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EA-2F Exam

Course Outline & Review Questions

2019 Edition

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ABOUT THIS MANUAL

This manual consists of my course outline and practice questions that have been inserted into the various sections of the outline. It reflects the course syllabus as published in January of 2019. Since this manual is being published before the final syllabus is published in the July, 2019 Joint Board program document (likely available in late August or early September, 2019), those updates are not reflected in this outline. It is possible that there will be a few additions and/or deletions to the reading for this exam once that program document is released. It is advisable to check the ASM website below for additions, changes and errata to this manual soon after that program document is published.

This manual is intended as a supplement to the suggested readings listed in the exam syllabus (not as the sole study material). It is possible that there could be exam questions that are not covered by the contents of this manual. A proper course of study is suggested in my Study Tips file, available for download at the ASM website.

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Please check A.S.M.'s web site at www.studymanuals.com for errata and updates.
If you have any comments or reports of errata, please
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Lump sum Distributions (IRC section 417(e)(3) and regulation 1.417(e)-1)

- The lump sum value of an accrued benefit cannot be less than the value determined using the applicable interest rate and the applicable mortality table (see IRC section 417(e)(3)). Note that prior to 2000, the minimum lump sum value under IRC section 417(e)(3) was based upon PBGC interest rates and plan actuarial equivalence mortality. All references to the PBGC interest rates should be ignored.
    - The applicable interest rate is re-determined for each stability period. A stability period can be one calendar month, one plan quarter, one calendar quarter, one plan year, or one calendar year.
    - The applicable interest rate is the rate in effect for any of the five full calendar months preceding the beginning of the stability period. This is the look-back period. Note that the look-back month for purposes of IRC section 417(e)(3) can be different from the month used for determining the minimum required contribution under IRC section 430. The interest rate used to determine the minimum lump sum value can use an average of any two or more of the interest rates from these 5 months.
    - If the look-back and/or stability period is changed by plan amendment, the lump sum value under the old look-back month definition (or stability period definition) must be protected for one year from the effective date of the amendment (or the adoption date, if later) in order to avoid a violation of the anti-cutback rules of IRC section 411(d)(6).
    - The present value under IRC section 417(e)(3) must be valued using the same method as is used under the plan's actuarial equivalence (see IRS regulation 1.417(e)-1(d)(1)). So, if the plan uses pre-retirement interest only, then use interest only for the IRC section 417(e)(3) lump sum. Under PPA, however, for years after 2007, it is not clear whether this will still be the case (the IRS position seems to be that pre-retirement mortality must be used, although regulations have not been issued).

- Applicable interest rate
  - For years prior to 2008, the applicable interest rate was the 30-year Treasury rate.
  - For years after 2007, the applicable interest rate is based upon the segment rates of IRC section 430(h)(2). These are determined without regard to any 24-month averaging for purposes of IRC section 417(e)(3).
  - For 2008 through 2011, there are transitional segment rates that are to be used. The transitional rates are equal to the sum of (1) 20% of the segment rates, multiplied by the number of years since 2007, and (2) the remaining percentage (up to 100%) of the 30-year Treasury rate. (For 2011, the transitional segment rates are 80% of the segment rates plus 20% of the 30-year Treasury rate.) See Revenue Notice 2007-81. Exam note: if interest rates are given as "IRC section 417(e)(3) segment rates," then any required blending has already been done. This paragraph is for informational purposes only – the transitional rates no longer apply in 2013.
- Applicable mortality table
  - For years prior to 2008, the applicable mortality table was the 1994 GAR table.
  - For 2008 and later, the applicable mortality table is the table published in regulations, and is updated each year.
  - Mortality is based upon a 50-50 blend of the male and female mortality rates.
  - The mortality table in effect for purposes of a lump sum distribution is the table in effect as of the first day of the stability period (the table for the calendar year in which the stability period begins).
- For single employer funding purposes (determining the target normal cost and funding target), where there is an assumed lump sum benefit option, the applicable mortality table is used post-retirement, the PPA single employer funding mortality table is used pre-retirement (if pre-retirement decrements are assumed), and the IRC section 430 segment rates are generally used both pre-retirement and post-retirement. However, if the plan provides that the lump sum is determined using an interest rate other than the applicable interest rate, then the post-retirement interest rate for funding is either the IRC segment rate applicable to the lump sum or the plan interest rate used to determine the lump sum benefit, whichever provides for a greater present value.

- Bifurcated benefit option
  - If a plan allows a participant to split their accrued benefit between an annuity and a lump sum, only the lump sum portion of the benefit is subject to the minimum benefit requirements of IRC section 417(e).
  - One way the plan can accomplish the bifurcation (the explicit method) would be to allow the participant to specify either a dollar amount or a percentage of the accrued benefit to be paid as an annuity, with the balance as a lump sum. For example, if a participant has a monthly accrued benefit of $3,000, they could elect to receive $2,000 per month as a life annuity, and the actuarial equivalent of the additional $1,000 as a lump sum. Only the actuarial equivalent of the $1,000 would be subject to the rules of IRC section 417(e).
  - A second method (the implicit method) provides that if the plan wants to provide a specific lump sum amount and pay the balance of the accrued benefit as an annuity, then the actuarially equivalent annuity in the normal form of the plan is determined from the lump sum, using the applicable interest rate and mortality table. The difference between that actuarially equivalent annuity and the total annuity in the normal form is the portion of the benefit to be paid as an annuity.
  - More detail can be found in Treasury regulation 1.417(e)(3) -1(d)(6).

Question 175

Normal retirement benefit: $100 per month per year of service

Optional form of benefit: Lump sum, equal to the greater of the amount determined under IRC section 417(e) or the amount using 5% interest and the applicable mortality table

Selected 2018 actuarial assumptions:

IRC section 430(h)(2) segment rates for funding: (5%, 6%, 7%)
IRC section 417(e)(3) applicable interest rates: (4.5%, 5.5%, 6.5%)
Probability of electing lump sum: 100%

Selected life annuity value for $\ddot{a}_{65}^{(12)}$:

7% interest, 2018 static mortality table for annuitants	9.0
7% interest, 2018 applicable mortality table	9.1
6.5% interest, 2018 static mortality table for annuitants	9.2
6.5% interest, 2018 applicable mortality table	9.3
5% interest, 2018 static mortality table for annuitants	10.2
5% interest, 2018 applicable mortality table	10.3

Data for participant Smith:

Date of birth: 1/1/1975
Date of hire: 1/1/2012

What is the 2018 target normal cost for Smith as of 1/1/2018?

Solution to question 175

The target normal cost is equal to the present value of the increase in the accrued benefit for 2018, determined as of 1/1/2018. Smith's monthly accrued benefit increases by $100 in 2018.

The optional form of benefit must be taken into account as it is assumed to be elected with a 100% probability.

Only the segment 3 interest rates apply to Smith, who at age 43 is more than 20 years from retirement age 65.

Treasury regulation 1.430(d)-1(f)(4)(ii)(B) states that when a lump sum is offered by a plan, in determining the present value for funding, the lump sum must be valued using special assumptions. These special assumptions generally include using the IRC section 417(e)(3) applicable mortality table for post-retirement mortality and the valuation interest rates under IRC section 430(h)(2). However, under regulation 1.430(d)-1(f)(4)(iii)(D), when the plan equivalence for determining the lump sum value exceeds the lump sum value using 417(e) applicable interest and mortality, then the lump sum is valued using the applicable mortality table for post-retirement mortality, <u>and</u> the plan interest rate (5% in this question) for post-retirement interest. (Note that the present value under each method (417(e)(3) assumptions or plan assumptions) can be calculated to determine which provides a larger present value, but a 5% interest rate will clearly provide a larger value than a 6.5% interest rate.)

Therefore, for purposes of determining the target normal cost, an interest rate of 5% is used post-retirement (along with the applicable mortality table), and the funding segment 3 rate of 7% is used to discount pre-retirement.

Target normal cost = $\$100 \times 12 \times 10.3 \times v_{7\%}^{22} = \$2{,}790$