STATUTORY HYBRID (CASH BALANCE) PLANS

APPLICABLE DEFINED BENEFIT PLANS

Accrued benefit can be expressed as

1. **Annuity at NRA**
2. **Balance of a hypothetical account**
3. **Current value of accumulated % of final average compensation**

WHAT IS A CASH BALANCE PLAN?

Benefit is defined as a hypothetical account balance

This is a paper account only - assets are not divided into individual accounts

Account is credited with

- **Pay credits (aka contribution credits or compensation credits)**
- **Interest credits at rate defined in plan document**

This is still a DB plan since benefit is not based on actual earnings

WHY USE A CASH BALANCE PLAN?

Provides more "meaningful" (understandable) benefit to employee versus traditional DB plan

Cash balance statement looks like profit sharing plan statement

Advantageous for professional groups

- **More able to equalize benefits, or**
- **Identify how much of plan belongs to each one**

Avoid lump sum swings due to interest rate shifts

WHY USE A CASH BALANCE PLAN?

Advantages for professional groups

- Divides costs and benefits easily among multiple principals
- Principal's benefit = account balance
- Principal's cost = funding of account balance
- Staff costs easily assignable by employee
- Principals with same pay at different ages will have same account balance. Not true with traditional DB plan as varying ages will generate different lump sums.

INTEREST CREDITS

Plan deemed to satisfy 411(b)(1)(H)(i) if

- **Rate for interest credit for any year does not exceed a market rate of return**
- **Plan allowed to specify either**
  - **reasonable minimum guaranteed rate**
  - **rate = greater of fixed or variable rate**

PRESERVATION OF CAPITAL

If interest credit < 0, account balance at annuity starting date must not be less than accumulated contributions credited to account

Regulation clarifies this rule must only be satisfied at the annuity starting date

THIS PAGE WAS INTENTIONALLY LEFT BLANK

FUNDING TARGET

In general, Funding target and Target normal cost are determined as of the valuation date. Both are based on accrued benefit at first day of the plan year. This is also usually the valuation date.

Funding target is defined as present value of accrued benefit. Accrued benefit can be defined in different ways (see page 2).

CASH BALANCE PLAN - FUNDING TARGET

General rule is that benefits are paid as life annuity at NRA:

- Project hypothetical account balance to NRA using interest crediting rate
- Divide by plan conversion factor to give annuity benefit
- Funding target is present value of monthly benefits based on segment rates

Note that the accrued benefit includes future interest credits.

CASH BALANCE PLAN - FUNDING TARGET EXAMPLE 1

01/01/2018 data	
Sex	male
Current age	60
Account balance	100,000
Interest crediting rate	4.0%
Age 65 annuity	10.50
Segment rates	5%, 6%, 7%

Projected balance at 65 $100,000(1.04)^5 = 121,665$

Annuity at 65 $121,665 / 10.50 = 11,587$

Funding target:

$$11,587[(1.06)^{-5}\{(N_{65}^{(12)} - N_{80}^{(12)}) / D_{65}\} + (1.07)^{-5}\{N_{80}^{(12)}/D_{65}\}]$$

using 6.0% using 7.0%

$= 11,587[.7473(230,685-39,371)/20,994 + .7130(17,772/11,403)]$
$= 11,587[.7473(9.1128) + .7130(1.5585)]$
$= 91,780$

CASH BALANCE PLAN - FUNDING TARGET

Some problems assume X% of participants receive a lump sum equal to account balance:

- **Project hypothetical account balance to NRA using interest crediting rate**
- **Funding target is sum of two items**
  - **(present value based on segment rate of cash balance account at NRA)*(X%)**
  - **(present value of monthly benefit at NRA based on segment rates)*(1 - X%)**

CASH BALANCE PLAN - FUNDING TARGET EXAMPLE 2

100% of participants receive lump sum equal to account balance:

01/01/2018 data	
Sex	male
Current age	60
Account balance	100,000
Interest crediting rate	4.0%
Age 65 annuity	10.50
Segment rates	5%, 6%, 7%

Projected balance at 65 $100{,}000(1.04)^5 = 121{,}665$

Funding target:

$90{,}915 = 121{,}665(1.06)^{-5}$

THIS PAGE WAS INTENTIONALLY LEFT BLANK

TARGET NORMAL COST

In general, Funding target and Target normal cost are determined as of the valuation date. Both are based on the accrued benefit at the first day of the plan year. This is also usually the valuation date.

Funding target is defined as present value of accrued benefit. Target normal cost is defined as present value of the increase in accrued benefit.

TARGET NORMAL COST

Hypothetical account balance increases from one year to the next due to interest credits. Also increases due to addition of the pay credit for that year (typically at EOY).

Normal cost is based on pay credit for the current year - not the interest credit for the current year. Projection to NRA reflects future interest credits.

Target normal cost questions are not common on the exam. You need to count years carefully, due to EOY versus BOY age difference.

TARGET NORMAL COST
EXAMPLE 3

100% of participants receive lump sum equal to account balance:

01/01/2018 data	
Sex	male
Current age	50
01/01 account balance	100,000
12/31 age	51
12/31 account balance	155,000
Interest crediting rate	4.5%
Segment rates	5.5%, 6.5%, 7.5%

12/31 balance = 1.045(01/01 balance) + pay credit
155,000 = 1.045(100,000) + pay credit
Pay credit = 50,500

Projected value at 65 $50{,}500(1.045)^{14} = 93{,}523$

Target normal cost:

$36{,}364 = 93{,}523(1.065)^{-15}$

THIS PAGE WAS INTENTIONALLY LEFT BLANK