

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 3: Percent Good Factors, Check Your Knowledge

Exercise 1

Determine the percent good factor to be used in estimating the reproduction cost new less (normal) depreciation (RCNLD) – market value – of the following types of equipment and fixtures, as of lien date 2011 (January 1).

	Equipment & Fixtures	Acquisition Year	Average Service Life (in years)	Percent Good Factor
a.	Commercial	2007	8	
b.	Commercial	2005	12	
c.	Industrial	2006	10	
d.	Industrial	2004	15	
e.	Construction – Non-Mobile	2008	12	
f.	Construction – Non-Mobile	2003	12	
g.	Agricultural – Non-Mobile	2009	15	
h.	Agricultural – Non-Mobile	2002	15	
i.	Construction – Mobile & New	2008	n/a	
j.	Construction – Mobile & Used	2003	n/a	
k.	Agricultural – Mobile & New Harvester	2009	n/a	
l.	Agricultural – Mobile & Used Non-Harvester	2002	n/a	

Solution:

- a. **56** = 2011 AH 581 Table 4 (page 12), row: 2007 Year Acquired, column: 8 Year Average Service Life.
- b. **59** = 2011 AH 581 Table 4 (page 12), row: 2005 Year Acquired, column: 12 Year Average Service Life.
- c. **57** = 2011 AH 581 Table 4 (page 12), row: 2006 Year Acquired, column: 10 Year Average Service Life.
- d. **64** = 2011 AH 581 Table 4 (page 12), row: 2004 Year Acquired, column: 15 Year Average Service Life.
- e. **80** = 2011 AH 581 Table 4 (page 12), row: 2008 Year Acquired, column: 12 Year Average Service Life.
- f. **45** = 2011 AH 581 Table 4 (page 12), row: 2003 Year Acquired, column: 12 Year Average Service Life.
- g. **90** = 2011 AH 581 Table 4 (page 12), row: 2009 Year Acquired, column: 15 Year Average Service Life.

- h. **53** = 2011 AH 581 Table 4 (page 12), row: 2002 Year Acquired, column: 15 Year Average Service Life.
- i. **60** = 2011 AH 581 Table 5 (page 14), row: 2008 Year Acquired, column: "New". *
- j. **47** = 2011 AH 581 Table 5 (page 14), row: 2003 Year Acquired, column: "Used". *
- k. **64** = 2011 AH 581 Table 6 (page 15), row: 2009 Year Acquired, column: "Harvesters" | "New". *
- l. **40** = 2011 AH 581 Table 6 (page 15), row: 2002 Year Acquired, column: "Except Harvesters" | "Used". *

* Note: selecting the percent good factor for use in valuing equipment via AH 581 Table 5 (Mobile Construction Equipment) or Table 6 (Mobile Agricultural Equipment) percent good factors does not require a determination of the equipment's economic life in order to locate the correct percent good factor to use.

Exercise 2

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for retail department store equipment purchased and installed in 2006, for \$250,000? (*The RCN for this equipment is \$277,500 and the average service life is 12 years.*)

Hint: multiply the RCN by the appropriate percent good factor.

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor}$ (converted to a decimal equivalent)
- $RCNLD = \$277,500 \times 0.66$
- $RCNLD = \$183,150$
- *Percent Good Table Used – Table 4*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 2 of Lesson 2, Check Your Knowledge*).

$$RCN = \$277,500 (\$250,000 \times 1.11)$$

- Determine the average service (economic) life of the equipment (as done in Exercise 2 of Lesson 5, Check Yourself Exercises).

$$\text{Retail Store - Others [other than warehouse type]} = 12 \text{ years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: *Machinery and Equipment Percent Good Factors* (page 12).

$$2006 \text{ Year Acquired \& } 12 \text{ Year Average Service (Economic) Life} = 66$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$277,500 \times 0.66 = \$183,150$$

Exercise 3

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for a forklift purchased and delivered in 2010, for \$25,000? (*The RCN for this equipment is \$25,000 and the average service life is 10 years.*)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor (converted to a decimal equivalent)}$
- $RCNLD = \$25,000 \times 0.92$
- $RCNLD = \$23,000$
- *Percent Good Table Used – Table 4*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 3 of Lesson 2, Check Your Knowledge*).

$$RCN = \$25,000 (\$25,000 \times 1.00)$$

- Determine the average service (economic) life of the equipment (as done in Exercise 3 of Lesson 5, Check Yourself Exercises).

$$\text{Forklifts} = 10 \text{ Years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: Machinery and Equipment Percent Good Factors (page 12).

$$2010 \text{ Year Acquired \& } 10 \text{ Year Average Service (Economic) Life} = 92$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$25,000 \times 0.92 = \$23,000$$

Exercise 4

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for furniture manufacturing equipment purchased and installed in 2002, for \$250,000? (*The RCN for this equipment is \$300,000 and the average service life is 15 years.*)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor (converted to a decimal equivalent)}$
- $RCNLD = \$300,000 \times 0.53$
- $RCNLD = \$159,000$
- *Percent Good Table Used – Table 4*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 4 of Lesson 2, Check Your Knowledge*).

$$RCN = \$300,000 (\$250,000 \times 1.20)$$

- Determine the average service (economic) life of the equipment (as done in Exercise 4 of Lesson 5, Check Yourself Exercises).

$$\text{Furniture Manufacturing / Wood Working} = 15 \text{ years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: *Machinery and Equipment Percent Good Factors* (page 12).

$$2002 \text{ Year Acquired \& 15 Year Average Service (Economic) Life} = 53$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$300,000 \times 0.53 = \$159,000$$

Exercise 5

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for sheet metal manufacturing equipment purchased and installed in 2009, for \$750,000? (*The RCN for this equipment is \$750,000 and the average service life is 15 years.*)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor}$ (converted to a decimal equivalent)
- $RCNLD = \$750,000 \times 0.90$
- $RCNLD = \$675,000$
- *Percent Good Table Used – Table 4*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 5 of Lesson 2, Check Yourself Exercises*).

$$RCN = \$750,000 (\$750,000 \times 1.00)$$

- Determine the average service (economic) life of the equipment (*as done in Exercise 5 of Lesson 5, Check Yourself Exercises*).

$$\text{Sheet Metal Manufacturing} = 15 \text{ years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: *Machinery and Equipment Percent Good Factors* (page 12).

$$2009 \text{ Year Acquired \& 15 Year Average Service (Economic) Life} = 90$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$750,000 \times 0.90 = \$675,000$$

Exercise 6

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for a diesel fired heater (non-mobile construction equipment) purchased and delivered in 2006, for \$30,000? (*The RCN for this equipment is \$32,700 and the average service life is 12 years.*)

Solution:

- RCNLD = RCN × Percent Good Factor (converted to a decimal equivalent)
- RCNLD = \$32,700 × 0.66
- RCNLD = \$21,582
- Percent Good Table Used – Table 4

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (as done in Exercise 6 of Lesson 2, Check Yourself Exercises).

$$RCN = \$32,700 (\$30,000 \times 1.09)$$

- Determine the average service (economic) life of the equipment (*as done in Exercise 6 of Lesson 5, Check Yourself Exercises*).

$$\text{Construction / Demolition Contractor} = 12 \text{ years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: *Machinery and Equipment Percent Good Factors* (page 12).

$$2006 \text{ Year Acquired \& 12 Year Average Service (Economic) Life} = 66$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$32,700 \times 0.66 = \$21,582$$

Exercise 7

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for dairy farm equipment (non-mobile agricultural equipment) purchased and installed in 2007, for \$85,000? (*The RCN for this equipment is \$93,500 and the average service life is 15 years.*)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor (converted to a decimal equivalent)}$
- $RCNLD = \$93,500 \times 0.80$
- $RCNLD = \$74,800$
- Percent Good Table Used – Table 4

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 7 of Lesson 2, Check Yourself Exercises*).

$$RCN = \$93,500 (\$85,000 \times 1.10)$$

- Determine the average service (economic) life of the equipment (*as done in Exercise 7 of Lesson 5, Check Yourself Exercises*).

$$\text{Agriculture / Farm} = 15 \text{ Years}$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and average service (economic) life using 2011 AH 581 Table 4: *Machinery and Equipment Percent Good Factors* (page 12).

$$2007 \text{ Year Acquired \& 15 Year Average Service (Economic) Life} = 80$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$93,500 \times 0.80 = \$74,800$$

Exercise 8

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for an excavator (mobile construction equipment) purchased new and delivered in 2001, for \$250,000? (The RCN for this equipment is \$320,000.)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor (converted to a decimal equivalent)}$
- $RCNLD = \$320,000 \times 0.31$
- $RCNLD = \$99,200$
- *Percent Good Table Used – Table 5*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (as done in Exercise 8 of Lesson 2, Check Yourself Exercises).

$$RCN = \$320,000 (\$250,000 \times 1.28)$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age) and purchase condition category (New, Used, or Average [unknown]) using 2011 AH 581 Table 5: *Construction Mobile Equipment Percent Good Factors* (page 14).

$$2001 \text{ Year Acquired \& Purchased New} = 31$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$320,000 \times 0.31 = \$99,200$$

Exercise 9

What is the reproduction cost new less (normal) depreciation (RCNLD), as of lien date 2011 (January 1), for a farm sprayer (mobile agricultural equipment) purchased and delivered in 2003, for \$62,500? (*The RCN for this equipment is \$78,750.*)

Solution:

- $RCNLD = RCN \times \text{Percent Good Factor (converted to a decimal equivalent)}$
- $RCNLD = \$78,750 \times 0.42$
- $RCNLD = \$33,075$
- *Percent Good Table Used – Table 6*

- Calculate the reproduction cost new (RCN) for the equipment by applying the index factor for its year of acquisition to the equipment cost (*as done in Exercise 9 of Lesson 2, Check Yourself Exercises*).

$$RCN = \$78,750 (\$62,500 \times 1.26)$$

- Locate the percent good factor corresponding to the equipment's year of acquisition (age), type (harvesters or mobile agricultural equipment except harvesters), and purchase condition category (New, Used, or Average [unknown]) using 2011 AH 581 Table 6: *Agricultural Mobile Equipment Percent Good Factors* (page 15).

$$2003 \text{ Year Acquired \& Non-Harvester \& Unknown Purchase Condition} = 42$$

- Calculate the reproduction cost new less (normal) depreciation (RCNLD) for the equipment by multiplying its reproduction cost new (RCN) by the decimal equivalent of the percent good factor (percent) found in the preceding step.

$$RCNLD = \$78,750 \times 0.42 = \$33,075$$