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### **Additions and Deletions**

Pages 295 – 304: The final syllabus has modified the list of revenue rulings, notices, procedures, and announcements as follows.

The following Revenue Rulings have been added to the reading list in the syllabus:

- 81-195 For funding purposes, it is acceptable to project salary with a salary scale to a level above the current high consecutive 3-year average allowed under IRC section 415. However, the dollar limit can never be projected. Cost of living increases can only be funded to the extent that they do not exceed the current dollar maximum.
  
- 81-202 This revenue ruling deals with comparability of multiple plans of an employer, and was the predecessor to the current regulations under IRC section 401(a)(4). This ruling is generally outdated, and is not likely to be tested (although it is curious that it was added to the syllabus for the first time in 2007).

- 81-215 A plan can use for funding the increased IRC section 415 dollar limit in effect during the calendar year in which the plan year begins, or in effect during the calendar year in which the plan year ends, regardless of the valuation date. Once a method of increasing the dollar limit has been established, it must remain the same each year.
- 85-131 This ruling deals with the situation where the normal retirement benefit is accrued at the rate of 10% per year. The funding method is unit credit. In the example outlined in the revenue ruling, the entire present value of the projected retirement benefit is allocated to the first year of participation in the plan, resulting in a normal cost equal to the present value of the projected retirement benefit. This is not allowed as explained in the ruling. The explanation contained in the ruling is really just a reminder of how the unit credit method works. Note that the ruling was issued in 1985. At that time, there was no 10-year phase-in of the dollar maximum over participation as there is currently. This can cause confusion when reading the revenue ruling. Note that the greatest accrued benefit both as of the first day of the first plan year and after one year of plan participation is equal (under current law) to the smaller of the accrued normal retirement benefit under the plan benefit formula or 10% of the dollar maximum (or the IRC section 415 compensation maximum, if smaller).
- 86-48 This ruling states that all subsidized benefits must be considered in the determination of “benefits on a termination basis” that is the PVAB used in allocating assets in the case of a spinoff situation.
- 2001-51 This is the most current IRC section 415 revenue ruling guidance. Note that the current final IRC section 415 regulations include updates to this revenue ruling.
- 2001-62 This provides for the use of the 94 GAR table as the applicable mortality table for distributions beginning on or after December 31, 2002.
- Revenue Ruling 96-20 has been removed from the reading list.

The following Revenue Notice has been added to the reading list in the syllabus:

83-10 This is the old IRC section 415 ruling that outlined the rules under TEFRA. The revenue notice is mostly obsolete, and is probably just a source of confusion.

Note that Revenue Notice 2007-28 is not listed on the final reading list in the syllabus. However, I suggest that anyone studying for the 2007 EA-2A exam read and understand the notice as it is quite important with regard to IRC section 404. Some of what the revenue notice describes is applicable to deductions taken before 2008, and is not expected to be tested on the 2007 exam since the July, 2007 syllabus indicates that funding questions should be expected to take place during the 2008 year. However, many of the concepts described in the notice are applicable to deduction rules that become effective in 2008.

General exam condition 44 indicates that for purposes of the 2007 EA-2A examination, the quarterly contribution requirement and liquidity shortfall are to be disregarded. As a result, the corresponding sections on pages 19 and 20 can be ignored. In addition, the following questions and solutions that cover these topics can be ignored:

Pages 32 – 35 (Questions 10 – 12)  
Page 45 (Question 18).

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IRC section 432 has been added to the reading list. The following is a general outline of this section. It is expected that if this section is tested, the questions would be factual. The following material should be added after page 73 (just before the section dealing with Deductible Limits).

## **Additional Funding Rules for Multiemployer Plans in Endangered or Critical Status (IRC section 432)**

- A multiemployer plan is in critical status if one or more of the following conditions exist as of the first day of the plan year.
  - The funded percentage (ratio of actuarial value of assets to accrued liability) of the plan is less than 65% and the sum of the market value of the assets and the present value of the expected contributions for the current year and the next six years (for a total of 7 years) is less than the present value of the expected future non-forfeitable benefits projected to be payable in the current year and the next six years.
  - The plan has a funding deficiency for the current year, or is projected to have a deficiency for any of the next 3 years (4 years if the funded percentage is 65% or less). Extension of amortization periods are ignored for this purpose.
  - Each of the following 3 conditions is satisfied.
    - The current year normal cost plus valuation interest for the current year on the unfunded benefit liabilities as of the last day of the prior year exceeds the present value of the expected employer and employee contributions for the current year.
    - The present value as of the beginning of the current year of the non-forfeitable benefits of the inactive participants exceeds the present value of the non-forfeitable benefits of the active participants.
    - The plan has a funding deficiency for the current year, or is projected to have a deficiency for any of the next 4 years. Extension of amortization periods are ignored for this purpose
  - The sum of the market value of assets and the expected future employer contributions for the current year and each of the next four years is less than the present value of benefits expected to be paid during the current year and each of the next four years.

- A plan is in endangered status if it is not in critical status and one of the following conditions exist as of the first day of the plan year. If both conditions are satisfied, then the plan is considered to be seriously endangered.
  - The funded percentage (ratio of actuarial value of assets to accrued liability) of the plan is less than 80%.
  - The plan has a funding deficiency for the current year, or is projected to have a deficiency for any of the next 6 years. Extension of amortization periods are ignored for this purpose.
- A plan sponsor of a plan that is in endangered status must adopt a funding improvement plan and must follow certain rules of operation.
- A plan sponsor of a plan that is in critical status must adopt a rehabilitation plan and must follow certain rules of operation.
- Certification by the plan actuary
  - The actuary must certify no later than 90 days after the beginning of the plan year whether the plan will either be in endangered status or critical status.
  - The actuary must also certify whether or not the plan is making the scheduled progress for plans that have adopted either a funding improvement or rehabilitation plan.
  - Notice must be made by the plan sponsor to the participants within 30 days of certification by the actuary that the plan is in endangered or will be critical status.

- Funding improvement plan
  - Must be adopted within 240 days after the actuarial certification that the plan is in endangered status.
  - Funding improvement plan is designed to increase the funded percentage of the plan as of the end of the funding improvement period by at least  $\frac{1}{3}$  of the difference between 100% and the funded percentage before the funding improvement. For a seriously endangered plan,  $\frac{1}{5}$  is substituted for  $\frac{1}{3}$ .
  - The funding improvement period is generally equal to the 10-year period (15-year period for a seriously endangered plan) beginning on the first day of the plan year after the second anniversary of the adoption of the funding improvement plan. However, if the collective bargaining agreement in effect at the time of the actuarial certification of endangered status expires before the second anniversary, then the 10-year (or 15-year) period begins on the first day of the plan year following the expiration of the collective bargaining agreement. This last condition only applies if at least 75% of the active participants in the multiemployer plan were covered by the expiring collective bargaining agreement.
  - The funding improvement adoption period is the time between the certification of the plan's endangered status and the time when the funding improvement period begins.
  - Restrictions on plan during improvement period and adoption period
    - The level of contributions cannot be reduced for any plan participant.
    - Contributions cannot be suspended for any period of service.
    - Plan cannot be amended to exclude new participants beyond the restrictions at the time of the certification of the plan's endangered status.
    - No plan amendment can increase liabilities unless required by law.

- Rehabilitation plan
  - Must be adopted within 240 days after the actuarial certification that the plan is in critical status.
  - Rehabilitation plan is designed to allow the plan to cease to be in critical status as of the end of the rehabilitation period. This can be accomplished through decreases in plan expenditures, decreases in future benefit accruals, or increases in future contributions.
  - The rehabilitation period is generally equal to the 10-year period beginning on the first day of the plan year after the second anniversary of the adoption of the rehabilitation plan. However, if the collective bargaining agreement in effect at the time of the actuarial certification of critical status expires before the second anniversary, then the 10-year period begins on the first day of the plan year following the expiration of the collective bargaining agreement. This last condition only applies if at least 75% of the active participants in the multiemployer plan were covered by the expiring collective bargaining agreement.
  - The rehabilitation plan adoption period is the time between the certification of the plan's critical status and the time when the rehabilitation period begins.
  - There is a surcharge on employer contributions during the rehabilitation period.
    - The surcharge in the initial year is equal to 5% of the otherwise required contribution from each employer.
    - The surcharge in subsequent years is equal to 10% of the otherwise required contribution from each employer.
    - The surcharge is no longer required for any employer covered by a renegotiated bargaining agreement that takes into account the increased requirements of the rehabilitation plan.
    - The surcharge cannot be used to pay for increased benefit accruals.
    - The surcharge is payable at the same time that the regular contribution for the year is paid.

- Restrictions on plan during rehabilitation period and adoption period
  - No plan amendment can increase benefit accruals.
  - Benefits cannot be paid in excess of a monthly single life annuity.
  - Payment cannot be made as a lump sum to purchase an annuity from an insurer.
  - There is an exception that allows for lump sums to be paid under the involuntary cash-out rules of IRC section 411(a)(11).
  - Additional restrictions during the adoption period
    - The level of contributions cannot be reduced for any plan participant.
    - Contributions cannot be suspended for any period of service.
    - Plan cannot be amended to exclude new participants beyond the restrictions at the time of the certification of the plan's critical status.
    - No plan amendment can increase liabilities unless required by law

## Errata

- Page 4: In the minimum funding calculation of the solution to question 1, the addition sign in the quantity that is being multiplied by  $\frac{1}{4}$  should actually be a subtraction sign. The numerical answer is correct.
- Page 8: There is some clarification needed concerning the shortfall amortization base section of the outline. First, the amortization of the base as described in the third bullet point is not changed in subsequent years (even though the segmented interest rates may change). However, the outstanding balance described in the fourth bullet point is determined using the segmented interest rates in effect for the year the outstanding balance is being determined (not using the original segmented interest rates). In addition, a plan is exempt from creating a new shortfall amortization base for a plan year if the valuation assets are at least as large as the funding target. For this purpose, the valuation assets are not reduced by the funding standard carryover balance, but are reduced by the pre-funding balance only if the employer has elected to use any portion of the pre-funding balance for the year to reduce the minimum funding requirement.
- Page 9: There is some clarification needed concerning the waiver amortization base section of the outline. First, the amortization of the base as described in the third bullet point is not changed in subsequent years (even though the segmented interest rates may change). However, the outstanding balance described in the fourth bullet point is determined using the first segment interest rate in effect for the year the outstanding balance is being determined (not using the original first segment interest rate).
- Page 20: The words “benefit accruals” should be inserted after the words “increase in” in the second to last line on this page.
- Pages 23: The segment interest rates are not applied correctly in the solution to this question. Payments that will be made within 5 years of the valuation date should be discounted using the first segment interest rate, payments during years 6 through 20 from the valuation date should be discounted using the second segment interest rate, and any other payments should be discounted using the third segment interest rate. There is not enough data to properly answer the question, and the following additional data needs to be added/changed:

Benefits are payable annually, on the first day of the year.

Additional actuarial assumptions:

$$p_{65} = 0.995$$

Annuity values at selected interest rates:

	<u>4.75%</u>	<u>4.85%</u>	<u>5.00%</u>
$\ddot{a}_{65}$	9.194	9.131	9.000
$\ddot{a}_{66}$	8.626	8.568	8.442

Date of birth for Smith: 1/1/1962

Part c of the question should be ignored since it is not possible to determine this from the data provided.

Page 24: The calculation of the accrued benefits in the solution is correct. The following is the revised calculation of the target normal cost and the funding target, using the additional data above for the question on page 23.

In determining the present value, the segmented interest rates must be used. Smith is 46 as of 1/1/2008. The second segment interest rate is applicable for Smith's first benefit payment at age 65, and the third segment interest rate is applicable for the remaining payments beginning at age 66. The first segment interest rate is ignored because Smith will receive no benefit payments during the next 5 years.

$$\begin{aligned} \text{Target normal cost} &= (6,180 - 5,000) \times [v_{.0475}^{19} + (\ddot{a}_{66(4.85\%)} \times p_{65} \times v_{.0485}^{20})] \\ &= 1,180 \times [0.41407 + (8.568 \times 0.995 \times 0.38782)] = 4,390 \end{aligned}$$

The funding target is equal to the present value of the 1/1/2008 accrued benefit (ignoring the expected salary increase for 2008). In determining the present value, the segmented interest rates must be used in the same manner as for the target normal cost.

$$\begin{aligned} \text{Funding target} &= 5,000 \times [ v_{.0475}^{19} + (\ddot{a}_{66(4.85\%)} \times p_{65} \times v_{.0485}^{20}) ] \\ &= 5,000 \times [ v_{.0475}^{19} + (\ddot{a}_{66(4.85\%)} \times p_{65} \times v_{.0485}^{20}) ] = 18,601 \end{aligned}$$

Page 25: The actuarial value of the assets should be changed to \$17,000. The actuarial assumptions are in effect for both 2008 and 2009. The segmented interest rates are not applied correctly in the solution to question 7. See the discussion about this above for page 23. The following annuity information should replace the given annuity value:

Annuity values at selected interest rates:

	<u>4.75%</u>	<u>4.85%</u>	<u>5.00%</u>
$\ddot{a}_{65}^{(12)}$	9.194	9.131	9.000

Page 26: The second paragraph of the solution to question 7 and the determination of the funding target should be replaced as follows.

The funding target is equal to the present value of the 1/1/2008 accrued benefit (ignoring the expected salary increase for 2008 – irrelevant to this question since there are no assumed salary increases). In determining the present value, the segmented interest rates must be used. Smith is 38 as of 1/1/2008. Only the third segment interest rate is used since the first annuity payment to Smith will be in 27 years (the third segment rate applies to payments in 20 or more years from the valuation date).

$$\begin{aligned} \text{Funding target} &= 8,000 \times \ddot{a}_{65(4.85\%)}^{(12)} \times v_{.0485}^{27} \\ &= 8,000 \times 9.131 \times 0.27839 = 20,336 \end{aligned}$$

The determination of the funding shortfall and application of the exemption test should be replaced by the following:

The funding shortfall is equal to the difference between the funding target and the actuarial value of the assets (reduced by the both the funding standard carryover balance and the pre-funding balance).

$$\text{Funding shortfall} = 20,336 - (17,000 - 15,000) = 18,336$$

The plan is exempt from creating a shortfall amortization base if the actuarial value of the assets (reduced by any pre-funding balance that the employer elects to be used for 2008 to reduce the minimum contribution requirement, but not by the funding standard carryover balance) is at least as large as the funding shortfall. The transition rule for 2008 allows that only 92% of the funding target is used in comparison to the actuarial value of the assets.

$$\text{Transition funding shortfall} = (92\% \times 20,336) - 17,000 = 1,709$$

Since the transition funding shortfall is greater than 0, a shortfall amortization base must be created.

The determination of the shortfall amortization charge and outstanding balance should be replaced by the following:

The shortfall amortization charge is determined by amortizing the funding shortfall over 7 years using the segmented interest rates. The first segment interest rate is used to discount the first 5 payments, and the second segment interest rate is used to discount the last 2 payments. The equation of value for this amortization is:

$$\begin{aligned} \text{Funding shortfall} &= \text{Shortfall amortization charge} \\ &\quad \times (1 + v_{.05} + v_{.05}^2 + v_{.05}^3 + v_{.05}^4 + v_{.0475}^5 + v_{.0475}^6) \\ \text{Shortfall amortization charge} &= 18,336 \div (\ddot{a}_{\overline{5}|.05} + \ddot{a}_{\overline{2}|.0475} v_{.0475}^5) \\ &= 18,336 \div (4.54595 + (1.95465 \times 0.79292)) \\ &= 3,008 \end{aligned}$$

The outstanding balance of the shortfall amortization base on 1/1/2009 is determined by using the 2009 segmented interest rates. The first 5 remaining payments are discounted using the first segment rate (5%) and the final 6<sup>th</sup> payment is discounted using the second segment rate (4.75%).

Outstanding balance of shortfall amortization base on 1/1/2009

$$\begin{aligned} &= 3,008 \times (1 + v_{.05} + v_{.05}^2 + v_{.05}^3 + v_{.05}^4 + v_{.0475}^5) \\ &= 3,008 \times (\ddot{a}_{\overline{5}|.05} + v_{.0475}^5) \\ &= 3,008 \times (4.54595 + 0.79292) = 16,059 \end{aligned}$$

Page 29: The last sentence of the second paragraph should be deleted. The determination of the funding shortfall should be replaced by the following:

$$\text{Funding shortfall} = 240,000 - 80,000 = 160,000$$

The following should be added to the solution after the determination of the funding shortfall:

The plan is exempt from creating a shortfall amortization base if the actuarial value of the assets (reduced by any pre-funding balance that the employer elects to be used for 2008 to reduce the minimum contribution requirement, but not by the funding standard carryover balance) is at least as large as the funding shortfall. The transition rule for 2008 allows that only 92% of the funding target is used in comparison to the actuarial value of the assets.

$$\text{Transition funding shortfall} = (92\% \times 240,000) - 80,000 = 140,800$$

Since the transition funding shortfall is greater than 0, a shortfall amortization base must be created.

The calculation of the shortfall amortization charge and the value of X should be modified as follows:

$$\begin{aligned} \text{Shortfall amortization charge} &= 160,000 \div (\ddot{a}_{\overline{5}|0.05} + \ddot{a}_{\overline{2}|0.0475} v^{.0475}) \\ &= 160,000 \div (4.54595 + (1.95465 \times 0.79292)) \\ &= 26,247 \end{aligned}$$

$$X = (20,000 + 26,247) \times 1.0489 = 48,508$$

Page 30: The segment interest rates are not applied correctly in the solution to question 9. See the discussion about this above for page 23. The following annuity information should replace the given annuity values:

Annuity values at selected interest rates:

	<u>4.75%</u>	<u>4.85%</u>	<u>5.00%</u>
$\ddot{a}_{65}^{(12)}$	9.194	9.131	9.000
$\ddot{a}_{65:10}^{(12)}$	10.426	10.353	10.200

Page 31: The fourth paragraph of the solution to question 9 and the calculation of the target normal cost that follows it should be replaced as follows.

In determining the present value, the segment interest rates must be used. Smith is 38 as of 1/1/2008. Only the third segment interest rate is used since the first annuity payment to Smith will be in 27 years (the third segment rate applies to payments in 20 or more

years from the valuation date).

$$\begin{aligned}\text{Target normal cost} &= (1,000 \times \ddot{a}_{65(4.85\%)}^{(12)} \times v_{.0485}^{27} \times 70\%) \\ &\quad + (950 \times \ddot{a}_{65:10(4.85\%)}^{(12)} \times v_{.0485}^{27} \times 30\%) \\ &= (1,000 \times 9.131 \times 0.27839 \times 70\%) \\ &\quad + (950 \times 10.353 \times 0.27839 \times 30\%) \\ &= 2,601\end{aligned}$$

The calculation at the bottom of page 31 has been corrected as follows.

$$\ddot{a}_{65(4.85\%)}^{(12)} / \ddot{a}_{65:10(4.85\%)}^{(12)} = 9.131/10.353 = 88.197\%$$

The last part of the solution was inadvertently left out of the manual. The following is the last part of the solution, with corrections made to reflect the above changes to the use of the segment interest rates:

The reduction of 95% provides for a greater benefit, indicating that the 10C&C option is more valuable than the normal form. Therefore, the target normal cost must be recalculated assuming that Smith elects the 10C&C benefit.

$$\text{At-risk target normal cost} = (950 \times \ddot{a}_{65:10(4.85\%)}^{(12)} \times v_{.0485}^{27}) = 2,738$$

Note that the target normal cost would have been increased by a loading factor if it had been at-risk for at least 2 of the past 4 years.

Since the plan has been at-risk for only 1 year, the at-risk target normal cost is phased in. The increase in normal cost due to being at-risk is phased in at the rate of 20% (for the one year).

$$\text{Phased in at-risk target normal cost} = 2,601 + [20\% \times (2,738 - 2,601)] = 2,628$$

Page 32: The final calculation in this question has a numerical error. It should read:

$$18,191 \times (1.05^{\frac{2.5}{12}} - 1) = 186$$

Page 37: The outstanding balance was determined incorrectly. The following reflects the correct determination of the outstanding balance, using the 2009 segmented interest rates.

$$\begin{aligned} \text{Outstanding balance on 1/1/2009} &= 8,202 \times (\ddot{a}_{\overline{5}|0.0512} + v_{.0488}^5) \\ &= 8,202 \times (4.53609 + 0.78802) \\ &= 43,668 \end{aligned}$$

$$2009 \text{ new shortfall amortization base} = 55,000 - 43,668 = 11,332$$

Page 39: The last sentence of the second paragraph should be deleted. The determination of the funding shortfall should be replaced by the following:

$$\text{Funding shortfall} = 350,000 - (230,000 - 5,000) = 125,000$$

The following should be added to the solution after the determination of the funding shortfall:

The plan is exempt from creating a shortfall amortization base if the actuarial value of the assets (reduced by any pre-funding balance that the employer elects to be used for 2008 to reduce the minimum contribution requirement, but not by the funding standard carryover balance) is at least as large as the funding shortfall. The transition rule for 2008 allows that only 92% of the funding target is used in comparison to the actuarial value of the assets.

$$\text{Transition funding shortfall} = (92\% \times 350,000) - 230,000 = 92,000$$

Since the transition funding shortfall is greater than 0, a shortfall amortization base must be created.

The calculation of the shortfall amortization charge and the value of X should be modified as follows:

$$\begin{aligned} \text{Shortfall amortization charge} &= 125,000 \div (\ddot{a}_{\overline{5}|0.05} + \ddot{a}_{\overline{2}|0.0475} v_{0.0475}^5) \\ &= 125,000 \div (4.54595 + (1.95465 \times 0.79292)) \\ &= 20,506 \end{aligned}$$

$$X = (50,000 + 20,506 - 5,000) \times 1.0489^{1.5} = 70,369$$

Page 41: The last sentence of the second paragraph should be deleted. The determination of the funding shortfall should be replaced by the following:

$$\text{Funding shortfall} = 350250,000 - 79,034 = 170,966$$

The following should be added to the solution after the determination of the funding shortfall:

The plan is exempt from creating a shortfall amortization base if the actuarial value of the assets (reduced by any pre-funding balance that the employer elects to be used for 2008 to reduce the minimum contribution requirement, but not by the funding standard carryover balance) is at least as large as the funding shortfall. The transition rule for 2008 allows that only 92% of the funding target is used in comparison to the actuarial value of the assets.

$$\text{Transition funding shortfall} = (92\% \times 250,000) - 79,034 = 150,966$$

Since the transition funding shortfall is greater than 0, a shortfall amortization base must be created.

The calculation of the shortfall amortization charge and the balance of the calculations should be modified as follows:

$$\begin{aligned} \text{Shortfall amortization charge} &= 170,966 \div (\ddot{a}_{\overline{5}|0.05} + \ddot{a}_{\overline{2}|0.0475} v_{0.0475}^5) \\ &= 170,966 \div (4.54595 + (1.95465 \times 0.79292)) \\ &= 28,046 \end{aligned}$$

$$2008 \text{ minimum} = 30,000 + 28,046 = 58,046$$

$$2008 \text{ funding deficiency} = 58,046 - (40,000 \times 1.0489^{0.5}) = 17,080$$

$$\text{Excise tax} = 17,080 \times 10\% = 1,708$$

Page 42: The segment interest rates are not applied correctly in the solution to question 16. See the discussion about this above for page 23. The following information should be added/changed:

Benefits are payable annually, on the first day of the year.

Additional actuarial assumptions:

$$p_{64} = 0.997 \qquad p_{65} = 0.995 \qquad p_{66} = 0.993$$

Annuity values at selected interest rates:

	<u>4.75%</u>	<u>4.85%</u>	<u>5.00%</u>
$\ddot{a}_{64}$	9.751	9.683	9.546
$\ddot{a}_{65}$	9.194	9.131	9.000
$\ddot{a}_{66}$	8.626	8.568	8.442

Date of birth for Smith: 1/1/1962

Page 43: The calculation of the accrued benefit and the early retirement benefit in the solution to question 16 is correct. The following is the revised calculation of the funding target.

In determining the present value, the segment interest rates must be used. Smith is 46 as of 1/1/2008. For the normal retirement benefit, the second segment interest rate is applicable for Smith's first benefit payment at age 65, and the third segment interest rate is applicable for the remaining payments beginning at age 66. The first segment interest rate is ignored because Smith will receive no benefit payments during the next 5 years. For the early retirement benefit, the second segment interest rate is applied to the first two payments (at ages 64 and 65), with the third segment interest rate used thereafter.

$$\begin{aligned}
\text{Funding target} &= [5,000 \times \{ v_{.0475}^{19} + (\ddot{a}_{66(4.85\%)} \times p_{65} \times v_{.0485}^{20}) \} \times 0.4] \\
&\quad + [4,900 \times \{ v_{.0475}^{18} + p_{64} v_{.0475}^{19} \\
&\quad\quad + (\ddot{a}_{66(4.85\%)} \times p_{64} \times p_{65} \times v_{.0485}^{20}) \} \times 0.6] \\
&= [5,000 \times \{0.41407 + (8.568 \times 0.995 \times 0.38782)\} \times 0.4] \\
&\quad + [4,900 \times \{0.43374 + (0.997 \times 0.41407) \\
&\quad\quad + (8.568 \times 0.997 \times 0.995 \times 0.38782)\} \times 0.6] = 19,621
\end{aligned}$$

Page 46: The last sentence in the first bullet point on this page should be deleted. IRC section 401(a)(29) is titled such that it sounds as though section 436 only applies to at-risk plans, but when you read the actual text of the Code section, it applies to all single employer defined benefit plans. It would not be likely, however, that any of the requirements of section 436 would ever apply to a plan that is not at-risk. Note that IRC section 436 is not listed in the recommended reading list in the final syllabus, so it is not likely to be tested on the 2007 exam.

Page 63: The fourth bullet point under the main bullet point that reads “RPA’94 full funding limit” should read “The mortality table used to determine the current liability is prescribed by the Secretary of the Treasury, and is currently based upon the RP 2007 mortality tables under IRS regulation 1.412(1)(7)-1.”

Page 64: In the second bullet point under “Minimum funding due date and contributions”, the phrase “valuation date” should read “last day of the plan year.”

Page 67: The normal cost given in the data for question 22 should be \$2,260.

Page 69: Prior to 2008, the experience gain or loss for a multiemployer plan was amortized over 15 years (not 5 as was done in the solution to question 23). The revised value for X is:

$$X = (30,000 + \frac{32,000}{\ddot{a}_{\overline{15}|}} - 12,000) \times 1.06 = 22,374$$

$$|X - Y| = 12,143$$

Page 73: In question 24, the market value of assets as of 12/31/2004 should be 220,000 (not 225,000).

Page 88: In the paragraph that begins “For plan B”, it is the at-risk valuation results that are used.

Page 91: In the sections of question 31 providing the funding targets if future salary increases are assumed, the words “cost of living increases apply to” should be replaced by “salary can exceed.”

- Page 100: Delete the words “under each option” from the end of question 36. The question should also have the following statement in the data: “The defined benefit plan is not covered by the PBGC.”
- Page 101: Question 37 should have the following statement in the data: “The defined benefit plan is not covered by the PBGC.”
- Page 103: The last part of question 38 should have added “such that all contributions to each plan are deductible.” The question should also have the following statement in the data: “The defined benefit plan is not covered by the PBGC.”
- Page 136: In the determination of the minimum, an incorrect initial base was used (400,000 instead of 610,000), to be amortized over 40 years. If 610,000 is used instead, the 40-year amortization is 42,762, and the minimum becomes 176,388.
- Page 150: The normal cost for 2008 of \$60,000 is as of 1/1 (not 12/31) in the data for question 61.

Page 170: The solution has an error in methodology. The first two paragraphs are correct (through the determination of the plan benefit including the social security supplement as being \$180,000). The balance of the solution should be replaced as follows:

For purposes of comparing this to the benefit limitation under IRC section 415, the combination of the plan benefit and the social security supplement must be converted to an actuarially equivalent life annuity using the plan's equivalence assumptions (see IRS regulation 1.415(b)-1(c)(6), example 3). Using the 6% interest rate (the plan's actuarial equivalence rate) and the equation of value for the annuity:

$$(180,000 \times \ddot{a}_{62}^{(12)}) - (10,000 \times {}_4\ddot{a}_{62}^{(12)}) = (B \times \ddot{a}_{62}^{(12)})$$

$$(180,000 \times \ddot{a}_{62}^{(12)}) - (10,000 \times (\ddot{a}_{62}^{(12)} - \ddot{a}_{62:4}^{(12)})) = (B \times \ddot{a}_{62}^{(12)})$$

$$(180,000 \times 10.011) - (10,000 \times 6.400) = (B \times 10.011)$$

$$B = 173,608$$

Smith is retiring at age 62, and the dollar limit of \$180,000 will be unreduced. In addition, the dollar limit is smaller than the compensation limit (high 3-year average) of \$200,000, so the IRC section 415 limit for Smith is \$180,000.

The equivalent annual annuity under the plan of \$173,608 is less than the \$180,000 IRC section 415 limitation, so the full \$180,000 can be paid to Smith in 2007.