

AH581

ASSESSORS' HANDBOOK

EQUIPMENT INDEX FACTORS

ASSESSMENT STANDARDS DIVISION

DEPARTMENT OF PROPERTY TAXES

CALIFORNIA STATE BOARD OF EQUALIZATION

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FOREWORD

This handbook section contains several tables of equipment index factors which should be useful in factoring acquisition costs of equipment found in taxpayers' books of account to an estimate of current replacement cost. The table entitled Commercial Equipment Index Factors was compiled based on equipment price level change data published by Marshall and Swift Publishing Company. The tables entitled Industrial Machinery and Equipment Index Factors and Agricultural and Construction Equipment Index Factors were derived by the Assessment Standards Division using the Bureau of Labor Statistics producer prices and price index as a basis.

Table V lists percent good factors for machinery and equipment. The rate of return used to calculate these factors is calculated annually and is shown on the table. These factors are derived from a system developed by the Iowa State University Engineering Research Center. An explanation of the methods of calculation is contained in a separate manual, Assessors' Handbook Section 581A, The Explanation of the Derivation of Equipment Percent Good Factors, which was adopted in December 1980.

For agricultural or construction mobile equipment, we suggest several valuation guides that can be used for valuing the equipment using the sales comparison approach. If the valuation guides are not used, then the cost approach can be employed. The appropriate index from Table III should be applied to equipment cost along with a percent good factor from Table IV. The depreciation factors found in Table IV are derived from a detailed analysis of used equipment sales data.

Chapter VI of this handbook section identifies certain improvements and lists the most common sub categorization of those improvements as either "structures" or "fixtures. "



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I. USE OF EQUIPMENT INDEX FACTORS

The factors shown in the following tables may be used to estimate current replacement costs for various groups of equipment when applied to the acquisition costs shown in books of account. When the cost of acquisition is multiplied by the factor for the year of acquisition, the product should approximate the current cost of acquiring a replacement item in most instances.

An example of the use of these factors follows:

COMMERCIAL EQUIPMENT INDEX FACTORS
 19X8 COST = 100

Year	Bank	Garage	Hospital	Hotel	Laundry & Dry Cleaning	Library	Office
19X8	100	100	100	100	100	100	100
19X7	102	101	101	102	101	101	101
19X6	103	104	104	104	103	103	102
19X5	105	106	107	108	106	106	105
19X4	111	112	112	113	112	111	110
19X3	115	116	118	118	116	116	115

Equipment Group	Year of Acquisition	Cost of Acquisition	Factor	Replacement Cost New
Office	19X3	\$1,000	1.15	\$1,150

In other words, it would require an expenditure of approximately \$1,150 on the 19X9 lien date to replace office equipment purchased in 19X3 for \$1,000. Property statement form SBE-ASD AH 571 has been designed for use with this method of estimating replacement cost.

Because of the rapid technological changes that have taken place in recent years, it is recommended that the maximum equipment index factor utilized should be the factor for the year in which the equipment would have been purchased if its present age were equal to 125 percent of the estimated average service life of the equipment class to which it belongs. For example, if the average life is 12 years, the maximum factor utilized in 1999 would be the 1984 factor since property acquired in 1984 would be 15 years old in 1999. If the equipment in this example was older than 15 years, the 15-year factor would still be utilized. However, this is a recommendation. It is not intended to replace appraiser judgment. If the appraiser believes that use of the 125 percent limit is inappropriate, an explanation of the reason for deviating, if well supported, is sufficient cause to do so.

Six group indexes are supplied in Chapter VII, Table II, Industrial Machinery and Equipment Index Factors. In most instances, these group indexes cover more than one industry class. In Chapter II of this handbook is a listing of industry classes covered by each group index. The reason for the grouping is that the cost index factors for the grouped industries are numerically similar. A detailed description of each industry class follows the general listing.

The following example demonstrates the use of the group factor.

INDUSTRIAL MACHINERY AND EQUIPMENT FACTORS
 19X8 COST = 100

YEAR	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
19X8	100	100	100	100	100	100
19X7	100	101	101	102	103	103
19X6	101	103	103	104	105	105
19X5	102	106	106	107	109	110
19X4	106	110	110	111	113	114
19X3	113	114	116	116	118	118
19X2	117	116	118	119	121	121

Type of machinery and equipment--Rubber tire manufacturing, Year of acquisition - 19X2, Cost of acquisition - \$100,000, Factor - (Group No. 4 - Item 5 Industry Class).

Equipment Group	Year of Acquisition	Cost of Acquisition	Factor	Replacement Cost New
Group 4	19X2	\$100,000	119	\$119,000

II. INDUSTRY CLASSES BY INDEX FACTOR GROUPS

Group No. 1

1. Petroleum Refining

Group No. 2

1. Electronic Equipment
2. Mining
3. Professional and Scientific Instruments

Group No. 3

1. Cement Manufacturing
2. Chemicals and Allied Products
3. Glass and Glass Products
4. Food and Kindred Products
5. Stone and Clay Products Except Cement
6. Petroleum Exploration and Production
7. Sugar and Sugar Products
8. Vegetable Oil Products

Group No. 4

1. Aerospace
2. Electrical Equipment Manufacturing
3. Pulp and Paper
4. Primary Metals
5. Rubber Products

Group No. 5

1. Lumber, Wood Products, and Furniture
2. Printing and Publishing
3. Grain and Grain Mill Products
4. Leather and Leather Products
5. Motor Vehicles and Parts
6. Plastics Products
7. Textile Mill Products
8. Paper Finishing

Group No. 6

1. Fabricated Metal Products
2. Machinery, Except Electrical Metal Working and Transportation

III. EXPLANATION OF INDUSTRY CLASSES

Group No. 1

1. Petroleum Refining

Includes the distillation, fractionation, and catalytic cracking of crude petroleum into gasoline and its other components.

Group No. 2

1. Electronic Equipment

Includes the manufacture of electronic communications, detection, guidance, control, radiation, computation, test, and navigation equipment and components thereof. Excludes manufacturers which, in addition to electronic equipment, also produce other equipment included under electric equipment.

2. Mining

Includes the mining and quarrying of metallic and nonmetallic minerals and the milling, benefaction, and other primary preparation of such materials.

3. Professional and Scientific Instruments

Includes the manufacture of mechanical measuring, engineering, laboratory, and scientific research instruments; optical instruments and lenses; surgical, medical, and dental instruments and equipment; ophthalmic equipment; photographic equipment; and watches and clocks.

Group No. 3

1. Cement Manufacturing

Includes the manufacture of cement. Excludes the manufacture of concrete and concrete products.

2. Chemicals and Allied Products

Includes the manufacture of basic chemicals such as acids, alkalis, salts, organic and inorganic chemicals; chemical products to be used in further manufacture, such as synthetic fibers and plastics materials; and finished chemical products, such as pharmaceuticals, cosmetics, soaps, fertilizers, paints, varnishes, explosives, and compressed and liquefied gases.

3. Glass and Glass Products

Includes the manufacture of flat, blown, or pressed glass products, such as plate, safety, and window glass, glass containers, glassware, and fiberglass. Excludes the manufacture of lenses.

4. Food and Kindred Products

Includes the manufacture of foods and beverages, such as meat and dairy products; baked goods; canned, frozen, and preserved products; confectionery and related products; and soft drinks and alcoholic beverages. Excludes the manufacture of grain and grain mill products, sugar and sugar products, and vegetable oils and vegetable oil products.

5. Stone and Clay Products, Except Cement

Includes the manufacture of structural clay products, such as brick, tile, and pipe; pottery and related products, such as vitreous-china, plumbing fixtures, earthenware, and ceramic insulating material; concrete; asphalt building materials; concrete, gypsum, and plaster products; cut and finished stone; and abrasive, asbestos, and miscellaneous nonmetallic mineral products.

6. Petroleum Exploration and Production

Includes the exploration, drilling, maintenance, and production activities of petroleum and natural gas producers. Includes gathering pipelines and related storage facilities of such producers. Excludes gathering pipelines and related storage facilities of pipeline companies.

7. Sugar and Sugar Products

Includes the manufacture of raw sugar, syrup, or finished sugar from sugar cane or sugar beets.

8. Vegetable Oil Products

Includes the manufacture of vegetable oils and vegetable oil products.

Group No. 4

1. Aerospace

Includes the manufacture of aircraft, spacecraft, rockets, missiles, and component parts.

2. Electrical Equipment Manufacturing

Includes the manufacture of electric household appliances, electronic equipment, batteries, ignition systems, and machinery used in the generation and utilization of electrical energy.

3. Pulp and Paper

Includes the manufacture of pulp from wood, rags, and other fibers and the manufacture of paper and paperboard from pulp. Excludes paper finishing.

4. Primary Metals

Includes the smelting, reducing, refining, and alloying of ferrous and nonferrous metals from ore, pig, or scrap, and the manufacture of castings, forgings, and other basic ferrous and nonferrous metals products.

5. Rubber Products

Includes the manufacture of finished rubber products, and the recapping, retreading, and rebuilding of tires.

Group No. 5

1. Lumber, Wood Products, and Furniture
Includes the manufacture of lumber, plywood, veneers, furniture, flooring, and other wood products. Excludes the manufacture of pulp and paper.
2. Printing and Publishing
Includes printing, publishing, lithographing, and printing services, such as bookbinding, typesetting, photoengraving, and electrotyping.
3. Grain and Grain Mill Products
Includes the manufacture of blended and prepared flours, cereals, feeds, and other grain and grain mill products.
4. Leather and Leather Products
Includes the manufacture of finished leather products, the tanning, currying, and finishing of hides and skins, and the processing of fur pelts.
5. Motor Vehicles and Parts
Includes the manufacture of automobiles, trucks, and buses and their component parts. Excludes the manufacture of glass, tires, and stampings.
6. Plastics Products
Includes the manufacture of processed, fabricated, and finished plastics products. Excludes the manufacture of basic plastics materials.
7. Textile Mill Products
Includes the manufacture of spun, woven, or processed yarns and fabrics from natural or synthetic fibers. Excludes finishing and dyeing.
8. Paper Finishing
Includes paper finishing and conversion into cartons, bags, envelopes, and similar products.

Group No. 6

1. Fabricated Metal Products
Includes the manufacture of fabricated metal products, such as cans, tinware, hardware, metal structural products, stampings, and a variety of metal and wire products.
2. Machinery, Except Electrical, Metal Working, and Transportation
Includes the manufacture of machinery, such as engines and turbines, farm machinery, construction and mining machinery, food products machinery, textile machinery, woodworking machinery, paper industry machinery, compressors, pumps, ball and roller bearings, blowers, industrial patterns, process furnaces and ovens, office machines, and service industry machines and equipment.

IV. USE OF EQUIPMENT PERCENT GOOD TABLES

The percent good table provided in Table V in chapter VII was derived using a method of computation called the "individual method." Another percent good table derived by a method called the "group method" is available but not printed in this edition. The rationale and the mathematics of the methods of computation are explained in Assessors' Handbook Section 581A, The Explanation of the Derivation of Equipment Percent Good Factors. Both methods, although they yield slightly different results, are based upon logical and reasonable premises. The individual method, which has been in use by the assessors of California for many years, is recommended and published here because its computation is based upon a procedure that closely follows standard appraisal practices.

The equipment percent good table is designed to assist the appraiser in estimating replacement or historical cost less normal depreciation (RCLND). The column headings represent the average service life expectancy of the equipment under consideration. Each column contains the percent good factor for the corresponding age.¹

The following example carries forward the example shown in Chapter I.

MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS
 INDIVIDUAL PROPERTIES-- AVERAGE SERVICE LIFE
 7.5% Rate of return

Year Acquired	AGE	<u>5</u>	<u>10</u>	<u>12</u>	<u>15</u>	AGE	Year Acquired
19X8	1	81	92	94	96	1	19X8
19X7	2	63	84	88	91	2	19X7
19X6	3	45	76	81	86	3	19X6
19X5	4	30	67	74	81	4	19X5
19X4	5	18	58	67	76	5	19X4
19X3	6	10	50	60	71	6	19X3

For instance, in the example shown in Chapter I, "Use of Equipment Index Factors," the office equipment was purchased in 19X3, so on the 19X9 lien date it is considered to be six years old. The appraiser estimates that the equipment has an average service life of 12 years. The 12-year-life equipment percent good column illustrates that for an item six years old, using the table, the percent good is 60.

Equipment Group	Year of Acquisition	Cost of Acquisition	Factor	Replacement Cost New	Percent Good	Replacement Cost Less Normal Depreciation
Office	19X3	\$1,000	1.15	\$1,150	60	\$690

^{1/} Life expectancies are derived from the R-3 survivor curve. No minimum percent good is intended.

The appraiser should also consider economic obsolescence, abnormal condition, and other factors which might affect the value of the equipment. Recent sales of equipment may lead directly to an estimate of total depreciation from all causes.

Assessors' Handbook Section 581A, The Explanation of the Derivation of Equipment Percent Good Factors, provides a technical explanation of these percent good factors.

A second percent good table, provided as Table IV, is to be used when determining the loss of value for agricultural and construction mobile equipment. Table IV provides percent good factors for both new and used equipment. The following examples demonstrate the use of Agricultural and Construction index and percent good factors.

Example 1. A construction motor grader acquired **new** in 19X4.
Index factor is 115 percent.
Depreciation factor is 53 percent.

AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS
19X9 COST = 100

YEAR	Agricultural	Construction
19X9	100	100
19X8	104	103
19X7	108	106
19X6	110	110
19X5	116	115
19X4	120	119

AGRICULTURE AND CONSTRUCTION MOBILE EQUIPMENT
PERCENT GOOD TABLE

CONSTRUCTION MOBILE EQUIPMENT

Year Acquired	Age	New	Used	Age
19X8	1	75	92	1
19X7	2	69	85	2
19X6	3	63	78	3
19X5	4	58	72	4
19X4	5	53	66	5

Equipment Group	Year of Acquisition	Cost of Acquisition	Index Factor	Replacement Cost New	Percent Good	Replacement Cost Less Normal Depreciation
Construction	19X4	\$100,000	119	\$119,000	53	\$63,070

Example 2. A construction motor grader acquired **used** in 19X5.
Index factor is 115 percent.
Depreciation factor is 66 percent.

AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS
19X9 COST = 100

<u>YEAR</u>	<u>Agricultural</u>	<u>Construction</u>
19X9	100	100
19X8	104	103
19X7	108	106
19X6	110	110
19X5	116	115
19X4	120	119

AGRICULTURE AND CONSTRUCTION MOBILE EQUIPMENT
PERCENT GOOD TABLE

CONSTRUCTION MOBILE EQUIPMENT

<u>Year Acquired</u>	<u>Age</u>	<u>New</u>	<u>Used</u>	<u>Age</u>
19X9	1	75	92	1
19X8	2	69	85	2
19X7	3	63	78	3
19X6	4	58	72	4
19X5	5	53	66	5

<u>Equipment Group</u>	<u>Year of Acquisition</u>	<u>Cost of Acquisition</u>	<u>Index Factor</u>	<u>Replacement Cost New</u>	<u>Percent Good</u>	<u>Replacement Cost Less Normal Depreciation</u>
Construction	19X5	\$80,000	115	\$92,000	66	\$60,720

Schedule D of the Agriculture Property Statement (571-F) should assist you in determining if agricultural mobile equipment was purchased new or used.

For construction mobile equipment and agricultural equipment where "New" or "Used" status cannot be determined from appraisal data at hand application of percent good factors associated with the "New" column will provide the more conservative estimate of value.

V. VALUATION GUIDES

There are numerous valuation guides available that contain sale derived market values of agricultural and construction mobile equipment. The appraiser should utilize these valuation guides in making the appraisal estimate when sufficient information regarding the equipment's make, model, etc., is reported on the property statement. The percent good factors from Table IV should be used when sufficient information cannot be obtained from value guides or other market information.

Valuation guides that we are aware of include the following:

Agricultural Equipment

National Farm Tractor and Implement Blue Book

Address:

Maclaen Hunter Reports Inc.
29 N. Wacker Dr.
Chicago, Illinois 60606-3297
Phone (312) 726-2802

Official Guide - Tractors and Farm Equipment

Address:

Far West Equipment Dealers Association
110 Vaughn Road
Dixon, California 95620
Phone (916) 678-8859

Construction Equipment

Green Guide for Construction Equipment

Address:

Published by Dataquest
A Company of the Dunn & Bradstreet Corp.
1290 Ridder Park Drive
San Jose, California 95131

VI. CLASSIFICATION OF IMPROVEMENTS AS STRUCTURE OR FIXTURE

The intent of the following listing is to determine the classification of property without regard to ownership. The listing does not necessarily indicate appraisal responsibility by a real property appraiser or an auditor-appraiser. It should be used as a guide in completing Schedule B of the business property statement.

The general concepts used as a basis for the segregation of improvements to "structure" or "fixture" categories are as follows.

Structure: An improvement will be classified as "structure" when its primary use or purpose is for housing or accommodation of personnel, personalty, or fixtures; or when the improvement has no direct application to the process or function of the trade, industry or profession.

Fixture: An improvement will be classified as "fixture" if its use or purpose directly applies to or augments the process or function of a trade, industry, or profession.

Dual Purpose: Items which have a dual purpose will be classified according to their primary purpose.

Examples: The following pages list a variety of improvements and their typical classifications as structures or fixtures. It must be emphasized that the listing is illustrative as a guide only. Proper classification as a fixture or structure is determined according to the actual use or purpose of the property.

STRUCTURE ITEMS

Air conditioning (office and building cooling)

Auxiliary power generation equipment-- for building purposes

Awnings

Batch plants--buildings, fences, paving, yard lights, and spur tracks

Blinds

Boilers (office and building heating)

Building renovations

Car washes--all buildings, canopies, interior and exterior walls, fences, paving, and normal plumbing

Carpets and floor coverings affixed to floor, such as wall-to-wall carpeting and specially installed strip or area carpeting, tile, terrazzo coverings

Central heating and cooling plants

Chutes--built-in

Conveyors--for moving people

Cooling towers--other than used in a trade or production process

Crane ways

Dock elevators

Drapes

FIXTURE ITEMS

Air conditioning (process cooling)

Air lines

Auxiliary power generation equipment-- for trade or production purposes

Back bars

Batch plant--scales, silos, hoppers, bins, machinery

Boilers for manufacturing process

Bowling lanes

Burglar alarm systems

Butane and propane installations--used for trade or production purposes

Car washes--special plumbing, wiring, and car washing equipment

Compressors (air)

Conveyors--for moving materials and products

Cooling towers--used in a trade or production process

Counters

Cranes--traveling

Environmental control devices--used in the production process

Fans and ducts used for processing

Fences and railings--inside of buildings

STRUCTURE ITEMS

Elevators, including machinery and power wiring

Environmental control devices--if an integral part of the structure

Escalators

External window coverings

Fans and ducts which are part of an aircirculation or exhaust system for the building

Fences--outside of building

Flagpoles

Heating--boilers--used in office or building heating

Butane and propane installations--used for heating buildings

Radiators--steam

Inter-communication and telephone systems--if integral part of the building

Kiosk--permanently attached

Coin-operated laundries--restroom, sanitary plumbing fixtures

Movie sets--which are a complete building

Paint spray rooms--if an integral part of the building

Parking lot gates

Partitions--floor to ceiling

FIXTURE ITEMS

Furnaces, process

Furnishings--built-in, i.e., wall-hung desks

Heating--boiler--for the manufacturing process

Hoists

Incinerators, commercial and industrial

Ice dispensers, coin operated

Kilns--beehive, tunnel, or cylinder type and equipment

Kilns--lumber

Laundromat--plumbing, wiring, and concrete work for equipment

Lighting fixtures--lighting associated with a commercial or industrial process

Machinery foundations and pits (not part of normal flooring or foundation)

Miniature golf courses

Movie sets--which are not a complete building

Ovens

Paint spray booths

Partitions (annexed), less than floor to ceiling

Pipelines and pipe supports used to convey air, water, steam, oil, or gas to equipment used in the production process

STRUCTURE ITEMS

Pipelines and pipe supports used to convey air, water, steam, oil, or gas to operate the facilities in a building

Pits--not used in the trade or process

Pneumatic tube systems

Railroad spurs

Refrigeration systems--that are an integral part of the building

Walk-in refrigerators--which are an integral part of the building--excluding operating equipment

Restaurants--rough plumbing to fixtures

Renovations to building structures

Security (Banks and Financial)

- Fire alarm systems
- Safes-embedded
- Night depository
- Teller cages
- Vault alarm system
- Vaults

Service stations--canopies, paving sign pylons

Shelving--originally designed as integral part of the building

Shielded or clean rooms--if an integral part of the building

FIXTURE ITEMS

Pits--used as wine and sugar clarifiers, skimming pits, grease pits, sump pits, and pits used to house machinery in the manufacturing process

Plumbing--special purpose

Power wiring, switch gear, and power panels for manufacturing process

Refrigeration systems--that are not an integral part of the building

Walk-in refrigerators--unitized

Operating equipment--for all walk-in refrigerators

Restaurant equipment--plumbing fixtures, stainless steel or galvanized sinks in kitchens, bars, soda fountains, garbage disposals, dishwashers, hoods, etc.

Roller skating surface

Scales--including platform and pit

Security (Banks and Financial)

- Cameras (surveillance)--attached to walls or columns
- Drive-up and walk-up windows-- unitized security type
- Man traps
- Television or visual auto tellers
- Vault doors

Service Stations--gasoline storage tanks, pumps, air and water wells

Shelving other than that which is an integral part of the building

Shielded or clean rooms--if not an integral part of the building

STRUCTURE ITEMS

Signs--include supporting structure which forms an integral part of the building, including sign blades, pylons, or marquee structures serving as canopies. Exclude sign cabinet (face) and lettering

Silos or tanks--whose primary function or intent is to store property for a time period, such as storage tank farms and grain and liquid petroleum storage facilities

Smog control devices when attached to incinerator or building heating plant

Sprinkler systems--where primary function is the protection of a building or structure

Store fronts

Television and radio antenna towers

Trout ponds--concrete

Theaters (drive-in)--buildings, screen and structures, fencing, paving, lighting

Water systems at golf courses

FIXTURE ITEMS

Signs--sign cabinets and free standing signs, including supports

Silos or tanks--whose primary function is as part of a process, including temporary process holding such as breweries or refineries

Ski lifts, tows, trams

Sky slides

Smog control devices attached to process device

Theaters--auditorium equipment-- seating, screens, stage equipment, sound, lighting, and projection

Drive-in theaters--heater and speaker uprights, wiring and units, projection equipment, signs

Trash compactors and paper shredders

Wash basins--special purpose water softeners for commercial or industrial purposes

VII. INDEX AND PERCENT GOOD TABLES
(Use for Lien Date March 1, 1993)

- TABLE I. **Commercial Equipment Index Tables**
These tables are derived using data provided courtesy of Marshall and Swift Publishing Company. Indexes are to be used for each appropriate class of equipment.
- TABLE II. **Industrial Machinery and Equipment Index Factors.**
These indexes are derived from data in the Bureau of Labor and Statistics' Producer Price Indexes
- Table III. **Agricultural and Construction Equipment Index Factors**
These indexes are derived from data in the Bureau of Labor and Statistics' Producer Price Indexes
- Table IV. **Agricultural and Construction Mobile Equipment Percent Good Factors**
- Table V. **Machinery and Equipment Percent Good Factors**

TABLE I
COMMERCIAL EQUIPMENT INDEX FACTORS
1992 COST = 100

Year	Bank	Garage	Hospital	Hotel	Laundry & Dry Cleaning	Library	Office	Restaurant	Retail	Theater	Ware- house	Service	Year
1992	100	100	100	100	100	100	100	100	100	100	100	100	1992
1991	102	101	101	102	101	101	101	102	102	101	101	101	1991
1990	103	104	104	104	103	103	102	104	103	103	103	103	1990
1989	105	106	107	108	106	106	105	108	106	106	106	106	1989
1988	111	112	112	113	112	111	110	114	112	111	110	112	1988
1987	115	116	118	118	116	116	115	118	116	116	114	116	1987
1986	117	118	120	120	118	118	116	121	118	118	115	118	1986
1985	118	119	122	122	119	119	118	123	120	120	116	120	1985
1984	120	121	124	125	121	121	120	125	121	121	118	121	1984
1983	123	124	127	129	124	125	123	129	125	125	120	125	1983
1982	127	126	130	131	126	127	126	132	129	128	122	128	1982
1981	131	133	137	138	132	133	131	139	134	134	127	133	1981
1980	143	147	150	154	146	146	142	153	146	147	141	147	1980
1979	154	163	165	165	160	158	154	167	158	159	153	160	1979
1978	168	178	180	180	174	173	167	183	173	174	167	174	1978
1977	180	191	193	194	187	187	178	197	186	187	180	187	1977
1976	188	201	203	204	196	196	185	208	196	197	190	197	1976
1975	199	212	214	216	207	207	195	221	210	208	205	209	1975
1974	220	238	237	237	232	229	216	244	227	229	224	230	1974
1973	253	274	272	267	271	265	246	281	262	265	253	264	1973
1972	263	282	283	279	280	277	256	292	273	276	259	275	1972
1971	270	294	294	286	289	284	263	299	280	284	268	283	1971
1970	285	311	314	299	307	298	276	311	294	298	286	298	1970
1969	305	330	337	316	325	317	294	326	313	317	302	317	1969
1968	318	343	353	331	337	332	306	340	326	331	312	330	1968
1967	331	354	369	345	351	346	320	353	341	345	324	343	1967
1966	347	365	384	361	363	363	334	367	356	361	334	358	1966
1965	357	376	396	370	372	370	340	374	362	367	341	366	1965
1964	360	384	401	373	373	373	343	376	365	370	344	370	1964
1963	363	389	407	375	377	375	345	377	368	373	346	372	1963
1962	364	391	408	379	376	378	348	381	370	375	348	374	1962
1961	366	395	410	382	377	379	350	383	372	377	349	376	1961
1960	365	397	411	384	371	380	351	383	374	379	346	377	1960
1959	369	401	416	387	371	383	354	383	377	382	347	379	1959
1958	375	411	423	390	375	385	356	386	379	384	357	384	1958
1957	387	424	434	398	378	399	368	389	391	397	367	394	1957
1956	416	463	472	420	402	422	390	407	417	428	395	421	1956
1955	461	513	523	453	439	465	421	439	459	474	435	462	1955
1954	478	530	543	470	451	482	436	456	477	492	452	479	1954
1953	481	535	545	472	459	485	439	457	479	493	454	482	1953
1952	492	540	557	476	464	487	446	462	481	504	456	487	1952
1951	483	542	547	474	465	485	444	461	479	495	454	484	1951
1950	519	587	586	511	497	519	477	499	511	531	488	521	1950
1949	539	619	607	536	514	544	499	524	534	550	505	543	1949
1948	520	616	588	513	514	535	479	500	526	532	505	530	1948
1947	563	671	639	554	551	573	515	537	561	573	542	571	1947
1946	649	851	747	682	659	696	632	661	697	675	679	694	1946

TABLE II
INDUSTRIAL MACHINERY AND EQUIPMENT FACTORS

1992 COST = 100

<u>YEAR</u>	<u>Group 1</u>	<u>Group 2</u>	<u>Group 3</u>	<u>Group 4</u>	<u>Group 5</u>	<u>Group 6</u>
1992	100	100	100	100	100	100
1991	100	101	101	102	103	103
1990	101	103	103	104	105	105
1989	102	106	106	107	109	110
1988	106	110	110	111	113	114
1987	113	114	116	116	118	118
1986	117	116	118	119	121	121
1985	117	118	120	121	124	123
1984	119	120	123	124	128	126
1983	122	122	126	127	132	129
1982	123	125	128	130	135	131
1981	125	130	133	135	141	136
1980	135	141	145	147	153	148
1979	149	158	161	165	173	166
1978	164	173	177	181	190	185
1977	178	189	193	199	209	204
1976	190	202	207	215	228	222
1975	199	213	220	228	243	237
1974	209	229	237	246	265	257
1973	279	285	300	309	330	325
1972	296	300	318	329	355	346
1971	303	306	325	336	363	354
1970	315	314	335	346	374	365
1969	339	335	361	371	402	390
1968	351	347	375	386	420	405
1967	359	357	389	402	440	421
1966	366	370	402	417	458	439
1965	377	382	416	432	476	458
1964	382	387	421	439	485	469
1963	385	390	426	445	493	478
1962	385	391	429	448	500	480
1961	382	392	431	452	507	487
1960	377	392	429	452	507	490
1959	379	396	432	457	512	502

TABLE III
AGRICULTURAL AND CONSTRUCTION EQUIPMENT INDEX FACTORS

1992 COST = 100

<u>YEAR</u>	<u>Agricultural</u>	<u>Construction</u>
1992	100	100
1991	104	103
1990	108	106
1989	110	110
1988	116	115
1987	120	119
1986	120	121
1985	121	123
1984	121	125
1983	124	127
1982	127	129
1981	135	135
1980	150	149
1979	167	167
1978	184	184
1977	199	202
1976	214	219
1975	233	233
1974	255	264
1973	315	334
1972	332	355
1971	344	364
1970	351	375
1969	376	406
1968	393	424
1967	408	448
1966	422	465
1965	434	479
1964	443	492
1963	450	504
1962	456	512
1961	465	514
1960	474	522
1959	483	533

TABLE IV
AGRICULTURE AND CONSTRUCTION MOBILE EQUIPMENT
PERCENT GOOD TABLE

Year Acquired	CONSTRUCTION MOBILE EQUIPMENT			AGRICULTURE MOBILE EQUIPMENT EXCEPT HARVESTERS					HARVESTERS	
	Age	New	Used	New	Used	New	Used	Age		
1992	1	75	92	74	92	70	89	1		
1991	2	69	85	68	85	62	79	2		
1990	3	63	78	63	78	51	70	3		
1989	4	58	72	58	72	45	63	4		
1988	5	53	66	53	66	37	56	5		
1987	6	49	61	45	56	31	46	6		
1986	7	45	56	38	48	26	39	7		
1985	8	42	51	33	41	21	32	8		
1984	9	38	47	28	34	18	27	9		
1983	10	35	43	24	29	15	22	10		
1982	11	32	40	20	25		18	11		
1981	12	30	37	17	21		15	12		
1980	13	27	34	14	18			13		
1979	14	23	31		15			14		
1978	15	21	29					15		
1977	16	20	26					16		
1976	17	18	24					17		
1975	18	17	22					18		
1974	19	15	21					19		
1973	20		19					20		

NO MINIMUM PERCENT GOOD INTENDED

USE OF TABLE IV

The percent good table is designed to assist the appraiser in determining total loss of value once replacement cost new (RCN) has been determined for the captioned equipment.

The table, derived from used equipment sales data, identifies a pattern of depreciation for three groups of equipment. Within each group two columns of percent good figures, "New" and "Used", are listed. The column labeled "New" should be used to measure depreciation if the subject equipment was acquired new, conversely the column label "Used" should be applied when the equipment was purchased used.

TABLE V
MACHINERY AND EQUIPMENT PERCENT GOOD FACTORS

INDIVIDUAL PROPERTIES-- AVERAGE SERVICE LIFE
7.5% Rate of return

Year Acq'd	AGE	3	4	5	6	7	8	9	10	11	12	13	14	15	17	18	20	22	25	30	35	40	AGE	Year Acq'd									
1992	1	67	76	81	85	88	89	91	92	93	94	95	95	96	96	97	97	98	98	99	99	99	1	1992									
1991	2	38	53	63	70	75	79	82	84	86	88	89	90	91	93	93	95	95	96	98	98	99	2	1991									
1990	3	17	33	45	55	62	68	72	76	79	81	83	85	86	89	90	92	93	94	96	97	98	3	1990									
1989	4	6	17	30	41	50	57	62	67	71	74	77	79	81	85	86	88	90	92	95	96	97	4	1989									
1988	5		8	18	28	38	46	53	58	63	67	71	74	76	80	82	85	88	90	93	95	97	5	1988									
1987	6		2	10	18	27	36	43	50	55	60	64	68	71	76	78	82	85	88	92	94	96	6	1987									
1986	7			5	11	19	27	35	42	48	53	58	62	66	72	74	78	82	86	90	93	95	7	1986									
1985	8				7	13	20	27	34	40	46	51	56	60	67	70	75	78	83	88	92	94	8	1985									
1984	9				3	8	14	20	27	33	40	45	50	55	62	65	71	75	81	87	91	93	9	1984									
1983	10					4	10	15	21	27	33	39	44	49	57	61	67	72	78	85	89	92	10	1983									
1982	11					1	6	11	16	22	27	33	38	44	52	56	63	69	75	83	88	91	11	1982									
1981	12						3	8	12	17	22	28	33	38	48	52	59	65	72	81	86	90	12	1981									
1980	13							4	9	13	18	23	28	33	43	47	55	61	69	79	85	89	13	1980									
1979	14								1	6	10	14	18	24	29	38	43	51	58	66	76	83	88	14	1979								
1978	15									3	7	11	15	20	24	34	38	47	54	63	74	82	87	15	1978								
1977	16										1	4	9	12	16	20	30	34	43	50	60	72	80	86	16	1977							
1976	17											2	6	9	13	17	26	30	39	47	57	69	78	84	17	1976							
1975	18												3	7	11	14	22	26	35	43	54	67	76	83	18	1975							
1974	19													1	5	8	11	19	23	31	39	50	64	75	81	19	1974						
1973	20														2	6	10	16	20	28	35	47	62	73	80	20	1973						
1972	21															4	8	14	17	25	32	44	59	71	79	21	1972						
1971	22																1	5	12	15	22	29	41	56	68	77	22	1971					
1970	23																	3	10	12	19	26	37	54	66	75	23	1970					
1969	24																		1	8	11	17	24	34	51	64	74	24	1969				
1968	25																			5	8	15	21	31	48	62	72	25	1968				
1967	26																			2	6	13	19	29	45	60	70	26	1967				
1966	27																				4	11	16	26	43	57	68	27	1966				
1965	28																				2	9	15	24	40	55	67	28	1965				
1964	29																					7	12	22	37	52	65	29	1964				
1963	30																					5	11	20	35	50	63	30	1963				
1962	31																					3	8	18	32	48	60	31	1962				
1961	32																						1	7	16	30	45	59	32	1961			
1960	33																							5	14	28	43	56	33	1960			
1959	34																							3	13	26	41	54	34	1959			
1958	35																								1	11	23	38	52	35	1958		
1957	36																									9	22	36	50	36	1957		
1956	37																									7	20	34	48	37	1956		
1955	38																										5	18	32	46	38	1955	
1954	39																										3	17	30	44	39	1954	
1953	40																											1	15	28	42	40	1953
1952	41																												13	26	39	41	1952
1951	42																												12	25	38	42	1951
1950	43																												10	22	36	43	1950
1949	44																												8	21	34	44	1949
1948	45																												7	19	32	45	1948
1947	46																												4	18	31	46	1947
1946	47																												2	17	28	47	1946