several situations which seem to cause many appraisers difficulty. The following is a brief discussion of many of these problem areas.

New Owner of an Existing Business

There are two types of situations where a new owner will acquire an existing business. The first is a stock transfer, where the purchaser acquires all or a controlling number of outstanding shares in a company. The second situation is where a purchaser acquires only the assets of a company. New owners of an existing business will "book" the assets at their purchase price or some allocation of the purchase price. This new book cost may represent the fair market value of the assets but in many cases it does not. In each case, our first **goal** in making our appraisal is to use the actual historical installed cost whenever possible. There will be situations where this is not a viable alternative.

The appraiser should be especially careful using selling price as the determinant of value. Frequently, sales of operating businesses occur because of operating losses. The profitability of a

business plays an important role in the determination of the selling price in a sale transaction. Any time the new book cost is substantially more or less than the previous year's appraisal, the appraiser should **ask why.** In these situations the following questions should be asked:

Does the price paid represent fair market value?
Were all of the assets purchased from the prior owner?
Have any of the assets been sold by the new owner since the purchase?
Were the reported costs of the prior owner ever audited?
What is the purchase price allocation based on?
Was an appraisal made of the property prior to the sale?
Was an appraisal made of the property after the sale?
How many business locations were involved in the purchase?

In many cases the sales price paid and recorded in the accounting records of the owner does not represent fair market value or the appraised value determined by the county last year is not correct. A meeting with the new owner and a visit to the property to review the appraisal of the assets should be made. In these situations the appraiser should use his/her best judgement as to what represents market value.

Idle Equipment

Equipment that has been taken off production status on a permanent basis is considered to be idle equipment. This classification should not be confused with equipment that is temporarily idle due to not yet being placed in production (CIP), a downturn in the economy, seasonal production, routine maintenance, etc. Although we recommend in most cases that some additional depreciation adjustment be made to verified idle equipment, there is no firm guideline as to what adjustment should be made to the final value. In determining the amount of adjustment, the county appraiser must review each situation, taking into account all the factors affecting the property such as age, condition, past and future uses, marketability, remaining life, and reasons for the equipment being idle. The appraiser should consider that idle equipment is no longer producing income to the owner, and in making a **going concern** appraisal, some adjustment is usually appropriate.

Construction in Progress

The investment in production equipment which has not been placed into operation is typically identified in the taxpayers accounting records as **CIP**. As we have stated earlier, the CIP account represents tangible personal property and is to be listed. Our position with regard to the appraisal of this property is that it should be appraised at 100% of the investment as of the date of the appraisal. The property has suffered no physical wear and tear, therefore no allowance for depreciation is warranted. The appraiser should remember that, while rare, some new equipment may suffer from functional or economic obsolescence and where appropriate, adjustments to value should be made.

Interest During Construction

Construction projects take time to be completed. During the construction period, the expenditures for the materials, labor, and other resources used in creating the asset must be financed. Financing has a cost. The cost may take the form of explicit interest on borrowed funds, or it may take the form of a return foregone on an alternative use of funds, but regardless of the form it takes, a financing cost is necessarily incurred. This construction period interest, based on the premise that the historical cost of acquiring an asset should include all costs necessarily incurred to bring it to the condition and location necessary for its intended use, should be included in the cost and appraisal of a subject property.

Inventory and Non-Inventory Items

Frequently there is confusion between what items are inventory and what items should be classified as spare parts and tools. While there is no firm answer to be applied to all cases, as a general rule only property that is immediately consumed in the manufacturing process is an inventory cost. Tools such as drill bits and grinding wheels etc. are tools and should be appraised accordingly. Spare parts held by the owner to be used in repair of that company's equipment are not inventory and should be appraised at **cost.**

The appraiser should remember that some spare parts may suffer from functional or economic obsolescence. It is also possible that spare parts that sit on the shelf for extended periods of time may suffer physical depreciation. Where appropriate, adjustments to value should be made.

Supplies are an item that a taxpayer may consider an inventory item. Examples would include, but not be limited to: cleaning/janitorial supplies, office supplies, oils/lubricants for machinery, fuels held for consumption, medical/dental supplies in a doctor/veterinarian/dental office, barber and beauty supplies, restaurant supplies such as linens/tableware/flatware/glassware not listed in other categories. For property tax purposes, supplies on hand on January 1 are not considered exempt inventory items and should be appraised at **cost**.

Many taxpayers do not keep a perpetual inventory of their supply items or take an actual count at year end of the items that must be listed for property tax purposes. The expenditures for these types of items can be analyzed by examining the accounts in the general ledger. Once the applicable accounts are identified the total expenditures for the year can be determined and a methodology developed to estimate the amount on hand as of January 1. A general rule of thumb is that one month’s worth of supplies is a reasonable amount. This would result in listing 1/12 of the annual expenditures. Some taxpayers may be able to provide information that will indicate a different factor is appropriate. The taxpayer is the ultimate best source of information to be used to determine a methodology, but the appraiser must always keep reasonableness in mind.

Expensed Items

The appraiser should determine what type of property is being purchased and expensed and then determine an acceptable useful life for the property. This category should then be carried only for the useful life of the category and then dropped from the appraisal. For example, if a company purchases and expenses only small office equipment such as staplers, hole punchers etc., a three year life may be appropriate. In this case the appraiser would only consider expensed property for three years. The assumption is that property older than three years will have been discarded.

Leased Equipment

As a general rule, leased equipment should be appraised at the same rate as owned property. The only exception to this general rule is situations where the lessor is also the manufacturer of the property. Under this situation the manufacturer/lessor may report current retail selling price instead of the actual cost of the property. When making appraisals of this type of property, no index factor should be applied; instead the appraiser should use the straight-line tables.

Leasehold Improvements

One of the most difficult areas to handle as a personal property appraiser is leasehold improvements. The appraisal of leaseholds is a function of many variables such as, length of lease, type of improvement, abandonment, etc. The best way to appraise leasehold improvements is to identify what type of property it is and appraise it accordingly. Leasehold improvements tend to be more like real property and generally leaseholds are appraised on a 10 to 20 year life or the life of the lease (including all re-lease options) **whichever is longer.**

The most crucial element in the taxation of leaseholds is that they not be double taxed. Real property and personal property appraisers should examine the basis of the leasehold and determine where it should be handled.

Public Service Companies

The North Carolina Department of Revenue is charged by statute with appraising all public service companies. It is very important for the counties to understand which of the public service companies' property the Department appraises and which the counties are to list and appraise. The companies list with the Department the property which is to be appraised by the Department. The Department appraises the property and sends the values to the counties for them to assess and collect the taxes. Below is a definition of each type of property and an explanation of who the property is to be listed with and which property is appraised by the Department and the counties.

§ 105-333. Definitions.

Public service company:

A railroad company, a pipeline company, a gas company, an electric power company, an electric membership corporation, a telephone company, a telegraph company, a bus line company, an airline company, or a motor freight carrier company. The term also includes any company performing a public service that is regulated by the United States Department of Energy, the United States Department of Transportation, the Federal Communications Commission, the Federal Aviation Agency, or the North Carolina Utilities Commission, except that the term does not include a water company, a radio common carrier company as defined in G.S. 62-119(3), a cable television company, or a radio or television broadcasting company.

Railroad company:

A company engaged in the business of operating a railroad to, from, within or through this State on rights-of-way owned or leased by the company. It also means a company operating a passenger service on the lines of any railroad located wholly or partly in this State.

§ 105-334. Duty to file report; penalty for failure to file.

(a) Every public service company, whether incorporated under the laws of this State or any other state or any foreign nation, whose property is subject to taxation in this State, shall prepare and deliver to the Department of Revenue each year a report showing (as of January 1) such information with regard to the property it owns and the system property it leases as the Department of Revenue may by regulation prescribe. This report shall be filed on or before the last day of March, and the following affirmation, which shall be annexed to the report, shall be signed by a principal officer of the public service company making the report:

Under penalties prescribed by law, I hereby affirm that to the best of my knowledge and belief this report, including any accompanying statements, inventories, schedules, and other information is true and complete.

(b) Any individual who willfully subscribes a report required by this section which he does not believe to be true and correct as to every material matter shall be guilty of a Class 2 misdemeanor.

(c) For good cause the Department may grant reasonable extensions of time for filing the required reports.

(d) The Department may require any additional reports or information it deems necessary to properly carry out its duties under this Article.

(e) The provisions of G.S. 105-291 and 105-312 are made specifically applicable to all proceedings taken under this Article.

Airline Companies

Airline Company - A public service company engaged in the business of transporting passengers or property by aircraft. The company must be a for hire carrier operating within, into, or from this state.

1. The North Carolina Department of Revenue shall appraise the flight equipment owned or leased by an airline company which operates scheduled flights within, into, or from North Carolina.

2. The North Carolina Department of Revenue is also responsible for appraising all of the North Carolina domiciled licensed motor vehicles that are owned or leased by the Airline Company.

3. The counties shall appraise the real property and all other personal property not appraised by the North Carolina Department of Revenue.

Bus Line Companies

Bus Line Company - A public service company engaged in the business of transporting passengers or property by motor vehicle over the public highways of this State. The company must be a for hire carrier operating within, into, or from North Carolina. This does not include buses which operate on the public streets of a particular city.

1. The North Carolina Department of Revenue shall appraise all licensed motor vehicles owned or leased to a bus line company.

2. The counties shall appraise all real property and all other personal property not appraised by the North Carolina Department of Revenue.

Motor Freight Carrier

I. Motor freight carrier - A public service company engaged in the business of transporting property by motor vehicle for hire over the public highways of this state.

II. The N.C. Department of Revenue is responsible for the listing and appraising of linehaul equipment and motor vehicles owned or leased to a motor freight carrier if the company meets at least one of the following requirements:

1. Intrastate - companies having at least two terminals inside North Carolina

2. Interstate - companies having one terminal in North Carolina and one in another state

3. Companies domiciled in North Carolina which have a terminal in North Carolina and are paying property tax in another state.

4. Non domiciled North Carolina companies having at least one terminal inside the state.

III. Locally Assessed Property

The counties are responsible for the listing, appraising and assessing of the following types of property.

1. Motor freight carriers which have only one terminal.

2. A company's trucks which hauls its own products.

3. Real property and all personal property other than licensed motor vehicles.

4. Owner operated vehicles leased to a motor freight carrier should be listed with the counties.

Water Companies

Contribution in Aid of Construction and Acquisition Adjustment should not be included in the valuing of the company.

1. The developer recovers his cost in the water system when he sells the lots.

2. The water system is actually being valued when the county appraises each lot in the subdivision.

3. The equipment, such as pumps, tanks and supplies, should be listed by the water company.

Cablevision Companies

The major components of a cable company are:

1. Headend equipment - all of the amplifying equipment and any other special equipment in the building. (12 year life)

2. Receiving equipment - this is the part of the system that picks up the signal from the satellite. (12 year life)

3. Distribution systems - all of the cable and wiring that runs along the poles or under the ground. (10 year life)

4. Subscriber connections or converter box - this is the box which connects to your television, the box that is usually located on top of your television. (3 year life)

5. Towers - self explanatory (25 year life)

Billboards

The advertising industry is big business all over this state and one of the best methods for advertising is through the use of billboards on major highways, buildings, and other selected areas. Included in Section 9 of this manual, is the current valuation guide being utilized by counties to appraise and value billboards in their respective taxing jurisdictions. At the time this 2007 Personal Property Appraisal Manual was being printed, the Property Tax Division staff was in the process of reviewing and updating the Billboard Structures Valuation Guide to reflect recent cost figures and include new technological advances in this type of personal property. A new billboard valuation guide should be available to counties for the January 1, 2008 valuation date. For purposes of this course, a review of the Billboard Valuation Guide in Section 9 would be appropriate and beneficial to the personal property appraiser.

USPAP

As a result of abuse in the appraisal process, reputable appraisal organizations realized that providing credible appraisal services is necessary to the general economic well being of society. A genuine social need exists for appraisal services by ethical and competent individuals. Leaders of professional appraisal organizations saw the need for a common set of appraisal standards. Eight US based organizations and the Appraisal Institute of Canada formed a Committee to develop what was to become, in January 1989, the Uniform Standards of Professional Appraisal Practice (USPAP).

The Uniform Standards of Professional Appraisal Practice (USPAP) are the generally accepted standards for professional appraisal practice in North America. USPAP contains standards for all types of appraisal services. Standards are included for real estate, personal property, business and mass appraisal. USPAP was created with the expressed purpose of promoting and preserving public trust and confidence in professional appraisal practice. Congress recognizes USPAP as the generally recognized standards of practice in the appraisal profession and authorized The Appraisal Foundation, through the Appraisal Standards Board, to exercise all authority and power over the content of USPAP.

Although the ASB writes, amends and interprets USPAP, the Board does not enforce USPAP. Through FIRREA (Financial Institutions Reform, Recovery, and Enforcement Act of 1989), the Federal government has mandated that the states enforce real property appraiser's compliance to USPAP. Professional appraisal associations also have the authority to enforce USPAP compliance by their members.

IAAO, USPAP, and the Standard on Valuation of Personal Property

The International Association of Assessing Officers (IAAO), is a non profit organization that is a recognized leader and respected source for innovation, education, and research in property appraisal with regards to assessment administration and property tax policy. Although there are many other appraisal organizations, such as the Appraisal Institute and the American Society of Appraisers, IAAO is generally considered the leading member organization for assessment professionals.

IAAO requires that all appraisal work performed by its members in the United States and Canada be compliant with USPAP and the IAAO Code of Ethics and Standards of Professional Conduct. USPAP Standards relevant to the valuation of personal property are:

- Standard 6: Mass Appraisal, Development and Reporting;
- Standard 7: Personal Property Appraisal, Development; and
- Standard 8: Personal Property Appraisal, Reporting.

Standard 6 defines the appropriate form for developing mass appraisal methods and the structure for reporting the results. It states that in developing a mass appraisal, an appraiser must be aware of,

understand, and correctly employ those recognized methods and techniques necessary to produce and communicate credible mass appraisals. Eight rules follow this statement above. These statements, among other items, require the appraiser to follow their state's appraisal laws, emphasize the critical importance of continuing education so appraisers maintain competency, require the appraiser to consider appropriate market information, require the use of generally recognized appraisal techniques, and require the appraiser to not render a mass appraisal in a careless or negligent manner.

Standards 7 and 8 provide guidance on the proper appraisal process to follow so that the results are based on sound conclusions and are well documented. Standard 7 states: In developing a personal property appraisal, an appraiser must identify the problem to be solved and the scope of work necessary to solve the problem and correctly complete research and analysis necessary to produce a credible appraisal. Standard 8 states: In reporting the results of a personal property appraisal, an appraiser must communicate each analysis, opinion, and conclusion in a manner that is not misleading.

IAAO produces additional standards for appraisal. One of those standards is the "Standard on Valuation of Personal Property" and is found in the support materials section of this manual. This standard represents a consensus in the assessing profession relating to personal property appraisal. The standard is advisory in nature and does not replace our statutes or standards adopted by the North Carolina Department of Revenue. However, the Department of Revenue supports this Standard, works closely with IAAO, and recommends reviewing this standard to help establish relevant goals and guidelines in the appraisal and assessment of personal property in your jurisdiction. Although every item in the standard is not applicable in North Carolina, we believe reviewing this standard will demonstrate that this appraisal course follows the standards of appraisal and assessment of personal property in other states and nations.

IAAO, offers several appraisal courses that support and expand on the appraisal fundamentals we have explored in this course. A list of all IAAO courses and information about the organization can be found on their website at www.iaao.org.

The Appraisal Profession

As we discussed at the beginning of the course, an appraisal by itself is nothing more than an opinion of value. The quality of the appraisal determines how useful the opinion of value will be. Appraisal quality is not determined by any single factor, but will be determined by several factors such as the reliability of the data, the appraiser's ethics, experience, and knowledge, and the accuracy of the calculations. The best data available given to an excellent appraiser would result in a poor appraisal if mathematical errors were not corrected. An appraiser can minimize errors by reviewing and by having peers review their appraisals.

After successful completion of this course, The Fundamentals of Listing and Assessing (Machinery Act course), and a written request from the assessor in your jurisdiction, you will be certified by the North Carolina Department of Revenue as a Personal Property Appraiser. This is

the minimum legal requirement for anyone who appraises personal property for the county. Although this is a significant accomplishment by itself, it marks only the beginning of what it means to be an appraiser. Although nothing can replace appraisal experience itself, there are other educational levels to reach for as you continue your appraisal profession. The North Carolina Association of Assessing Officers (NCAAO) offers an appraisal certification for both real and personal property. To achieve this certification, additional coursework and experience is required. The IAAO has several professional designations that demonstrate an appraiser's dedication to education and experience. The Personal Property Specialist (PPS) designation is awarded to IAAO members demonstrating their achievement in personal property appraisal. This is demonstrated by many hours of coursework, writing a demonstration appraisal report or passing an 8-hour case study examination, and passing a final 4-hour master exam. North Carolina statutes require continuing education and the Department of Revenue encourages all appraisers to reach for additional certifications and designations through the NCAAO, IAAO, or other professional appraisal organizations.

Summary

The appraisal of business machinery and equipment can be a highly technical undertaking, and fundamental to this is a basic understanding of:

1. The legal requirements
2. Generally recognized appraisal techniques
    a. cost approach
    b. market (sales comparison) approach
    c. income approach
3. Generally accepted accounting principles

The appraiser should also strive to become familiar with the types of property being appraised and the basic operation of the industry in the case of industrial equipment. This can be a difficult task to accomplish due to the large amount of property within a taxing jurisdiction, but it is necessary and well worth the effort.