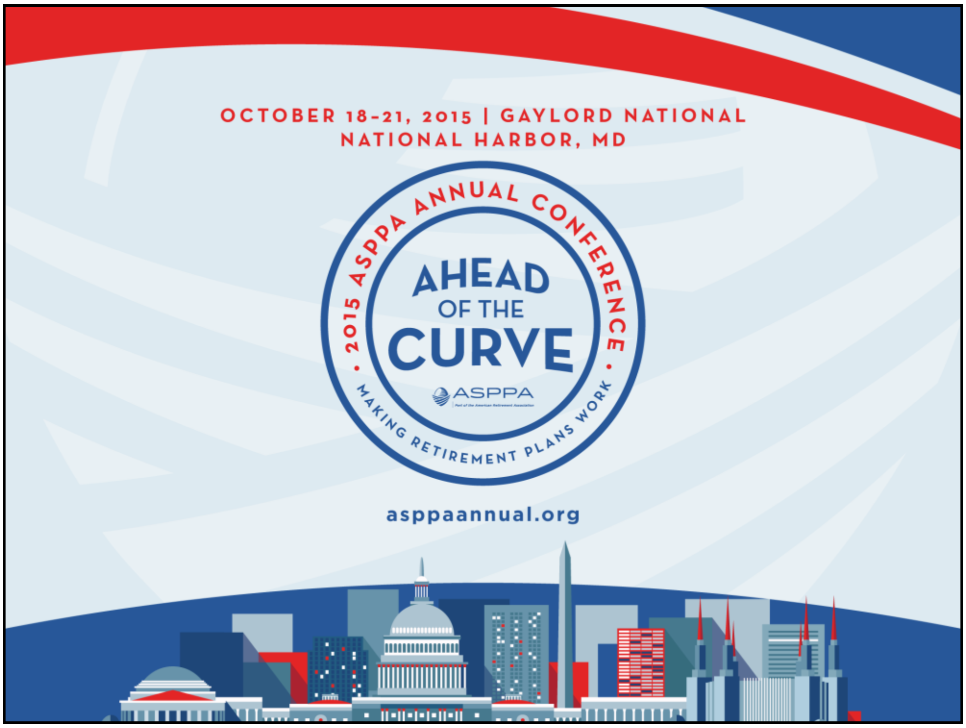

Today’s Agenda

1. Background on Cash Balance
2. Interest Crediting Rules
3. Funding & Top-25 Issues
4. Plan Documents
5. Design Case Study

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What is a Cash Balance Plan?

- Defined Benefit Plan
- Benefit = Notional Account
  - Assets are not divided into individual accounts
  - Account is on paper only
  - IRS: "accumulated benefit"
- Interest credit on Notional Account
  - E.g., 3% annual interest credit
- Interest credit may (or may not) match investment return on Plan assets

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Cash Balance Example

- 1/1/2015 Account Balance: $300,000
- Annual principal credit: $25,000
- Annual interest credit:
  - 2015: $300,000 * 3% = $9,000
- 12/31/2015 Account Balance: $334,000

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Cash Balance Usage

- What does a Cash Balance Plan do well?
  1. Provides significant tax deferral
     - Generally not appropriate for lower-dollar employers, for whom a DC approach might work better
     - Stand-alone, or supplement to a DC plan
  2. Easy-to-understand benefit
     - Participants like simplicity
     - CB statement is analogous to 401(k) statement

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Cash Balance Usage

- What does a Cash Balance Plan do well?
  3. Can generate flat annual contributions for principals
     - Depends on link between investments & interest credits
     - Appropriate to employers with income stability
  4. Favorable non-discrimination for principals
     - 35% discount on CB contributions, compared to DC plan contributions

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Cash Balance Usage

- What does a Cash Balance Plan do <u>well</u>?

5. Divides costs easily among multiple principals
   - ➢ Principal benefit = account balance
   - ➢ Principal cost = funding of account balance
   - ➢ Staff costs easily assignable by employee
   - ➢ Not true with traditional DB plan, since varying ages of principals will generate different lump sum values

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Cash Balance Usage

- What does a Cash Balance Plan do <u>well</u>?

6. Branded design
   - ➢ Common, well-known product
   - ➢ Legal affirmation in PPA
   - ➢ 2014 final regulations reinforce legality and regulatory acceptance of designs
   - ➢ Lots of administrative support in industry

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Cash Balance Usage

- What is a Cash Balance Plan **NOT** good at?
  1. Targeting certain levels of income
     - Traditional DB plan better with income target
     - E.g., 10% of IRC 415 limit
     - CB plans better with savings targets
  2. Covering younger staff employees
     - Better non-discrimination value in DC plan

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Cash Balance Usage

- What is a Cash Balance Plan **NOT** good at?
  3. Providing top-heavy minimum benefits
     - Top-heavy benefits more expensive in CB than in DC
     - CB top-heavy benefit is quadruple the 401(a)(26) threshold
     - Must track lump sum value, rather than balance
  4. Satisfying 401(a)(26)
     - Must cover 40% of workforce (or 50 parts, if smaller)
     - Staff coverage expensive, particularly for older employees
     - Best if principals meet 40% / 50 requirement

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Cash Balance Components

- Two components of any Cash Balance Plan:
  1. Principal credits
     - Or “pay credits” or “contribution credits”
     - Usually flat dollar (e.g., $50,000) or % of pay
     - Lightly regulated
  2. Interest credits
     - ***Heavily*** regulated…

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Cash Balance Interest Rates

- Regulatory approach: Prescriptive
  - IRS dictates specific interest rates available
  - Interest rates outside IRS list **cannot** be used
  - 2014 regs: IRS delegated the ability to issue future guidance to expand list of acceptable interest rates
    - May see gradual expansions of possibilities

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Cash Balance Interest Rates

- Acceptable Interest Rates:
  1. Fixed: **up to 6.0%**
     - 2014 regs increased from 5.0%
  2. Treasury yields:
     - Yields + fixed basis points
     - See listing in regs
     - E.g., 5-year Treasury yield + 25 basis points

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Cash Balance Interest Rates

- Acceptable Interest Rates:
  3. Segment rates:
     - MAP-21/HATFA or Unadjusted
     - First, second or third
  4. Investment return on plan assets:
     - 2014 regs: return on all plan assets, or on subset, of plan assets

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Cash Balance Interest Rates

- Acceptable Interest Rates:
  5. Investment return on mutual funds:
     - Must be broad-based
     - Not significantly more volatile than US markets
     - E.g., no industry sector
  6. Annuity contract rates

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Cash Balance Interest Rates

- Acceptable Minimum Interest Rates:
  a. Treasury yields: up to 5.0% annually
     - E.g., Max of 30-year Treasury and 5.0%
     - Minimum applies to each year
  b. Corporate bond yields: up to 4.0% annually
     - E.g., Max of first segment & 4.0%
     - Minimum applies to each year

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Cash Balance Interest Rates

- Acceptable <u>Minimum</u> Interest Rates:
  c. Return on Plan Assets: up to 3.0% cumulatively
    - E.g., Return on plan assets, not less than 3.0%
    - Does NOT apply annually
    - Applies on cumulative basis
    - Applies at distribution only

  d. Return on mutual funds:
    - Same as for Return on Plan Assets

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Cash Balance Interest Rates

- How to credit almost any index or return:
  - Suppose you want to credit the return on VICEX, a mutual fund investing solely in sin stocks like tobacco, gambling and alcohol
  - Credit the VICEX return, capped by 6%
  - Or credit the VICEX return, capped by 3rd segment
    - In general, capping with a compliant rate (6%, 3rd segment rate, or something else) makes it compliant

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Investment Direction?

- Can Investment Direction by provided?
  - Suggested by IRS in 2010 regulations
- 2014 regulations:

  "It is possible that the Treasury Department and the IRS will conclude that such plan designs are not permitted."

  This follows 4 pages of criticism of investment direction.

  We take this as "No."

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What are ACOPA Actuaries Doing?

- ACOPA survey on Cash Balance Plans
  - Conducted in summer 2014
  - Respondents: 128
  - Number of CB Plan: 5,600

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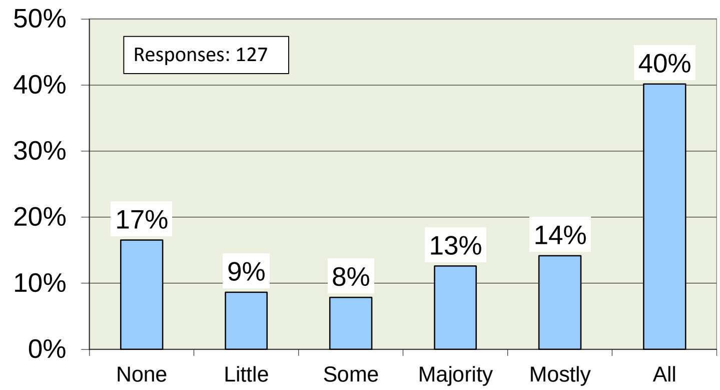
ACOPA Cash Balance Survey

- Portion of CB Plans with FIXED Interest Credit



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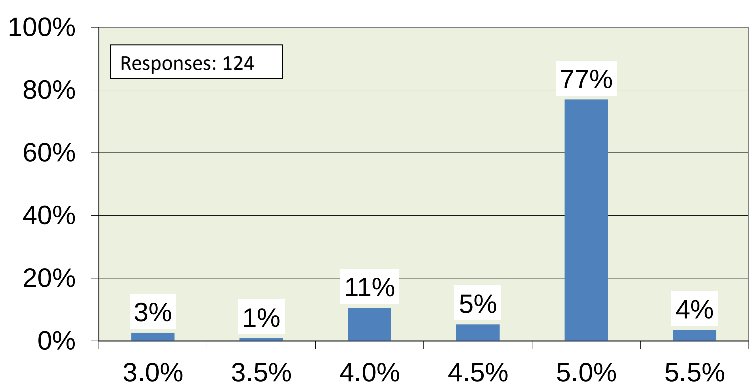
ACOPA Cash Balance Survey

- What is FIXED Interest Credit?



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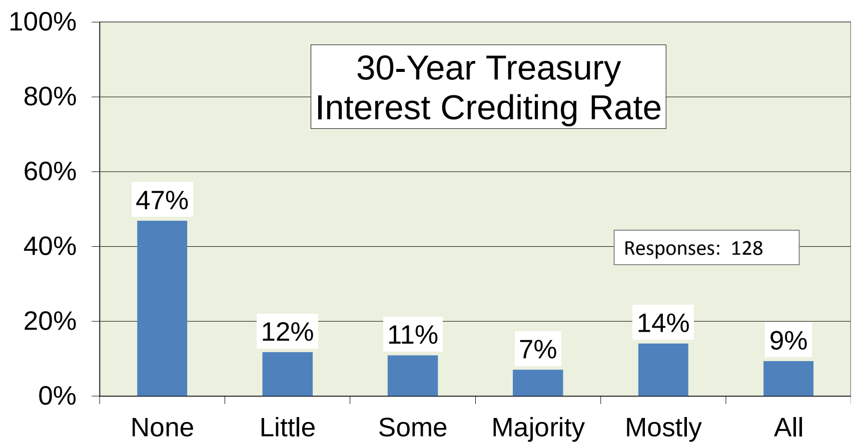
ACOPA Cash Balance Survey



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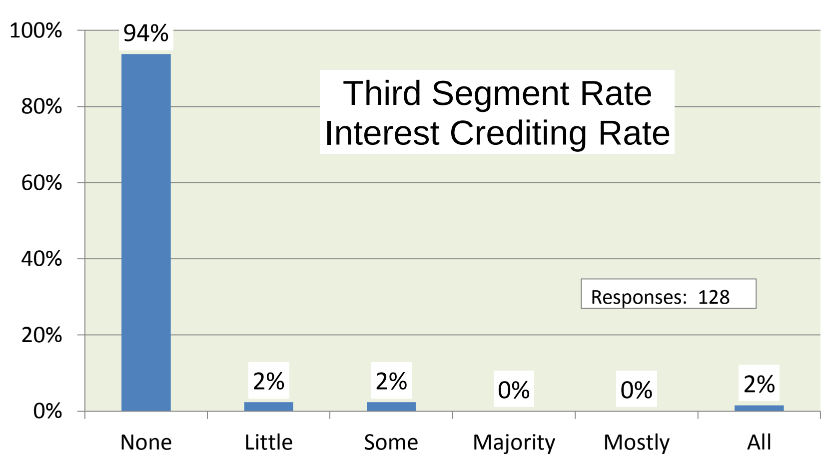
ACOPA Cash Balance Survey



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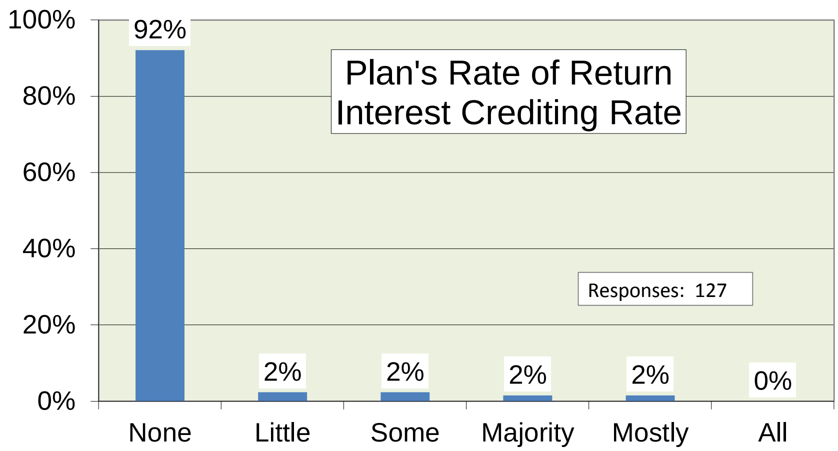
ACOPA Cash Balance Survey



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Accrued Benefit

- Must define CB Plan's "Accrued Benefit"
  - IRS: Accrued Benefit must be annuity commencing at normal retirement age ("NRA")
  - Almost always, CB Plan's Accrued Benefit is:
    - The current account balance,
    - Projected to NRA,
    - And then converted to an annuity

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Accrued Benefit

- Why discuss the Accrued Benefit?
  - All the recordkeeping and reporting will be based on the account balance
  - Participants will almost always take the lump sum
- Because the Accrued Benefit is the basis for:
  - Non-discrimination testing
  - IRS benefit limits ("415" limits)
  - Accrual rules

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Accrued Benefit

- Calculating the Accrued Benefit
  - AB = Account * (1 + Interest) ^ (NRA – attain age), divided by APV(NRA)
- Important variables:
  - Interest = projected interest crediting rate
  - NRA: usually age 62 or age 65
  - APV(NRA) = PV at plan's stated mortality and interest rate as stipulated in plan document

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Accrued Benefit

- Projection of Interest Credit
  - IRS verbal position:
    - Project interest at current year's rate
    - Does it make sense to project a one-year return for all future years?
      - 2014 S&P 500 return: 13.7%
      - Project for all years after 2014 at 13.7%?

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Accrued Benefit

- Selection of Normal Retirement Age
  - Why use age 62?
    - Easier to manage 415 limits
  - Why use age 65?
    - Three extra years of interest lowers 401(a)(26) compliance cost
    - Lower gateway results
    - Three fewer years of post-NRA actuarial increases

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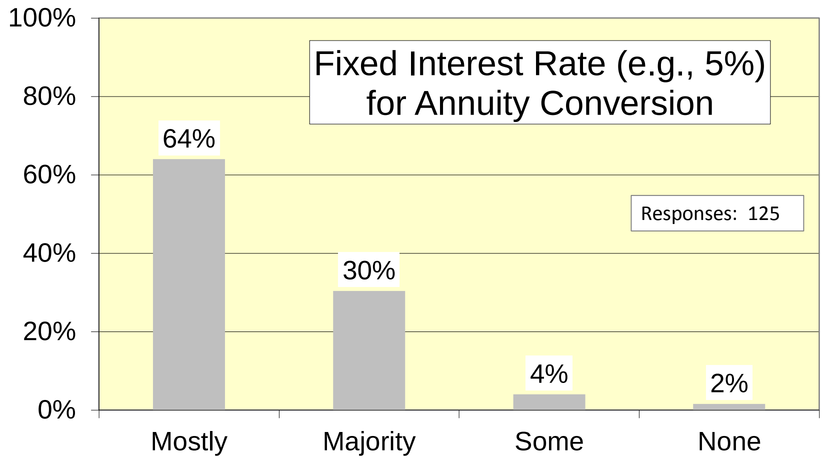
ACOPA Cash Balance Survey



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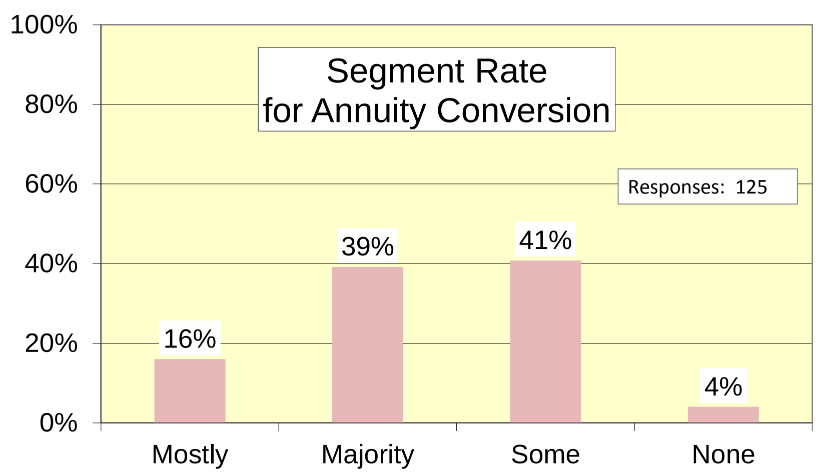
ACOPA Cash Balance Survey



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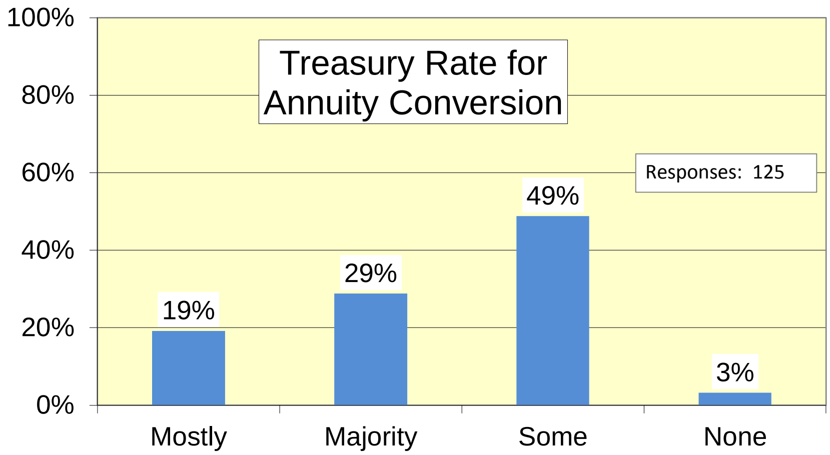
ACOPA Cash Balance Survey



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Funding Rules

- Minimum Required Contribution
  - First year: Target Normal Cost (TNC) (1)
  - Second & later years:
    - TNC + Amortization of any unfunded Target Liability (TL) minus any overfunding of TL (2)
  - TNC = present value of principal credit (3)
  - TL = present value of balance account (3)

[1] Assumes no past service
[2] But not less than zero
[3] Generally

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Funding Rules

- Example: Target Normal Cost
  - Pay credit = $100,000
  - Does the TNC = $100,000?
    - Probably not!
    - Must take Present Value of pay credit
    - Could be higher or lower than $100,000
  - Same issue with Funding Target & account balances

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Funding Rules

- Valuation Process for Cash Balance Plan
  1. Set expected payment date
     - E.g., NRA (if that's reasonable)
  2. Set assumed future interest credit
     - Fixed rate (e.g., 5%): no choice
     - Variable rate: make assumption!
       - Regulation: reasonableness, based on plan experience, and best estimate of future experience

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Funding Rules

- Example 1
  - Assumed crediting rate 5%
  - MAP-21 for 2016: 4.43% / 5.91% / 6.65%
  - Expected payment date: 12 years after current plan year
  - Pay credit $100,000
  - Credit posted at EOY, valuation date is BOY
  - Projected pay credit = $100,000 * 1.05^12 = $179,586
  - TNC = $179,586 ÷ 1.0591^13 = $85,132
  - TNC is only 85% of pay credit!

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Funding Rules

- Example 2
  - Same as Example 1, except unadjusted (non-MAP-21)
  - Rates for 2016: 1.34% / 4.03% / 5.06%
  - Projected pay credit = $100,000 * 1.05^12 = $179,586
  - TNC = $179,586 ÷ 1.0403^13 = $107,449
  - TNC is 107% of pay credit
    - For maximum deduction, that's a good thing
    - For PBGC (if PBGC-covered), that's a bad thing

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Funding Rules

- Potential Valuation Issues:
  1. Minimum required exceeds pay credits
     - With HATFA, not as likely
     - But HATFA will wear off starting in 2018
     - Look for further Congressional extensions?

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Funding Rules

- Potential Valuation Issues:
  2. If PBGC-covered, PBGC liability exceeds CB accounts
     - As in Example 2
     - Use part of next year's contribution for current year
       - Fund a portion of next year's pay credits mid-year
       - Can still deduct next year's pay credits for next year, even though they appear on this year's Schedule SB
       - See 2011 EA Gray Book, Q&A 7

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Funding Rules

- Potential Valuation Issues:
  3. Deduction allowed is less than pay credits
     - Generally an issue in first year
     - First year: rely on "at-risk" calculation
     - Second and third year an issue if plan is re-establishment following plan termination and under 100 participants
     - Generally not an issue otherwise due to cushion

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Top 25 Restrictions

- Highest 25-Paid Employees
  - If Account Balance > 1% of Plan liability, and not 110% funded, generally single-sum distributions can <u>only</u> be made within restrictive agreements, like escrow accounts
  - If Plan liability is 110% funded, restrictions don't apply
    - EA Gray Book 2013: can use MAP-21 Funding Target
    - Measured as if distribution already made
    - Can use mid-year measurements of FT and Assets

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Top 25 Restrictions

- Example T-25:
  - Ten (10) participants with $50,000 each
    - First 9 participants: expected payment date in 9 years
    - Last participant: expected payment date now
  - Value of Plan assets = $500,000
    - Account Balances equal Plan assets
  - Interest credit: 4.75%
  - Second segment rate (2016 MAP-21): 5.91%

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Top 25 Restrictions

- Example T-25 (can't):
  - Funding Target
    - 9 parts: $450,000 * (1.0475^9) ÷ (1.0591^9) = $407,536
    - Last part: $50,000
    - Total liability = $407,536 + $50,000 = $457,536
  - AFTAP = $500,000 ÷ $457,536 = 109.28%
  - But Top-25 is AFTER anticipated distribution:
    - Top-25: $450,000 ÷ $407,536 = 110.42%
  - Since 110%, distribution is unrestricted

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Interest Rate = Actual Return

- Assets and liabilities match each other
  - ➢ Can deposit pay credits, and account balances are based on actual investment earnings
    - Just like money purchase plan
  - ➢ But not exactly:
    - Preservation of capital
    - Likely need interest cap to pass 401(a)(4) & 415
    - Timing of deposits may be restricted

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Interest Rate = Actual Return

- Interest crediting rate can be Negative!
  - ➢ If interest credit a flat rate, or tied to outside index, what happens when an investment loss occurs?
    1. Plan sponsor contributes additional amounts
    2. Principals complain about that!
  - ➢ If crediting Actual Return, investment loss is passed through to account balance
    1. Assets and liabilities remain in alignment
    2. Principals not disturbed by any cash calls
  - ➢ Watch out for Preservation of Capital

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Interest Rate = Actual Return

- Challenges for Actual Return (or mutual fund return)
  1. Greater administrative work
  2. Uncertainty with accrued benefit
  3. Potential difficulties with Top-25 lump sums
  4. Potentially lower 415 Limits
  5. Potentially harder to pass 401(a)(4)
  6. Potentially harder to meet 401(a)(26)
  7. Timing of contributions could be restricted

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Plan Documents

- In the past, CB plans had to be individually designed
  - Needed customize document
- IRS has opened M&P possibilities for cash balance plans, although some restrictions on use
- More to come…

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Case Study

- Two partners:
  - 5.0% of pay PS contribution
  - Want to maximize tax deferral
- Two associates:
  - No profit-sharing contribution
  - In separate 401(k) plan to avoid top-heavy minimum
- Staff:
  - 5.0% of pay profit-sharing contribution
  - 1.5% of pay matching contribution

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Case Study

Category	Age	Pay	HCE
Partner	50	$265,000	Y
Partner	40	265,000	Y
Associate 1	32	220,000	Y
Associate 2	28	220,000	Y
Staff 1	55	100,000	N
Staff 2	45	70,000	N
Staff 3	35	70,000	N
Staff 4	30	60,000	N

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Case Study

- Demographics tell us…
  1. Match is not helpful to partner contributions
     - Convert match to profit-sharing
     - May be sufficient for gateway – need analysis
  2. Older partner will get sizable CB
     - Staff is young
     - Need reasonably high profit-sharing contributions
  3. Younger partner benefits will be below IRS limit
     - Unless they hire some millennials

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Case Study

- Demographics tell us…
  4. Combined plan limit drives partner profit-sharing
     - Partner profit-sharing will be small
  5. Staff CB Plan coverage necessary to meet 401(a)(26)
     - 2 partners + 2 staff meets 40%
     - CB coverage for youngest staff (least expensive)
     - Grant minimum CB Plan benefit under 401(a)(26)
     - Treat CB benefits as add-on, rather than reducing profit-sharing

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Case Study

Category	401(k)	Profit-Sharing	Cash Balance
Partner	$18,000	$14,800	$136,000
Partner	18,000	14,800	48,000
Associate 1	18,000	0	0
Associate 2	18,000	0	0
Staff 1	6,000	6,500	0
Staff 2	4,200	4,550	0
Staff 3	4,200	4,550	1,700
Staff 4	3,600	3,900	1,200

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Case Study

- Why no Top-Heavy contributions for Associates?
  - Associates in separate 401(k) plan
    - No keys in separate 401(k) plan
    - Separate 401(k) plan does not help the other 401(k) plan or the CB Plan pass non-discrim
      - Therefore, no required aggregation group!
      - See IRC 416(g)(2)(A)(i)(II)

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Case Study

- More on Separate 401(k) Plans
  - When associate promoted to owner, must transfer account balance out of separate plan
  - If associate marries a partner, must transfer balance
    - Hopefully, this is a known event
    - Partnership agreement may stipulate disclosure
  - Must perform two non-discrimination tests:
    1. Combination of two plans
       - Ensures Associate-only plan passes (aggregated)
    2. CB Plan + Staff/Partner 401(k) plan
       - Ensures stand-alone pass for these two plans

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Determination of NAR

- Age 50 HCE CB pay credit of $136,000
  - Increase from age 50 to testing age (age 62) at interest crediting rate of 4% = $217,740
  - Divide by APR using plan rates (5%, 2015 417(e) table) at age 62 = 156.5952
  - Accrued benefit = $217,740 / 156.5952 = $1,390
  - Normal accrual rate = $1,390 * 12 / $265,000 = 6.3%

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Determination of NAR

- HCE 1 allocation of $14,800
  - Increase from age 50 to age 62 at 8.5% = $39,393
  - Divide by APR (1971 GAM male, 8.5%, age 62) = 101.7180
  - Equivalent benefit = $39,393 / 101.7180 = $387
  - Equivalent benefit accrual rate (EBAR) = $387 * 12 / $265,000 = 1.8%

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Case Study

Category	PS EBAR	CB Normal EBAR	Tot Normal EBAR
Partner	1.8%	6.3%	8.1%
Partner	4.0%	3.3%	7.3%
Associate 1	-	-	-
Associate 2	-	-	-
Staff 1	1.4%	-	1.4%
Staff 2	3.1%	-	3.1%
Staff 3	6.9%	0.5%	7.5%
Staff 4	10.4%	0.5%	11.0%

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Case Study

1. We pass 401(a)(26)
   - Four CB Plan participants with 0.5% or higher EBARs
   - Four ≥ 40% of eight participant
2. Easy pass on Normal EBARs
   - One-to-one rate group coverage: 100% ratio!
3. We pass combined plan deduction limit
   - Total coverage payroll = $830,000 (omit Associates' pay)
   - 6% of $830,000 = $49,800
   - Our PS total is $49,100

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Determination of MVAR

- Age 50 HCE CB pay credit of $136,000
  - Convert to 50% joint-and-survivor annuity: divide by APR using plan rates (5%, 2015 417(e) table) at age 50 = 200.3952
  - 50% J&S immediate benefit = $136,000 / 200.3952 = $679
  - Take PV at testing assumptions = 129.0372 * $679 = $87,572
  - Increase to age 62 = $87,572 * $1.085^{(62\text{-}50)}$ = $233,090
  - Convert to age-62 annuity = $233,090 / 101.7180 = $2,292
  - Most valuable accrual rate = $2,292 * 12 / $265,000 = 10.4%
  - Add profit-sharing accrual rate = 10.4% + 1.8% = 12.1%

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Determination of Gateway

- Age 50 HCE CB pay credit of $136,000 and $14,800 PS
  - Take present value of NAR benefit, using testing assumptions: $1,390 * 101.7180 / 1.085^{(62-50)} = $53,120
  - Add PS contribution: $53,120 + $14,800 = $67,920
  - Gateway = $67,920 / $265,000 = 25.6%
  - Note: PV of $136,000 credit is $53,120 >> 61% discount!

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Case Study

Category	Gateway	ABPT	Total MVAR
Partner	25.6%	10.2%	12.1%
Partner	10.2%	12.1%	12.1%
Associate 1	-	10.8%	-
Associate 2	-	15.0%	-
Staff 1	6.5%	2.6%	1.4%
Staff 2	6.5%	5.9%	3.1%
Staff 3	7.0%	13.9%	8.6%
Staff 4	6.8%	20.6%	12.4%

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Case Study

1. We pass Gateway
   - Highest HCE aggregate allocation: 25.6%
   - All benefiting non-HCEs must be at 6.0%
   - Since non-HCEs all at 6.5% profit-sharing, Pass!
2. Average benefits percentage test passes
   - HCE average is 12.0%
   - non-HCE average is 10.8%
   - ABPT ratio = 90% >>> Pass! (threshold = 70%)

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Case Study

3. We pass General Test
   - Only one rate group (12.1% and higher)
   - HCEs in rate group: 2 out of 4 >> 50% coverage
   - non-HCEs in rate group: 1 out of 4 >> 25% coverage
   - Ratio percentage = 25% ÷ 50% = 50%
   - Passing threshold = 45% >> Pass!
   - If there were no Associates, Fail!
     - Ratio = 25%; Passing threshold = 40.5%

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