Valuation of Personal Property and Fixtures
Using Assessors' Handbook Section 581
(Equipment Index, Percent Good, and Valuation Factors)

Appraisal Training: Self-Paced Online Learning Session

Lesson 6: Factor Adjustments, Check Your Knowledge

Exercise 1

Determine the Recommended Maximum Index Factor for the following types of equipment based on the given economic life (service life), as of lien date 2011 (January 1).

	Equipment & Fixtures	Economic Life (years)	Maximum Index Factor
a.	Bakery	15	
b.	Circuit Board Manufacturer	8	
c.	Demolition Contractor (non-mobile)	12	
d.	Golf Carts	6	

Solution:

a. Maximum Index Factor Age = Economic Life × 125%
   (15 × 125% = 19 years)

   Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
   (2011 - 19 years = 1992)

   Recommended Index Factor corresponds to Maximum Index Factor Year
   152 ⇔ 1992 (2011 AH 581 Table 1 - Commercial)

b. Maximum Index Factor Age = Economic Life × 125%
   (8 × 125% = 10 years)

   Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
   (2011 - 10 years = 2001)

   Recommended Index Factor corresponds to Maximum Index Factor Year
   120 ⇔ 2001 (2011 AH 581 Table 2 - Industrial)

c. Maximum Index Factor Age = Economic Life × 125%
    (12 × 125% = 15 years)

    Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
    (2011 - 15 years = 1996)

    Recommended Index Factor corresponds to Maximum Index Factor Year
    137 ⇔ 1996 (2011 AH 581 Table 3 - Construction)

d. Maximum Index Factor Age = Economic Life × 125%
    (6 × 125% = 8 years)

    Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
    (2011 - 8 years = 2003)

    Recommended Index Factor corresponds to Maximum Index Factor Year
    128 ⇔ 2003 (2011 AH 581 Table 1 - Commercial)

Exercise 2

In 1994, a company purchased light plant equipment for $100,000. If the economic life of light plant equipment (non-mobile construction equipment) is 12 years, what is the recommended maximum index factor for use in valuing this type of equipment, as of lien date 2011 (January 1); and what is its RCN?

Solution:

Recommended Maximum Index Factor

- Maximum Index Factor Age = Economic Life × 125% (converted to a decimal equivalent)
- Maximum Index Factor Age = **15 years** (12 years × 1.25)
-
- Maximum Index Factor Year = Valuation Lien Date Year – Maximum Index Factor Age
- Maximum Index Factor Year = **1996** (2011 – 15 years)
-
- Recommended Maximum Index Factor = **137** (Table 3 index factor for 1996)

- Calculate the Maximum Index Factor Age* for the equipment by multiplying its economic life by 125 percent. (Economic life determined to be 12 years based on a review of the CAA tables, as discussed in Lesson 5.)

  12 years × 1.25 = 15 years (rounded to the nearest whole number)*

- Calculate the Maximum Index Factor Year for the equipment by subtracting its Maximum Index Factor Age from its valuation lien date year.

2011 - 15 years = 1996

- Locate the Recommended Maximum Index Factor by finding the construction index factor corresponding to the Maximum Index Factor Year, using 2011 AH 581 Table 3: *Agricultural and Construction Equipment Index Factors.*

  1996 = 137

RCN

- Acquisition Year Index Factor = **143** (Table 3 construction index factor for 1994)
-
- The lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor = **137** < 143
-
- RCN = Cost × Index Factor (converted to decimal equivalent)
- RCN = $100,000 × 1.37
- RCN = $137,000

- Determine the Acquisition Year Index Factor by finding the "construction" equipment index factor corresponding to the year that the equipment being valued was acquired (1994), using Table 3 of the January 2011 AH 581.

  1994 = 143

- Select the lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor for use in valuing the equipment.

  137 < 143

- Calculate the RCN (2011) for the equipment, by multiplying the acquisition cost of the equipment by the decimal equivalent of the index factor selected in the preceding step.

  RCN = $100,000 × 1.37 = $137,000

Exercise 3

In 1995 a company purchased laboratory centrifuge equipment for $75,000. If the economic life of laboratory equipment is 10 years, what is the recommended maximum index factor for use in valuing the equipment, as of lien date 2011 (January 1); and what is its RCN?

Solution:

Recommended Maximum Index Factor

- Maximum Index Factor Age = Economic Life × 125% (converted to a decimal equivalent)
- Maximum Index Factor Age = **13 years** (10 years × 1.25)

- Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
- Maximum Index Factor Year = **1998** (2011 - 13 years)

- Recommended Maximum Index Factor = **134** (Table 1 index factor for 1998)

- Calculate the Maximum Index Factor Age for the equipment, using the formula:

  Equipment Economic Life (years) × 125% = Maximum Index Factor Age (years)*.

  *10 years × 1.25 = 13 years *(rounded to the nearest whole number)*

- Calculate the Maximum Index Factor Year for the equipment, using the formula:

  Valuation Lien Date Year - Maximum Index Factor Age = Maximum Index Factor Year.

  2011 - 13 years = 1998

- Locate the Recommended Maximum Index Factor by finding the "commercial" equipment index factor corresponding to the Maximum Index Factor Year (1998), using Table 1 of the January 2011 AH 581.

  1998 = 134

RCN

- Acquisition Year Index Factor = **139** (Table 1 index factor for 1995)

- The lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor = **134** < 139

- RCN = Cost × Index Factor (converted to decimal equivalent)
- RCN = $75,000 × 1.34
- RCN = $100,500

- Locate the Acquisition Year Index Factor by finding the "commercial" equipment index factor corresponding to the year that the equipment being valued was acquired (1995), using Table 1 of the January 2011 AH 581.

  1995 = 139

- Select the lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor for use in valuing the equipment.

  134 < 139

- Calculate the RCN (2011) for the equipment, by multiplying the acquisition cost of the equipment by the decimal equivalent of the index factor selected in the preceding step.

  RCN = $75,000 × 1.34 = $100,500

Exercise 4

In 1987 a cannery operator purchased cannery equipment for $825,000. If the economic life of cannery equipment is 17 years, what is the recommended maximum index factor for use in valuing this equipment, as of lien date 2011 (January 1); and what is its RCN?

Solution:

Recommended Maximum Index Factor

- Maximum Index Factor Age = Economic Life × 125% (converted to a decimal equivalent)
- Maximum Index Factor Age = **21 years** (17 years × 1.25)
-
- Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
- Maximum Index Factor Year = **1990** (2011 - 21 years)
-
- Recommended Maximum Index Factor = **143** (Table 2 index factor for 1990)

- Calculate the Maximum Index Factor Age for the equipment, using the formula:

  Equipment Economic Life (years) × 125% = Maximum Index Factor Age (years)*.

  *17 years × 1.25 = 21 years *(rounded to the nearest whole number)*

- Calculate the Maximum Index Factor Year for the equipment, using the formula:

Valuation Lien Date Year - Maximum Index Factor Age = Maximum Index Factor Year.

2011 - 21 years = 1990

- Locate the Recommended Maximum Index Factor by finding the "industrial" equipment index factor corresponding to the Maximum Index Factor Year (1990), found in the preceding step, using Table 2 of the January 2011 AH 581.

  1990 = 143

RCN

- Acquisition Year Index Factor = 161 (Table 2 index factor for 1987)
-
- The lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor = **143** < 161
-
- RCN = Cost × Index Factor (converted to decimal equivalent)
- RCN = $825,000 × 1.43
- RCN = $1,179,750

- Determine the Acquisition Year Index Factor by finding the "industrial" equipment index factor corresponding to the year that the equipment being valued was acquired (1987), using Table 2 of the January 2011 AH 581.

  1987 = 161

- Select the lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor for use in valuing the equipment.

  143 < 161

- Calculate the RCN (2011) for the equipment, by multiplying the acquisition cost of the equipment by the decimal equivalent of the index factor selected in the preceding step.

  RCN = $825,000 × 1.43 = $1,179,750

Exercise 5

In 1990, a cotton farm purchased four cotton gins for $235,500. If the economic life of non-mobile agricultural equipment is 15 years, what is the recommended maximum equipment index factor for use in valuing the harvester, as of lien date 2011 (January 1); and what is its RCN?

Solution:

Recommended Maximum Index Factor

- Maximum Index Factor Age = Economic Life × 125% (converted to a decimal equivalent)
- Maximum Index Factor Age = **19 years** (15 years × 1.25)
-
- Maximum Index Factor Year = Valuation Lien Date Year - Maximum Index Factor Age
- Maximum Index Factor Year = **1992** (2011 - 19 years)
-
- Recommended Maximum Index Factor = **157** (Table 3 agricultural index factor for 1992)

- Calculate the Maximum Index Factor Age for the equipment, using the formula:

  Equipment Economic Life (years) × 125% = Maximum Index Factor Age (years)*.

  *10 years × 1.25 = 13 years *(rounded to the nearest whole number)*

- Calculate the Maximum Index Factor Year for the equipment, using the formula:

  Valuation Lien Date Year - Maximum Index Factor Age = Maximum Index Factor Year.

  2011 - 19 years = 1992

- Locate the Recommended Maximum Index Factor by finding the "agricultural" equipment index factor corresponding to the Maximum Index Factor Year (1998) using Table 3 of the January 2011 AH 581.

  1992 = 157

RCN

- Acquisition Year Index Factor = **167** (Table 3 agricultural index factor for 1990)
-
- The lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor = **157** < 167
-
- RCN = Cost × Index Factor (converted to decimal equivalent)
- RCN = $235,500 × 1.57
- RCN = $369,735

- Determine the Acquisition Year Index Factor by finding the "agricultural" equipment index factor corresponding to the year that the equipment being valued was acquired (1990), using Table 3 of the January 2011 AH 581.

  1990 = 167

- Select the lesser of the Recommended Maximum Index Factor and the Acquisition Year Index Factor for use in valuing the equipment.

  157 < 167

- Calculate the RCN (2011) for the equipment, by multiplying the acquisition cost of the equipment by the decimal equivalent of the index factor selected in the preceding step.

  RCN = $235,500 × 1.57 = $369,735