

**EXAMPLES:** The following examples will better illustrate the index crediting methods formulas on pages 6 and 18.

Assume \$10,000 is paid into a 5 year term with a participation rate of 90%.

- (i) Assume the S&P 500 Index value at the start of the term is 1000 and it grows 20 points per month for the first year to close at 1240. The S&P 500 Index Average on this first contract anniversary is 1130 (derived as follows:  $1020 + 1040 + 1060 + 1080 + 1100 + 1120 + 1140 + 1160 + 1180 + 1200 + 1220 + 1240 = 13,560 \div 12 = 1130$ ).
- (ii) Assume the S&P decreases 20 points per month in the second year to close at 1000. The S&P 500 Index Average is 1120.
- (iii) Assume the S&P increases 20 points per month for the first six months, then decreases 20 points per month for the final six months of the third year to again close at 1000. The S&P 500 Index Average on the third contract anniversary would be 1100.

Taking the S&P 500 Average from (i), (ii) and (iii) above, Index Increases would be calculated as follows:

If no partial surrenders have been made, the formulas on page 6 are used to calculate the Indexed Value at the end of all three years.

On the first contract anniversary:

"A" = 90%, "B" = 1130, and "C" = 1000.

The growth percentage on the first contract anniversary is  $90\% \times (1130 - 1000)/1000 = 11.7\%$ .

"D" = 11.7%, "E" = \$10,000, "F" = 1/5, and "G" = 0.

The Index Increase for the first year is  $(11.7\% \times \$10,000 \times 1/5) - 0 = \$234$ .

On the second contract anniversary:

"A", "B", and "C" are unchanged so the growth percentage is still 11.7%. "F" changes to 2/5, and the Index Increase for the second year is  $(11.7\% \times \$10,000 \times 2/5) - \$234 = \$234$ .

On the third contract anniversary:

1130 is still the highest S&P Index Average, so "A", "B", and "C" are unchanged and the growth percentage is 11.7%. "F" changes to 3/5, and the Index Increase for the second year is  $(11.7\% \times \$10,000 \times 3/5) - (\$234 + \$234) = \$234$ .

*so stock market went up 248 w/out dividend + you get 2.348*

*B is unchanged because it's the greater of 1130 + 1000*

*so stock market fell 19.48 234/10234 = 2.298*

*so stock market unch'd + you get 234/10468 = 2.238*

The Indexed Value equals the Single Premium; plus all Index Increases; plus any end-of-term adjustments; less any partial surrender amounts. Therefore, the Indexed Value on the third contract anniversary is  $\$10,000 + \$234 + \$234 + \$234 = \$10,702$ .

This same approach will continue in years 4 and 5 of the 5 year term.

To illustrate the effect of a partial surrender on the formula, using the same example, assume that there was a \$1,000 withdrawal immediately after the second anniversary. Since \$1,000 is greater than all Index Increases to date in the term, the method detailed on page 18 is used.

Prior to the withdrawal, "G" was \$10,000. After the withdrawal, "G" is adjusted to \$9,468 (\$10,000 less \$532, the amount by which the \$1,000 surrender exceeds the \$468 available Index Increases).

This adjusted value for "G" is used to calculate the Index Increase on the third contract anniversary.

The formula to use is

$$\frac{A \times [B \times (C - D)/E + (D - E)/E]}{F} \times G \quad \text{where}$$

"A" = 90%, "B" = 3, "C" = 1130, "D" = 1130, "E" = 1000, "F" = 5, "G" = \$9,468. So the Index Increase on the third contract anniversary equals

$$\frac{90\% \times [3 \times (1130 - 1130)/1000 + (1130 - 1000)/1000]}{5} \times \$9,468 = \$221.55$$

Under this scenario, the Indexed Value on the third anniversary is

$$\$10,000 + \$234 + \$234 + \$221.55 - \$1,000 = \$9,689.55.$$