April 27, 2001

Mr. Mark Weinberger
Assistant Secretary of the Treasury for Tax Policy
Department of the Treasury
1500 Pennsylvania Avenue, NW
Washington, DC 20220

Dear Assistant Secretary Weinberger:

On behalf of the American Academy of Actuaries, the Academy Pension Committee would like to offer assistance to the Department of Treasury (Treasury) in determining which mortality table to use for current liability purposes under the Internal Revenue Code. The RP-2000 Mortality Table was recently developed and approved by the Society of Actuaries (SoA).

As noted on page 4 of the enclosed *RP-2000 Mortality Tables Report*, data was collected for this study for the express purpose of providing a mortality table that could be used for pension plans, particularly for current liability determinations. The RP-2000 Mortality Table, as described below, will come closer than any other mortality table available to achieving the statutory goal to, "take into account results of available independent studies of mortality of individuals covered by pension plans" (IRC Section 412(l)(7)(C)(ii)(II)).

Below is a description of the study's background and pertinent findings and our recommendation for the mortality table(s) to be used for current liability determinations. Throughout the Report, there are references to blue-collar and white-collar employees and those terms have been used in this letter to be consistent with the terminology in the Report. Depending on the final approach to mortality for determining current liability selected by Treasury, other terminology may be more appropriate when distinguishing between these groups of employees with different employment characteristics.

RP-2000 Background

This study was commissioned in response to the pertinent provisions of the Retirement Protection Act. Pages 8 and 9 of the Report indicate that data for plans not subject to the current liability provisions were excluded. With over 14 million life-years of data collected—of which nearly 11 million were used in the final Report—the study includes by far the largest volume of private pension mortality data ever studied. As such, the

Report provides mortality rates "based upon the actual experience of pension plans" affected by the current liability requirements (IRC Section 412(l) (7)(C)(ii)(II)).

Significant differences in mortality in hourly and salaried employee groups have been observed for some time. It was with this in mind that data for the RP-2000 tables were collected to measure the difference in hourly and salary mortality. As noted on page 6 of the Report, plans with more than 70 percent of their participants listed as either hourly or union were identified as blue-collar plans.

While many actuaries independently develop and publish mortality tables that are designed to reflect the experience of specific plans, groups of plans or plans within certain industries, we are not aware of any table or set of tables that has been developed with the breadth of experience as to number of covered participants nor as comprehensive as to types of plans and industries. Further, many of these independently developed tables do not reflect the restrictions set forth in the IRC for the table that is to be used for determining current liability.

RP-2000 Findings

The Report includes a set of base tables that represent the graduated (smoothed) mortality rates from all of the accepted data. Tables 4–5 and 4–6, starting on page 35, give base male and female mortality rates, respectively. Separate rate sets are provided for employees, healthy annuitants, disabled retirees, and "combined healthy" people. The "combined healthy" column of rates provides a single schedule of rates for employees and healthy annuitants, created by blending the employee and annuitant data. Pages 73 and 74 show the very small differences in sample current liability calculations using the separate employee and annuitant tables on the one hand, and single blended tables on the other.

Chapter 5 presents the differences in observed mortality by collar and amount. As noted on page 43, both the collar and amount variables are "…statistically significant indicators of differences in annuitant mortality… ." The Report found very significant variations between blue-collar and white-collar mortality. To highlight the importance of this difference, we observe that the mortality rate for a 65-year old blue-collar male is 42% higher than the white-collar rate while the mortality rate for a healthy male annuitant at 65 is 29% higher than the female rate. In other words, at age 65 the effect of collar on mortality experience is much greater than that of gender difference.

As noted above, both amount and collar are significant indicators of mortality differences. However, the authors of the Report were unable to determine the correlation between amount and collar; nor were they able to devise an approach to using both collar and amount, and so, a choice is required. The Report recognizes that, given the context

of pension plans and the way data are normally collected, an adjustment reflecting collar is "considerably more practical" (Report, p. 48).

In addition to reflecting the new data and projecting the results to year 2000, the Report discusses the importance of incorporating future mortality improvements into any long-term model. Theoretically, the Report prefers a generational approach, a complex method explained fully in other references. Recognizing that most actuarial valuation systems are currently incapable of this approach, the Report offers an alternative. The last two paragraphs of Chapter 7 provide a suggested method for using mortality improvement projections on an approximate basis.

Actuarial Standard of Practice for Mortality Assumptions

When selecting, or making a recommendation regarding the selection of, a mortality assumption, actuaries are required to follow Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. In part, ASOP 35 requires that the actuary use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select reasonable assumptions based upon the application of that professional judgment. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period. ASOP 35 notes that specific experience of the covered group or other groups with similar characteristics may be useful in forming a judgment about future expectations.

With regard to the selection of a mortality assumption, section 3.5.3 of ASOP 35 specifies that the actuary should consider factors such as the following:

a. the possible use of different mortality assumptions before and after retirement;
b. the likelihood and extent of mortality improvement in the future;
c. the use of different mortality assumption for disabled lives, which in turn may depend on the plan's definition of disability and how it is administered; and
d. the use of different mortality tables for different participant subgroups and beneficiaries.

The analysis and recommendations in this letter are based on the requirements of ASOP 35.

American Academy of Actuaries Recommendations

We recommend that the RP-2000 Mortality Table base rates (Tables 4-5 and 4-6) be adopted as the new current liability mortality basis with the following adjustments:

Amount and Collar

For current liability calculations, the base tables should be adjusted for collar but not for amount. Collar is a more practical and sensible proxy for the underlying characteristics that affect mortality experience in the private pension plan area. Specifically, we have the following concerns about using amount adjustments:

- Low amount may be a sign of lower socioeconomic status, but it could also signal shorter service with the employer. The same employee might be a low-amount employee in three plans and a high-amount employee in another employer's plan.

- Where benefits are not indexed, amount is a function of retirement date, which leads to lower amounts for older retirees without regard to their mortality experience. Early in retirement, a retiree could be categorized as high-income with lower mortality, and as inflation reduces the relative size of benefit amounts, the same retiree could become low-income with higher mortality, in later years.

- Due to the continuing shift in focus of plan design from defined benefit to defined contribution, the total wealth of retirees is not fully represented in defined benefit amounts. Furthermore, the total wealth of retirees may be even less represented as defined benefit amounts in the future, as the full impact of the pendulum shift to defined contribution plans works its way through the system. In addition, there are other factors that can influence the amount of benefits as well as the underlying mortality patterns, such as compensation prior to termination, length of service, age at termination and retirement, and the availability of other post-retirement benefits including health care.

With respect to collar, the blue- and white-collar adjustments in Tables 5–5 and 5–6 on pages 49–50 should be required (as adjustments to base table rates) unless the makeup of the group strongly suggests otherwise.

When should a collar adjustment be required? Recognizing that the collar factors found in the two tables referred to immediately above are based on collected data, Treasury could consider two principal alternatives:

(1) If a plan would be a blue-collar or white-collar plan using the 70% threshold noted on page 6 of the Report, then the applicable collar adjustment should be used, otherwise the unadjusted base rates would apply; or

(2) In addition to the requirement in (1), if the percentage of participants who are blue-collar or white-collar is greater than 30% but less than 70%, then the collar adjustment should be prorated.

To illustrate the second alternative, assume a participant group is 60% blue-collar and 40% white-collar. The collar adjustment would be determined as 0.6 times the blue-collar adjustment plus 0.4 times the white-collar adjustment.

The first method is easier to use and follows the data collection procedure used in formulating the adjustment factors in the Report. But, it would likely "misvalue" groups that fall below (but close to) the 70% standard. This method can create significant shifts from year to year in the value of current liability when plans move above or below the 70% threshold. The second method is more complicated and avoids the potential for "misvaluing" current liability with the first method, but the second method introduces the potential for discontinuity at 30% and 70%. For example, at 70%, the mortality table for the participant group is all of one collar, but at 69% it is a 69%/31% mix. However, the discontinuity at 70% under the second method would be less severe than under the first method.

To be more precise and theoretically consistent, the table should be adjusted every year to reflect the underlying employee demographics. However, such precision adds administrative expense without the potential for significant improvement in results. The use of the first method with annual changes in the table could cause unnecessary fluctuations in the current liability from year to year for plans that vacillate above and below the 70% threshold. To avoid this constant fluctuation in subsequent years, the table from the prior year can be used, if the collar designation is between 60% and 80%.
As an alternative to this approach, the table determined under either method could be set for a specified period of time, such as three years subject to modification for a significant change in demographics.
Inherent in the use of either method is the determination of the underlying employment characteristic. Treasury should consider the following rules for classifying a participant as either blue-collar or white-collar. An active employee who is currently paid on an hourly basis or is a member of a union [similar to regulation section 1.410(b)-6(d), which excludes plans with professional employees], would be classified as a blue-collar participant; otherwise, he or she is classified as a white-collar participant. Inactive participants (retiree or terminated vested) retain the collar designation they had when they left employment, and spouses or other beneficiaries would have the same collar classification as their associated participant. In cases where the collar designation of former employees cannot be readily determined, the former employee is classified as having an unknown collar and the base tables would apply to this group. Finally, the plan's Enrolled Actuary would certify to the plan's collar classification relying on information provided by the plan sponsor or plan administrator.

Separate or Blended Tables

We recommend using the male and female "combined healthy" rates in Tables 4–5 and 4–6, respectively, for healthy pension plan participants. For disabled participants, we recommend the male and female "disabled retiree" rates found in RP2000. These

mortality rates can be applied to all disabled participants because the data were not limited to Social Security disability recipients. While the RP-2000 study confirms the generally held belief that mortality among active employees is lower than that for pensioners of the same age and gender, using the combined employee and pensioner table is simpler than, and substantially similar to, using separate tables for active employees and retirees.

As shown in Table 8–4 of the Report, separate tables do not significantly affect the calculated current liability. However, there are plans where the liability for benefits in pay status represents a significant portion of the current liability. For these cases, a method similar to the collar options could be adopted that would still allow most plans to use the combined table while providing an alternative for plans with significant retired life liabilities.

Mortality Improvement Projection

Selection of a projected static mortality table is vastly preferable to a generational one. Many actuarial valuation systems are not currently capable of using a generational approach to mortality improvement. A static table similar to the type described on pages 67 and 68 of the Report would produce results quite close to those that would be produced by a generational one—without the added expense, which could be significant for some actuaries.

Currently, it is not standard actuarial practice to use generational mortality tables though the use of such tables is theoretically more valid. Whatever Treasury decides on mortality projection, the result should favor ease of application over theoretical purity. There is little agreement on exactly what will happen with mortality in the future and more refined approaches can add administrative cost without providing a corresponding improvement in results.

Small Plans

While we have not specifically addressed in this letter the application of these tables to small plans, it is important to recognize that incorporating all of the adjustments recommended above may have only limited value for small plans, but could sharply increase the cost of compliance for such plans. Thus, we recommend small plans (those under either 100 or 500 lives) use the base tables without adjustment.

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Thank you for the opportunity to present this important study on mortality for determining current liability. It is the first comprehensive review of uninsured pensioner mortality. As such, the study is a great advancement in the actuarial profession's ability to accurately estimate the nature and amount of pension liabilities in the uninsured

pension system. The SoA study could also help the Pension Benefit Guaranty Corporation estimate and plan for the cost of coverage and ensuing liabilities under its insurance program.

We are available to answer any questions or to further elaborate on our recommendations.

Sincerely,

Donald J. Segal
Chairperson, Pension Committee

Enclosure

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