National Tooling &
Machining Association

NTMA

PRECISION

Business Management Advisory

For Precision Custom Manufacturers

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A DEPRECIATION GUIDE FOR TOOLING AND MACHINING COMPANY OWNERS

I. DEPRECIATION-A GENERAL DEFINITION

Depreciation is a system of accounting that distributes the cost of capital assets over their estimated useful lives in a systematic and rational manner. The primary thrust of the theory of depreciation is to match the deduction for exhaustion, wear and tear, and normal obsolescence of property with the income produced from the use of the assets. The concept seems simple, but the rules under the Internal Revenue Code keep changing. In recent years, the Internal Revenue Code has had four different depreciation systems. Depending upon the age of a particular business, there may be a number of different depreciation systems at work simultaneously in any one business.

II. THE HISTORY OF DEPRECIATION DEDUCTIONS

The amount of the annual depreciation deduction is primarily the product of two variables: the asset's useful life in the business and the method for allocating the deduction to each period.

A. Useful Life of Assets

The total length of an asset's life will affect the amount of the depreciation deduction in each accounting period of the business. The asset's life is inversely proportional to the amount of the deduction in each period. The shorter the asset's life, the larger the deduction will be in each period. The longer the asset's life, the smaller the deduction will be in each period.

1. Reasonable Method (1913-1962)

The Revenue Act of 1913 allowed the taxpayer to select freely any "reasonable period" for depreciation. This loose language led to a constant tug of war between the taxpayers and the Department of Treasury.

2. Bulletin F-1942

As the Treasury received greater authority from Congress during the Depression, it began to impose administrative guidelines that restricted the taxpayer's right to select "reasonable periods." These administrative guidelines were detailed in a seemingly endless list of assets in Bulletin F. The Treasury Department listed separate lives of each asset and often changed the life of an asset from industry to industry.

3. Revenue Procedure Guidelines (1962-1970)

In the 1960s, the Internal Revenue Service began issuing Revenue Procedures, which grouped assets into broad, industry-wide classifications. Approximately 75 classes of assets were created. Each class was assigned a guideline useful life, which was 30 to 40 percent shorter than the applicable lives listed in Bulletin F. The intent of the class life system was to reduce the number of controversies between taxpayers and the Internal Revenue Service over the definition of "reasonable period."

4. Class Life Asset Depreciation Range System (ADR) (1971-1980)

Prior to 1971, taxpayers had a great deal of freedom in determining both the useful life and method of depreciation for assets utilized in their businesses. The Internal Revenue Service was placed in a difficult administrative position, since the taxpayer's and the Service's definition of "reasonable period" often differed drastically. In an effort to reduce the number of such disputes, the Internal Revenue Act of 1971 authorized the creation of the ADR system. Under this system, class lives or asset guideline periods are provided for broad classes of assets. The ADR system generally applies to all assets placed in service after December 31, 1970 and before January 1, 1981.

B. Depreciation Methods

1. Straight-Line

Before 1954, taxpayers commonly used the Straight-Line Method of Depreciation. Straight-line divides the depreciable cost of an asset equally over each period within the assets useful life.

2. Accelerated Methods

The Internal Revenue Code of 1954 authorized the utilization of two accelerated methods: the declining balance method and the Sum-of-the-Years-Digits Method. Each of these methods attempted to recognize the fact that actual economic depreciation is greater in earlier years than in later years. Each method acted to shift more of the depreciation deduction onto the earlier years.

C. Cost Recovery in the 1980s

Prior to 1981, depreciation changes were either related solely to the useful life of assets or the method of depreciation. Under the Reagan administration, Congress acted to change depreciation on both fronts at the same time.

1. Accelerated Cost Recovery System (ACRS) - 1981

In 1981, Congress introduced the Accelerated Cost Recovery System (ACRS) in an effort to standardize asset lives and accelerate depreciation deductions. Under the ACRS system, assets were grouped into general classes. Personal property groupings included the following: three years for automobiles and light trucks, five years for furniture and equipment; and 15 years for other public utility equipment; ten years for railroad tank cars, mobile homes, and certain public utility equipment; and 15 years for other public utility equipment. Real property, such as buildings and additions to buildings, was originally placed in a 15-year class; this period was subsequently lengthened to 18 and 19 years, respectively.

The accelerated cost recovery system (ACRS) generally applies to property placed in service after 1980 and before January 1, 1987. Basically this system allows for the rapid recovery of the cost of assets using fixed recovery schedules over a prescribed statutory period. It is much simpler to use than the ADR system since it does not require the taxpayer to estimate the depreciable property's useful life in salvage value.

2. Modified Accelerated Cost Recovery System (MACRS) - 1986

In 1986, Congress again revised standardized lives; however, this time it spread the deduction for depreciation over more years with the introduction of the modified cost recovery system (MACRS). Under the MACRS, assets are grouped into recovery periods that are based upon the asset depreciation range (ADR) system, which was originally created in the 1970s. The cost of depreciable personal property is generally recoverable over a 3-, 5-, 7-, 10-, 15-, or 20-year period, depending upon which class it falls into. Real property will generally fall into either a 2.75 or 39-year class life. Since MACRS applies to most depreciable, property placed in service after 1986, we will concentrate the remainder of our discussion on the current depreciation rules.

III. CURRENT DEPRECIATION RULES

The Modified Accelerated Cost Recovery System (MACRS) is an entirely new system of depreciation. The deduction for depreciation under MACRS is a product of three variables: useful life (the applicable recovery period), the applicable method, and the applicable convention.

A. Applicable Recovery Periods

MACRS utilizes the ADR class life system created in 1971 for the purpose of making recovery period classifications.

The following table lists the MACRS Recovery Periods for various assets:

Recovery Period	Description
3 years	ADR midpoint life of four years and less, excluding cars and light trucks.
5 years	ADR midpoint life of more than 4 years and less than 10 years; plus cars and light trucks, qualified technological equipment, certain research and development (R&D) property.

Recovery Period	Description
7 years	ADR midpoint life of more than 10 years and less than 16 years; plus personal property without an ADR life.
10 years	ADR midpoint life of more than 16 years and less than 20 years.
15 years	ADR midpoint life of more than 20 years and less than 25 years.
20 years	ADR midpoint life of more than 25 years for personal property.
27.5 years	Residential rental property
39 years	Nonresidential real property

The class lives of specific assets are generally published by the Internal Revenue Service in periodic editions of The Internal Revenue Bulletin as Revenue Procedures. The Revenue Procedures list assets by industry groupings, a narrative description, an ADR and by an Alternative Depreciation System (ADS) recovery period (which is for Alternative Minimum Tax (AMT) purposes). The Revenue Procedures are updated by the Internal Revenue Service on a not-less-than-annual basis.

The following is a sample from Rev. Proc. 87-56, 1987-42 CB 17 of specific assets that are common to tooling and machining companies:

Common MACRS Class Assets

Class General Depreciation System	Rev. Proc. 87-56 Class	Alternate Depreciation System Life	Description
3-year	00.26	4	Tractor units (over-the-road)
	30.11	4	Special tools and devices used in manufacture of rubber;
	30.21	3.5	Special tools used in the manufacture of finished plastic products;
	32.11	2.5	Special tools used in the manufacture of glass products;
	34.01	3	Special tools used in the manufacture of fabricated metal products; and
	37.12	3	Special tools used in the manufacture of motor vehicles.
			"Special tools" includes jigs, dies, fixtures, mold patterns, gauges and special shipping devices. Does not include general-purpose, small tools such as wrenches and drills or other general-purpose equipment.
5-year	00.22	5	Automobiles and taxis.
	00.241	5	Light, general-purpose trucks (less than 13,000 lbs.).
	00.242	6	Heavy, general-purpose trucks.
	00.12	5	Information systems - computers and peripheral equipment.
	00.13	6	Data handling equipment - typewriters, calculators, adding machines, copiers, and duplicating equipment.
	00.21	6	Noncommercial airplanes and all helicopters.
	28.0	9.5	Assets used to manufacture basic organic and inorganic chemicals. Also includes assets used to manufacture photographic supplies such as film, developing paper and developing chemicals.
	37.33	6.5	Special tool used in ship and boat building.
	B	5	Qualified technological equipment - computer and peripheral equipment, hi-tech telephone station equipment installed on customer premises and hi-tech medical equipment.
	C	-*	R&D property in Sec. 168(e)(3)(b).
	15.0	6	Construction equipment.
7-year	00.11	10	Office furniture, desks, files, safes, fixtures and equipment (including certain communications equipment).
10-year	00.28	18	Vessels, barges, tugs, and similar water transportation equipment.

*** Use class life or 12 years.**

B. Applicable Method

Personal property under MACRS is generally calculated using the 200 percent declining balance method, with a switch to the straight-line method during the first year in which straight-line will yield a larger deduction.

The applicable method for 15-year and 20-year property is the 150% declining balance method, with a similar provision for switching to the straight-line method.

The applicable method for both residential and nonresidential real property is the straight-line method. However, a taxpayer can voluntarily elect straight-line depreciation for any MACRS property as long as the election extends to all property of the same class and is placed in service during the year of the election.

C. Applicable Convention

1. Personal Property

MACRS personal property placed in service (or disposed of) during any taxable year is treated as if it were placed in service (or disposed of) on the midpoint of that year. This is called the half-year convention.

The IRS depreciation tables factor this convention in by allowing only one-half of the 200 percent declining balance amount in the first year (See D).

2. Real Property

MACRS real property is generally treated as if it were placed in service (or disposed of) on the midpoint of the month in which it is placed in service (or disposed of). This is called the mid-month convention.

3. The Mid-Quarter Exception

a. If the aggregate basis of property placed in service during the last three months of the fiscal year is more than 40 percent of the aggregated basis of property placed in service during the entire fiscal year, then a mid-quarter convention is used.

b. Nonresidential real property and residential rental property are not taken into account for purposes of determining whether the mid-quarter convention applies; nor does that convention apply to such property, even if the convention is otherwise applicable.

D. IRS Depreciation Tables

The following table lists the applicable percentage of cost, which is recoverable as depreciation for each year under the 200 percent declining balance method, utilizing the mid-year convention.

IRS Depreciation Tables

Recovery Year	3-Year Class	5-Year Class	7-Year Class	10-Year Class
1	33.00	20.00	14.28	10.00
2	45.00	32.00	24.49	18.00
3	15.00	19.20	17.49	14.40
4	7.00	11.52	12.49	11.52
5		11.52	8.93	9.22
6		5.76	8.93	7.37
7			8.93	6.55
8			4.46	6.55
9				6.55
10				6.55
11				3.29

Similar tables are published in Rev. Proc. 87-56, 1987-2 IRB 674, and Rev. Proc. 87-57, 1987-2 IRB 687, for the mid-quarter and mid-month conventions.

E. First-Year Election to Expense (Section 179)

Historically, taxpayers have been able to elect to expense up to $17,500 of the cost of personal property used in a trade or business provided that the amount expensed does not exceed the income derived from any active trade or business.

"This limitation of $17,500 has been increased in stages to $25,000 in the year 2003 by the1986 Tax Act. The new limitations are as follows:

Tax Year Beginning In	Maximum Expense Deduction
1997	$18,000
1998	$18,500
1999	$19,000
2000	$20,000
2001 - 2002	$24,000
2003	$25,000

Furthermore the amount of the deduction is increased by $20,000 for property used by a business located in an empowerment zone.

Any nondeductible portion may be carried forward subject to the annual limit (IRC Section 179(b)(3), as amended by TAMRA). In order to qualify for the Section 179 deduction, the taxpayer must materially participate in the business (IRC Section 179 (d)(1)).

The annual ceiling is reduced dollar for dollar for taxpayers whose total investment in tangible personal property is greater than $200,000. Furthermore, if the property is converted to non-business use prior to the end of the property's recovery period, the difference between expensing and the allowable MACRS deductions is recaptured.

EXAMPLE

A corporation conducting an active business purchases and places in service $201,000 of Section 179 property during 1996. However, its taxable income before the Section 179 deduction is $6,000. The limitation would be applied as follows:

1. Apply the $17,500 limit of Sec. 179(b)(1).

2. Reduce the $17,500 by the amount of property acquired in excess of $200,000 under Sec. 179(b)(2). In this case, the limit is $16,500 [$201,000 - $200,000 = $1,000].

3. Apply the limit under Sec. 179(b)(3). In this case, the deduction is limited to $6,000. The amount of the carryover is $10,500 [$16,500 - $6,000].

F. Special Rules

1. Salvage Value

There is no salvage value recognized under MACRS.

2. Automobiles

An auto must be written off over a five-year period. Depreciation for luxury automobiles placed in service in 1996 with a cost in excess of $12,685 cannot exceed the following amounts:

Year	Amount
1*	$3,060
2	4,900
3	2,950
4**	1,775

* Year placed in service.
** And each succeeding year.

Note:
If non-business use of the auto exceeds 50 percent, the depreciation deductions must be computed using the Alternative Depreciation System (ADS).

3. Optional Allowance for Actual Use

EXAMPLE

The taxpayer buys a heavy truck for $20,000, which is considered to be five-year property under MACRS, but the truck will not realistically last for five years. The best estimate is that the truck will last for about 200,000 miles (or about three years, based on estimated use). If the taxpayer locked into a five-year life?

No. He can elect out of MACRS and depreciate the truck at the rate of 10 cents per mile (the $20,000 cost divided by 200,000 - the estimated miles the truck will last). For example, if the truck is driven for 80,000 miles in the first year, the depreciation for that year would be $8,000 (10 cents X 80,000 miles).

The right to use this mileage method is found in the Internal Revenue Code (the Code). Section 168(f)(1)(B) tells the taxpayer he can use the unit-of-production method or any method of depreciation not expressed in a term of years.

4. Additions and Improvements

In general, depreciation on additions or improvements is computed in the same manner as the property to which the addition or improvement is added would be depreciated if it were currently placed in service under MACRS.

EXAMPLE

Taxpayer owns and operates its plant, which was placed in service in 1981 and is being depreciated under ACRS over a period of 15 years. The taxpayer constructs an addition to the building in 1994. The addition should be depreciated under MACRS over 39 years.

5. Lessee's Leasehold Improvements

Prior to the start of MACRS, lessees could recover the cost of leasehold improvements over the shorter of the ACRS recovery period of the remaining terms of the lease. Under MACRS, lessees are treated as any other owner/taxpayer for purposes of determining recovery deductions for lessee's improvements. Therefore, the depreciation deduction will be determined without regard to the lease term. Accordingly, with regard to any leasehold improvement that would be subject to a 39 year life if placed in service by the owner of the property, it now must be amortized by the lessee over a 39 year life, irrespective of his remaining lease term. Any unamortized cost remaining at the end of the lease term may be deducted in full at that time.

6. MACRS Cost Recovery Procedures for Short Taxable Years

The IRS has issued guidelines for computing depreciation allowances for tangible property when property is placed in service in a taxable year consisting of less than 12 months. Rev. Proc. 89-15, IRB 1989-9 also covers situations in which property is disposed of prior to the end of the recovery period and when the recovery period for the property includes all or part of a short taxable year other than the year the property is placed in service.

The special rules of Rev. Proc. 89-15 apply in each of the following situations:

a. In the first year of new business entities,

b. In the last year of a partnership and corporations,

c. Wherever a taxpayer changes its fiscal year,

d. When a partner in a partnership dies or a basis election is made by a partnership, or

e. Whenever property is transferred to a partnership or a controlled corporation.

IV. ALTERNATIVE DEPRECIATION SYSTEM (ADS)

An alternative cost recovery system has been created under MACRS for the purpose of applying the Alternative Minimum Tax (AMT) provisions, computing Adjusted Current Earnings (ACE) of a domestic corporation, and computing the depreciation deduction for foreign use and tax-exempt property and property financed through tax-exempt bonds. Generally, the applicable depreciation method is straight-line, using the asset's ADR midpoint life (ADS life). However, for purpose of computing the minimum tax, a 150 percent declining balance depreciation over the ADS life is used to measure the tax adjustment on personal property.

EXAMPLE

On January 2, 1996, a corporation purchases equipment costing $100,000. It has an economic life of ten years and no salvage value. The equipment's ADS life is eight years. It is a five-year class item, and the 40 percent rule does not apply; total Section 179 property acquired does not exceed $200,000. As many as four depreciation schedules could be required.

Book depreciation (straight-line):	
$100,000 X 1/10	$10,000
Tax depreciation (200% DB):	
Sec. 179 expense	$17,500
$82,500 X 1/5 X 200% x 1/2	16,500
	$34,000
AMT depreciation (150% DB):	
Sec. 179 expense	$17,500
$82,500 X 1/8 X 150% X1/2	7,734
	$25,234
ACE depreciation (which is straight-line):	
Sec. 179 expense	$17,500
$82,500 X 1/8 X 1/2	5,156
	$22,656

A separate schedule of annual depreciation deductions should be maintained. The difference between the annual MACRS depreciation amount on the ADS depreciation amount is an adjustment for the purposes of computing the Alternative Minimum Tax (AMT).

A separate AMT schedule of the adjusted basis of assets must also be maintained.

If an asset is disposed of before it has been fully depreciated under both MACRS and ADS, there will be a difference in the amount of gain (loss) recognized under each system. This difference upon disposition will also be an adjustment for AMT purposes.

Finally, in those states that do not accept MACRS depreciation, a fifth depreciation schedule will have to be maintained.

For purposes of computing regular depreciation on property otherwise eligible for MACRS, taxpayers may irrevocably elect the the alternative depreciation system ADS described above or the straight-line method over the MACRS recovery period on a class-by-class, year-by-year basis. By making this election taxpayer could avoid the burden of keeping multiple depreciation schedules.

V. ADJUSTED CURRENT EARNING (ACE) DEPRECIATION

The Revenue Reconciliation Act of 1989 made several changes to the calculation of Adjusted Current Earnings (ACE) calculation for alternative minimum tax purposes, particularly ACE depreciation. The ACE adjustment can be positive or negative. If ACE depreciation is less than AMT depreciation, then ACE is increased by the difference. If ACE depreciation is greater than AMT depreciation, then ACE is decreased by the difference.

The Revenue Reconciliation Act of 1993 eliminated the ACE depreciation adjustment for property placed in service after 1993. Separate calculations continue to be required for all property placed in service before 1994.

Calculating ACE Depreciation:

a. Property Placed in Service After 1989 and Before 1994.
The taxpayer is required to use straight-line over the ADS life for personal property and 40 years S/L for real property.

b. MACRS Property Placed in Service Before 1990 and After 1987. The ACE depreciable basis must be calculated. This basis is the adjusted AMT basis of the asset at close of 1989 tax year. The depreciation is computer using straight line over the remaining recovery period.

c. ACRS Property
ACE depreciable basis is the adjusted regular tax basis of the asset at close of the 1989 tax year.

Depreciation is computer using straight line over the remaining recovery period using ADS recovery period.

d. Pre 1981 Property
ACE depreciation equals regular tax depreciation.

A separate schedule of annual depreciation deductions should be maintained. The difference between the annual MACRS depreciation and the alternative minimum tax depreciation is an adjustment for the purposes of computing the Alternative Minimum Tax (AMT).

A separate AMT schedule and ACE schedule of the adjusted basis of assets must also be maintained.

If an asset is disposed of before it has been fully depreciated under MACRS, AMT and ACE, there will be a difference in the amount of gain (loss) recognized under each system. This difference upon disposition will also be an adjustment for AMT and ACE purpose.

Finally, in those states that do not accept MACRS depreciation, a fifth depreciation schedule will have to be maintained.

For purposes of computing regular depreciation on property otherwise eligible for MACRS, taxpayers may irrevocably elect the alternative depreciation system AMT described above or the straight-line method over the MACRS recovery period on a class-by-class, year-by-year basis. By making this election taxpayer could avoid the burden of keeping multiple depreciation schedules.

VI. CONCLUSION

Depreciation has become extremely complex as the rules have continued to change. As a result, it is desirable for owners to seek the advise of competent professional whenever they are implementing, or changing present depreciation methods.

This BMA was prepared by Allen L. Berger, CPA; Blackman, Kallick, Barterlstein, LLP, Chicago, IL for NTMA and its members.