

# Chapter 7

## The Sum-Of-The-Years'-Digits Method Of Depreciation

The sum-of-the-years-digits (SYD) method, like the declining balance (DB) method (that you already studied in chapter 6), results in more depreciation in the early years of an asset's life and less in later years. But under SYD depreciation, the year-to-year decline in depreciation expense is more gradual than under DB depreciation. Today, SYD is the least used of the four GAAP methods.

**Computing Depreciation Under the SYD Method.** To compute depreciation under the SYD method, multiply the depreciable base by the depreciation rate. Under SYD, the depreciation rate is a fraction, used as follows:

$$\frac{\text{Numerator}}{\text{Denominator}} = \frac{\text{Years remaining in asset's life}}{\text{SYD}} = \text{depreciation rate}$$

$$\text{Depreciation rate} \times \text{depreciable base} = \text{depreciation expense}$$

**The Numerator: Years remaining in the assets life as of the beginning of the year.** For example, if you are depreciating an asset with a 10-year estimated life, the numerator to use at the end of Year 1 is 10 because that is the number of years remaining in the asset's life as of the beginning of the first year. The numerator to use at the end of Year 2 is 9, because that is the number of years remaining in the asset's life as of the beginning of Year 2. Because the numerator changes each year, the SYD depreciation rate also changes each year.

**The Denominator: Sum-of-the-years' digits.** This is the total (sum) of the digits in the asset's life. For example, if there are 5 years in the asset's life, the sum of the digits is 15 (5 + 4 + 3 + 2 + 1). If there are 3 years in the asset's life, the sum of the digits is 6 (3 + 2 + 1). The denominator stays the same each year. To save time in adding up the digits for each asset each year, use the following shortcut to compute the denominator:

$$\frac{n(n+1)}{2} = \text{SYD, the denominator in the fraction}$$

n = asset's estimated life

**Problem 1:** On January 1, Brabo Co. acquired an item for \$20,000 and choose to use SYD depreciation, the asset has an estimated life of 10 years. What is the depreciation rate for Year 1-20?