Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

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#7 – Average Compensation Overview

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#1 – American Rescue Plan Act of 2021

Topic Roadmap

    A.   Overview of the American Rescue Plan Act of 2021

    B.   ASC Programming and Reporting for Extended Amortization

    C.   ASC Programming and Reporting for Funding Minimum Segment Rate Relief

    D.   References

#1 – American Rescue Plan Act of 2021

A. Overview of the American Rescue Plan Act of 2021

- ARP 2021 passed March 11, 2021, with 2 significant pension law changes for single employer DB plans

  o Extended Amortization
    - Change amortization period for new shortfall amortization payments from 7 years to 15 years
    - Set all prior shortfall amortization balances and payments to zero
    - Default Effective Date – For plan years beginning after December 31, 2021
      - Early Opt-in Option – Plan sponsors can elect to use the Extended Amortization for plan years beginning after December 31, 2018

  o Minimum Funding Segment Rate Relief
    - Adds a 5% floor to the 25-year average calculation for the tiered minimum segment rates
    - Changes the corridor that applies to the calculated average for the tiered minimum segment rates
    - Default Effective Date – For plan years beginning after December 31, 2019
      - Opt-out Option – Plan sponsors can elect to defer the use of the revised minimum funding segment rates until the plan year beginning after December 31, 2021

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization

- Extended Amortization Plan Specification fields on Values \ VALPPA screen

    o Storage for up to 15 years of Shortfall Amortization Payments (SAPs)

    o ARP 21 Relief 1st Val Date input field

        ▪ Use this field for plans using the Early Opt-in Option

Plan Specifications: Values \ VALPPA screen

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- How to Activate ASC Programming for Extended Amortization

  - For Plans using the Default Effective Date (PYB after 12/31/2021)

    - No entries or changes to Values \ VALPPA needed

    - Run Calculations > Valuation

      - PYB before 1/1/2022 will be calculated using the 7-year amortization period.
      - For the first PYB after 12/31/2021, all prior SAPs will be set to zero and removed from the Values \ VALPPA screen
      - Starting with the first PYB after 12/31/2021, the current shortfall amortization balance, if any, will be amortized using a 15-year period and stored in the Current Amortization Payment field in Values \ VALPPA screen

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- How to Activate ASC Programming for Extended Amortization (Continued)

  o For Plans using Early Opt-in Option

    ▪ Enter Early Opt-in valuation date in ARP21 Relief 1st Val Date

      - IF the ARP21 Relief 1st Val Date is *before* the current Valuation Date

        o Verify any prior SAPs stored already use the 15-year amortization period. There should be no SAPs stored that use the 7-year amortization period.
        o During Calculations > Valuation:
          ▪ Prior SAPs, if any, are kept in the Values \ VALPPA screen
          ▪ Current shortfall amortization balance, if any, will be amortized using a 15-year period and stored in the Values \ VALPPA screen

      - IF the ARP21 Relief 1st Val Date is *equal to* the current Valuation Date

        o No other action needed on the Values \ VALPPA screen
        o During Calculations > Valuation:
          ▪ All prior SAPs, if any, are set to zero and removed from the Values \ VALPPA screen
          ▪ Current shortfall amortization balance, if any, will be amortized using a 15-year period and stored in the Values \ VALPPA screen

      - IF the ARP21 Relief 1st Val Date is *after* the current Valuation Date

        o Verify any prior SAPs stored still use the 7-year amortization period.
        o During Calculations > Valuation:
          ▪ Prior SAPs, if any, are kept in the Values \ VALPPA screen
          ▪ Current shortfall amortization balance, if any, will be amortized using a 7-year period and stored in the Values \ VALPPA screen

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- How to Activate ASC Programming for Extended Amortization (Continued)

  - For Plans using Early Opt-in Option (Continued)

Description of Opt-in Scenarios	ARP21 Relief 1st Val Date is *before* the current Valuation Date	ARP21 Relief 1st Val Date is *equal to* the plan's current Valuation Date	ARP21 Relief 1st Val Date is *after* the current Valuation Date
Plan Maintenance in Values \ VALPPA screen	• Prior SAPs use 15-year amortization period	• No action needed	• Prior SAPs use 7-year amortization period
Calculations > Valuation Results	• Prior SAPs retained • Current SAP, if any, uses 15-year amortization period	• Prior SAPs set to zero • Current SAP, if any, uses 15-year amortization period	• Prior SAPs retained • Current SAP, if any, uses 7-year amortization period

Top Tips for DB Valuation System
Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- How to Activate ASC Programming for Extended Amortization (Continued)

  - For Plans using Early Opt-in Option (Continued)

Calculations > Valuation Results	ARP21 Relief 1st Valuation Date in 2019	ARP21 Relief 1st Valuation Date in 2020	ARP21 Relief 1st Valuation Date in 2021	ARP21 Relief 1st Valuation left blank
Valuation Date in 2019	• Old Bases Set to Zero • 15-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base
Valuation Date in 2020	• 15-year period used for new Current Base	• Old Bases Set to Zero • 15-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base
Valuation Date in 2021	• 15-year period used for new Current Base	• 15-year period used for new Current Base	• Old Bases Set to Zero • 15-year period used for new Current Base	• Old Bases Maintained • 7-year period used for new Current Base
Valuation date in 2022	• 15-year period used for new Current Base	• 15-year period used for new Current Base	• 15-year period used for new Current Base	• Old Bases Set to Zero • 15-year period used for new Current Base

Color Key	ARP21 Relief 1st Val Date is *before* the current Valuation Date	ARP21 Relief 1st Val Date is *equal to* the plan's current Valuation Date	ARP21 Relief 1st Val Date is *after* the current Valuation Date

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- ASC Reporting for Extended Amortization

  - When the 15-year method applies:
    - Actuarial Certification will refer to the American Rescue Plan Act of 2021
    - Shortfall Amortization Report will document the 15-year method in the Amortization Method column and remaining future installments based on the 15-year amortization method in the Number of Future Installments column

  - Short Plan Year report will reflect the 15-year method as well, when applicable

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- ASC Reporting for Extended Amortization (Continued)

  o Sample Plan's 1st year Shortfall Amortization report with Extended Amortization

Sample Pension Plan
American Rescue Plan Act of 2021

Shortfall Amortization
Plan Year: 9/1/2020 to 8/31/2021
Valuation Date: 9/1/2020

If the plan has a funded status below 100%, the plan may require additional payments in the form of shortfall amortization payments. A plan's amortization payments are calculated to pay down the plan's underfunding over a fifteen year period. Shortfall amortization payments, if any, for all plan years preceding the first plan year beginning after 12/31/2019 were reduced to zero.

Valuation Date	Amortization Method	Number of Future Installments	Installment	Value of Future Installments
09/01/2020	15-year	15	$9,098	$96,909
Total			$9,098	$96,909

Shortfall Amortization Charge (sum of installments, no less than zero): $9,098

  o Sample Plan's 2nd year Shortfall Amortization report with Extended Amortization

Sample Pension Plan
American Rescue Plan Act of 2021

Shortfall Amortization
Plan Year: 9/1/2021 to 8/31/2022
Valuation Date: 9/1/2021

If the plan has a funded status below 100%, the plan may require additional payments in the form of shortfall amortization payments. A plan's amortization payments are calculated to pay down the plan's underfunding over a fifteen year period.

Valuation Date	Amortization Method	Number of Future Installments	Installment	Value of Future Installments
09/01/2020	15-year	14	$9,098	$93,858
09/01/2021	15-year	15	$9,086	$98,161
Total			$18,184	$192,019

Shortfall Amortization Charge (sum of installments, no less than zero): $18,184

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- Using ASC Table Maintenance Function Calc PV Factors to check Current SAP

  - Plan Data
    - Shortfall Balance for Minimum (Values \ VALPPA screen) – 96,909
      - This is the first year of ARP2021, so no reduction for prior SAP present values needed
    - Minimum Funding Segment Rates (Funding \ PPAFASMP screen) – 4.75% / 5.50% / 6.27%

  - Launch Table Maintenance > Functions > Calc PV Factors
    - Use any mortality table
    - Enter tiered segment rates
    - Enter any Current and Retirement age, but they must be equal
    - Enter 15 in Period Certain
    - Check Certain Only option
    - Check Annual Rate option
    - Calculate PVF Result = 127.8137 (Annual)

  - Current SAP Calculation
    - Shortfall Balance for Minimum / [Calc PVF Result (Annual) / 12]
    - 96,909 / [127.8137 / 12] = **_9,098.46_**

Table Maintenance: Functions \ Calc PV Factors

#1 – American Rescue Plan Act of 2021

B. ASC Programming and Reporting for Extended Amortization (Continued)

- Using ASC Table Maintenance Function Calc PV Factors to check Value of Future Installments for prior SAPs

  - Plan Data
    - 1 yr ago SAP (Values \ VALPPA screen) – 9,098.46
    - Number of Future Installments – 14
    - Minimum Funding Segment Rates (Funding \ PPAFASMP screen) – 4.50% / 5.25% / 6.00%

  - Launch Table Maintenance > Functions > Calc PV Factors
    - Use any mortality table
    - Enter tiered segment rates
    - Enter any Current and Retirement age, but they must be equal
    - Enter 14 in Period Certain
    - Check Certain Only option
    - Check Annual Rate option
    - Calculate PVF Result = 123.7901 (Annual)

  - Value of Future Installment for 1 yr ago SAP
    - 1 yr ago SAP x Calculate PVF Result (Annual) / 12
    - 9,098.46 x 123.7901 /12 = ***93,858***

Table Maintenance: Functions \ Calc PV Factors

#1 – American Rescue Plan Act of 2021

C. ASC Programming and Reporting for Funding Minimum Segment Rate Relief

- Minimum Funding Segment Rates in Table Maintenance \ Defined Benefit \ Segment Rates

    o HATFA rates (BBA 2015), the 'F' series tables, will phase out after December 31, 2021

    o ARP21 rates are the 'G' series tables
        - YYYYMMG0 – ARP21 Funding Rates for Plan Years beginning in 2020
        - YYYYMMG1 – ARP21 Funding Rates for Plan Years beginning in 2021
        - YYYY is the Year and MM is the month of publication
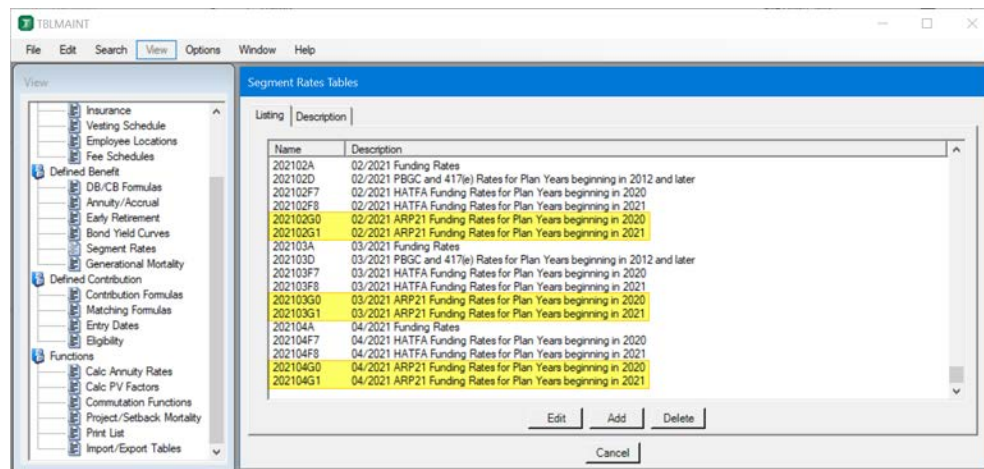
Table Maintenance: Defined Benefit \ Segment Rates

#1 – American Rescue Plan Act of 2021

C. ASC Programming and Reporting for Funding Minimum Segment Rate Relief (Continued)

- How to Activate ASC Programming for Minimum Funding Segment Rate Relief

  o For Plans using the Default Effective Date (PYB after 12/31/2019)
    - Select ARP 2021 Minimum Funding Segment Rates in the Funding \ PPAFASMP screen
    - Run Calculations > Valuation
      - Check 'Calculate Effective Interest Rate (EIR)' option
    - Run Calculations > Actuarial > Quarterly Interest to reflect updated EIR

  o For Plans using Opt-Out Option (PYB in 2020 or 2021)
    - Select BBA 2015 Minimum Funding Segment Rates in the Funding \ PPAFASMP screen
    - Run Calculations > Valuation
      - Check 'Calculate Effective Interest Rate (EIR)' option
    - Run Calculations > Actuarial > Quarterly Interest to reflect updated EIR
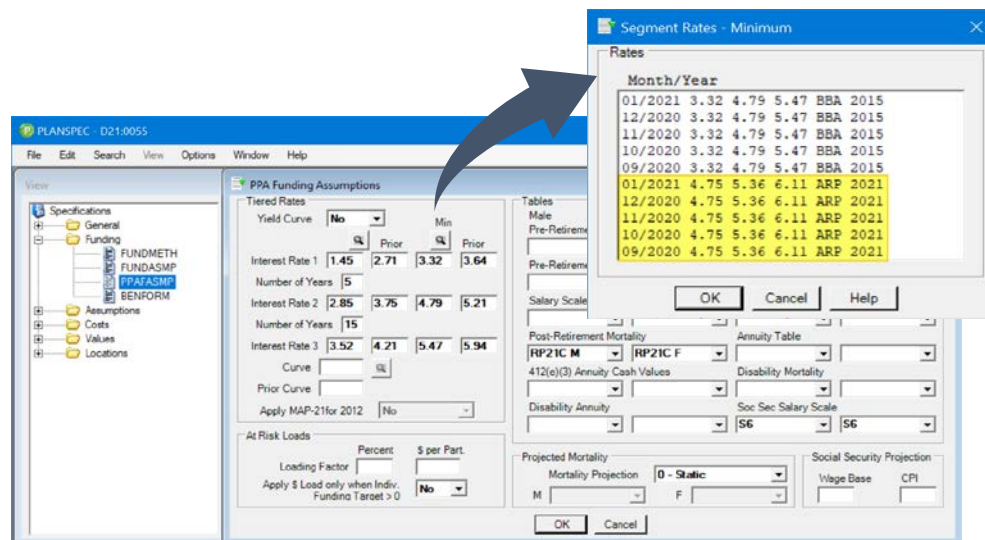
Plan Specifications: Funding \ PPAFASMP screen

#1 – American Rescue Plan Act of 2021

C. ASC Programming and Reporting for Funding Minimum Segment Rate Relief (Continued)

- ASC Reporting for Minimum Funding Segment Rate Relief

  o When the ARP 2021 Minimum Funding Segment rates are selected, the Actuarial Certification will refer to the American Rescue Plan Act of 2021

  o The Summary of Actuarial Assumptions, PPA Funding Values, and SB Information reports will reflect the ARP 2021 rates selected.

#1 – American Rescue Plan Act of 2021

D. References

- FAQs

FAQs ASC
+ Actian SQL
+ Daily Val - DV Direct
+ DC - Compliance
+ DC - Recordkeeping
− Defined Benefit

[FAQ 910: PPA Shortfall Amortization Base - Funding Relief for ARP21 or PRA 2010](#)
[FAQ 833: PPA/ARP Shortfall Payment Calculation using Segment Rates](#)
[FAQ 906: PPA/ARP Shortfall Payment Calculation using Yield Curve Rates](#)
[FAQ 977: Segment Rates - HATFA/BBA15/ARP21](#)

- DB Reference Manual

- Online Help
  - <F1> on keyboard to access online help for each employee or plan specifications field

- Update from Actuaries article
  - [Update from Actuaries: American Rescue Plan Act of 2021](#)

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#2 – One Participant DC Cash Balance Plan Proposal

Topic Roadmap

    A.   Overview

    B.   Case Preparation

    C.   Budget Calculations

    D.   Analysis and Reporting

    E.   References

#2 – One Participant DC Cash Balance Plan Proposal

A. Overview

- First stage development of budget solving proposal programming and reports for cash balance/DC combo plans.

- Advantages
    - Incorporates minimum required, maximum deductible, and 415 maximum lump sum calculations all within stated budget constraints
    - 415 adjustments for pre-62 or post-65 commencement is automated
    - Reflects published segment rates or rates selected that represent long-term budget planning
    - Use features within the ASC Valuation system plan specifications to further customize cash balance and DC plan calculations for the budget
    - Export results into your own custom proposal materials
    - Quickly convert finalized proposal case to a working valuation case

- Considerations
    - Results should always be reviewed an actuary
    - Once budget results are calculated, you can adjust the final Cash Balance formula to fit your client's goals
    - The combo plan in ASC is meant for use for budget proposal purposes. It may not be appropriate for valuation purposes.
    - Current version of the budget calculator is designed for one person plans only.

- Stay tuned for future enhancements!

#2 – One Participant DC Cash Balance Plan Proposal

B. Case Preparation

- Plan Specifications

  - New EOY valuation Cash Balance plan paired with a new DC plan
    - DB: Funding \ FUNDMETH screen \ Beginning of Year Valuation set to No

  - EOY valuation funding segment rates may not be published when you are preparing proposals
    - Work with your actuary to determine reasonable best estimate of segment rates

  - If Budget target is the Maximum Deductible, consider coding at-risk loads and assumptions

DC Plan Specifications: General \ Identification \ ID screen

DB Plan Specifications: General \ Identification \ ID screen

#2 – One Participant DC Cash Balance Plan Proposal

B. Case Preparation (Continued)

- Employee Data

  o One participant in each plan

  o Index solo participant by coding the same value in SSN field or Name field

  o Solo participant Principal code setting
    - Cash Balance Plan: 1 – Group 1
    - DC Plan: Y – Yes

  o Deferral is an optional input in the DC plan

DC Employee: Basic Data \ NAME screen

DB Employee: Basic Data \ NAME screen

#2 – One Participant DC Cash Balance Plan Proposal

C. Budget Calculations

- Launch from the DC: Calculations > Budget > DC/CB Combo Budget

DC: Calculations > Budget > DC/CB Combo Budget Menu

#2 – One Participant DC Cash Balance Plan Proposal

C. Budget Calculations (Continued)

- Menu Features

  o Multiple Plan Setup
    - Ensure Cash Balance plan is selected to be paired with the DC plan
    - Select option for indexing solo participant – either Number, Name or SSN

  o Valuation Options
    - If eligibility has not already been calculated in both plans, select 'Calculate Eligibility' option

  o Budget
    - Budget Amount
      - Leave blank to target the maximum deductible contribution
      - Input an amount to target a specific total budget for the combined CB/DC plans
    - Budget include deferrals – if checked, be sure deferrals are coded in DC employee record

  o Solving Options
    - Reserved for future enhancements

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting

- Review results within the CB and DC plan specifications and employee records

- Customizable combo proposal report

  - Launch from the DC: Reports > Studies and Proposals > DC/CB Combo

DC: Reports > Studies and Proposals > DC/CB Combo Menu

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- Menu Options

  - Multiple Plan Setup
    - Ensure Cash Balance plan is selected to be paired with the DC plan
  - Report Sections
    - Title Page
      - Includes Disclaimer
    - Plan Summary
      - Summary of DC and CB plans
      - Budget conditions from Budget Calculations menu

DC/CB Owner Only Proposal
For Max Benefit
Plan Specifications
For Plan Year Ending December 31, 2021

		DC Plan	CB Plan
Primary Eligibility	Age:	21	21
	Service:	0 years	0 years
	Exclusions:	Union, Leased, and Nonresidents	None
	Entry Date(s):	Date eligible	Date eligible
	Source(s):	Employee Deferral, Employer Discretionary	
Normal Retirement	Age:	62	62
	Participation:	1	1
Contributions		6% of compensation	
	Group 1:		$253,700
415 Maximum Benefit		$58,000	Lesser of $19,166.66 and 100% of the highest 3-year average salary, subject to service requirements.

Budget Conditions

Budget Amount	Targeted Maximum Contribution

Disclaimer: Text input in the Disclaimer Setup

DC: Reports > Studies and Proposals > DC/CB Combo Menu: Plan Summary

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- o Menu Options (Continued)

  - ▪ Report Sections (Continued)

    - • Summary of Assumptions
      - o Summary of Cash Balance assumptions

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DC/CB Owner Only Proposal
For Max Benefit
Summary of Assumptions
For Plan Year Ending December 31, 2021

	For Funding		**For Actuarial Equivalence**
	Min	**Max**	
Interest Rates	Seg 1: 4.75%	1.45%	Pre-Retirement: 5.00%
	Seg 2: 5.36%	2.85%	Post-Retirement: 5.00%
	Seg 3: 6.11%	3.52%	
Pre-Retirement	No pre-retirement decrements		
Assumed Ret Age	Normal retirement age 62 and 1 years of participation		Normal retirement age 62 and 1 years of participation
Post-Retirement			
Mortality	Male-2021 Static Table - Combined Male Female-2021 Static Table - Combined Female		2021 Applicable Mortality Table from Notice 2019-67
Assumed Benefit Form For Funding			100% Lump Sum / 0% Normal Form
Cash Balance Interest Crediting Rate			5.00% annual rate
Cash Balance Projected Interest Crediting Rate			5.00% annual rate

</div>

DC: Reports > Studies and Proposals > DC/CB Combo Menu: Summary of Assumptions

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- o Menu Options (Continued)

  - ▪ Report Sections (Continued)

    - Census
    - DC Plan Costs
      - o Contributions, deferrals (if any), and totals
    - CB Plan Costs
      - o Summarizes CB Contribution Credit, PPA Minimum, PPA Maximum, and 415 Immediate Maximum Lump Sum

DC/CB Owner Only Proposal
For Max Benefit
Cash Balance Plan Costs
For Plan Year Ending December 31, 2021

Participant Name	Owner Pct	HCE	Key	Group Code	Annual Comp	Contrib Credit	Pct of Comp	PPA Minimum Funding Target	PPA Minimum Normal Cost	PPA Maximum Funding Target	PPA Maximum Normal Cost	Cost Estimate	415 Imm Lump Sum	Accrued Benefit
Max Benefit	100.00	N	N	1	300,000.00	253,700.00	84.57	0.00	254,731.00	0.00	271,573.00	254,731.00	253,700.00	1,733.99
Subtotal					300,000.00	253,700.00		0.00	254,731.00	0.00	271,573.00	254,731.00		
Total					300,000.00	253,700.00		0.00	254,731.00	0.00	271,573.00	254,731.00		

DC: Reports > Studies and Proposals > DC/CB Combo Menu: CB Plan Costs

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- o Menu Options (Continued)

    - ▪ Report Sections (Continued)

        - • Combo Plan Costs
            - o Summarizes the CB Contribution Credit, the DC Employer Contribution, CB Plan Costs, and Combined Plan Costs

DC/CB Owner Only Proposal
For Max Benefit
Employee Contributions and Costs Summary
For Plan Year Ending December 31, 2021

Participant Name	Owner Pct	HCE	Key	Annual Comp	CB Plan Contrib Credit	CB Plan Pct of Comp	Pct of CB Plan Cost	DC Plan Employer Contrib	CB Plan Cost Estimate	Combined Employer Contrib	Combined Pct of Comp	Pct of Total Plan Cost	Combined Contrib w/ Defer
Max Benefit	100.00	N	N	300,000.00	253,700.00	84.57	100.00	17,400.00	254,731.00	272,131.00	90.71	100.00	298,131.00
Subtotal				300,000.00	253,700.00			17,400.00	254,731.00	272,131.00			298,131.00
Total				300,000.00	253,700.00			17,400.00	254,731.00	272,131.00			298,131.00

DC: Reports > Studies and Proposals > DC/CB Combo Menu: Combo Plan Costs

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- o Menu Options (Continued)

    - ▪ Report Sections (Continued)

        - • Combo Plan Budget Summary
            - o Cash Balance Funding Range
                - ▪ May result in no cash balance plan if the budget is satisfied by a solo DC plan
            - o Combined Plan Maximum Deduction Limit
                - ▪ Reflects combined plan deduction limits
            - o Budget Analysis
                - ▪ Provides analysis on the combined plan costs with the stated budget constraint

DC/CB Owner Only Proposal
For Max Benefit
Combo Plan Budget Summary
For Plan Year Ending December 31, 2021

Cash Balance Funding Range

A)	Cash Balance PPA Minimum Required Contribution:	254,731
B)	Cash Balance Contribution Credits:	253,700
C)	Cash Balance PPA Maximum Deductible Contribution:	271,573
D)	Estimated Cash Balance Cost [Greater of A and B, but no more than C]:	254,731

Combined Plan Maximum Deduction Limit

E)	Cash Balance Plan Covered by PBGC?:	No
F)	Defined Contribution Limited Compensation:	290,000
G)	Defined Contribution Employer Contributions:	17,400
H)	Ratio of Employer Contributions to Limited Compensation [G / F]:	6.00%
I)	Do DC Contributions Exceed 6% of Limited Compensation? [Is H > 6%]:	No
J)	Potential Combined Plan Deduction Limit [C + 6% of F]:	288,973

If CB Plan is covered by PBGC, C + 25% of F
If CB Plan is not covered by PBGC, if I = Yes, then 31% of F
If CB Plan is not covered by PBGC, if I = No, then C + 6% of F
If DC only, then 25% of F

Budget Analysis

K)	Budget:	Targeted Maximum Contribution
L)	Defined Contribution Cost:	
	1) Employer Cost:	17,400
	2) Employee Deferral:	26,000
M)	Cash Balance Cost:	254,731
N)	Total Combined Plan Cost:	298,131

Disclaimer: Total Combined Plan Cost may be less than the Combined Plan Available Deduction Limit if one or more individual's 415 limit has been reached.

DC: Reports > Studies and Proposals > DC/CB Combo Menu: Combo Plan Budget Summary

#2 – One Participant DC Cash Balance Plan Proposal

D. Analysis and Reporting (Continued)

- Menu Options (Continued)

    - Report Sections (Continued)

        - Owner Summary
            - Includes estimated tax savings based on Tax Bracket entered in Report Options
    - Source Options
    - Employee Matching
        - Use Number, Name, or SSN field
    - Ownership Type
    - Plan Description
        - Edit the title of the plan that appears on the Title Page and as Report Headers
    - Report Options
        - Prepared by and Date Prepared options
        - Tax Bracket Percent for estimated tax savings calculation in the Owner Summary report
        - Column Headers to describe DC Plan sources for DC Plan Costs report
        - Disclaimer Setup – customizable text included on Title Page and Plan Summary reports
    - Create Extract File
        - Check this option to create an extract .xlsx file to integrate into your own customized proposal reports
        - Each report selected from the Report Sections will appear on its own tab

#2 – One Participant DC Cash Balance Plan Proposal

D. References

- FAQs

- DB Reference Manual
  - Dedicated chapter expected Fall 2021

- Online Help
  - <F1> on keyboard to access online help for each employee or plan specifications field

Top Tips for DB Valuation System

Tuesday, August 10, 2021

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#3 – ASC-715 Basics in ASC

Topic Roadmap

    A.   Overview of ASC-715

    B.   ASC Programming for ASC-715

    C.   ASC Results Storage for ASC-715

    D.   ASC Reporting for ASC-715

    E.   Sample Calculations for ASC-715

    F.   References

Top Tips for DB Valuation System
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#3 – ASC-715 Basics in ASC

A. Overview of ASC-715

- FASB Accounting Standards Codification 715 (formerly FAS 87)

    - Required reporting for publicly held plan sponsors and private plan sponsors that require Generally Accepted Accounting Principles (GAAP) accounting.
        - Auditor/CPA is responsible for determination of reporting requirement

    - Key ASC-715 Terms as found in ASC

ASC-715 Term	ASC-715 Description	ASC Calculation Description*
Measurement Period	Fiscal Year	• Plan Year Begin/End dates are used for calculations • Corporation Year End is used to report fiscal year end if different from Plan Year End date
Cost Method	Projected Unit Credit	• Default cost method for ASC-715 calculations
Asset Method	Fair Market Value	• Assets entered in Market Value of Assets field
Discount Rate	Rate at which obligations could be settled	• Single rate pre- and post-retirement • Yield Curve
Accumulated Benefit Obligation (ABO)	Present value of accrued benefits	• Present value as of the valuation date of the Accrued Benefit
Projected Benefit Obligation (PBO)	Present value of accrued benefits reflecting salary increases	• Present value as of the valuation date of the greater of • a) Accrued portion of the FASB screen Projected Benefit • b) Accrued Benefit
Service Cost (SC)	Present value of benefit earned during the year	• Present value as of the valuation date of the greater of a) and b) minus the PBO • a) Accrued portion as of the end of the year of the FASB screen Projected Benefit • b) Accrued Benefit as of EOY

* ASC recommends BOY valuations for ASC-715 calculations

#3 – ASC-715 Basics in ASC

A. Overview of ASC-715 (Continued)

- FASB Accounting Standards Codification 715 (formerly FAS 87) (Continued)

  - Assumptions
    - Selected by the plan sponsor, reviewed by auditor
      - Actuary may provide guidance on certain demographic assumptions and each assumption should represent "best estimate" of that assumption as of the measurement date
    - Discount rate
      - Rate at which obligations could be settled
      - ASC can accommodate the single rates of pre-retirement/post-retirement interest, tiered rates, or yield curves
      - Tools within ASC
        - Effective interest rate calculation for discount rate
        - Bond matching using projected payouts output
    - Salary Growth rate
    - Mortality
      - Assumption should be appropriate for the employee base covered under the plan as of measurement date
      - Reflect expected changes (improvements) in mortality
        - Very common to apply 2D mortality projection scales
      - ASC can accommodate mortality assumptions with mortality projection
    - Expected Long-Term Return on Plan Assets

  - Reporting requirements
    - Net Periodic Pension Cost
      - ASC report available based on user inputs for components
    - Year-end disclosures of balance sheet
    - Settlement/curtailment reporting

- ASC-715 and the Small Plan Market

#3 – ASC-715 Basics in ASC

B. ASC Programming for ASC-715

- Assumptions Coding on Plan Specifications: Assumptions \ FASB screen

Plan Specifications: Values \ FASB screen

- o Options to enter tiered rates, single rate of pre-retirement interest, single rate of post-retirement, or yield curve

- o Enter pre-retirement tables as needed
  - If Pre-Retirement Mortality, Turnover, or Disability tables are entered, select the corresponding Method Used on the Funding \ FUNDMETH screen.

- o Asset Long Term Rate of Return
  - Prints on the Summary of Actuarial Assumptions and Projected Payouts reports

- o Projected Mortality coding
  - 1-D or 2-D projection scales
  - Reminder: When using projection scales, base tables must have the base year entered on the 3rd description line of the base table

- o Benefit Forms
  - Form of payment will be the annuity specified in the Funding \ BENFORM screen

- o Projected Rates
  - To apply assumed annual increase in 415 $ Limits and 401(a)(17) Maximum Compensation Limit in the calculation of the FASB projected benefit

#3 – ASC-715 Basics in ASC

B. ASC Programming for ASC-715 (Continued)

- Table Maintenance
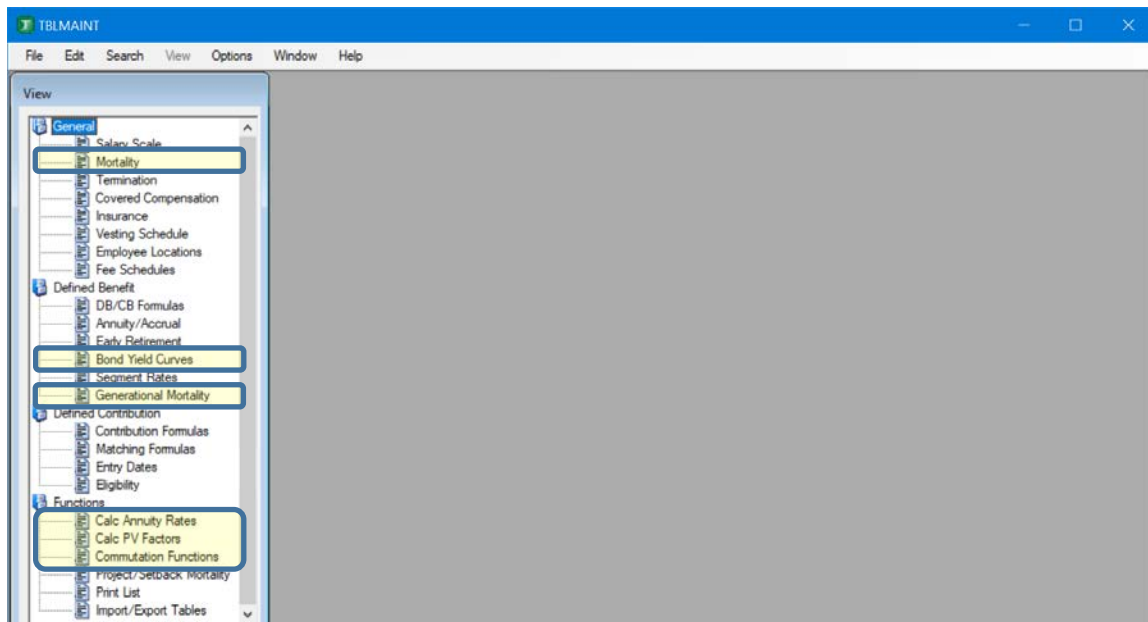
Access > Table Maintenance

- o General
  - ▪ Mortality
    - Tables may be installed from portable copy available in Client Support Center or imported from Excel file

- o Defined Benefit folder
  - ▪ Bond Yield Curves
    - FTSE yield curve
      - o 06/30, 09/30, and 12/31 yield curves included with System Patches
    - Other yield curves can be imported
  - ▪ Generational Mortality
    - Projection scales included with Patch installation

- o Functions
  - ▪ Calc PV Factors – to check PVFs
  - ▪ Commutation Functions for 2-D Projection scale checking

#3 – ASC-715 Basics in ASC

B. ASC Programming for ASC-715 (Continued)

- ASC-715 Programming Tips and Pointers

    o Consider making a copy of your PPA Funding case when applying unique coding that is specific to the ASC-715 calculations you are trying to achieve

    o Recommend using BOY valuation date
        - In Funding \ FUNDMETH screen, set Use BOY Valuation to Yes
            - Refer to FAQ 936: Valuation Dates - Changing from EOY to BOY
            - Refer to System Training > Web Seminars > Defined Benefit
                o DB Top Tips – 2020 - Topic #1 – Changing Valuation Dates

    o We're here to help!
        - The tips and pointers provided may not work for all cases and other approaches may achieve the same results.
        - Contact ASC Support with a portable copy of your plan and your objectives

#3 – ASC-715 Basics in ASC

B. ASC Programming for ASC-715 (Continued)

- ASC-715 Programming Tips and Pointers (Continued)

    o Options for reflecting lump sums in ABO, PBO, and Service Cost calculations
        - Using representative tiered segment rates and lump sum mortality tables
            - Set Rates are PPA Tiered = Yes
            - Enter representative tiered rates to approximate lump sum payments
            - Enter lump sum mortality tables in Post-Retirement Mortality tables
        - Using representative single post-retirement interest rate and lump sum mortality tables
            - Set Rates are PPA Tiered = No
            - Enter representative single rate to approximate lump sum payments in Post-Retirement interest field
            - Enter a single rate as the discount rate in the Pre-Retirement interest fields
            - Enter lump sum mortality tables in Post-Retirement Mortality tables
        - Using Actuarial Equivalence assumptions
            - Set Rates are PPA Tiered = No
            - Enter Actuarial Equivalence post-retirement rate from the Assumptions \ ACTEQUIV screen in Post-Retirement interest field
            - Enter a single rate as the discount rate in the Pre-Retirement interest field
            - Enter Actuarial Equivalence post-retirement mortality tables in Post-Retirement Mortality tables
        - Frozen plan coding in Funding \ PPAFASMP
            - Reminder – Make a copy of your plan since you will override the Funding \ PPAFASMP screen assumptions for this pointer
            - Set Funding \ BENFORM screen Fund to Lump Sum Limited by 415 field to Yes to use the PPA Funding to lump sum calculations
            - Code ASC-715 assumptions in the Funding \ PPAFASMP screen
            - If using an ASC-715 yield curve in Funding \ PPAFASMP
                o ASC system default for yield curve lookup options will be the Funding yield curve, but you can type in the ASC-715 yield curve table name in the entry field
            - Funding Target result can be used as the ABO and PBO

#3 – ASC-715 Basics in ASC

B. ASC Programming for ASC-715 (Continued)

- ASC-715 Programming Tips and Pointers (Continued)

    o Frozen plans using Yield Curve
        - Option to use Calculate Effective Interest Rate to verify ASC-715 discount rate developed outside the system using cash flow bond matching process
        - Enter ASC-715 assumptions in Funding \ PPAFASMP screen
        - Select Calculate Effective Interest Rate in the Calculations > Valuation menu.
            - The EIR result will be stored in Values \ VALPPA screen

    o Cash balance plans
        - The Projected Unit Credit method applied to cash balance plans generally results in PBO equal to ABO because the accrued portion of projected benefit will generally be less than the accrued benefit used for PBO (and SC purposes).
        - In some cases, the PBO will not equal ABO and a workaround is necessary to achieve the results of having the PBO equal to the ABO.
            - Create a Grid that includes at least the ABO and PBO
            - Consider selecting only active status codes (ABC) to limit which participants are affected by this workaround
            - Use Set Column Data to set employee PBO values equal to ABO values
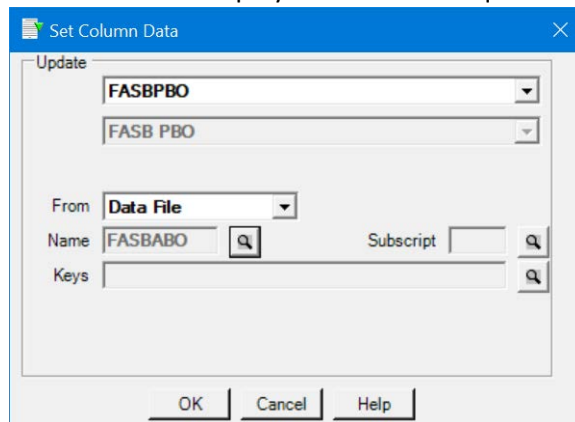
Employee: View > Grid > Set Column Data

            - Run Calculations > Valuation as a Partial Calculation from Plan Totals
            - Print Reports > Actuarial > FASB

- How to Activate ASC Programming for ASC-715
    o Run Calculations > Valuation
        - Calculations for ASC-715 run coincident with those of funding and PBGC calculations – no separate calculation step required

#3 – ASC-715 Basics in ASC

C. ASC Results Storage for ASC-715

- Employee Results Storage

  o Benefits \ FASB screen

Employee: Benefits\ FASB

  o ASC-715 results
  - Expected Future Service
    - For inactive status codes, value stored is expected future lifetime

  o ABO results by decrement

#3 – ASC-715 Basics in ASC

C. ASC Results Storage for ASC-715 (Continued)

- Plan Results Storage

  - o Selected plan level inputs in Costs \ FASBVAL screen
    - ▪ Inputs on this screen will appear on Reports > Actuarial > FASB.. > Information for FASB87 report

Plan Specifications: Costs \ FASBVAL

#3 – ASC-715 Basics in ASC

C. ASC Results Storage for ASC-715 (Continued)

- Plan Results Storage (Continued)

  o Active plan total results stored in Values \ VALFASB

Plan Specifications: Values \ VALFASB

  o Retired and Term Vested plan total results stored in Values \ LIABILTY

Plan Specifications: Values \ LIABILTY

#3 – ASC-715 Basics in ASC

D. ASC Reporting for ASC-715

- Employee Reporting

    o From Basic Data \ NAME screen, select F – FAS in the Print Multi-Decrement Support field.

    o Run Calculations > Valuation to generate the report
        - Illustrates at each age the development of each liability by decrement (normal retirement, early retirement, termination, death, disability)

2021 Top Tips Webcast
Top Tip #3 - ASC-715 Basics in ASC
Case: D17:0043
July 7, 2021 (15:29:29)

Present Values (FAS) - Active Employee1

	Description @ Age	61 [3]	62	63	64	65 [4]
1.	Segment rate	4.00%	4.00%	4.00%	4.00%	4.00%
2.	Mortality	0.000000	0.000000	0.000000	0.000000	0.000000
3.	Turnover	0.000000	0.000000	0.000000	0.000000	0.000000
4.	Disability	0.000000	0.000000	0.000000	0.000000	0.000000
5.	Early retirement	0.000000	0.000000	0.000000	0.000000	0.000000
6.	Vested percent	100.00%	100.00%	100.00%	100.00%	100.00%
7.	Probability of survival (all decs)	1.000000	1.000000	1.000000	1.000000	1.000000
8.	Probability of survival (mort only)	1.000000	1.000000	1.000000	1.000000	1.000000
9.	Interest discount	1.000000	0.961538	0.924556	0.888996	0.854804
10.	Present value factor	0.000	0.000	0.000	0.000	0.000
	Normal Retirement					
11.	Accrued benefit	3,807.56	4,007.96	4,034.37	4,034.37	4,034.37
12.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
13.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
14.	Service cost	0.00	0.00	0.00	0.00	0.00
	Employee Mandatory					
15.	Contribution	0.00	0.00	0.00	0.00	0.00
16.	Accumulated contribs	0.00	0.00	0.00	0.00	0.00
17.	Benefit by contribs	0.00	0.00	0.00	0.00	0.00
18.	Present value of contrib	0.00	0.00	0.00	0.00	0.00
19.	Expected contrib	0.00	0.00	0.00	0.00	0.00
	Early Retirement					
20.	Reduction	0.791468	0.791468	0.854894	0.924160	1.000000
21.	Benefit	3,013.56	3,172.17	3,448.96	3,728.40	4,034.37
22.	Pres val factor ERA to val	180.858	180.858	177.138	173.290	169.316
23.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
24.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
25.	Service cost	0.00	0.00	0.00	0.00	0.00
	Termination					
26.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
27.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
28.	Service cost	0.00	0.00	0.00	0.00	0.00
	Pre-retirement Death (Annuity)					
29.	Reduction	0.372308	0.372308	0.401051	0.432359	0.466536
30.	Benefit	1,417.59	1,492.20	1,617.99	1,744.30	1,882.18
31.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
32.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
33.	Service cost	0.00	0.00	0.00	0.00	0.00
	Pre-retirement Death (Lump Sum)					
34.	Benefit	0.00	0.00	0.00	0.00	0.00
35.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
36.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
37.	Service cost	0.00	0.00	0.00	0.00	0.00
	Disability					
38.	Reduction	0.000000	0.000000	0.000000	0.000000	0.000000
39.	Benefit	0.00	0.00	0.00	0.00	0.00
40.	Pres val factor NRA to val	0.000	0.000	0.000	0.000	0.000
41.	Present value of benefit (ABO)	0.00	0.00	0.00	0.00	0.00
42.	Present value of benefit (PBO)	0.00	0.00	0.00	0.00	0.00
43.	Service cost	0.00	0.00	0.00	0.00	0.00
	Compensations					
44.	Compensation	48,412.44	48,412.44	48,412.44	48,412.44	0.00

Sample Multi-Decrement Report
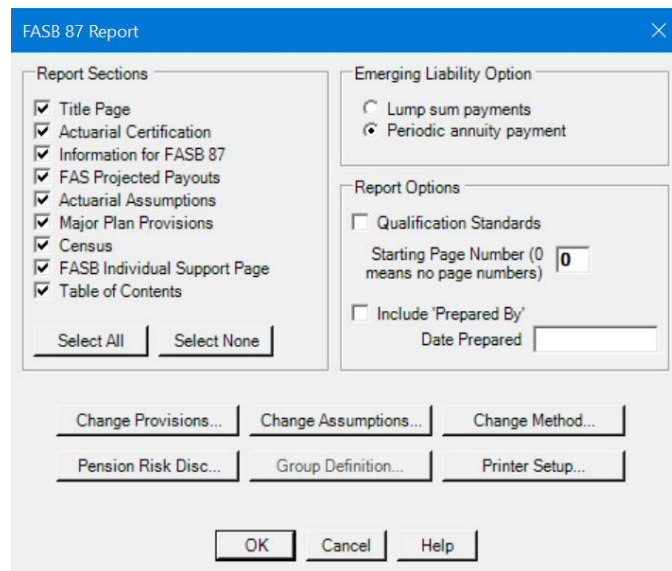
#3 – ASC-715 Basics in ASC

D. ASC Reporting for ASC-715 (Continued)

- Plan Reporting

  - Reports > Actuarial > FASB

Reports > Actuarial > FASB Menu

  - Highlights of Selected Report Pages
    - Information for FASB87
      - Original FASB87 disclosure format based on
        - Assets input in Costs \ CONTRIB
        - Plan level inputs in Costs \ FASBVAL
        - Plan totals of employee liabilities
      - Review current reporting and disclosure requirements to ensure compliance with accounting standards
    - FAS Projected Payouts
      - Payouts based on Projected Benefits
      - Emerging Liability Option will determine payout type:
        - Lump sum payment – lump sum at Normal Retirement using post-retirement assumptions on FASB screen
        - Periodic annuity payment – Accrued benefit commencing at Normal Retirement
    - FASB Individual Support Page
      - Active, terminated, in pay status reports showing ABO, PBO, and SC
      - Active reports include Average Future Service
      - Retired and Terminated reports include Expected Future Life

#3 – ASC-715 Basics in ASC

D. ASC Reporting for ASC-715 (Continued)

- Plan Reporting (Continued)

  o Reports > Actuarial > FASB Project Payouts…
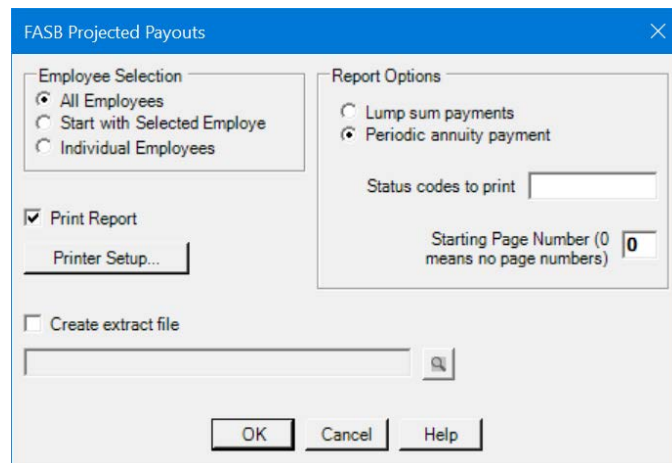
Reports > Actuarial > FASB Proj Payouts… Menu

- Options available include exporting to file, selecting specific individual employees or specific status codes for reporting

- Payouts based on Projected Benefits

  - Emerging Liability Option will determine payout type:
    o Lump sum payment – lump sum at Normal Retirement using post-retirement assumptions on FASB screen
    o Periodic annuity payment – Accrued benefit commencing at Normal Retirement

#3 – ASC-715 Basics in ASC

E. Sample Calculations

- Plan Data
    - BOY Valuation Date: 1/1/2021
    - Unit Benefit Formula: 5% x High 3 Average Compensation for Service up to 20 years
    - ASC-715 Assumptions
        - 4% pre- and post-retirement discount rate
        - No pre-retirement decrements
        - PR12WCAM/PR12WCAF post-retirement mortality with MP2020 M/MP2020 F 2-D generational mortality projection scales

- Participant Data
    - Active Employee1
        - AA – 61
        - RA – 65
        - Sex – Male
        - Service
            - Accrued – 19
            - Service at EOY – 20
            - Total – 23
        - Average Compensation
            - Accrual Average at BOY – 4,007.96
            - Benefit Average at EOY – 4,007.96
            - Projected Average – 4,034.37
        - Benefit
            - Accrued at BOY – 5% x 4,007.96 x 19 = 3,807.56
            - Accrued at EOY – 5% x 4,007.96 x 20 = 4,007.96
            - Projected Benefit – 5% x 4,034.37 x 20 = 4,034.37

#3 – ASC-715 Basics in ASC

E. Sample Calculations (Continued)

- Participant Data (Continued)

    o Active Employee1

        ▪ PVF – 144.73194
            • Stored in EE: Benefits \ FASB screen

            • Check Age – Calc APR function

            • Basic Check - Calc PV Factors Function

Table Maintenance > Functions > Calc PV Factors Menu

#3 – ASC-715 Basics in ASC

E. Sample Calculations (Continued)

- Participant Data (Continued)

  o Active Employee1 (Continued)

    ▪ PVF – 144.73194 (Continued)

      • Advanced Check – Commutation Functions Function

Table Maintenance > Functions > Commutation Functions Menu

      o Projection Factors Report for First Age 65
        ▪ Provides detail of the 2-D Projection Scale adjusted qx at First Age 65

Table Maintenance > Functions > Commutation Functions with Projected Factor Input of 65

#3 – ASC-715 Basics in ASC

E. Sample Calculations (Continued)

- Participant Data (Continued)

    - Active Employee1 (Continued)

        - PVF – 144.73194 (Continued)

            - Advanced Check – Commutation Functions Function (Continued)

                - Commutation Functions Report for range 61 to 65
                    - Confirms use of the 2-D Projection Scale adjusted qx
                    - 12ax column shows the APR at each age

Commutation Functions

Interest Rate 1:		4.000%		Mortality Project Type:			2-D		
Primary Mortality:		PR12WCAM		Primary Project Scale:			MP2020 M	Base Year:	2012
Turnover:				Valuation Year:			2021		
Disability:									
Salary Scale:									

Age	Lx	Mort Qx	Turn Qx	Disa Qx	Sx	Dx	Nx	NSx	N12x	12ax
61	931,069.08	.006875	.000000	.000000	0.0000	88,507.65	1,401,067.62	0.00	1,360,501.62	184.459
62	924,667.98	.007147	.000000	.000000	0.0000	84,518.43	1,312,559.97	0.00	1,273,822.36	180.858
63	918,059.38	.007419	.000000	.000000	0.0000	80,686.90	1,228,041.54	0.00	1,191,060.05	177.138
64	911,248.29	.007748	.000000	.000000	0.0000	77,007.96	1,147,354.65	0.00	1,112,059.33	173.290
65	904,187.94	.008164	.000000	.000000	0.0000	73,472.41	1,070,346.68	0.00	1,036,671.83	169.316

Table Maintenance > Functions > Commutation Functions

                - To check the PVF – APR at 65 discounted at pre-retirement interest
                    - 169.316 x 1.04^ (61-65) = 144.732

#3 – ASC-715 Basics in ASC

E. Sample Calculations (Continued)

- Participant Data (Continued)

  - Active Employee1
    - ABO
      - Present Value of Accrued Benefit
        - Accrued Benefit x PVF
        - 3,807.56 x 144.73194 = **_551,075.55_**
    - PBO
      - Present value of the maximum of the Accrued Benefit or accrued portion of the Projected Benefit
        - Benefit Used for PBO = Maximum [Accrued Benefit; Accrued portion of Projected Benefit]
          - Maximum [3,807.56 ; 19/20 x 4,034.37]
          - Maximum [3,807.56 ; 3,832.65] = 3,832.65
        - PBO = Benefit Used for PBO x PVF
          - 3,832.65 x 144.73194 = **_554,707.09_**
    - Service Cost
      - Present value of the maximum of the Accrued Benefit at EOY or accrued portion at EOY of projected benefit reduced by the benefit used for PBO
        - Benefit Accrual for Service Cost = Maximum [Accrued Benefit at EOY ; Accrued portion at EOY of Projected Benefit] - Benefit Used for PBO
          - Maximum [4,007.96 ; 20/20 x 4,034.37] – 3,832.65
          - Maximum [4,007.96 ; 4,034.37] – 3,832.65 = 201.72
        - SC = Benefit Accrual for Service Cost x PVF
          - 201.72 x 144.73194 = **_29,195.33_**

Employee: Benefits \ FASB

#3 – ASC-715 Basics in ASC

F. References

- Client Support Center
    - o Downloads > System Tables
        - DB Tables - Generational Mortality Projection Documentation.pdf
        - PPA Mortality Tables Import Instructions.pdf
            - This document includes a comprehensive list of available mortality tables to download from the System Tables folder

    - o System Training > Web Seminars > Defined Benefit
        - DB Top Tips – 2020
            - Topic #1 – Changing Valuation Dates
    - o FAQs

FAQ 936: Valuation Dates - Changing from EOY to BOY

- DB Reference Manual
    - o Chapter 15: FASB Reports

- System Reference Manual
    - o Chapter 6: Table Maintenance

- Online Help
    - o <F1> on keyboard to access online help for each employee or plan specifications field

Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

Top Tips for the DB Valuation System
Tuesday, August 10, 2021

#4 – Participant Termination/Optional Forms

Topic Roadmap

A. Accessing the Program

B. Participant Termination / Optional Forms Menu

C. Export Factors

D. Sample Reports

E. References

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms
Enhancements for Cash Balance Plans

#4 – Participant Termination/Optional Forms

A. Accessing the Program

- The Participant Termination / Optional Forms program is designed to provide:

    o Lump sum and optional form calculations for individual participants

    o Lump sum amounts for all participants in an active or terminated plan

    o Option to calculate actuarially increased benefits for late retirees

    o PBGC notices of plan benefits for active, terminated, and retired participants in PBGC covered terminated plans

- To access these reports, go to ASC Main Menu > Reports > Actuarial > Participant Termination/Optional Forms…

ASC Main Menu: Reports > Actuarial > Participant Termination Optional Forms

#4 – Participant Termination/Optional Forms

B. Participant Termination / Optional Forms Menu

Reports > Actuarial > Participant Termination Optional Forms

- Employee Selection

- Report Options

#4 – Participant Termination/Optional Forms

B. Participant Termination / Optional Forms Menu (Continued)

- Cash Balance Options

  o Use CB conv factors for Imm and Ret benefit payment

    ▪ Select this option to have the normal form of payment calculated based on Cash Balance assumptions entered in the Assumptions \ CASHBAL screen
    ▪ All other optional forms will be calculated based on Actuarial Equivalence assumptions entered in the Assumptions \ ACTEQUIV screen

  o Use CB conv factors for all opt forms of payment

    ▪ Select this option to have all optional forms of payment calculated based on Cash Balance assumptions rather than Actuarial Equivalence assumptions

  o Show cash balance basis

    ▪ Select this option to include the total cash balance contribution credits from the participant's Employee \ Costs \ CASHBAL \ Basis in Account field on the Calculation Worksheet

  o Show cash balance contribution history

    ▪ Select this option to include the cash balance contribution history on the Calculation Worksheet

  o Additional information

    ▪ 2020 Top Tips for the DB Valuation System #8 – Plan Term Optional Forms Enhancements for CB Plans provides sample reports and calculations specific to Cash Balance plans. The handout from that session is included with this topic in Appendix A
    ▪ The DB Reference Manual, Chapter 5: Participation Termination/Optional Forms, Example 2 has additional sample reports with calculations that cover a variety of combination of selections from the Participant Termination / Optional Forms menu

#4 – Participant Termination/Optional Forms

B. Participant Termination / Optional Forms Menu (Continued)

- Calculation Options

  - Enter a Calculation Date after the plan year begin date and not more than 12 months after the plan year

  - Present Values can be recalculated using nearest year, month or day or the value stored in participant screens can be used if "Do Not Recalculate" is selected. The APRs used for this calculation will be weighted based on the selected option.
    - The following employee fields are used when "Do Not Recalculate" is selected: Benefits \ ACCRBENF \ Present Value of Accrued Benefit for 417e and Costs \ LIABILITY \ 415 Immediate Lump Sum Benefit. The report can be overridden by manually editing these fields to any value you determine is appropriate before printing.
    - Update Assumptions \ 417E and MAXBNADJ screens with the parameters applicable to the calculation period.
    - 415 calculations are based on Completed Months

  - Calculate Annuity Payments to the Nearest Year or Nearest Month

- Optional Forms to Show

  - Forms and the factors used are included in the Export Factors File

- PBGC Benefit Commitments

  - Actives – used for Active and Terminated Participants

  - Retired – for participants in pay status

  - Enter the Plan Termination Date, Extended Termination Date, if applicable, Proposed Distribution Date and Involuntary Cashout amount, if applicable in the Participation Termination / Optional Forms Menu. These entries will be included in the reports
    - If no Involuntary Cashout amount is entered, the report will assume participant and spousal consent, if married, are required for benefit payments

- Export Factors

  - Option to export factors becomes available when Optional Forms report selected

#4 – Participant Termination/Optional Forms

C. Export Factors

- Create export factors file

    o Fixed columns allow user to integrate the data with other documents

    o Can be used to integrate with Relative Value Disclosure Forms

    o Can be used to check the Participant termination / Optional Forms Report results

- Data extracted includes:

    o Factors, such as: employee data, retirement age, optional form calculations for Optional Forms selected in the menu

    o Params – Information shown in the Parameters report

	Name	SS#	Birth Date	Spouse Bi	Term Date	Ret Date	Calculation Da	Life Only-C	Life with 5 Y	Life with 1	Life with 1	Lif
3	Employee 2	xxx-xx-0002	9/13/1993			9/13/2055	12/31/2020	7.96	7.96	7.96	7.95	
4	Employee 1	xxx-xx-0001	10/20/1963			10/20/2025	12/31/2020	5382.41	5369.97	5327.98	5253.58	
5	Employee 4	xxx-xx-0004	3/14/1995			3/14/2057	12/31/2020	10.58	10.58	10.58	10.57	
6	Employee 5	xxx-xx-0005	3/17/1988			3/17/2050	12/31/2020	22.77	22.77	22.76	22.74	
7	Employee 3	xxx-xx-0003	8/12/1955			1/2/2021	12/31/2020	47.06	46.72	45.71	44.12	
8	Employee 6	xxx-xx-0006	10/26/1974			10/26/2036	12/31/2020	35.86	35.84	35.79	35.68	
9	Employee 7	xxx-xx-0007	1/27/1971			1/27/2033	12/31/2020	48.49	48.45	48.32	48.06	
10	Employee 8	xxx-xx-0008	4/1/1975		11/1/2019	4/1/2037	12/31/2020	8.88	8.88	8.86	8.84	
11	Employee 9	xxx-xx-0009	1/23/1991		12/2/2019	1/23/2053	12/31/2020	16.09	16.09	16.08	16.07	
12	Employee 10	xxx-xx-0010	1/22/1963			1/22/2025	12/31/2020	19.7	19.65	19.47	19.16	
13	Employee 11	xxx-xx-0011	7/26/1961			7/26/2023	12/31/2020	16.92	16.87	16.69	16.4	
14	Employee 13	xxx-xx-0013	11/18/1969			11/18/2031	12/31/2020					
15	Employee 14	xxx-xx-0014	8/16/1981			8/16/2043	12/31/2020					

Sample Participation Termination Optional Forms \ Export Factors file

#4 – Participant Termination/Optional Forms

D. Sample Reports

- Report output will change for traditional or cash balance plans

- Refer to the DB Reference Manual – Chapter 5: Participant Termination Optional Forms for sample cash balance reports and sample calculations

#4 – Participant Termination/Optional Forms

D. Sample Reports (Continued)

- Single Lump Sum Worksheet: Traditional DB Plan

  o Details on the top of this page include key ages used in the calculation of the 417(e)(3) Lump Sum and 415 maximum calculations below

  o For a Cash Balance Plan, this report includes interest crediting rate, interest to Calculation Date and Cash balance account as of Calculation Date

PARTICIPANT TERMINATION / OPTIONAL FORMS
SAMPLE PLAN

Single Lump Sum Worksheet for: Employee 1

Valuation Date: December 31, 2020
Calculation Date: July 31, 2021

Date of Birth:	04/11/1978	Normal Retirement Date:	04/11/2043
Date of Hire:	06/01/2003	Date NRA Attained:	04/11/2043
Date of Entry:	01/01/2007	Early Retirement Date:	N/A
Vesting Start Date:	01/01/2007	Vesting Service:	Total service
Years of Vesting:	14.00	Vested Percent:	100.00%
Accrual Start Date:	01/01/2007	Accrual Service:	Participation service
Years Accrued:	14.00	Discount Period for Sgl Lump Sum:	21,254 days
Total Accrual Years:	36.00	Age at Calc Date for Sgl Lump Sum:	43, 111 days
		Age at NRD:	65, 0 days
Normal Form:	Life Only	415 Service at Calculation Date:	19.00
		415 Participation at Calculation Date:	15.00

Accrued Benefit Payable at Normal Retirement Date: 272.17

Vested Percent: 100.00%

Vested Accrued Benefit Payable at Normal Retirement Date: 272.17

	Actuarial Equivalence Assumptions	Alternate Assumptions
Post-retirement annuity rate:	141.529	N/A
Pre-retirement interest rate:	5.00%	0.51 / 2.26 / 3.01%
Present value factor:	0.34693	95.914
Single lump sum value of vested accrued benefit:	13,364	26,105
IRC §415 maximum lump sum:	1,123,149	1,123,149
Single lump sum value on Calculation Date:	13,364	26,105

Participant Termination Optional Forms: Single Lump Sum Worksheet

#4 – Participant Termination/Optional Forms

D. Sample Reports (Continued)

- Calculation Worksheet: Traditional DB Plan

  o Summarizes participant data used in calculations

  o For a cash balance plan, this report includes Account Value, conversion factors, and optional Cash Balance Basis and Contribution History (options available in the Participant Termination/Optional Forms menu)

PARTICIPANT TERMINATION / OPTIONAL FORMS
SAMPLE PLAN

Calculation Worksheet for: Employee 1

Valuation Date: December 31, 2020
Calculation Date: July 31, 2021

Name:	Employee 1	SSN:	xxx-xx-0001
Sex:	M	HCE/Key:	Y/Y
Date of Birth:	04/11/1978	Primary Status:	A
Date of Hire:	06/01/2003	Years Accrued:	14.00
Date of Entry:	01/01/2007	Total Accrual Years:	36.00
Date of Termination:	N/A	Vesting Service:	14.00
Spouse's Date of Birth:		Vested Percent:	100.00%
Normal Retirement Date:	04/11/2043	Discount Period for Single Lump Sum:	21, 254 days
Date NRA Attained:	04/11/2043	Age at Calc Date for Single Lump Sum:	43, 111 days
Early Retirement Date:	N/A	Spouse's Age at NRD for Sgl Lump Sum:	65, 0 days
415 Valuation Date Service:	18.00	Spouse's Age at Calc Date for Sgl LS:	43, 111 days
415 Valuation Date Participation:	14.00	Age at NRD for Annuity Payments:	65, 0 months
415 Normal Ret Date Service:	40.00	Age at Calc Date for Annuity Pmts:	43, 4 months
415 Normal Ret Date Participation:	36.00	Spouse's Age at NRD for Annuity Pmts:	65, 0 months
415 Service Start Date:	01/01/2003	Spouse's Age at Calc Dt for Annty Pmts:	43, 4 months
415 Participation Start Date:	01/01/2007		

Accrual Average Comp:	23,333.33
Accrued Benefit:	272.17
Accrued Benefit Add-on:	0.00
Accrued Benefit Offset:	0.00
Forced Maximum Accrued Benefit:	0.00
Normal Form:	Life Only

Employee History

Date	Compensation	Hours
12/31/2020	300,000.00	2080
12/31/2019	300,000.00	1000
12/31/2018	300,000.00	2080

Participant Termination Optional Forms: Calculation Worksheet

#4 – Participant Termination/Optional Forms

D. Sample Reports (Continued)

- Participant Statement with Optional Forms: Traditional DB Plan

  o Joint and Survivor calculation assumes Spouse is the same age as the Participant If Spouse's Birth is not entered in the Employee \ Basic Data \ DATE screen

  o Optional forms are calculated as of the date entered in Calculation Date field and at Normal Retirement Date.

  o For cash balance plans, the Participant Termination / Optional Forms menu includes options to use CB conversion factors to calculate the optional forms reported here

PARTICIPANT TERMINATION / OPTIONAL FORMS
SAMPLE PLAN

Participant Statement with Optional Forms
Employee 1

Calculation Date: July 31, 2021

Accrued benefit payable monthly:	$272.17
Vested percentage:	100.00%
Vested accrued benefit payable monthly beginning on your Normal Retirement Date:	$272.17*

* Your vested accrued benefit is payable to you for your lifetime. Payments will cease on your death. See the schedule below for benefits payable in optional forms.

Following is your personal information in our records. If any of this information is incorrect, please contact the Plan Administrator immediately with the correct information. Failure to do so could affect the amount of your benefit.

Date of Birth:	04/11/1978
Spouse's Date of Birth:	
Date of Hire:	06/01/2003
Normal Retirement Date:	04/11/2043

Schedule of benefit payment options:

Form of Payment	Payable Now	At Normal Retirement
Life Only*	65.80	272.17
Life With 10 Years Certain	65.62	260.54
Joint and 100% Survivor	61.55	230.53
Joint and 50% Survivor	63.60	249.63
Single Lump Sum	26,109	38,520**

* Plan normal form of payment
** Based on plan factors. Minimum lump sum may be greater, depending on interest rates in effect as of the date of distribution.

Participant Termination Optional Forms: Participant Statement with Optional Forms

#4 – Participant Termination/Optional Forms

D. Sample Reports (Continued)

- PBGC Notice of Plan Benefits: Traditional DB Plan, Active participants

  o Includes Termination Date, Extended Term Date, if applicable, Distribution Date and Involuntary Cashout, if applicable, entered from the program menu

  o For Cash Balance Plans, this report includes applicable cash balance interest rates and states that "For Cash Balance Plans, the single lump sum value is the cash balance account value"

NOTICE OF PLAN BENEFITS for: Employee 1

You have previously been informed that the PARTICIPANT TERMINATION / OPTIONAL FORMS SAMPLE PLAN is being terminated as of March 31, 2021. A notice concerning this termination will be filed with the Pension Benefit Guaranty Corporation.

Following is general information about the plan and the termination:

Name of plan sponsor:
EIN of plan sponsor: 99-0000001
Name of plan: PARTICIPANT TERMINATION / OPTIONAL FORMS SAMPLE PLAN
Plan number: 999
Name, address, phone of plan contact:

Proposed termination date: March 31, 2021
Extended proposed termination date: N/A
Proposed distribution date: July 31, 2021

Following is your personal data that was used to calculate your benefit. If any of this information is incorrect or incomplete, you should immediately provide the correct information to the plan contact listed above. Failure to do so could affect the amount of the benefit you receive.

Date of Birth: 04/11/1978
Spouse's Date of Birth: Assumed same age
Date of Hire: 06/01/2003
Date of Plan Entry: 01/01/2007
Date of Termination: N/A
Date of Credited Service: 01/01/2007
Average Annual Compensation: 280,000

Normal Retirement Date: 04/11/2043
Early Retirement Date: N/A
Normal Form of Payment: Life Only
Normal Retirement Benefit: $272.17

Your Normal Retirement Benefit is payable on your Normal Retirement Date in the Normal Form of Payment indicated above. The Life Annuity form of payment provides you with a monthly benefit for your lifetime, with no payments to your beneficiary after your death. If you are married at the time your benefit commences, your benefit will be paid in the form of a qualified joint and survivor annuity unless you, with your spouse's consent, elect another form of payment. A joint and survivor annuity provides you with a monthly benefit for your lifetime, with a percentage of your benefit payable to your surviving spouse on your death. Payments cease on the death of both you and your spouse. If paid as a joint and 50% survivor annuity, you would receive $249.63 per month for your lifetime. If your spouse survives you, (s)he would receive $124.82 per month for his/her lifetime. Payments would cease on the death of your spouse. If your spouse dies before you, payments would cease on your death.

The plan provides for payment of your benefit in other forms, including a single sum option. If the amount of your single sum benefit at the time of distribution is $5,000.00 or less, your benefit will automatically be paid to you in this form. If the amount of your single sum is greater than $5,000.00 however, you cannot receive your benefit in this form unless both you and, if you are married, your spouse consent to the distribution.

Participant Termination Optional Forms: Notice of Plan Benefits, Page 1

#4 – Participant Termination/Optional Forms

D. Sample Reports (Continued)

- PBGC Notice of Plan Benefits: Traditional DB Plan, Active participants (Continued)

NOTICE OF PLAN BENEFITS for: Employee 1

As of the proposed distribution date, the estimated amount of your single sum distribution is $26,105. This benefit was calculated according to the provisions of the plan document using the actuarial assumptions, A or B, producing the greater benefit:

A) Interest: Pre-retirement: 5.00%
              Post-retirement: 5.00%
   Mortality: Pre-retirement: None
             Post-retirement: GAR 94 without loads projected to 2002 with scale AA 50%M/50%F

B) Interest: December 2020 Applicable Interest Rates
             0.51% for the first 5 payment years,
             2.26% for the next 15 payment years, and
             3.01% for the remaining payment years
   Mortality: Pre-retirement: None
             Post-retirement: 2021 Applicable Mortality Table from Notice 2019-67

On the date your estimated single sum distribution was calculated, the set B assumptions produced the greater benefit. Please note that the interest rates and mortality may change before your distribution date. A change in interest rates will have the greatest impact on the amount of your single sum benefit, and higher interest rates will produce lower benefits.

Other forms of payment offered by the plan include the following:

Life Only	Payable for the life of the participant.
Life With 10 Years Certain	Payable for the life of the participant. If the participant dies before receiving payments for 10 full years, payments will continue to his/her surviving beneficiary for the remainder of the 10-year period and then stop.
Joint and 100% Survivor	Payable for the life of the participant and his/her beneficiary. Payments cease on the death of both.
Joint and 50% Survivor	Payable for the life of the participant. If the participant dies before his/her beneficiary, 50% of the benefit will continue for the life of the beneficiary.
Single Lump Sum	This is a one-time payment of the lump sum equivalent of the plan's normal form of benefit.

Participant Termination Optional Forms: *Notice of Plan Benefits, Page 2*

#4 – Participant Termination/Optional Forms

E. References

- FAQs

FAQ 745: Optional Forms – Calculating lump sums & joint and survivor annuities
FAQ 1023: 415 Maximum Lump Sum

- DB Reference Manual
  - Chapter 5: Participant Termination/Optional Forms

- Reports Reference Manual
  - DB Reports

- 2020 DB Top Tips
  - #8 – Plan Term Optional Forms Enhancements for CB Plans

#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

ASC
Since 1981
Actuarial Systems Corporation

Top Tips for DB Valuation System

Tuesday, June 30, 2020

#1 – Changing Valuation Dates

#2 – Coding Postponed Retirees

#3 – CARES Act for DB Plans

#4 – Using Force All Benefits

#5 – Exporting Plan Specifications with ASCRIPT

#6 – Importing Plan Specifications from DGEM Documents

#7 – At-risk Coding for 1st Year Cash Balance Plans

#8 – Plan Termination/Optional Forms Enhancements for Cash Balance Plans

#9 – Interest Rate Basics for Cash Balance Plans

#10 – ASC Defined Benefit Learning Resources

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

Topic Roadmap

    A. Summary of Cash Balance Enhancements

    B. Accessing the Program

    C. Participant Termination / Optional Forms Menu

    D. Summary of Cash Balance Options

    E. Sample Cash Balance Report

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

A. SUMMARY OF CASH BALANCE PLAN ENHANCEMENTS

Additional programming enhancements have been made for Cash Balance Plans. The following is a summary of the enhancements that have been made to the program:

- The Parameters report will include the cash balance options chosen and cash balance assumptions being used.
- Detailed cash balance account information will be illustrated on the Single Lump Sum and Calculation worksheets for all cash balance plans.
- The Single Lump Sum values shown on the report will be the hypothetical cash balance account values.
- An option has been added that will allow you to calculate both the Immediate and Retirement (Normal and Early) normal forms of monthly benefit by projecting the hypothetical cash balance account forward to the payment date and converting to the normal form of annuity using the cash balance conversion factors.
- An option has been added that will allow you to calculate the optional forms of payment (Certain & Life, Joint & Survivor, etc.) by converting the hypothetical cash balance account directly to the annuity form of payment using the cash balance conversion factors. If this option is chosen, the actuarial equivalent factors will not be used to calculate the optional forms of benefits.
- The option to illustrate the cash balance basis has been added. The total of the cash balance contribution credits from the **EE Costs \ CASHBAL – Basis in Account** field will be included on the Calculation Worksheet. Note that this field does not include the **Prior Contribution** for BOY valuations or the **Expected Contribution** for EOY valuations.
- The option to show the cash balance contribution history (if available on the **EE \ Basic Data \ HISTORY** screen) has been added.
- New wording has been added to the "Participant Statement with Optional Forms" to describe the method chosen to calculate the annuity benefits.
- The description for "Single Lump Sum" form of payment on the "Schedule SB Attachment" and "Notice of Plan Benefits" now states "For Cash Balance plans, the single lump sum value is the cash balance account value".

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

B. ACCESSING THE PROGRAM

The Participant Termination / Optional Forms program is designed to provide:

- Lump sum and optional form calculations for individual participants
- Lump-sum amounts for all participants in an active or terminated plan
- PBGC notices of plan benefits for active, terminated and retired participants in PBGC covered terminated plans.

To access these reports, go to ASC Main Menu > Reports > Actuarial > Participant Termination/Optional Forms…

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

D. SUMMARY OF CASH BALANCE PLAN OPTIONS

OPTION	DESCRIPTION
Use CB conv factors for Imm and Ret benefit payment	Check this box to have the 'Payable Now', Early (if applicable) and Normal Retirement plan annuity normal forms of payment calculated by projecting the cash balance account to the date of payment and converting to an annuity based on the Cash Balance Assumptions. (🏠 **Assumptions \ CASHBAL** screen). Unless **Use CB conv factors for all opt forms of payment** is checked, all other optional forms of payment will be calculated using the actuarial equivalence assumptions as coded on the 🏠 **Assumptions \ ACTEQUIV** screen.
Use CB conv factors for all opt forms of payment	Check this box to have all annuity forms of payment calculated by projecting the cash balance account to the date of payment and converting to an annuity based on the Cash Balance Assumptions. (🏠 **Assumptions \ CASHBAL** screen). The actuarial equivalence assumptions will not be used to calculate the optional forms of payment.
Show cash balance basis	If this box is checked, the total of the cash balance contribution credits from the 🏠 **Costs \ CASHBAL – Basis in Account** field will be included on the Calculation Worksheet. This field does not include the **Prior Contribution** for BOY valuations or the **Expected Contribution** for EOY valuations.
Show cash balance contribution history	If this box is checked, the history of the cash balance contribution credits will be illustrated on the Calculation Worksheet. The historical cash balance credits are found in the 🏠 **Basic Data \ HISTORY – Ext A** screens.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT

Valuation Date – 12/31/2019
There are no early retirement provisions
Cash Balance Assumptions:
     Current Interest Rate – 4.00%
     Post-Retirement Interest Rate – 5.50%
     Post-Retirement Mortality – RP19C U

Actuarial Equivalence Assumptions:
     Pre and Post-Retirement Interest Rate – 6.00%
     Post-Retirement Mortality – RP19C U

Sample Participant Information:
     Name – Nancy
     Age Nearest as of Valuation Date – 56
     Age as of Calculation Date – 56 years, 107 days
     Cash balance account as of 12/31/2019 valuation date – 4,273.94
     Age at Retirement – 62, 16 days
     Age Nearest at Retirement – 62
     Age Nearest at Calculation Date – 56
     Spouse assumed to be the same age

Plan Termination / Optional Forms elections:
     Recalculate Present Values – To the nearest day
     Show Cash Balance Basis – Yes
     Show cash balance contribution history – Yes
     Liquidation Date – 07/01/2020

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)
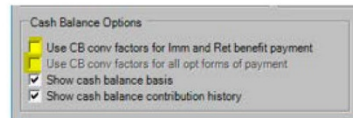

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PLAN PARAMETERS PAGE

- The Cash Balance Options questions have been added
- The Parameters page now includes the cash balance assumptions (highlighted in green below)

Combo Cash Balance Plan
Parameters (D35:0011)

Plan Year:	January 1, 2019 to December 31, 2019
Valuation Date:	December 31, 2019
Liquidation date: Use liquidation date for all participants	July 1, 2020
Recalculate accrued benefits? Store recalculations?	Yes No
Included status codes: Vest all participants at 100%?	ABCT No
Recalculate present values?	To the nearest day
Use CB Conversion Factors for Imm and Ret benefit payments?	No
Show Cash Balance Basis?	Yes
Show cash balance contribution history?	Yes
Cash balance assumptions Pre-retirement current interest rate: Post-retirement conversion interest rate: Post-retirement mortality:	 4.00% 5.50% RP19C U
Actuarial equivalence assumptions Actuarial equivalence equal to 417(e)?	 N/A
Pre-retirement interest: Post-retirement interest: Pre-retirement mortality: Post-retirement mortality:	6.00% 6.00% None RP19C U
Plan normal form of payment:	Life Only
PBGC Benefit Commitments Plan termination date: Extended plan termination date: Distribution date: Involuntary Cashout:	 March 1, 2020 July 1, 2020 5,000.00

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)
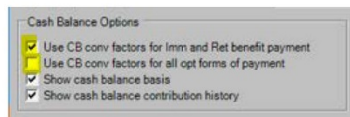
Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

SINGLE LUMP SUM WORKSHEET

- The interest crediting rate will be shown.
- The report will include cash balance hypothetical account balance information – this is automatic; not an option.
- Interest credit to the Liquidation date is added if 'Recalculate Present Values' is set to anything other than 'Do not recalculate'.
- Alternate Assumptions will not be used and will be set to N/A. The 417(e)(3) assumptions will not be illustrated – it is assumed that the Cash Balance plan meets the hybrid plan safe harbor exemption from Code Section 417(e)

Combo Cash Balance Plan

Single Lump Sum Worksheet for: Nancy

Valuation Date: December 31, 2019
Calculation Date: July 1, 2020

Date of Birth:	03/16/1964	Normal Retirement Date:	04/01/2026
Date of Hire:	08/01/2016	Date NRA Attained:	03/16/2026
Date of Entry:	10/01/2017	Early Retirement Date:	N/A
Vesting Start Date:	01/01/2017	Vesting Service:	Total service
Years of Vesting:	3.00	Vested Percent:	100.00%
Accrual Start Date:	10/01/2017	Accrual Service:	Participation service
Years Accrued:	3.00	Discount Period:	5, 258 days
Total Accrual Years:	8.25	Age at Calculation Date:	56, 107 days
Normal Form:	Life Only	415 Service at Calculation Date:	4.00
		415 Participation at Calculation Date:	4.00

Accrued Benefit Payable at Normal Retirement Date: 35.12

Vested Percent: 100.00%

Vested Accrued Benefit Payable at Normal Retirement Date: 35.12

	Cash Balance Account and Assumptions	Alternate Assumptions
Interest crediting rate:	4.00%	N/A
Cash balance account as of 12/31/2019:	4,273.94	N/A
Interest to 07/01/2020:	85.34	N/A
Cash balance account as of 07/01/2020:	4,359.28	N/A
Vested cash balance account as of 07/01/2020:	4,359.28	N/A
IRC §415 maximum lump sum:	209,258	N/A
Single lump sum value as of 07/01/2020:	4,359.28	N/A

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

SINGLE LUMP SUM WORKSHEET (continued)

➢ When 'Recalculate Present Values' is set to 'Nearest Day', the interest credit to 07/01/2020 will be calculated as follows: $4,273.94 \times 1.04^{(184/365)} - 4,273.94 = 85.34$, where 184 is the date difference between 7/1/2020 and 12/31/2019. Additional examples for other 'Present Value' settings will be illustrated at the end of this presentation.

➢ Note that the 'Single lump sum value as of 07/01/2020' is equal to the hypothetical account balance as of the valuation date plus interest to the calculation date.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

CALCULATION WORKSHEET

- If 'Show cash balance basis' is checked, the 'Total of Employer Cash Balance Contribution Credits', will be illustrated. This amount comes from the 'Basis in Account' field found on the EE \ Costs \ CASHBAL screen.
- The 'Current Interest Crediting Rate' will be illustrated on the worksheet
- Both the Cash Balance Conversion APR at NRD and Cash Balance APR as of the Calculation Date will be illustrated.
- If 'Show cash balance contribution history' is checked, the history of the cash balance contribution credits will be illustrated (Note: historical cash balance credits are found in the EE \ Basic Data \ HISTORY screen – Ext A)

Combo Cash Balance Plan

Calculation Worksheet for: Nancy

Valuation Date: December 31, 2019
Calculation Date: July 1, 2020

Name:	Nancy	SSN:	xxx-xx-0002
Sex:	F	HCE/Key:	N/N
Date of Birth:	03/16/1964	Primary Status:	A
Date of Hire:	08/01/2016	Years Accrued:	3.00
Date of Entry:	10/01/2017	Total Accrual Years:	8.25
Date of Termination:	N/A	Vesting Service:	3.00
Spouse's Date of Birth:		Vested Percent:	100.00%
Normal Retirement Date:	04/01/2026	Discount Period:	5, 258 days
Date NRA Attained:	03/16/2026	Age at Calculation Date:	56, 107 days
Early Retirement Date:	N/A	Spouse's Age at NRD:	62, 16 days
415 Valuation Date Service:	3.00	Spouse's Age at Calc Date:	56, 107 days
415 Valuation Date Participation:	3.00		
415 Normal Ret Date Service:	9.00		
415 Normal Ret Date Participation:	9.00		
415 Service Start Date:	01/01/2017		
415 Participation Start Date:	01/01/2017		

Total of Employer Cash Balance Contribution Credits:	2,400.00
Account Value as of the Distribution Date:	4,359.28
Current Interest Crediting Rate:	4.00%
Cash Balance Conversion at NRD:	154.000
Cash Balance APR as of the Calculation Date:	170.588
Accrued Benefit:	35.12
Accrued Benefit Add-on:	0.00
Accrued Benefit Offset:	0.00
Forced Maximum Accrued Benefit:	0.00
Normal Form:	Life Only

Employee History

Date	Compensation	Hours	CB Contribution Credits
12/31/2019	37,039.88	2080	1,742.00
12/31/2018	37,039.88	1920	1,200.00
12/31/2017	36,736.80	1000	1,200.00

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)
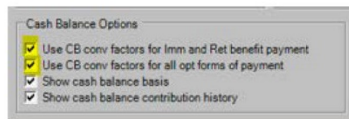

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 1 – Use CB Conversion Factors for Imm and Ret Benefit payments not checked

Cash Balance Options
- ☐ Use CB conv factors for Imm and Ret benefit payment
- ☐ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Combo Cash Balance Plan
Participant Statement with Optional Forms Nancy

Calculation Date: July 1, 2020

Accrued benefit payable monthly:	$35.12
Vested percentage:	100.00%
Vested accrued benefit payable monthly beginning on your Normal Retirement Date:	$35.12*

* Your vested accrued benefit is payable to you for your lifetime. Payments will cease on your death. See the schedule below for benefits payable in optional forms. The benefit payable monthly beginning on your Normal Retirement Date is calculated by projecting the cash balance account forward to retirement using the Current Interest Crediting rate and then dividing by the Cash Balance Conversion APR @ NRD. All other monthly benefit forms of payment are the actuarial equivalent of the plan normal form of payment at NRD.

Following is your personal information in our records. If any of this information is incorrect, please contact the Plan Administrator immediately with the correct information. Failure to do so could affect the amount of your benefit.

Date of Birth:	03/16/1964
Spouse's Date of Birth:	
Date of Hire:	08/01/2016
Normal Retirement Date:	04/01/2026

Schedule of benefit payment options:

Form of Payment	Payable Now	At Normal Retirement
Life Only*	22.87	35.12
Life With 15 Years Certain	22.40	33.59
Joint and 100% Survivor	20.93	31.22
Single Lump Sum	4,359	5,408

* Plan normal form of payment

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 1 Calculations

Cash Balance Options
- ☐ Use CB conv factors for Imm and Ret benefit payment
- ☐ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Form of Payment	Payable Now	At Normal Retirement
Life Only*	22.87	35.12
Life With 15 Years Certain	22.40	33.59
Joint and 100% Survivor	20.93	31.22
Single Lump Sum	4,359	5,408

Actuarial Equivalence APR's - Based on 6.00% interest and RP19C U mortality

	Payable Now - 56	NRA - 62
Life Only	161.964	147.094
15C&C	165.376	153.812
Joint and 100% Survivor	176.997	165.477
Life Only Cash Balance Conversion Factor		154.000

Use CB Conversion Factors for Imm and Ret benefit payments - No
Use CB Conversion Factors for all Opt forms of payment - No

➤ If 'Use CB Conversion Factors for Imm and Ret benefit payments' is not checked, the Payable Now, Early Retirement (if applicable), and all Optional forms of payment will be the actuarial equivalent of the normal form of payment at retirement.

➤ Note the blue highlighted statement at the top of the 'Participant Statement with Optional Forms'. This language will change depending on the options chosen.

➤ NRA – 62 Calculations
  - Life Only (Normal Form) = 35.12 (From EE \ Benefits \ ACCRBENF – Accrued Benefit)
  - 15C&C = 35.12 x 147.094 / 153.812 = 33.59
  - Joint and 100% Survivor = 35.12 x 147.094 / 165.477 = 31.22
  - Single Lump Sum = 4,273.94 x 1.04^6 = 5,407.90
    Note: interest crediting to retirement uses nearest years and is calculated based on the balance as of the valuation date

➤ Payable Now Calculations
  - Discount Period = 5 years, 258 days = 5 + 258/365 = 5.706849
  - Life Only = 35.12 x 147.094 / 1.06^$^{5.706849}$ / 161.964 = 22.87
  - 15C&C = 22.87 x 161.964 / 165.376 = 22.40
  - Joint and 100% Survivor = 22.87 x 161.964 / 176.997 = 20.93
  - Single Lump Sum = 4,359 (from Single Lump Sum Worksheet)

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 2 – Use CB Conversion Factors for Imm and Ret Benefit payments is checked; Use CB conv factors for all opt forms of payment is NOT checked

Cash Balance Options
- ☑ Use CB conv factors for Imm and Ret benefit payment
- ☐ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Combo Cash Balance Plan
Participant Statement with Optional Forms Nancy

Calculation Date: July 1, 2020

Accrued benefit payable monthly:	$35.12
Vested percentage:	100.00%
Vested accrued benefit payable monthly beginning on your Normal Retirement Date:	$35.12*

* Your vested accrued benefit is payable to you for your lifetime. Payments will cease on your death. See the schedule below for benefits payable in optional forms.

The normal form of benefit payable monthly beginning on your Normal Retirement Date is calculated by projecting the cash balance account forward to retirement using the Current Interest Crediting rate and then dividing by the Cash Balance Conversion APR @ NRD.

The normal form of benefit payable monthly beginning on your 'Payable Now' Date is calculated by projecting the cash balance account forward to the Calculation Date using the Current Interest Crediting rate and then dividing by the Cash Balance APR as of the calculation date.

All Optional monthly forms of payment are the actuarial equivalent of the plan normal form of payment.
Following is your personal information in our records. If any of this information is incorrect, please contact the Plan Administrator immediately with the correct information. Failure to do so could affect the amount of your benefit.

Date of Birth:	03/16/1964
Spouse's Date of Birth:	
Date of Hire:	08/01/2016
Normal Retirement Date:	04/01/2026

Schedule of benefit payment options:

Form of Payment	Payable Now	At Normal Retirement
Life Only*	25.55	35.12
Life With 15 Years Certain	25.02	33.59
Joint and 100% Survivor	23.38	31.22
Single Lump Sum	4,359	5,408

* Plan normal form of payment

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 2 Calculations

Cash Balance Options
- ☑ Use CB conv factors for Imm and Ret benefit payment
- ☐ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Form of Payment	Payable Now	At Normal Retirement
Life Only*	25.55	35.12
Life With 15 Years Certain	25.02	33.59
Joint and 100% Survivor	23.38	31.22
Single Lump Sum	4,359	5,408

Actuarial Equivalence APR's Based on 6.00% interest and RP19C U mortality

	Payable Now - 56	NRA - 62
Life Only	161.964	147.094
15C&C	165.376	153.812
Joint and 100% Survivor	176.997	165.477
Life Only Cash Balance Conversion Factor	170.588	154.000

Use CB Conversion Factors for Imm and Ret Benefit payments - Yes
Use CB Conversion Factors for all Opt forms of payment - No

➤ If 'Use CB Conversion Factors for Imm and Ret benefit payments' is checked, the Payable Now, and Early Retirement (if applicable) normal forms of benefits will be calculated by converting the hypothetical account balance to a benefit at the given date. All other Optional forms of payment will be the actuarial equivalent of the normal form of payment at the Normal, Early, and Payable Now calculation dates.

➤ Note the blue highlighted statement at the top of the 'Participant Statement with Optional Forms'. This language will change depending on the options chosen.

➤ NRA – 62 Calculations (Same as Example 1)
- Life Only (Normal Form) = 35.12 (From EE \ Benefits \ ACCRBENF – Accrued Benefit)
- 15C&C = 35.12 x 147.094 / 153.812 = 33.59
- Joint and 100% Survivor = 35.12 x 147.094 / 165.477 = 31.22
- Single Lump Sum = 4,273.94 x 1.04^6 = 5,407.90
  Note: interest crediting to retirement uses nearest years and is calculated based on the balance as of the valuation date

➤ Payable Now Calculations
- Life Only = 4,359.28 / 170.588 = 25.55 (Based on Payable Now Single Lump Sum)
- 15C&C = 25.55 x 161.964 / 165.376 = 25.02
- Joint and 100% Survivor = 25.55 x 161.964 / 176.997 = 23.38
- Single Lump Sum = 4,359 (from Single Lump Sum Worksheet)

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 3 – Both CB Conversion Factors for Imm and Ret Benefit payments and Use CB conv factors for all opt forms of payment are checked

Cash Balance Options
- ☑ Use CB conv factors for Imm and Ret benefit payment
- ☑ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Combo Cash Balance Plan
Participant Statement with Optional Forms Nancy

Calculation Date: July 1, 2020

Accrued benefit payable monthly:	$35.12
Vested percentage:	100.00%
Vested accrued benefit payable monthly beginning on your Normal Retirement Date:	$35.12*

* Your vested accrued benefit is payable to you for your lifetime. Payments will cease on your death. See the schedule below for benefits payable in optional forms.

All forms of benefit payable monthly have been calculated by projecting the cash balance account forward to the payment date using the Current Interest Crediting rate and then dividing by the Cash Balance Conversion APR @ the payment date.

Following is your personal information in our records. If any of this information is incorrect, please contact the Plan Administrator immediately with the correct information. Failure to do so could affect the amount of your benefit.

Date of Birth:	03/16/1964
Spouse's Date of Birth:	
Date of Hire:	08/01/2016
Normal Retirement Date:	04/01/2026

Schedule of benefit payment options:

Form of Payment	Payable Now	At Normal Retirement
Life Only*	25.55	35.12
Life With 15 Years Certain	25.03	33.58
Joint and 100% Survivor	23.27	31.06
Single Lump Sum	4,359	5,408

* Plan normal form of payment

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PARTICIPANT STATEMENT WITH OPTIONAL FORMS – Example 3 Calculations

Cash Balance Options
- ☑ Use CB conv factors for Imm and Ret benefit payment
- ☑ Use CB conv factors for all opt forms of payment
- ☑ Show cash balance basis
- ☑ Show cash balance contribution history

Form of Payment	Payable Now	At Normal Retirement
Life Only*	25.55	35.12
Life With 15 Years Certain	25.03	33.58
Joint and 100% Survivor	23.27	31.06
Single Lump Sum	4,359	5,408

Cash Balance Conversion Factors Based on 5.50% interest and RP19C U mortality

	Payable Now - 56	NRA - 62
Life Only	170.588	154.000
15C&C	174.173	161.048
Joint and 100% Survivor	187.358	174.120

Use CB Conversion Factors for Imm and Ret Benefit payments - Yes
Use CB Conversion Factors for all Opt forms of payment - Yes

➤ If both 'Use CB Conversion Factors for Imm and Ret benefit payments' and 'Use CB conv factors for all opt forms of payment ' are checked, <u>all</u> forms of benefit payment will be calculated by converting the cash balance account to the annuity using the cash balance assumptions only.

➤ Note the blue highlighted statement at the top of the Participant Statement with Optional Forms. This language will change depending on the options chosen.

➤ NRA – 62 Calculations
- Life Only (Normal Form) = 35.12 (From EE \ Benefits \ ACCRBENF – Accrued Benefit)
- 15C&C = 5,407.90 / 161.048 = 33.58
- Joint and 100% Survivor = 5,407.90 / 174.120 = 31.06
- Single Lump Sum = 4,273.94 x 1.04^6 = 5,407.90
  Note: interest crediting to retirement uses nearest years and is calculated based on the balance as of the valuation date

➤ Payable Now Calculations
- Life Only = 4,359.28 / 170.588 = 25.55
- 15C&C = 4,359.28 / 174.173 = 25.03
- Joint and 100% Survivor = 4,359.28 / 187.358 = 23.27
- Single Lump Sum = 4,359 (from Single Lump Sum Worksheet)

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

PRESENT VALUE REPORT

- No changes were made to this report

Combo Cash Balance Plan
Present Value Report
Distribution Date: July 1, 2020

[1] Name	[2] Accrued Benefit	[3] Vested Percent	[4] Vested Benefit	[5] Pres Val Plan Rate	[6] Pres Val IRC §415	[7] Lesser [5] & [6]
Nancy	35.12	100.00%	35.12	4,359	198,727	4,359
Totals	35.12		35.12	4,359	198,727	4,359

Schedule SB Attachment

- The Single Lump Sum wording has changed

Combo Cash Balance Plan
EIN: 111111111 PN: 004

2019 Schedule SB Attachment
Optional Forms of Benefit

The plan's normal form of payment is a Life Only annuity, payable for the life of the participant.

For married participants, the actuarial equivalence of this benefit will be paid in the form of a Joint and 100% Survivor annuity unless the participant elects a different form of payment and the spouse consents in writing. This benefit is payable for the life of the participant, with 100% payable to the surviving spouse for his/her lifetime. Payments cease on the death of the participant and spouse.

The following forms of payment are also available:

Life Only	Payable for the life of the participant.
Life With 15 Years Certain	Payable for the life of the participant. If the participant dies before receiving payments for 15 full years, payments will continue to his/her surviving beneficiary for the remainder of the 15-year period and then stop.
Joint and 100% Survivor	Payable for the life of the participant and his/her beneficiary. Payments cease on the death of both.
Single Lump Sum	This is a one-time payment of the lump sum equivalent of the plan's normal form of benefit. For Cash Balance plans, the single lump sum value is the cash balance account value.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

NOTICE OF PLAN BENEFITS

- No changes were made to the first page

NOTICE OF PLAN BENEFITS for: Nancy

You have previously been informed that the COMBO CASH BALANCE PLAN is being terminated as of March 1, 2020. A notice concerning this termination will be filed with the Pension Benefit Guaranty Corporation.

Following is general information about the plan and the termination:

Name of plan sponsor:	
EIN of plan sponsor:	111111111
Name of plan:	Combo Cash Balance Plan
Plan number:	004
Name, address, phone of plan contact:	

Proposed termination date: March 1, 2020
Extended proposed termination date: N/A
Proposed distribution date: July 1, 2020

Following is your personal data that was used to calculate your benefit. If any of this information is incorrect or incomplete, you should immediately provide the correct information to the plan contact listed above. Failure to do so could affect the amount of the benefit you receive.

Date of Birth:	03/16/1964
Spouse's Date of Birth:	Assumed same age
Date of Hire:	08/01/2016
Date of Plan Entry:	10/01/2017
Date of Termination:	N/A
Date of Credited Service:	10/01/2017
Average Annual Compensation:	37,040

Normal Retirement Date:	04/01/2026
Early Retirement Date:	N/A
Normal Form of Payment:	Life Only
Normal Retirement Benefit:	$35.12

Your Normal Retirement Benefit is payable on your Normal Retirement Date in the Normal Form of Payment indicated above. The Life Annuity form of payment provides you with a monthly benefit for your lifetime, with no payments to your beneficiary after your death. If you are married at the time your benefit commences, your benefit will be paid in the form of a qualified joint and survivor annuity unless you, with your spouse's consent, elect another form of payment. A joint and survivor annuity provides you with a monthly benefit for your lifetime, with a percentage of your benefit payable to your surviving spouse on your death. Payments cease on the death of both you and your spouse. If paid as a joint and 50% survivor annuity, you would receive $32.96 per month for your lifetime. If your spouse survives you, (s)he would receive $16.48 per month for his/her lifetime. Payments would cease on the death of your spouse. If your spouse dies before you, payments would cease on your death.

The plan provides for payment of your benefit in other forms, including a single sum option. If the amount of your single sum benefit at the time of distribution is $5,000.00 or less, your benefit will automatically be paid to you in this form. If the amount of your single sum is greater than $5,000.00 however, you cannot receive your benefit in this form unless both you and, if you are married, your spouse consent to the distribution.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

NOTICE OF PLAN BENEFITS - Page 2

- The Single Lump Sum wording has changed on the second page

NOTICE OF PLAN BENEFITS for: Nancy

As of the proposed distribution date, the estimated amount of your single sum distribution is $4,359. This benefit and the other optional forms of payment were calculated according to the provisions of the plan document using the following cash balance assumptions:

Interest:	Current:	4.00%
	Post-retirement:	5.50%
Mortality:	Post-retirement:	2019 Applicable Mortality Table from Notice 2018-02

Other forms of payment offered by the plan include the following:

Life Only	Payable for the life of the participant.
Life With 15 Years Certain	Payable for the life of the participant. If the participant dies before receiving payments for 15 full years, payments will continue to his/her surviving beneficiary for the remainder of the 15-year period and then stop.
Joint and 100% Survivor	Payable for the life of the participant and his/her beneficiary. Payments cease on the death of both.
Single Lump Sum	This is a one-time payment of the lump sum equivalent of the plan's normal form of benefit. For Cash Balance plans, the single lump sum value is the cash balance account value.

➢ Set Plan Specifications \ Assumptions \ 417E – 'Use Greater of Act. Equiv or 417(e) for Reports' to 'No' to avoid the use of 417(e) language on this report.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

SINGLE LUMP SUM WORKSHEET Calculations - Present Values set to 'Nearest Month'

Combo Cash Balance Plan
Single Lump Sum Worksheet for: Nancy

Valuation Date: December 31, 2019 Calculation Date: July 1, 2020

Date of Birth:	03/16/1964	Normal Retirement Date:	04/01/2026
Date of Hire:	08/01/2016	Date NRA Attained:	03/16/2026
Date of Entry:	10/01/2017	Early Retirement Date:	N/A
Vesting Start Date:	01/01/2017	Vesting Service:	Total service
Years of Vesting:	3.00	Vested Percent:	100.00%
Accrual Start Date:	10/01/2017	Accrual Service:	Participation service
Years Accrued:	3.00	Discount Period:	5, 8 months
Total Accrual Years:	8.25	Age at Calculation Date:	56, 4 months
Normal Form:	Life Only	415 Service at Calculation Date:	4.00
		415 Participation at Calculation Date:	4.00

Accrued Benefit Payable at Normal Retirement Date:	35.12
Vested Percent:	100.00%
Vested Accrued Benefit Payable at Normal Retirement Date:	35.12

	Cash Balance Account and Assumptions	Alternate Assumptions
Interest crediting rate:	4.00%	N/A
Cash balance account as of 12/31/2019:	4,273.94	N/A
Interest to 07/01/2020:	84.64	N/A
Cash balance account as of 07/01/2020:	4,358.58	N/A
Vested cash balance account as of 07/01/2020:	4,358.58	N/A
IRC §415 maximum lump sum:	198,727	N/A
Single lump sum value as of 07/01/2020:	4,358.58	N/A

> When 'Recalculate Present Values' is set to 'Nearest Month', the interest credit to 07/01/2020 will be calculated as follows: $4{,}273.94 \times 1.04^{(6/12)} - 4{,}273.94 = 84.64$, where 6 represents the number of months nearest between 12/31/19 and 7/1/2020.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

SINGLE LUMP SUM WORKSHEET Calculations - Present Values set to 'Nearest Year'

Combo Cash Balance Plan
PL 20170518B Spring 2020 Project #13

Single Lump Sum Worksheet for: Nancy

Valuation Date: December 31, 2019
Calculation Date: July 1, 2020

Date of Birth:	03/16/1964	Normal Retirement Date:	04/01/2026
Date of Hire:	08/01/2016	Date NRA Attained:	03/16/2026
Date of Entry:	10/01/2017	Early Retirement Date:	N/A
Vesting Start Date:	01/01/2017	Vesting Service:	Total service
Years of Vesting:	3.00	Vested Percent:	100.00%
Accrual Start Date:	10/01/2017	Accrual Service:	Participation service
Years Accrued:	3.00	Discount Period:	6
Total Accrual Years:	8.25	Age at Calculation Date:	56
Normal Form:	Life Only	415 Service at Calculation Date:	4.00
		415 Participation at Calculation Date:	4.00

Accrued Benefit Payable at Normal Retirement Date: 35.12

Vested Percent: 100.00%

Vested Accrued Benefit Payable at Normal Retirement Date: 35.12

	Cash Balance Account and Assumptions	Alternate Assumptions
Interest crediting rate:	4.00%	N/A
Cash balance account as of 12/31/2019:	4,273.94	N/A
Interest to 07/01/2020:	170.96	N/A
Cash balance account as of 07/01/2020:	4,444.90	N/A
Vested cash balance account as of 07/01/2020:	4,444.90	N/A
IRC §415 maximum lump sum:	198,727	N/A
Single lump sum value as of 07/01/2020:	4,444.90	N/A

➢ When 'Recalculate Present Values' is set to 'Nearest Year', the interest credit to 07/01/2020 will be calculated as follows: $4{,}273.94 \times 1.04^{1} - 4{,}273.94 = 170.96$, where the 'Nearest Year' from 12/31/2019 to 7/1/2020 is 1.

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#4 – Participant Termination/Optional Forms

F. Appendix A: 2020 Top Tips for the DB Valuation System #8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans (Continued)

Top Tips for the DB Valuation System
Tuesday, June 30, 2020

#8 – Plan Term/Optional Forms Enhancements for Cash Balance Plans

E. SAMPLE CASH BALANCE PLAN REPORT (continued)

SINGLE LUMP SUM WORKSHEET Calculations - Present Values set to 'Do Not Recalculate'

Combo Cash Balance Plan
Single Lump Sum Worksheet for: Nancy

Valuation Date: December 31, 2019 Calculation
Date: July 1, 2020

Date of Birth:	03/16/1964	Normal Retirement Date:	04/01/2026
Date of Hire:	08/01/2016	Date NRA Attained:	03/16/2026
Date of Entry:	10/01/2017	Early Retirement Date:	N/A
Vesting Start Date:	01/01/2017	Vesting Service:	Total service
Years of Vesting:	3.00	Vested Percent:	100.00%
Accrual Start Date:	10/01/2017	Accrual Service:	Participation service
Years Accrued:	3.00	Discount Period:	6
Total Accrual Years:	8.25	Age at Calculation Date:	56
Normal Form:	Life Only	415 Service at Calculation Date:	3.00
		415 Participation at Calculation Date:	3.00

Accrued Benefit Payable at Normal Retirement Date: 35.12

Vested Percent: 100.00%

Vested Accrued Benefit Payable at Normal Retirement Date: 35.12

	Cash Balance Account and Assumptions	Alternate Assumptions
Cash balance account as of 12/31/2019:	4,273.94	N/A
Vested cash balance account as of 12/31/2019:	4,273.94	N/A
IRC §415 maximum lump sum:	157,533	N/A
Single lump sum value as of 12/31/2019:	4,273.94	N/A

➤ When 'Recalculate Present Values' is set to 'Do Not Recalculate', no additional interest will be added to calculate the 'Payable Now' single lump sum value. The 'Payable Now' cash balance account value will be the same as the value found on the Employee > Costs > CASHBAL screen.

➤ You may also use the 'Do Not Recalculate' option in conjunction with the Earnings Override option found on the Employee > Costs > CASHBAL screen to adjust the cash balance account value.

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Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

#5 – DB Pattern Plans Overview

Topic Roadmap

A. ASC Pattern Plans

B. Creating New Pattern Plans

C. Setting up Pattern Plans for Commonly Used Designs

D. Updating Pattern Plans

E. References

#5 – DB Pattern Plans Overview

A. ASC Pattern Plans

- Pattern plans are templates on which new plans are based. They contain Plan Specifications with default settings, but no employee data and are stored in the DEF Pattern Plans library

- The ASC System contains pre-created pattern plans
    - DB Pattern Plan
    - DC Pattern Plan

- Custom Pattern Plans can be created

B. Creating New Pattern Plans

- Creating custom pattern plans with your commonly used designs saves you time when creating new plans in the future.

- Coordinate with a designated individual on your team to create pattern plans and keep them updated each year.

- To create a pattern plan:
    1. File > New Plan
    2. Highlight the DEF Library and DB Pattern Plan
    3. Click OK – and Yes to confirm that you want a new Pattern Plan
    4. A Pattern Plan can be copied into a Pattern Plan

ASC Main Menu: File > New Plan

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs

- Set up Pattern Plans for

    - BOY and EOY Valuation Dates
    - Traditional Designs and Cash Balance Plans
    - Template for our new DC/CB Proposal program for one participant plans

- Common Recommended Settings

    - Plan Specifications

        - General \ Identification \ ID
            - If setting up a Pattern Plan for Cash Balance Plans, set Cash Balance Plan to **Yes**

Plan Specifications: General \ Identification \ ID screen

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs (Continued)

- Common Recommended Settings (Continued)

  - Plan Specifications (Continued)

    - General \ Identification \ ANCILELG \ Early Retirement
      - Set provisions to match Normal Retirement Provisions of the RETIRE screen
      - Set Vest at Early Retirement to **Yes**

Plan Specifications: General \ Identification \ ANCILELG

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs (Continued)

- Common Recommended Settings (Continued)

    o   Plan Specifications (Continued)

    ▪   General \ Identification \ ACCRUAL
      - Set Accrual before Apply Maximum to **Yes**. This field should always be set to **Yes** when Type of Accrual is set to **5 – Unit Per Formula**
      - Starting Date field in the ACCRUAL and Benefit Formula screens
        - **2 – Plan Year** – accrual service begins on the participant's Accrual Start date
        - **4 – BOY Entry** – accrual service begins in the plan year containing the participant's Entry date
      - Set Starting Date, Basis of Year, and Days in First Year/Retirement Year to match the coding in the Benefit Formula screen

Plan Specifications: General \ Identification \ ACCRUAL

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs (Continued)

- Common Recommended Settings (Continued)

    - Plan Specifications (Continued)

        - General \ Compensation \ COMPAVG
            - Set Maximum Applies to **4 – Year 2001 Law** for all post-EGTRRA plan years.

Plan Specifications: General \ Compensation \ COMPAVG

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs (Continued)

- Common Recommended Settings (Continued)

    o Plan Specifications (Continued)

        ▪ General \ Compensation \ LEGALAVG
            • Set Limit by 401(a)(17) to **Yes**

Plan Specifications: General \ Compensation \ COMPAVG

        ▪ General \ Compensation \ MAXBEN

        ▪ Funding \ FUNDASMP
            • Needs to be coded with interest rates and valid mortality tables to avoid errors that will terminate the Calculations > Valuation routine.

        ▪ Funding \ FUNDMETH
            • Beginning of Year Valuation
            • Use BOY accrued benefit for funding target

        ▪ Assumptions \ CASHBAL
            • Disregard Prior Accrued Benefit

        ▪ Values \ VALPPA
            • Prior Funded percent for 430(f)(3) = 80%
            • Last Year AFTAP = 100%
            • ARP Relief 1st Val Date

#5 – DB Pattern Plans Overview

C. Setting up Pattern Plans for Commonly Used Designs (Continued)

- Common Recommended Settings (Continued)

    o Reports > Valuation > PPA DB…. – Preselect your typical Report Sections and Options, such as:

        ▪ Include Late Quarterly Interest
        ▪ Qualification Standards

    o Compliance Testing menus

        ▪ Mortality Table
        ▪ Interest Rates
        ▪ Rate Calculation Methods

    o Extended History Records

        ▪ Utilities > Change Structure > Extended History Records

#5 – DB Pattern Plans Overview

D. Updating Pattern Plans

- Pattern plans are not automatically updated with system updates to avoid resetting any custom specification coding you choose to use

- Update to New Period: Delete history records and note prior year values that were updated during this process

- Manual Update: The following fields should be reviewed each year and updated if necessary (additional fields should be reviewed depending on the specifics of your pattern plan):

  - General \ Identification \ ID \ Plan Year Begin, End, Insurance Issue Date, Effective Date
  - General \ Compensation \ COMPAVG \ Maximum Compensation
  - General \ Compensation \ MAXBEN \ Maximum Benefit 62 to 65
  - Funding \ PPAFASMP \ Interest Rates and Mortality
  - Assumptions \ ACTEQUIV \ Mortality
  - Assumptions \ MAXBNADJ \ Post-Retirement Mortality
  - Assumptions \ 417E \ Interest Rates and Mortality
  - Assumptions \ PBGCPREM \ Interest Rates, Mortality, Premium Information
  - Assumptions \ CASHBAL \ Interest Rates and Mortality

#5 – DB Pattern Plans Overview

E. References

- FAQs

[FAQ 763: Pattern Plan Update](#)
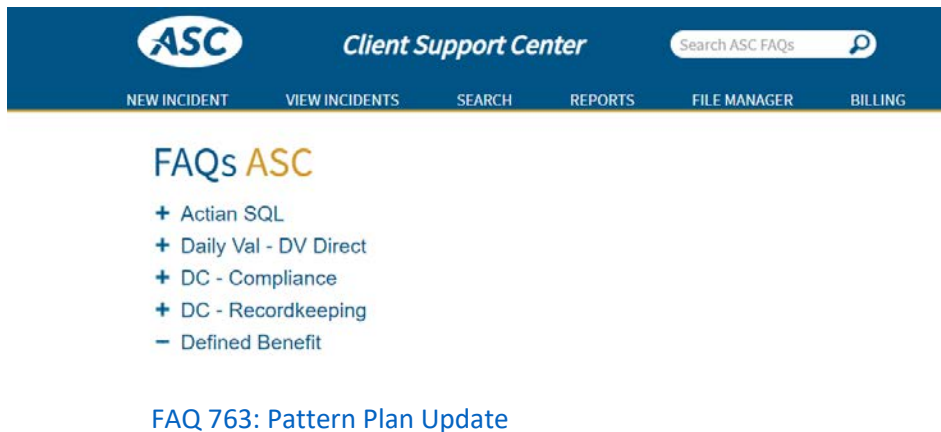
- Systems Reference Manual
  - Chapter 1: Plan Management

- DB Reference Manual
  - Chapter 3: Cash Balance Plans
    - Creating a Cash Balance Pattern Plan

- Online Help
  - <F1> on keyboard to access online help for each employee or plan specifications field

Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

#6 – Extended History

Topic Roadmap

    A.   Overview

    B.   Employee Extended History

    C.   Plan Specifications History

    D.   History Utilities

    E.   Exporting Employee History using ASCript and Grids

    F.   References

#6 – Extended History

A. Overview

- Plan and Employee history records store useful information that can be exported from the plan or used to analyze historical data

- Plan and Employee history fields are automatically stored each year when Update to New Period calculations are run and a new history record for the prior year is created

- A history record can be manually added, and history fields can be manually input as well

- Use history records to:

  o Export historical employee data using ASCript or Grids
    - Exports can be used to populate custom reports

  o Monitor changes in dates (i.e., retirement, hire, term)

  o Study trends in employee data

#6 – Extended History

B. Employee Extended History

- Basic Data \ HISTORY

Employee: Basic Data \ HISTORY

- The extended history records contain historical employee fields that are stored during the Update to New Period routine

- The Employee history record for the previous plan year is created and populated when a plan is updated to a new period. A history record and history fields can also be manually entered by the user or populated with ASCript Import. The most recent employee history record is the last day of the prior compensation year, for example:

  For a 2021 Calendar Year plan, the most recent employee history record is:
    - o   BOY Valuation Date Plan – 12/31/2019
    - o   EOY Valuation Date Plan – 12/31/2020

- View Extended history by selecting a history record and click "Modify." In the History record, click one of the "Ext" buttons on the top of the screen.

- All fields in Extended History can be overridden

#6 – Extended History

B. Employee Extended History (Continued)

- Extended History A

Employee: Basic Data \ HISTORY \ Extended History A

- o Contains fields from the NAME, DATE, CASHBAL screens as well as excluded compensation and the Cash Balance APR
  - Cash Bal APR – relevant for postponed retirees and BOY tested plans with variable interest rates

#6 – Extended History

B. Employee Extended History (Continued)

- Extended History B

Employee: Basic Data \ HISTORY \ Extended History B

- o Contains fields from the 415 immediate lump sum limit calculations, BOY and EOY accrued benefits, Present values for Plan Assumptions, Top-Heavy and 417(e) purposes, Current Service, Total Service, Vesting Service, and offset and add-on fields

#6 – Extended History

B. Employee Extended History (Continued)

- Extended History C

Employee: Basic Data \ HISTORY \ Extended History C

  o Contains average compensation at the valuation date and at the end of the year for Plan Benefits, Top-Heavy, and 415 maximum purposes

- Extended History D

Employee: Basic Data \ HISTORY \ Extended History D

  o Contains the distribution date and gross amount paid fields input in the Benefits \ SOLEPROP screen

#6 – Extended History

C. Plan Specifications History

- Located in Values \ HISTORY

Plan Specifications: Values \ HISTORY

   o   Assets, Balances, EIR and PPA Minimum and Maximum Funding values

#6 – Extended History

D. History Utilities

- Creating Extended History Records

    o Utilities > Change Structure > Extended History Records…
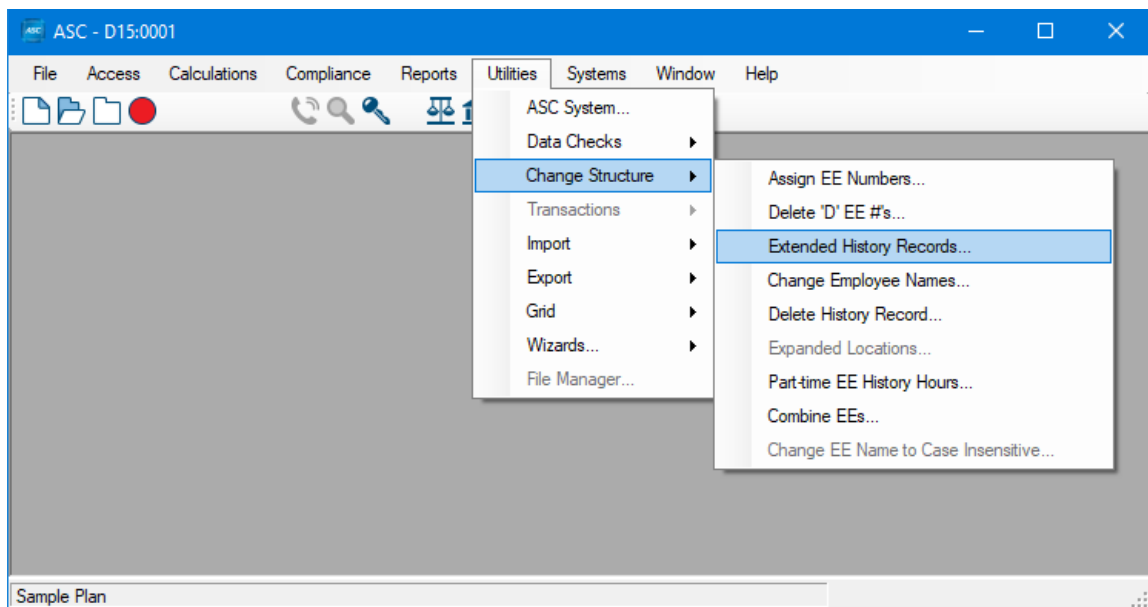
ASC Main Menu: Utilities > Change Structure > Extended History Records…

    o Automatically enabled when the Calculations > Update to New Period program is run

    o Manually enabled by selecting Utilities > Change Structure > Extended History Records from the ASC Main Menu

    ▪ This selection also enables History records in Plan Specifications. Plan Specifications \ Values \ HISTORY records are created during the Update to New Period routine.

#6 – Extended History

D. History Utilities (Continued)

- Part-Time EE History Hours…

    o Utilities > Change Structure > Part-Time EE History Hours…
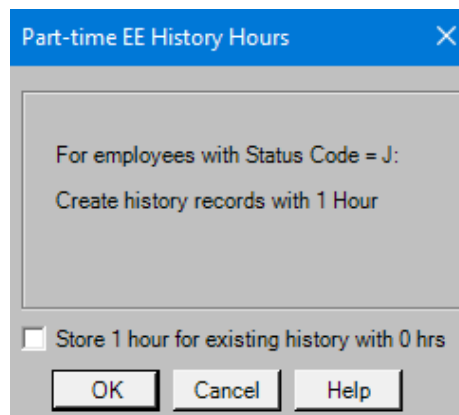
ASC Main Menu: Utilities > Change Structure > Part-time EE History Hours

    o This command creates history records and stores a value of 1 in the Hours field for employees coded as Participation Status code J in the DATE screen

    o Includes option to replace existing 0 (blank) hour history records with 1 hour
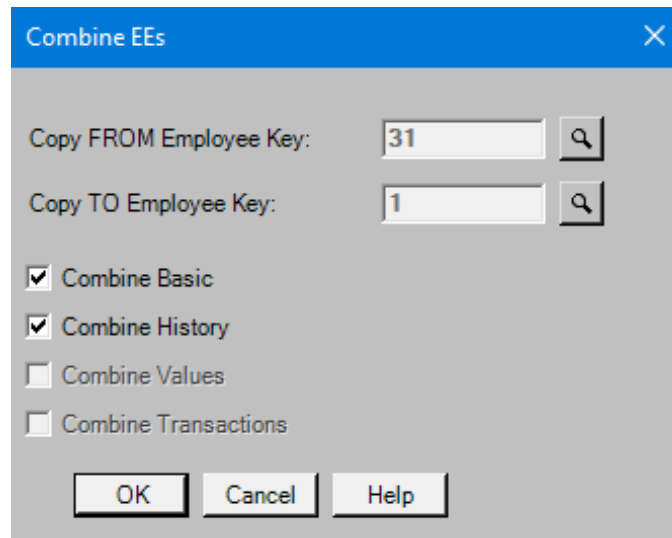
#6 – Extended History

D. History Utilities (Continued)

- Combine EEs…

    o Utilities > Change Structure > Combine EEs..

ASC Main Menu: Utilities > Change Structure > Combine EE…

    o This command will combine or move basic data from one employee record to the other employee record

        ▪ Dates of Birth, Hire, Termination and Rehire, and History records are moved if they do not already exist in the destination record

        ▪ If the combined hours are less than 3,001, then both Compensation and Hours are combined in the destination record

        ▪ If the combined hours exceed 3,000, then only Compensation is combined in the destination record

    o The "FROM" employee record data is deleted when the program is complete

#6 – Extended History

E. Exporting Employee Data using ASCript and Grids

- ASCript Export

  o Select "New, exporting Employee detail data such as history or transactions" to export records for all historical entries or for selected dates for every participant
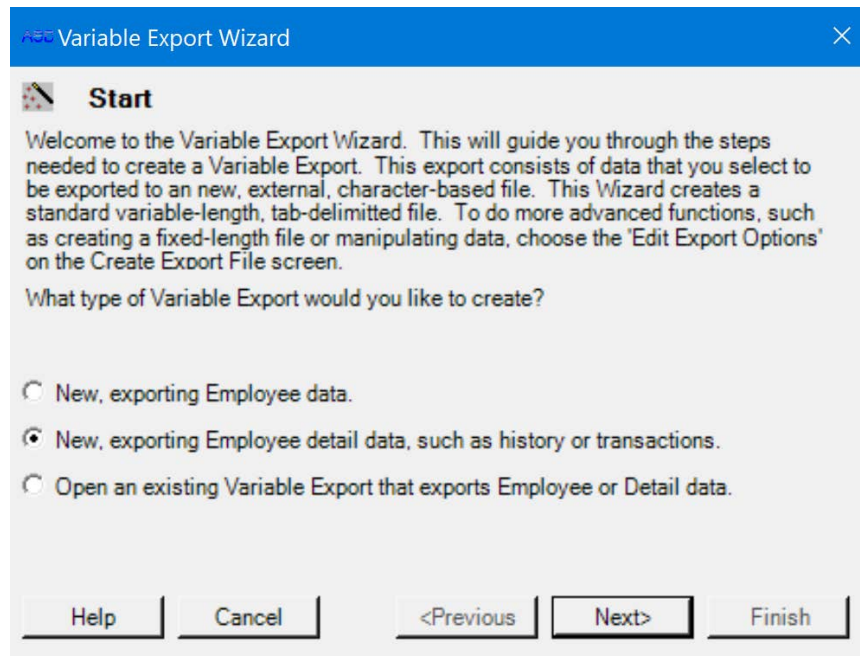
ASCript: Wizards \ Export

#6 – Extended History

E. Exporting Employee Data using AScript and Grids (Continued)

- ASCript Export (Continued)

  - Click Edit to Select items to export
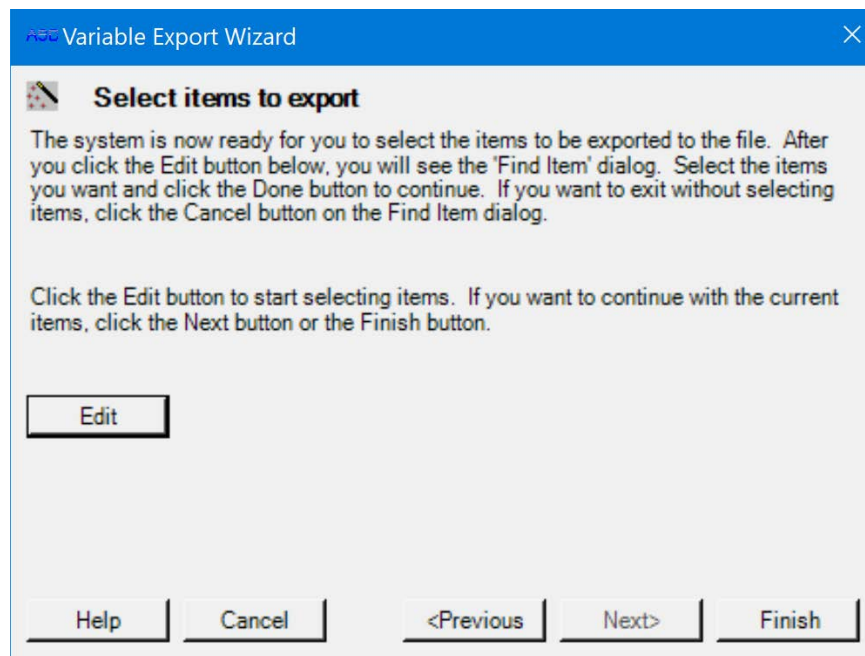
ASCript: \ Wizards \ Export \ Select items to export
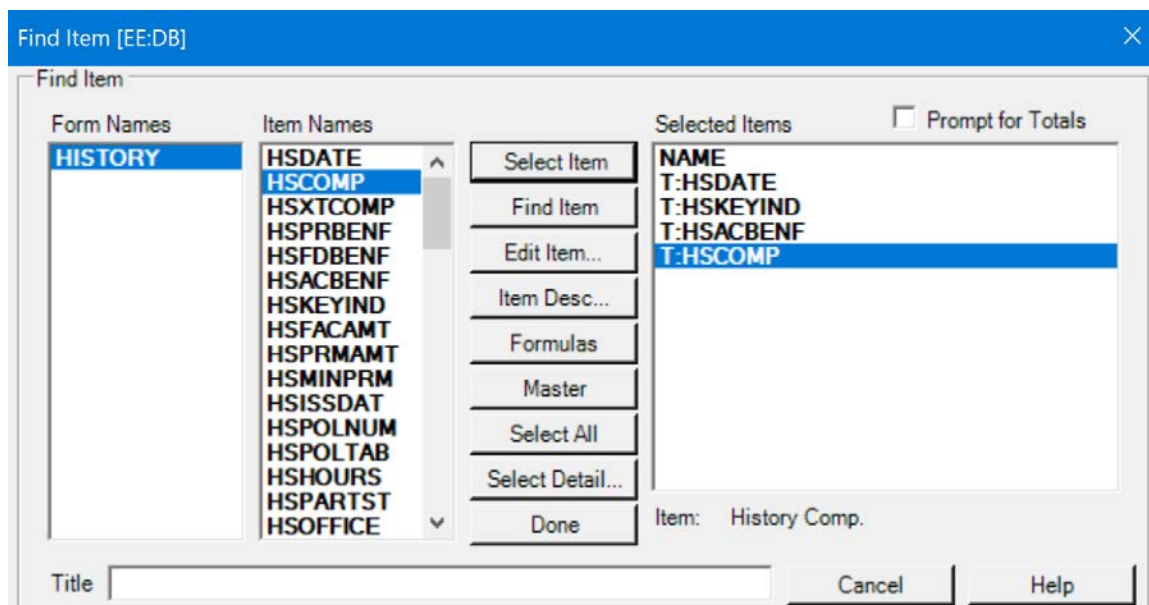
ASCript: \ Wizards \ Export \ Select items to export – Find Item

#6 – Extended History

E. Exporting Employee Data using ASCript and Grids (Continued)

- ASCript Export (Continued)

  - ASCript Export can be saved as an .xls file

	A	B	C	D	E
1	NAME	T:HSDATE	T:HSKEYIN	T:HSACBENF	T:HSCOMP
2	Employee 1	12/31/2013	Y	1411.64	255469.31
3	Employee 1	12/31/2014	Y	3098.07	265000
4	Employee 1	12/31/2015	Y	3407.89	265000
5	Employee 1	12/31/2016	Y	4981.75	265000
6	Employee 1	12/31/2017	Y	5869.97	270000
7	Employee 1	12/31/2018	Y	7041.42	278100
8	Employee 1	12/31/2019	Y	6604.89	294786
38	Employee 2	12/31/2013	N	0	1400.29
39	Employee 2	12/31/2014	N	0	29300
40	Employee 2	12/31/2015	N	0	0
41	Employee 2	12/31/2016	N	0	0
42	Employee 2	12/31/2017	N	0	37564
43	Employee 2	12/31/2018	N	20.38	38690.92
44	Employee 2	12/31/2019	N	41.49	41012
45	Employee 3	12/31/2013	N	4.55	29790.68
46	Employee 3	12/31/2014	N	9.42	33100
47	Employee 3	12/31/2015	N	0	35700
48	Employee 3	12/31/2016	N	0	37500

Sample ASCript Export .xls

  - Variable export file can be saved for future exports

#6 – Extended History

E. Exporting Employee Data using AScript and Grids (Continued)

- Employee Grids

  - Employee Grids can be used to view data in the ASC system. The data can then be copied to a clipboard and pasted into a spreadsheet

    - Select the HISTORY Form Name and Item name and enter the History Date(s) you would like to add to the Grid
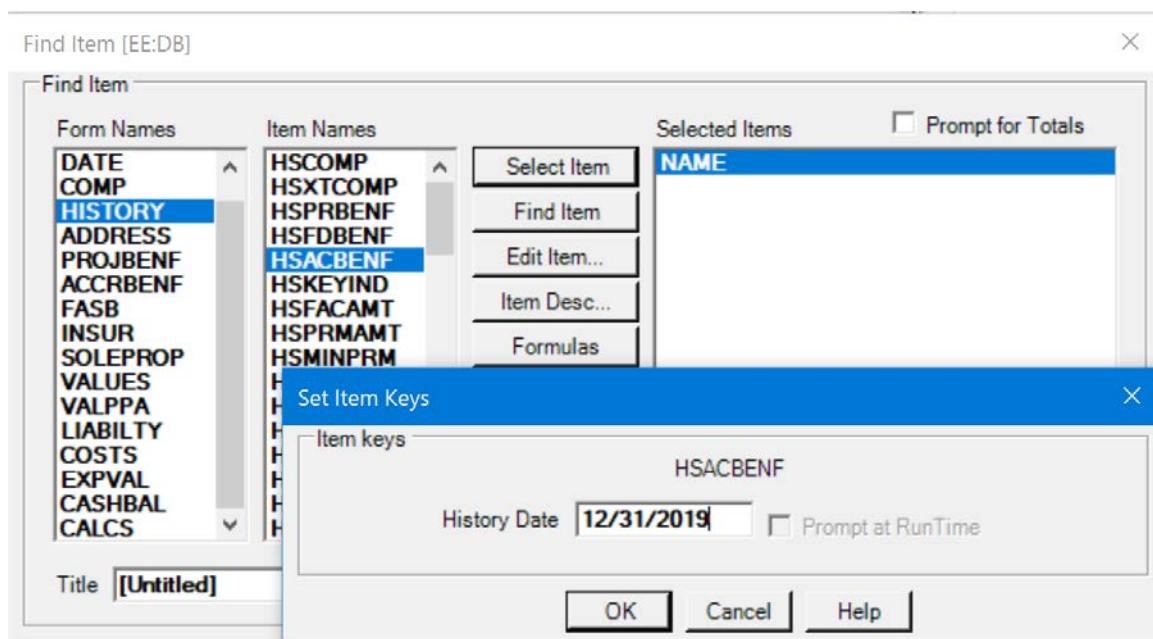
Employee: View > Grid > New
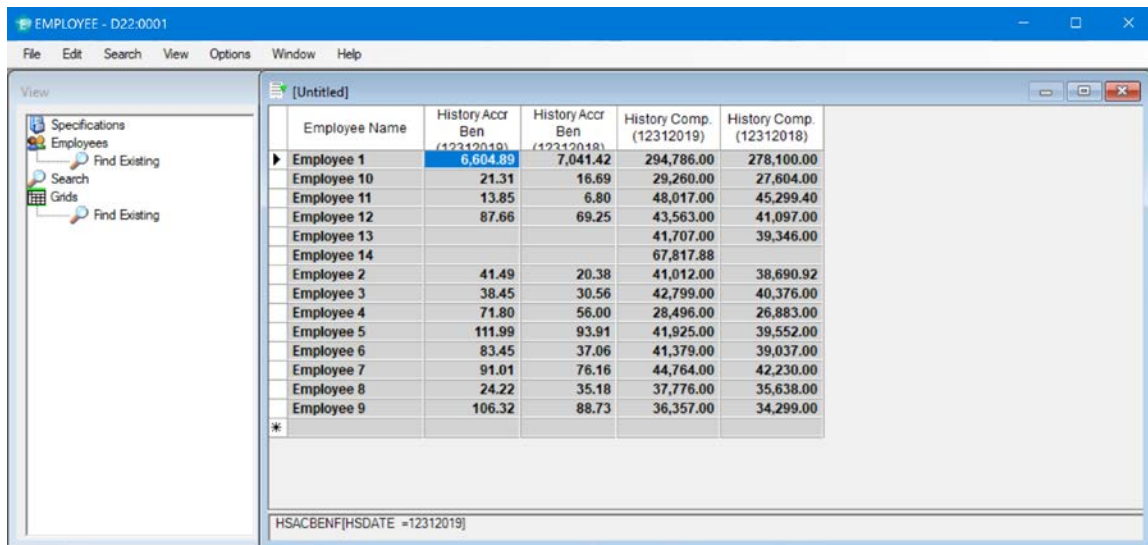
#6 – Extended History

E. Exporting Employee Data using ASCript and Grids (Continued)
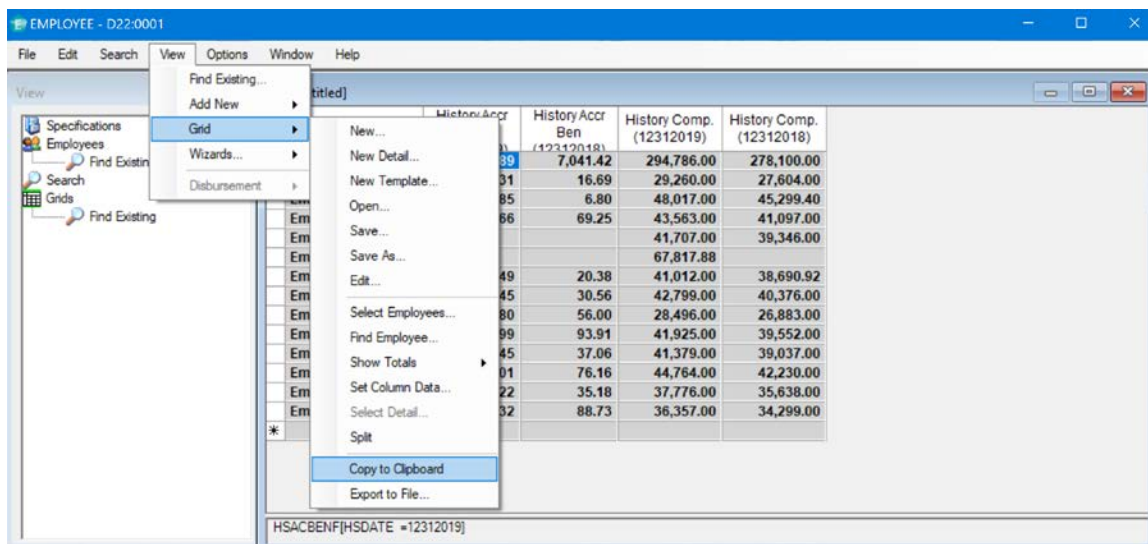
- Employee Grids (Continued)

  - Click 'OK' to view Data in Grid

Employee: View > Grid > Sample Grid output

  - Copy to Clipboard to paste into a spreadsheet

Employee: View > Grid > Copy to Clipboard

#6 – Extended History

F. References

- DB Reference Manual
  - Chapter 1: Plan Specifications
  - Chapter 2: Employee Data

- Grid Manual
  - Chapter 1: Grid Basics

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#7 – Average Compensation Overview

Topic Roadmap

A. Overview of Average Compensation in ASC

B. Average Compensation Options

C. Average Compensation Storage in Employee Screens

D. Basic Average Compensation Examples

E. Advanced Average Compensation Considerations

F. References

#7 – Average Compensation Overview

A. Overview of Average Compensation in ASC

- In general, average compensation results are used to determine or limit benefits.

- For formulas based on average compensation, reviewing the active participants' various average compensation fields and compensation averaging options are steppingstones for how ASC calculates or limits their benefits.

- During Calculations > Valuation, ASC can calculate many compensation averages for participants. Examples of calculated average compensations are:

  o   415 compensation limits

  o   Top heavy minimum benefits

  o   Projected Benefits

#7 – Average Compensation Overview

B. Average Compensation Options

- Plan Specifications \ General \ Identification \ Compensation
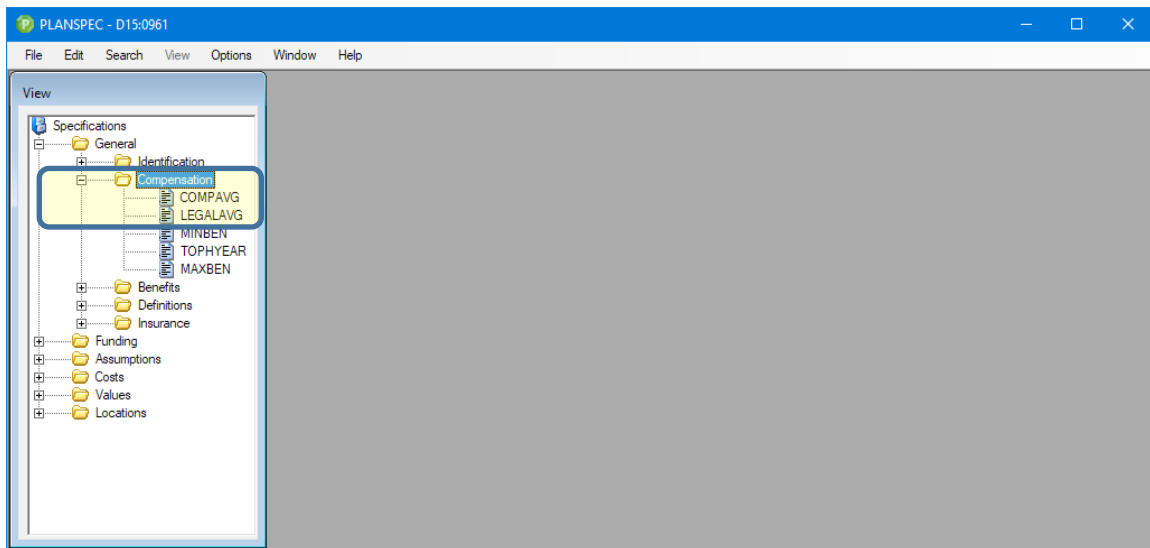
Plan Specification: Compensation \ COMPAVG screen

- o The COMPAVG and LEGALAVG screens contain most of the average compensation options. Other screens have their related options.

#7 – Average Compensation Overview

B. Average Compensation Options (Continued)

- General \ Identification \ Compensation \ COMPAVG (Compensation Averaging) screen

Plan Specification: Compensation \ COMPAVG screen

- o Plan Average section for plan benefit calculations:
    - Averaging Period: defines the number of years averaged for their highest averaging period.
    - Exclude Comp during Last: the number of final years to be disregarded in determining plan benefit average compensation.
    - Average during Last: defines the years considered for the average compensation.
    - First, Retirement, and Termination Years: Special options for these years.
        - Note, if First Year is set to **4 – Omit Pre-Entry**, Consecutive Month Avg should be set to **Yes**
    - Consecutive Month Avg: determines if average annual or average monthly compensation is determined.
    - Use Consecutive Years: determines if their highest paid years needs to be consecutive for their average

- o Compensation Limits for maximum compensation considered
    - Maximum Compensation: for the plan year compensation limit and reporting in reports.
        - Note, the system applies the applicable 401(a)(17) compensation limit to their HISTORY record for each year.
    - Other options are available on this screen. After selecting a field with your mouse, press <F1> on your keyboard to view Online Help for the details.

#7 – Average Compensation Overview

B. Average Compensation Options (Continued)

- General \ Compensation \ LEGALAVG (Legal Limit Compensation Averaging) screen

Plan Specification: Compensation \ COMPAVG screen

- o Top Heavy Minimum Average section for Top Heavy Benefit purposes

- o Maximum Benefit Average section for 415 % of Compensation purposes
    - Limit by 401(a)(17) Compensation should be set to **Yes** for years beginning after 6/30/2007

- o The settings on this screen operate similarly to the options on the COMPAVG screen.

#7 – Average Compensation Overview

B. Average Compensation Options (Continued)

- Funding \ PPAFASMP (PPA Funding Assumptions) screen

Plan Specification: Funding \ PPAFASMP screen

- o Salary Scale
    - ▪ Only the 1st two salary scales will be used when using group formulas

- o Salary Scale for Principals
    - ▪ Set participants' Basic Data \ NAME \ Principal field to **Y-Yes** to have Salary Scales for Principals apply to these participants
    - ▪ Will not apply when using group formulas

- o Salary Scales do not impact the calculation of % of pay group formula CB credits

#7 – Average Compensation Overview

B. Average Compensation Options (Continued)

- Assumptions \ FASB (FASB Assumptions) screen

Plan Specification: Assumptions \ FASB screen

- o   Salary Scales
  - ▪   These salary scale will apply to all participants with no distinction between participants coded as Principals or non-Principals as used by the PPAFASMP screen.

- o   Increase Maximum Comp
  - ▪   Input to assume increases in Maximum Compensation limits.

#7 – Average Compensation Overview

B. Average Compensation Options (Continued)

- After changing a compensation selection, run Calculations > Valuation to update the results. In general, Complete Calculations is recommended.

    - However, if Partial Calculation is run starting at Social Security, Average Salaries, Calculate Benefits or Calculate Present Values, all four of these calculations will run and average compensation fields for participants are recalculated.

Calculations > Valuation menu

#7 – Average Compensation Overview

C. Average Compensation Storage in Employee Screens

- Employee \ Basic Data \ COMP (Compensation) screen

Employee: Basic Data \ COMP screen

- o Plan Benefit, 415 Maximum Benefit, and Top Heavy Minimum average monthly compensation sections show average monthly compensations similarly.

  - ▪ Projected Average: the estimated average compensation at retirement with a 0.00% salary scale.
    - • Used with death benefits
  - ▪ Funding Average: the estimated average compensation at retirement with the PPAFASMP input salary scales applied
    - • Used projected benefits for funding or deduction cushions
    - • May apply for pre-PPA funding methods
  - ▪ Accrual Average: the average compensation as of the valuation date
    - • Used for calculating accrued benefit for pay-related plans
  - ▪ Prior Accrual Average: the average compensation as of the prior valuation date
    - • For EOY valuations, these inputs can impact the Begin of Year Accrued Benefit
    - • This value is not calculated during Calculations > Valuation.
    - • It is stored during Update to New Period and can be manually entered.

#7 – Average Compensation Overview

C. Average Compensation Storage in Employee Screens (Continued)

- Employee \ Benefits \ FASB (FASB/Integration) screen

Employee Window: Benefits \ FASB screen

- o Projected Average compensations is the estimated average compensation at retirement using the salary scale input and increase maximum assumptions entered on the Assumptions \ FASB screen.

#7 – Average Compensation Overview

C. Average Compensation Storage in Employee Screens (Continued)

- Employee \ Costs \ LIABILTY (Liability) screen

Employee Window: Costs \ LIABILTY screen

- o Benefit Average, Minimum Average, Maximum Average are the end of year plan accrued benefit, top-heavy and 415 maximum compensation averages
  - These are used for the calculation of end of year accrued benefits

#7 – Average Compensation Overview

D. Basic Average Compensation Examples

Example Participant Data	Related Plan Specifications

• Hire Date: 06/21/2019
    o 18 completed months of employment
• Entry Date: 7/1/2020
   o 6 months of participation
• 12/31/2019 Compensation in HISTORY: 33,540.00
• Current Compensation on COMP screen: 67,817.88
	• 1/1/2021 BOY Valuation

- Settings on the General \ Compensation \ COMPAVG screen will be adjusted to illustrate the impact on the participant's Basic Data \ COMP \ Plan Benefit Accrual Average compensation.

Employee: Basic Data \ COMP screen

#7 – Average Compensation Overview

D. Basic Average Compensation Examples (Continued)

Example 1 – Yearly	Example 2 – Monthly	Example 3 – Omit Pre-Entry	Example 4 – Annualize
Plan Average Averaging Period 3 Yrs Exclude Comp during Last [ ] Yrs Average during Last 99 Yrs First Year 1 - No Change Retirement Year 1 - Annualize if Accr Credit Termination Year 1 - Annualize if Accr Credit Consecutive Month Avg No Use Consecutive Years Yes	**Plan Average** Averaging Period 3 Yrs Exclude Comp during Last [ ] Yrs Average during Last 99 Yrs First Year 1 - No Change Retirement Year 1 - Annualize if Accr Credit Termination Year 1 - Annualize if Accr Credit Consecutive Month Avg Yes Use Consecutive Years Yes	**Plan Average** Averaging Period 3 Yrs Exclude Comp during Last [ ] Yrs Average during Last 99 Yrs First Year 4 - Omit Pre-Entry Retirement Year 1 - Annualize if Accr Credit Termination Year 1 - Annualize if Accr Credit Consecutive Month Avg Yes Use Consecutive Years Yes	**Plan Average** Averaging Period 3 Yrs Exclude Comp during Last [ ] Yrs Average during Last 99 Yrs First Year 2 - Annualize Retirement Year 1 - Annualize if Accr Credit Termination Year 1 - Annualize if Accr Credit Consecutive Month Avg Yes Use Consecutive Years Yes
Compensation Considered 2019: 33,540.00: 2020: 67,817.88 Divisor Yearly = 2 x 12 = 24 Accrual Average (33,540.00 + 67,817.88) / 24 = ***4,223.25***	Compensation Considered 2019: 33,540.00: 2020: 67,817.88 Divisor Completed Months = 18 Accrual Average (33,540.00 + 67,817.88) / 18 = ***5,630.99***	Compensation Considered 2019: 0.00 2020: 67,817.88 Divisor Completed Months = 6 Accrual Average 67,817.88 / 6 = ***11,302.98***	Compensation Considered 2019: Compensation / Days in First Yr x 372 = 63,334.42 2020: 67,817.88 Divisor Completed Months = 18 Accrual Average (63,334.42 + 67,817.88) / 18 = ***7,286.24***
Plan Benefit Projected Average 5,651.49 Funding Average 10,831.72 Accrual Average 4,223.25	**Plan Benefit** Projected Average 5,651.49 Funding Average 10,831.72 Accrual Average 5,630.99	**Plan Benefit** Projected Average 5,651.49 Funding Average 10,831.72 Accrual Average 11,302.98	**Plan Benefit** Projected Average 5,651.49 Funding Average 10,831.72 Accrual Average 7,286.24

#7 – Average Compensation Overview

E. Advanced Average Compensation Considerations

- Employee HISTORY records

  - If the compensation field in an employee's record is left blank, years surrounding the blank year will be treated as consecutive for calculating average compensation

- Employee: Basic Data \ COMP \ Extra Compensation and HISTORY \ Ext A \ Excluded Compensation

  - Can be used to store compensation for maximum or minimum benefit purposes but not be included for plan benefit average compensation.

- Employee Multi-Decrement Support Report

  - Generated during Calculations > Valuation if their Basic Data \ NAME \ Print Multi-Decrement Support is set to one of the Y options

  - Report provides helpful details on historical and projected compensation averages

Age	Plan Comp	Minimum Comp	Maximum Comp
38[1]	5,277.87	2,795.00	2,795.00
39[3]	7,286.24	4,223.25	4,223.25
40	6,700.10	4,755.80	4,755.80
41	5,822.53	5,065.64	5,822.53
42	5,997.22	5,287.63	5,997.22

#7 – Average Compensation Overview

E. Advanced Average Compensation Considerations (Continued)

- Plan Specification \ General \ Compensation \ COMPAVG \ Compensation is Input field
  - Set to No, turn off the 415 % of Compensation limit.
    - Often used for frozen plans that do no load compensation history.

Plan Specification: Compensation \ COMPAVG screen

- Cash Balance Plans

  - Generally, cash balance plans do not use average compensation with the benefit formulas
    - Instead, employee's Current Compensation and Current Annual Compensation Rate are used.
    - Cash Balance Contribution credits calculated using Unitized Minimum programming do use their plan benefit average compensation

  - Set Plan Specifications \ COMPAVG: Averaging Period and Average during Last both to **1** to achieve current annual compensation testing method

#7 – Average Compensation Overview

F. References

- FAQs

FAQs ASC
+ Actian SQL
+ Daily Val - DV Direct
+ DC - Compliance
+ DC - Recordkeeping
− Defined Benefit

      FAQ 480: Compensation average calculation
      FAQ 911: Cushion Amounts - Calculations for salary increase

- DB Reference Manual

- Online Help
  - <F1> on keyboard to access online help for each employee or plan specifications field

Top Tips for DB Valuation System

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#3 – ASC-715 Basics in ASC

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#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

#8 – Traditional Benefit Formula Coding

Topic Roadmap

    A.   Setting Up the ACCRUAL Screen

    B.   Setting Up Benefit Formula Screens

    C.   Fractional Benefit, Unit Benefit, and Fresh Start Examples

    D.   References

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen

- Plan Specifications \ General \ Identification \ ACCRUAL screen

Plan Specification: General \ Identification \ ACCRUAL screen

- o Type of Accrual options

  - **1 - Yr/Yr Project Avg**
    - A fractional accrual of years over years, to a projected benefit based on a projected average salary.
  - **2 - Yr/Yr Curr Avg**
    - Fractional Accrual where service <u>is not</u> limited to a number of years and based on current average salary
      - o Often used with FLATBENF type formulas
  - **3 - % per Year**
    - Accrual based on a percentage per year.
  - **4 – Front End**
    - Fractional Accrual where service <u>is</u> limited to a number of years as input on the Years for Full Accrual field.
      - o Often used with FLATBENF type formulas
  - **5 – Unit Per Formula**
    - Accrual based on the service entered on the formula screens.
    - Often used with UNITBENF, CARRBENF, and Cash Balance formulas.

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen (Continued)

- Plan Specifications \ General \ Identification \ ACCRUAL screen (Continued)

Plan Specification: General \ Identification \ ACCRUAL screen

- o Starting Date options

    - 1 – Hire
        - Accrual periods are employment anniversary years starting with hire date and ending each 12 months thereafter
    - 2 – Plan Year
        - Accrual period use the same fiscal year as the plan year
        - Does not limit to service while a participant
    - 3 – Entry
        - Accrual period are the years starting with entry date and ending each 12 months thereafter
    - 4 – BOY Entry
        - Accrual period uses the same fiscal year as the plan year but starts with the first year of participation
        - Recommended for cash balance plans
    - 5 – BOY Eligible
        - Accrual period uses the same fiscal year as the plan year but starts with the first year a participant could have been eligible if the plan was in existence
    - These options can impact the calculation of the Basic Data \ DATE \ Accrual Start date for participants with status code B or C. Manually changing their Accrual Start date is possible with status code A participants but review the results to ensure they are as expected.

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen (Continued)

- Plan Specifications \ General \ Identification \ ACCRUAL screen (Continued)

Plan Specification: General \ Identification \ ACCRUAL screen

o Basis of Year Options:

- **1 – Exact Year**
    - Accrual service is prorated on the number of days out of each year
    - ASC counts each month to have 31 days for a 372-day year
- **2 – 1,000 Hours**
    - In general, if hours equal or exceeds 1,000 hours then that year is counted for benefit service
- **3 – 500 Hours**
    - In general, if hours equal or exceeds 500 hours then that year is counted for benefit service
- **4 – X Hours**
    - In general, if hours equal or exceeds the hours requirement input in the Hours field then that year is counted for benefit service
- Note, Days in First Year and Retirement year may impact whether a year is considered

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen (Continued)

- Plan Specifications \ General \ Identification \ ACCRUAL screen (Continued)

Plan Specification: General \ Identification \ ACCRUAL screen

o Days in First Year and Retirement Year

- In general, these days in first or retirement year have two effects:
  - For the first or retirement year, if that year has less than the number of days input, that year is generally excluded
  - If hours are not input for the first or retirement year (often for their projected benefits), then the number of days is used to estimate if they met the accrual retirements
- The 163 entered above in Days in First Year is 5 months, 1 week and a day (5 x 31+7+1 = 163)
- The 186 entered above in Days in Retirement Year is 6 months (6 x 31 = 186) If hours are blank, 2080 hours are assumed for the year.
  - Do not input 1,000 hours if not importing actual hours. That may cause unexpected results for eligibility or projected benefits

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen (continued)

- Plan Specifications \ General \ Identification \ ACCRUAL screen (Continued)

DB Plan Specification: General \ Identification \ ACCRUAL screen

- o Other ACCRUAL screen settings to consider

  - ▪ Excl. Years < Effective Date
    - • Set this to **Yes** to exclude service before the effective date
  - ▪ Accrual before Apply Maximum
    - • For fractional accruals this defines whether the accrual fraction shall be applied before or after the application of the maximum benefit.
    - • For Unit Accruals, this should be set to **Yes**
  - ▪ Accrual Before Apply Minimum
    - • For fractional accruals this defines whether the accrual fraction shall be applied before or after the application of the minimum benefit (other than top heavy)
  - ▪ Years for Full Accrual
    - • For Front End and Unit Accrual methods, this input will be used for the maximum number of accrual years

#8 – Traditional Benefit Formula Coding

A. Setting Up the ACCRUAL Screen (Continued)

- Plan Specifications \ General \ Identification \ ACCRUAL screen (Continued)

  o ACCRUAL screen selections should generally match the coded benefit formula screen(s)

    ▪ The benefit formula options operate similarly but apply to benefit service calculations instead of accrual service calculations
    ▪ Both exclude years options also match between the two sample screens below
    ▪ The Calculations window may provide warning messages if the settings are different.
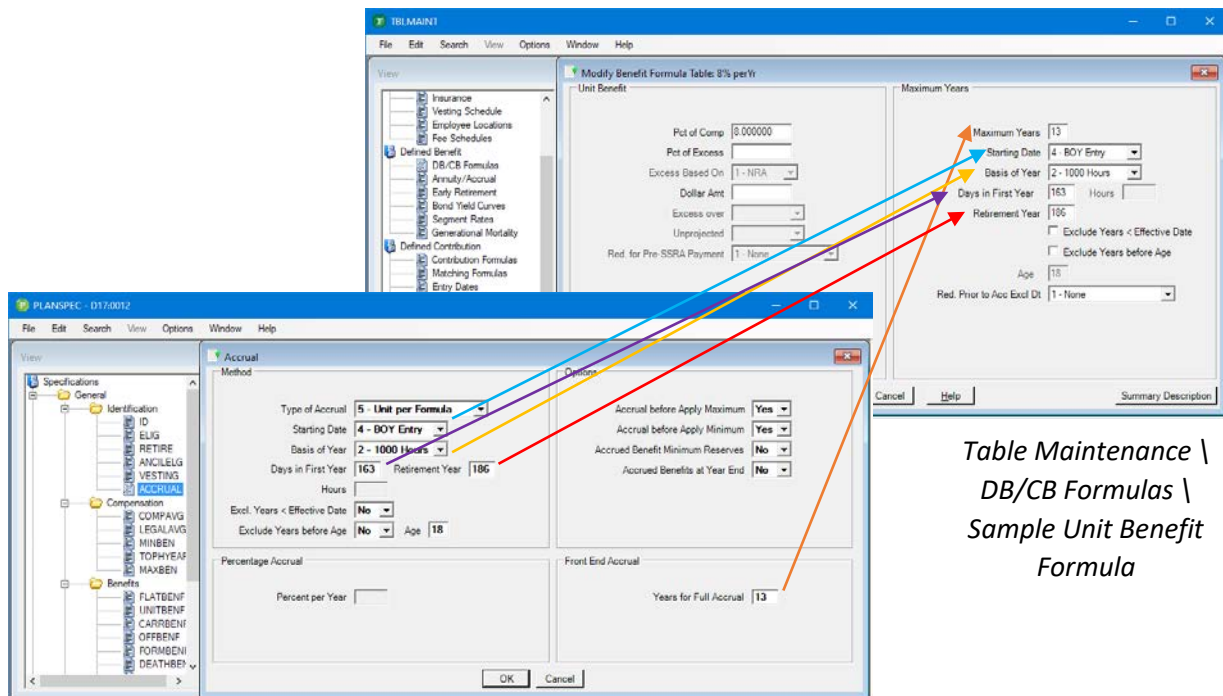
Table Maintenance \ DB/CB Formulas \ Sample Unit Benefit Formula

Plan Specification: General \ Identification \ ACCRUAL screen

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens

- Plan Specifications \ General \ Benefits \ FLATBENF screen

Plan Specification: General \ Benefits \ FLATBENF screen

- Generally, to be used with Accrual Types of Yr/Yr Curr Avg or Front End

- Pct of Comp and Dollar Amt

  - Standard benefit formula options

- Pct of Excess and Excess over:

  - Used for integrating with social security

- Reduce for Year Less Than

  - Used for prorating the benefit formula for participant that have less than the projected number of years as input

- Other Settings

  - Review Online Help for additional details on other options

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Benefits \ OFFBENF screen

Plan Specification: General \ Benefits \ OFFBENF screen

- o To be used in conjunction with the FLATBENF screen for integrating with social security using the offset design.

- o Review Online Help or DB Reference Manual for details on these options.

- Benefit Description

- o For traditional DB benefit formula types (UNITBENF, FLATBENF, ETC), there is an option to input a customized benefit description for the Summary of Plan Provisions report

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Benefits \ UNITBENF screen

Plan Specification: General \ Benefits \ UNITBENF screen

- o Generally, to be used with Accrual Types of Unit Accrual

- o Pct of Comp and Dollar Amt

  - ▪ Standard benefit formula options

- o Pct of Excess and Excess over

  - ▪ Used for integrating with social security

- o Maximum Years

  - ▪ Used for limiting the number of years considered for the benefit formula

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Benefits \ UNITBENF screen (Continued)

  - Red. Prior to Acc Excl Dt: (excerpt of the available options)

    - Based on Accrual Exclusion Date entered on General \ Identification \ ID screen
    - **2 - All Years**
      - All years before the Accrual Exclusion Date will be excluded from the benefit service but Reduced for Years Less Than begins at the original Starting Date
    - **4 - Total (<=35)**
      - Years before the Accrual Exclusion Date will be excluded from the benefit service reduction for application to the total benefit. A cap on benefit service of 35 years is applied from the original starting date.
    - **5 - Fresh Start**
      - Service for the above formula begins at the Accrual Exclusion Date. Any benefits coded in the individual's record as additional benefits are added on to the formula benefit.

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Benefits \ CARRBENF screen

Plan Specification: General \ Benefits \ CARRBENF screen

- o To be coded in conjunction with the UNITBENF screen

- o Career Average formulas calculate the current accrual based on current compensation, rather than average, which is then added to the Prior Accrued Benefit

- o Credit Service Percentages

  - ▪ Can be coded for up to 10 levels for prorating the accrual for the year based on a range of hours

- o Date of Formula Change for Prior Unit Benefit

  - ▪ If a date is entered here, the above formula will be applied to final average compensation using service prior to this date. This calculated prior service benefit will then be added to the benefit calculated based on service after this date and the formula on the UNITBENF screen.

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Benefits \ FORMBENF screen

DB Plan Specification: General \ Benefits \ FORMBENF screen

- o Group Formula Tables are used when more than 1 formula is needed in a single plan

- o Benefit formula is set up in Table Maintenance and can be selected for the above assigned groups

- o Set Employee's Basic Data \ NAME screen Principal Code to **1** through **9** or **A** to assign a benefit formula to them.

- o If an employee's Principal code is set to **Y** or **N** then their benefit would be calculated based on the other benefit formula screens coded in plan specifications.

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ Funding \ BENFORM screen

Plan Specification: General \ Benefits \ BENFORM screen

- o By default, if the Years Certain and Percent to Survivor are blank, calculations will be based on a single life annuity for the normal form of benefits.

- o Enter a value into either of these fields to change the normal form

- o Changing the normal form will impact the factors used in the calculations

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Compensation \ MINBEN screen

Plan Specification: General \ Compensation \ MINBEN screen

- o Use for All Years, not just Top Heavy Years

  - ▪ **No**
    - The Minimum Percent is applied to top heavy average compensation in top heavy years only up to the Maximum Years

  - ▪ **Yes**
    - The Minimum Percent is applied to top heavy average compensation for all plan years (whether top heavy or not) up to the Maximum Years

- o Offset to Benefit Applies to Minimum Only

  - ▪ **Yes**
    - For plans with offset benefits for participants, the system will apply the offset to the top heavy minimum benefit only

  - ▪ **No**
    - For plans with offset benefits for participants, the system will apply the offset to a participant's total benefit. See Offset Applied after Top Heavy Minimum field below

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Compensation \ MINBEN screen (Continued)

    o Minimum Applies to Non-Key Only

        ▪ **No**
            • Provide top heavy minimum benefits to non-key participants only
        ▪ **Yes**
            • Provide top heavy minimum benefits to all participants, key and non-key

    o Offset Applied after Top Heavy Minimum

        ▪ For plans with offset benefits, the coding in this field determines if the benefit offset is applied to determine the accrued benefit
        ▪ The benefit offset is always applied to the projected and funding benefits
        ▪ **No**
            • Limits the accrued benefit to the greater of a) the top heavy minimum benefit without the offset applied, and b) the plan formula benefit with the offset applied
        ▪ **Yes**
            • Limits the accrued benefit to the greater of a) the top heavy minimum benefit after offset, and b) the plan formula benefit after offset

#8 – Traditional Benefit Formula Coding

B. Setting Up Benefit Formula Screens (Continued)

- Plan Specifications \ General \ Compensation \ MAXBEN screen

Plan Specification: General \ Compensation \ MAXBEN screen

- o Starting Date

    - Defines the date from which the system will begin counting years of service for the above requirement
    - For plans that count years for the 415 dollar limit based on plan years of participation, enter **4 – BOY Entry**
    - For plans that define participation for the 415 dollar limit as elapsed time or as anniversary years based on hours, enter **3 – Entry**

- o Exc. Yrs < Eff Date

    - Enter **Yes** to exclude service before the plan effective date for all 415 purposes, including for the purpose of counting years of service for determining the 415 percent of pay maximum limit.
    - Plans with Starting Date set to **3 - Entry** or **4 - BOY Entry**, who count all years of service from date of hire for determining the 415 percent of pay maximum benefit should enter **No** in this field.

- Run Calculations > Valuation to update the results after setting up the benefit formula and participant records

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples

- Example 1: Flat Benefit with Front End Accrual

    o Plan Design: 80% Fractional Accrual with 25 Plan Years of Participations for Full Accrual where a year is 1,000 hours. The 80% is reduced for participants with less than 25 years

Plan Specification: General \ Benefits \ ACCRUAL screen

    o Plan Specification settings

    - Type of Accrual
        - Select **4 – Front End** for fractional accrual method
    - Years for Full Accrual
        - Enter **25** years for the Full Accrual option
    - Starting Date
        - Select **4 – BOY Entry** because accrual service starts the first of the plan year they entered the plan
    - Basis of Year
        - Select **2 – 1000 Hours** for 1,000 hour accrual requirements

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 1: Flat Benefit with Front End Accrual (Continued)

  o Plan Design: 80% Fractional Accrual with 25 Plan Years of Participations for Full Accrual where a year is 1,000 hours. The 80% is reduced for participants with less than 25 years

DB Plan Specification: General \ Benefits \ FLATBENF screen

  o Plan Specification settings

    ▪ Pct of Comp
      - Enter **80.0** for the plan's 80% Pct of Comp benefit formula
    ▪ Reduce for Years Less than
      - Enter **25** to reduce the 80% for participants with less than 25 years of total accrual service
    ▪ Other parameters are set to match the ACCRUAL screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 1: Flat Benefit with Front End Accrual (Continued)

    o Plan Design: 80% Fractional Accrual with 25 Plan Years of Participations for Full Accrual where a year is 1,000 hours. The 80% is reduced for participants with less than 25 years

    o Participant service and compensation results for the benefit formula as of 12/31/2020

Employee: Basic Data \ DATE screen

Employee: Basic Data \ COMP screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 1: Flat Benefit with Front End Accrual (Continued)

    - Plan Design: 80% Fractional Accrual with 25 Plan Years of Participations for Full Accrual where a year is 1,000 hours. The 80% is reduced for participants with less than 25 years

Employee: Basic Data \ ACCRBENF screen

- Participant Accrued Benefit result for the benefit formula as of 12/31/2020

    - Factors
        - 80% of average compensation reduced for years less than 25
        - Years Accrued: 1
        - Total Accrual Years: 27 (max of 25)
        - Accrual Average Comp: 4,223.25
    - Accrued Benefit Calculation
        - 80% x Accrual Average Comp x (Total Accrual Years / Reduced Less Than 25) x (Years Accrued x Total Accrual Years)
        - 0.80 x 4,223.25 x (25 / 25) x (1 / 25) = ___**135.14**___

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 2: Unit Benefit with Unit Accrual

    o Plan Design: 4% Unit Accrual per year of participation for maximum 25 years

Plan Specification: General \ Benefits \ ACCRUAL screen

    o Plan Specification settings

      ▪ Type of Accrual
        - Select **5 – Unit per Formula** for unit accrual method
      ▪ Years for Full Accrual
        - Enter **25** years for the Full Accrual option
      ▪ Starting Date
        - Select **4 – BOY Entry** because accrual service starts the first of the plan year they entered the plan

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 2: Unit Benefit with Unit Accrual (Continued)

    o Plan Design: 4% Unit Accrual per year of participation for maximum 25 years

DB Plan Specification: General \ Benefits \ UNITBENF screen

    o Plan Specification settings

        ▪ Pct of Comp
            • Enter **4.0** for the plan's 4% Pct of Comp benefit formula
        ▪ Reduce for Years Less than
            • Enter **25** to a maximum 25 years of total accrual service years
        ▪ Other parameters are set to match the ACCRUAL screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 2: Unit Benefit with Unit Accrual (Continued)

    o Plan Design: 4% Unit Accrual per year of participation for maximum 25 years

    o Participant service and compensation results for the benefit formula as of 12/31/2020

Employee: Basic Data \ DATE screen

Employee: Basic Data \ COMP screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 2: Unit Benefit with Unit Accrual (Continued)

  o Plan Design: 4% Unit Accrual per year of participation for maximum 25 years

Employee: Basic Data \ ACCRBENF screen

  o Participant Accrued Benefit result for the benefit formula as of 12/31/2020

      ▪ Factors
          - 4% of average compensation per year up to 25 years
          - Years Accrued: 33 (maximum of 25)
          - Accrual Average Comp: 5,013.00
      ▪ Accrued Benefit Calculation
          - 4% x Accrual Average Comp x Years Accrued (maximum of 25)
          - 0.04 x 25 x 5,013.00= **_5,013.00_**

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date

    o In ASC, limiting years to a specific date is called a Fresh Start

    o Review References at the end of this topic for FAQs on Fresh Start programming

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

Plan Specification: General \ Identification \ ID screen

    o Plan Specification settings

        ▪ Exclude Service
            • Leave blank
        ▪ Exclude Accrual Service
            • Enter earliest date on which service will be credited
            • Enter 1/1/2016 to provide up to 5 years of service prior to the plan's Effective Date of 1/1/2021

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date (Continued)

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

Plan Specification: General \ Benefits \ ACCRUAL screen

    o Plan Specification settings

        ▪ Type of Accrual
            • Select **5 – Unit per Formula** for unit accrual method
        ▪ Years for Full Accrual
            • Enter **25** years for the Full Accrual option
        ▪ Starting Date
            • Select **2 – Plan Year** because accrual service is permitted to start as early as the first plan year service will be credited

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date (Continued)

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

Plan Specification: General \ Benefits \ UNITBENF screen

    o Plan Specification settings

        ▪ Dollar Amount
            • Enter **100.00** for the plan's $100 per year of service benefit formula
        ▪ Reduce for Years Less than
            • Enter **25** to a maximum 25 years of total accrual service years
        ▪ Reduce Prior to Accrual Exclusion Date
            • Select **5 – Fresh Start** to permit service to be credited prior to the plan's Effective Date
        ▪ Other parameters are set to match the ACCRUAL screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date (Continued)

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

Plan Specification: General \ Compensation \ MAXBEN screen

    o Plan Specification settings

        ▪ Days in First Year
            • Enter **1** to have the system calculate 1 year of 415 participation service as of the plan's Effective Date

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date (Continued)

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

    o Participant service results for the benefit formula as of 1/1/2021

Employee: Basic Data \ DATE screen

#8 – Traditional Benefit Formula Coding

C. Fractional Benefit, Unit Benefit, and Fresh Start Examples (Continued)

- Example 3: Unit Benefit with Service Credit Before Effective Date (Continued)

    o Plan Design: $100 Unit Accrual with 5 years of service before Effective Date per year of participation for maximum 25 years

Employee: Basic Data \ ACCRBENF screen

    o Participant Accrued Benefit result for the benefit formula as of 1/1/2021

        ▪ Factors
            • $100 per year up to 25 years
            • Years Accrued: 5 (maximum of 25)
        ▪ Accrued Benefit Calculation
            • $100 x Years Accrued (maximum of 25) = ***500.00***

#8 – Traditional Benefit Formula Coding

D. References

- FAQs

FAQ 264: Coding a tiered formula
FAQ 1022: Coding an integrated formula with unit accrual
FAQ 826: Fresh Start - Coding a First Year Val with Accrual Service Prior to Plan Effective Date
FAQ 847: Fresh Start - Coding a new formula with a prior frozen benefit
FAQ 496: Fresh Start - Coding a wear-away formula

- DB Reference Manual

- Online Help
  - o <F1> on keyboard to access online help for each employee or plan specifications field

Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

#9 – Participant Reconciliation with Grids and Formulas

Topic Roadmap

    A.   Grids and Formulas Snapshot

    B.   5500 Schedule R – Lump-Sum Distribution Counts

    C.   5500 Participant Counts

    D.   Reconcile Annuity Distributions

    E.   How to Load Sample DB Formula File and Saved Grids to Your ASC System

    F.   References

#9 – Participant Reconciliation with Grids and Formulas

A. Grids and Formulas Snapshot

- Any participant field viewable on the participant screens can be used with grids. For ASC users not familiar with creating grids to view employee data, it is recommended to review the grid webcast, grid training videos, and other available documentation before working with formulas

    o   See F. References for a listing of available resources

    o   Formulas can reference plan specification fields by adding an S: before the Plan Specification field

        ▪   Example: S:PLNYREND will reference the Plan Year End date on the Plan ID screen.

    o   If formulas are added to a grid, those calculated results will display as a column in the grid

    o   Grids and formulas can be used to reconcile participant fields

        ▪   Depending on your reconciliation needs, different participant fields and formulas can be used to display the needed information

- This top tip will apply a practical application of grids and formulas to reconcile participant fields

#9 – Participant Reconciliation with Grids and Formulas

B. 5500 Schedule R – Lump-Sum Distribution Counts

- In general, there are three ways to identify if a participant received a lump-sum distribution in the 12 months prior to the valuation date:

  o If their status code as of the prior valuation date was not P, but as of the current valuation date, it is P

    ▪ P status code is for participants that have been paid out of the plan and no longer have benefits due

  o If there is a value in their Benefits \ SOLEPROP screen \ 1099R fields and their status code is not D, G, or R

    ▪ Status codes D, G, and R are for participants receiving annuity payments

  o If they have cash balance distributions input on their Costs \ CASHBAL screen

    ▪ CB distributions generally are nonrecurring payments

- Using Grids and Formulas, we can see which participants may have taken a lump-sum distribution during the prior 12 months

  o With the above logic, the ASC DB SchR Lumps grid will count those participants
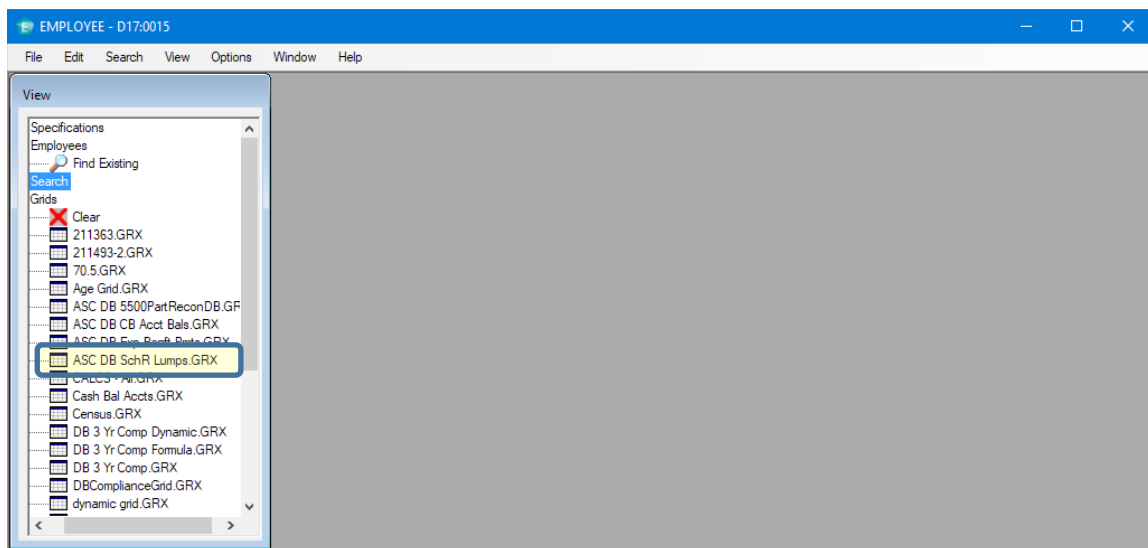
ASC: Employee window

#9 – Participant Reconciliation with Grids and Formulas

B. 5500 Schedule R – Lump-Sum Distribution Counts (Continued)

- In the screenshot below, the grid includes these columns:

  - **P this Yr Not Last**

    - Participants' preceding plan history record status code is compared to their current status code
    - If status this year is P, but prior year status is not P, then 1 is returned

  - **Not InPay but Dist**

    - If a participant has a gross distribution input but status code is not DGR (retiree status codes), then 1 is returned

  - **CB Dist**

    - If a participant has a CB distribution input, then 1 is returned

- Set View / Grid / Show Totals to **Yes\Disallow Edits** to show the totals for each column

ASC: Employee: View of 'ASC DB SchR Lumps'

- Depending on how you use ASC, select the participant results that you determine are appropriate

#9 – Participant Reconciliation with Grids and Formulas

B. 5500 Schedule R – Lump-Sum Distribution Counts (Continued)

- The formula used for the columns

  - **P this Yr Not Last**

    - $IF(S:FMBOYVAL="N";$IF((HSPARTST[HSDATE=@LastYear]<>"P")AND(PARTSTAT="P");1;0);$IF((HSPARTST[HSDATE=@2YrAgo]<>"P")AND(PARTSTAT="P");1;0))

  - **Not InPay but Dist**

    - $IF((DISTGROS>0)AND($NOT($IN(PARTSTAT;"D";"G";"R")));1;0)

  - **CB Dist**

    - $if(CBDIST > 0;1;0)

#9 – Participant Reconciliation with Grids and Formulas

C. 5500 Participant Counts

- 5500s report various participant counts. For Example, line 6h is for the number of participants that terminated during the year that were not fully vested.

- Formulas files can be created using ASC's Utilities > Wizards > Formulas menu
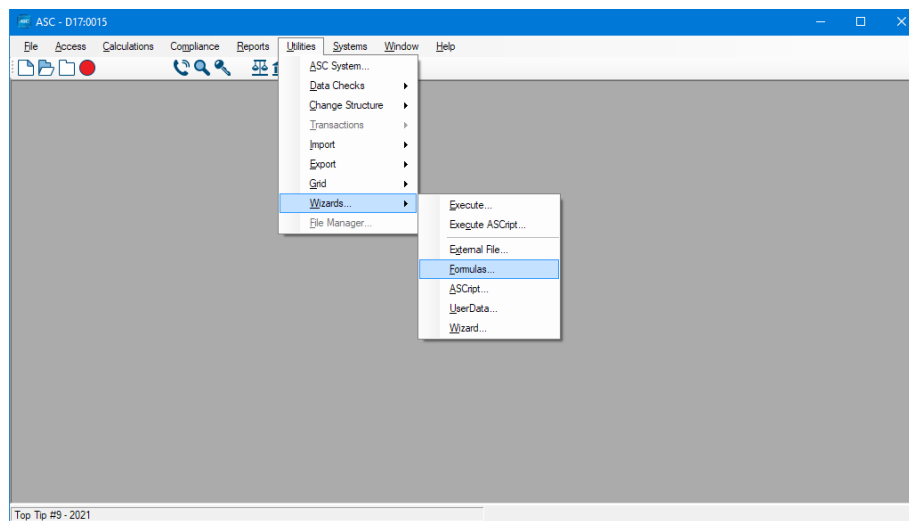
Utilities > Wizards > Formulas menu

- o The following formula could be added to a formula file to be used with grids for checking for participants that terminated during the year were not 100% vested.
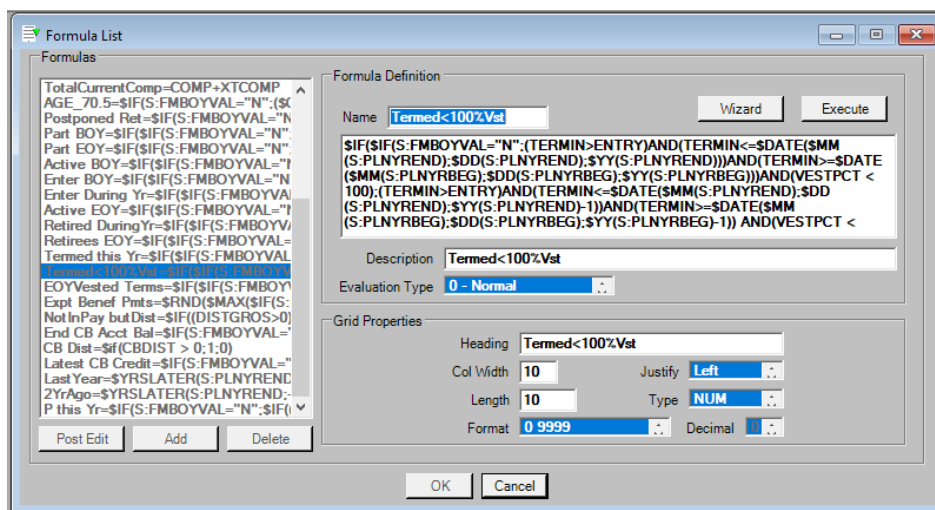
Utilities > Wizards > Formulas menu > 'Termed<100%Vst' Formula

- ▪ Depending on the valuation date (BOY versus EOY), the '*Termed<100%Vst*' formula references different plan specification fields for the 12-month period before the valuation date for reporting

#9 – Participant Reconciliation with Grids and Formulas

C. 5500 Participant Counts (Continued)

- For this presentation, the following generic formulas were used to calculate:

    o Active BOY, Enter on BOY, Enter During the Year, Active EOY

    o Retired During Yr, Retirees as of EOY

    o Terminated during the EOY, EOY Vested, Terminated <100% vested

    o Participants BOY and EOY

Employee Name	Entry Date	Termination	Normal Retire	Primary Status	Active BOY	Enter BOY	Enter During	Active EOY	Retired Dur	Retirees EO	Termed this	EOYVested	Termed<10	Part BOY	Part EOY
Employee_66	09/21/2019		11/26/2032	A	1	0	0	1	0	0	0	0	0	1	1
Employee_67	10/25/1993		01/02/2021	A	1	0	0	1	0	0	0	0	0	1	1
Employee_68	01/01/2013		01/01/2033	A	1	0	0	1	0	0	0	0	0	1	1
Employee_69	10/02/2000		01/16/2022	A	1	0	0	1	0	0	0	0	0	1	1
Employee_7	09/01/2014		03/15/2038	A	1	0	0	1	0	0	0	0	0	1	1
Employee_70	06/12/2017		10/04/2028	A	1	0	0	1	0	0	0	0	0	1	1
Employee_71	02/16/1984	03/01/2013	03/01/2012	R	0	0	0	0	0	1	0	1	0	1	1
Employee_72	12/14/2015	10/12/2016	04/01/2046	T	0	0	0	0	0	0	0	0	1	1	1
Employee_73	02/24/2014		08/31/2039	A	1	0	0	1	0	0	0	0	0	1	1
Employee_74	10/07/2019		10/07/2029	A	1	0	0	1	0	0	0	0	0	1	1
Employee_75	08/14/2012	07/12/2013	11/01/2036	T	0	0	0	0	0	0	0	0	1	1	1
Employee_76	07/25/2011		12/09/2037	A	1	0	0	1	0	0	0	0	0	1	1
Employee_77	05/10/1999	10/15/2010	08/01/2042	T	0	0	0	0	0	0	0	1	0	1	1
Employee_78	03/01/2016		10/09/2034	A	1	0	0	1	0	0	0	0	0	1	1
Employee_79	12/14/2015	01/29/2016	01/01/2041	T	0	0	0	0	0	0	0	0	1	1	1
Employee_8	09/20/2010		06/28/2025	A	1	0	0	1	0	0	0	0	0	1	1
Employee_80	06/19/2006	01/02/2007	08/01/2050	T	0	0	0	0	0	0	0	1	0	1	1
Employee_81	05/14/2019	12/19/2019	05/14/2039	T	0	0	0	0	0	0	0	0	1	1	1
Employee_82	01/02/2017		01/01/2037	A	1	0	0	1	0	0	0	0	0	1	1
Employee_83	01/02/2019		02/26/2043	A	1	0	0	1	0	0	0	0	0	1	1
Employee_84	01/01/1980	01/01/2001	08/01/2005	R	0	0	0	0	0	1	0	1	0	1	1
Employee_85	03/28/2017		06/22/2044	A	1	0	0	1	0	0	0	0	0	1	1
Employee_86	07/29/2019	01/21/2020	04/17/2046	M	1	0	0	0	0	0	1	0	0	1	1
Employee_87	01/12/2015	02/08/2016	08/01/2056	T	0	0	0	0	0	0	0	0	1	1	1
Employee_88	05/16/2018	03/29/2019	06/01/2057	T	0	0	0	0	0	0	0	0	1	1	1
Employee_89	06/03/2019	12/10/2019	03/24/2047	T	0	0	0	0	0	0	0	0	1	1	1
Employee_9	11/06/2006		08/27/2038	A	1	0	0	1	0	0	0	0	0	1	1
Employee_90	08/27/2018	01/06/2020	04/22/2047	M	1	0	0	0	0	0	1	1	0	1	1
Employee_91	02/16/2017		05/06/2048	A	1	0	0	1	0	0	0	0	0	1	1
Employee_92	04/21/2018	02/02/2019	05/01/2048	T	0	0	0	0	0	0	0	0	1	1	1
Employee_93	01/26/2019	09/24/2020	04/12/2049	M	1	0	0	0	0	0	1	1	0	1	1
Employee_94	01/01/1980	08/01/2003	01/01/2008	R	0	0	0	0	0	1	0	1	0	1	1
Employee_95	09/14/1994	02/01/2011	02/01/2011	R	0	0	0	0	0	1	0	1	0	1	1
Employee_96	12/03/2017	05/04/2018	07/01/2062	T	0	0	0	0	0	0	0	0	1	1	1
Employee_97	01/02/2005	01/26/2008	01/02/2021	T	0	0	0	0	0	0	0	0	1	1	1
Employee_98	10/25/1983	04/01/2007	11/01/2011	R	0	0	0	0	0	1	0	1	0	1	1
406					**216**		**11**	**201**		**43**	**26**	**109**	**75**	**366**	**377**

ASC: Employee: View > Grid

- At the bottom, when Show Totals Yes/Disallow Edits is enabled, totals in each category are calculated

- Note, for this large of a plan, it takes a few seconds to View / Grid / Copy to Clipboard to process
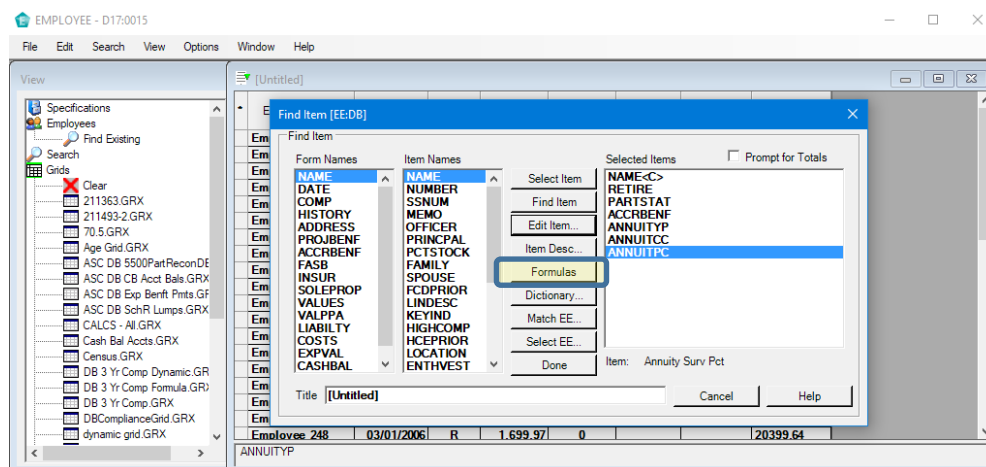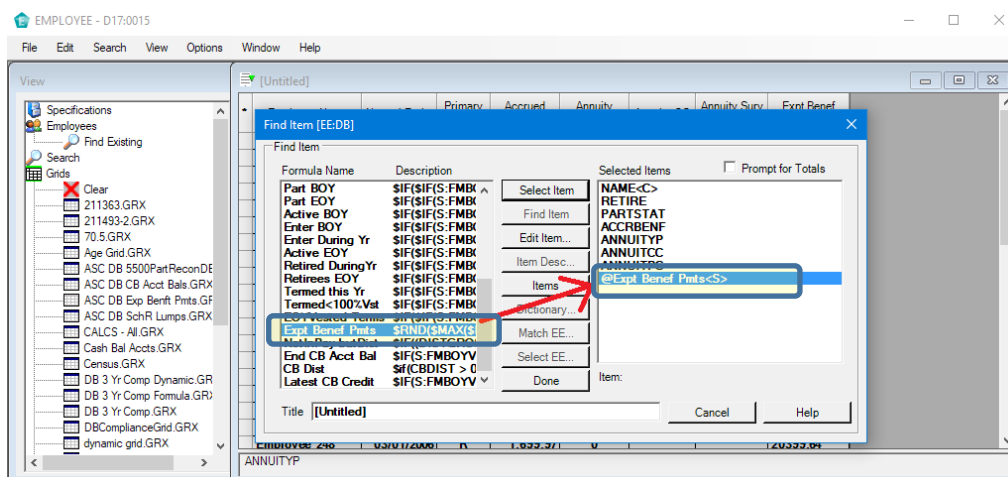
#9 – Participant Reconciliation with Grids and Formulas

D. Reconcile Annuity Distributions

- Use Grids to calculate estimated individual annual benefit payments. Calculating estimated total annual benefit payments may help verify trust accounting or 5500 reporting

- The following formula multiplies the Accrued Benefit by how many months the participant was retired in the 12 months prior to the valuation date
  - $RND($MAX($IF(S:FMBOYVAL="N";$MIN($CMO(RETIRE;S:PLNYREND);12);$MIN($CMO(RETIRE;S:PLNYRBEG);12));0)*ACCRBENF;0)

- After the formula file is saved, it can be accessible to a grid as a column by pressing the Formulas button.
  - If no formula file has recently been selected, you will be prompted to open a formula file

  - Double-click to add the formula to the grid.

ASC: Employee: View > Grid > New or Edit

#9 – Participant Reconciliation with Grids and Formulas

D. Reconcile Annuity Distributions (Continued)

- To filter which employees are included in the Grid, press Select EEs to define the filter

ASC: Employee: View > Grid > New or Edit

   o For retiree benefit payments, select codes of DGR.

ASC: Employee: View > Grid > New or Edit > Select EE…

#9 – Participant Reconciliation with Grids and Formulas

D. Reconcile Annuity Distributions (Continued)

- After the grid is created, enable Show Totals to view the estimated total annuity benefit payments for the last 12 months.
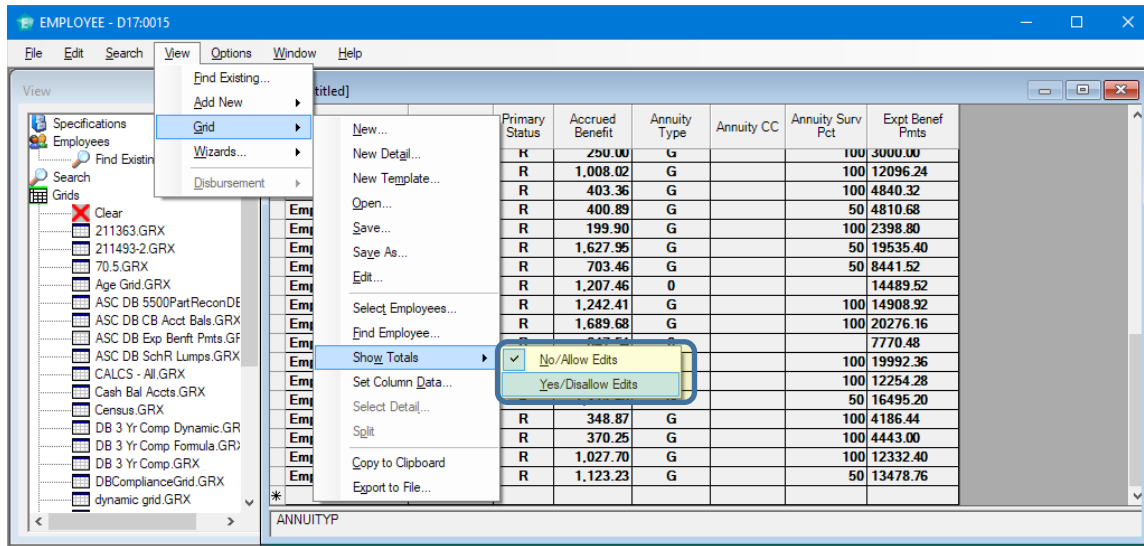
ASC: Employee: View > Grid

- While creating the grid, if totals were enabled for that column the total will show at the bottom of that column

ASC: Employee: View > Grid

- For this plan, based on the coding of the employee records, it is expected that **_545,608.56_** annuity benefits were paid in the prior 12 months from the trust.

- Discrepancies between trust reports and ASC grid results can be reconciled outside of ASC.

#9 – Participant Reconciliation with Grids and Formulas

E. How to Load Sample DB Formula File and Saved Grids to Your ASC System

- Navigate to the Client Support Center / DOCUMENTS / ASC System webpage.

- Download **ASC DB Advanced Formulas and Grids.zip** from the Client Support Center

    - *The formulas provided are generic and may need additional logic added to accommodate your plan designs. We welcome and will collect feedback on these formulas and grids for a potential future re-release.*
    - Review the results to ensure they are as expected.

- Review the instructions included in the zip file

- Save the **AdvancedFormulasDB-2021.FME** and the included .GRX files to your ASC \ USER directory

- Open a DB Plan in ASC. After opening a grid that uses a formula, the following menu will open
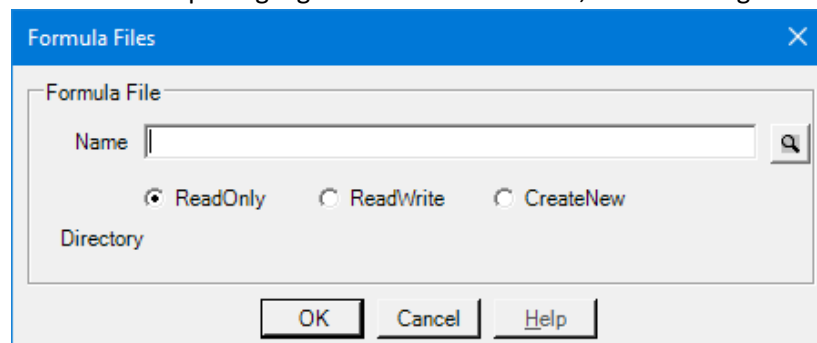
ASC: Employee: View > Grid > Open

- Select the **AdvancedFormulasDB-2021.FME** file for use with the ASC provided grids by selecting the spyglass and navigating to that file.
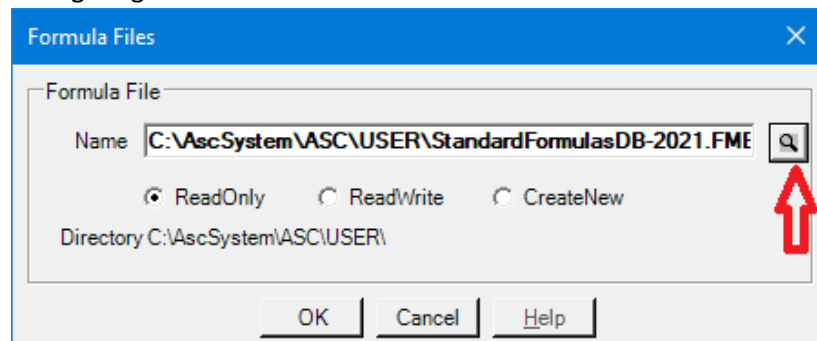
ASC: Employee: View > Grid > Open

- After pressing OK, the grid will be displayed using the formulas.

#9 – Participant Reconciliation with Grids and Formulas

F. References

- Client Support Center

  o System Training > Web Seminars > General System

    ▪ Grids & Formulas webcast

  o System Training > Web Seminars > Defined Benefit

    ▪ DB Top Tips – 2020
      • DB Top 10 Tips – 2017 webcast, Top Tip #3 – Using Grids and Formulas

  o System Training > Web Seminars > General System

    ▪ Grids & Formulas webcast

  o System Training > Training Video Series > Defined Benefit video

    ▪ *Grids and Formulas segment*
      • Click on the menu button on the bottom right to select the Grids and Formulas segment as indicated with the red arrows below.
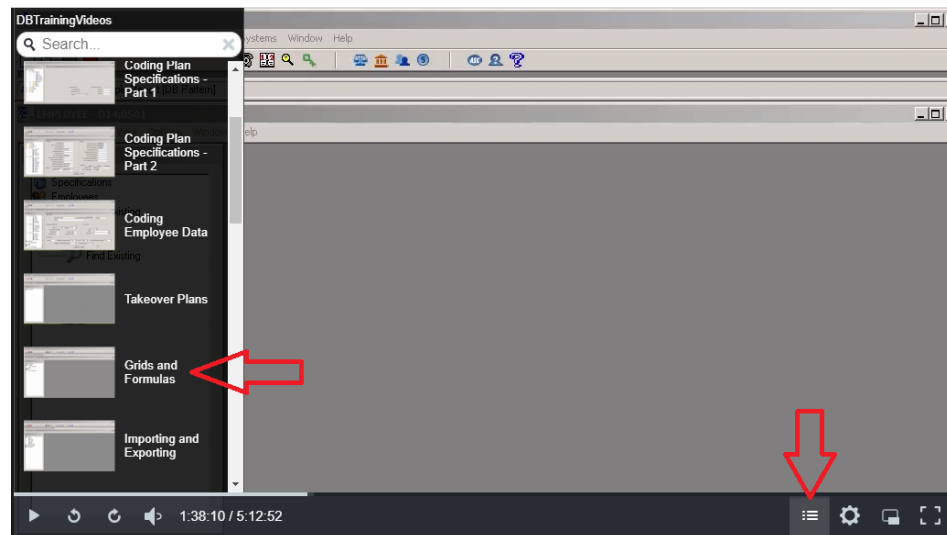
#9 – Participant Reconciliation with Grids and Formulas

F. References (Continued)

- Client Support Center (Continued)

    o FAQs

    FAQ 37: Grid--creating a formula to be displayed in a grid
    FAQ 5: Grid - Showing totals on a grid
    FAQ 337: Grid--Open a grid with the totals already turned on

- Grid Manual

    o Formula Expressions

    o Using Formula Expressions with the Grid

    o Formula Names

Top Tips for DB Valuation System

Tuesday, August 10, 2021

#1 – American Rescue Plan Act of 2021

#2 – One Participant DC Cash Balance Plan Proposal

#3 – ASC-715 Basics in ASC

#4 – Participant Termination/Optional Forms

#5 – DB Pattern Plans Overview

#6 – Extended History

#7 – Average Compensation Overview

#8 – Traditional Benefit Formula Coding

#9 – Participant Reconciliation with Grids and Formulas

Thank you for joining us!

Tip #	2021	2020	2018	2017	2016
1	American Rescue Plan Act of 2021	Changing Valuation Dates	Starting Dates for Benefit and Valuation Calculations	Housekeeping	Coding and Valuing Postponed Retirees **UPDATED 2020**
2	One Participant DC Cash Balance Plan Proposal	Coding Postponed Retirees	Status Codes Overview	FASB / ASC	Using the new SOA Mortality Tables and Generational Projection Scales
3	ASC-715 Basics in ASC	CARES Act for DB Plans	Application of IRC 415 Limits and Annuity Substitution	Using Grids and Formulas	Cash Balance Assumptions Coding Tips
4	Participant Termination/Optional Forms	Using Force All Benefits	New PPA Report Enhancements	Combined DC/DB Participant Statements	Discounted Receivable Contributions for EOY Valuations
5	DB Pattern Plans Overview	Exporting Plan Specifications with ASCRIPT	Compliance Testing for BOY DB and EOY DC Plans	Schedule SB Attachments	Employee Statements
6	Extended History	Importing Plan Specs from DGEM Documents	Takeover Plans	New PPA Report Options	PBGC Premium Report Additions
7	Average Compensation Overview	At-risk Coding for 1st Year Cash Balance Plans	Checking Individual Calculations	Quarterly Contribution Reports	Using Reporter to Customize an ASOP Disclosure
8	Traditional Benefit Formula Coding	Plan Term/Optional Forms Enhancements for Cash Balance Plans	SB Attachment Reporting	IRC 401(a)(4) Component Plan Testing	Optional Forms Calculation of 415 Lump Sums
9	Participant Reconciliation with Grids and Formulas	Interest Rate Basics for Cash Balance Plans	Short Plan Year Programming and Reporting	DB/DC Combined Plan Reporting	Potpourri I
10	NA	ASC Defined Benefit Learning Resources	Importing Tables in Table Maintenance	Short Plan Year Programming and Reporting	Potpourri II

ASC - Actuarial Systems Corporation

Tip #	2015	2014	2013
1	New Cash Balance Formula Options	Exporting and Importing Portable Copies	Coding tiered formulas
2	Allocation of DB Contribution on DC/DB Combo Report	Status codes overview **UPDATED 2018**	Coding the ANCILELG screen
3	401(a)(4) Rate Banding	Takeover Plans – **UPDATED 2018**	Checking Individual calculations **UPDATED 2018**
4	PBGC Report for 2014 and Beyond	Plan Termination / Optional Forms	Employee statements **UPDATED 2016**
5	Present Value and Benefit Comparison Reports	Data and Plan Specs Checking	Average compensation **UPDATED 2021**
6	SB Information Report Additions	Using Grids for Checking	Application of IRC 415 limits **UPDATED 2018**
7	PPA Cushion Calculations	Quarterly Interest Program **UPDATED 2017**	Annuity substitution **UPDATED 2018**
8	Coding Postponed Retirees **UPDATED 2020**	PBGC Changes Preview	Status codes overview **UPDATED 2018**
9	New Omit Pre-Entry Compensation Calculations	HATFA Updates	DC/DB combo plan report
10	Weekly Patches and Monthly Segment Rates	NA	Funded status report