

LIFE PRACTICE NOTE 1995-11
December 1995

Special Issues Involving Structured Settlements

Introduction

This practice note was prepared by a work group organized by the Committee on Life Insurance Financial Reporting of the American Academy of Actuaries. The work group was charged with developing a description of some of the current practices used by valuation actuaries in the United States. This work group was originally formed in 1992 and issued the first set of Life Practice Notes that year; changes have been made to this set of practice notes on an annual basis to reflect additional information on current practices.

The practice notes represent a description of practices believed by the work group to be commonly employed by actuaries in the United States in 1995. The purpose of the practice notes is to assist actuaries who are faced with the requirement of adequacy testing by supplying examples of some of the common approaches to this work. However, no representation of completeness is made; other approaches may also be in common use. It should be recognized that the information contained in the practice notes provides guidance, but is not a definitive statement as to what constitutes generally accepted practice in this area. Moreover, these practice notes are based upon the model Standard Valuation Law of the National Association of Insurance Commissioners (NAIC). To the extent that the laws of a particular state differ from the NAIC model, practices described in these practice notes may not be appropriate for actuarial practice in that state. This practice note has not been promulgated by the Actuarial Standards Board, nor is it binding on any actuary.

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Comments are welcome as to the appropriateness of the practice notes, desirability of annual updating, validity of substantive disagreements, etc. Comments should be sent to Donna R. Claire at her Directory address.

This practice note has been divided into three sections:

- Section A. Guideline IX-A, which describes the minimum reserves allowed for substandard annuities and structured settlements.

- Section B. Guideline IX-B, which defines a new commissioner's reserve valuation method for individual single-premium immediate annuities (and any deferred payments associated therewith), some deferred annuities, and structured settlement annuity contracts.

- Section C. Cash flow testing for immediate annuities and structured settlements.

Section A—Guideline IX-A Questions

Q. What does Guideline IX-A require?

A. Guideline IX-A describes the minimum reserves allowed for substandard annuities. It also discusses when and to what extent a substandard valuation table may be used for annuities. When substandard reserves are allowed, Guideline IX-A requires them, by use of the *constant extra deaths method*, to grade into standard reserves by the end of the (standard) mortality table.

Q. How are minimum reserves calculated for substandard annuities, according to Guideline IX-A?

A. According to Guideline IX-A, one must make a constant addition to the mortality rates,

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beginning with the annuitant's actual age, such that the life expectancy under the adjusted table is greater than or equal to

1. the life expectancy developed during the underwriting process; or
2. if more than one life expectancy is developed during the underwriting process, the average of all such life expectancies.

Q. When can a substandard mortality table be used under Guideline IX-A?

A. A substandard mortality table may be used when valuing one of the following:

1. benefits arising from court settlements;
2. settlements involving workers' compensation; or
3. settlements arising from long-term disability claims, and when the annuitant is the injured party and there are relevant hospital records or physicians' reports that are kept on file by the company.

Q. How does the magnitude of the Guideline IX-A minimum reserves compare to that of the *rated up in age* reserves that have historically been the more common choice as a reserve methodology?

A. Typically, all things being equal, the minimum reserve under Guideline IX-A (or the constant application of the extra deaths method) will produce an initial reserve, ${}^{\text{ed}}V_0$, that is less than its rated age counterpart, rV_0 , assuming that the selected rated age and the application of constant extra deaths to the mortality table at the true age produce life expectancies that are equivalent. With survival however, ${}^{\text{ed}}V_t$ fairly quickly exceeds rV_t . Eventually, when the attained rated age reaches the limit of the mortality table, rV_t would be 0 while ${}^{\text{ed}}V_t$ would be approaching the standard reserve, V_t , that is, the reserve based on the true age of the annuitant without modification to the mortality table.

It should be noted that the presence of a certain period in the contract can alter the general relationship of the two reserves. It is possible that the initial reserve under an extra deaths methodology could exceed that under a rated age methodology under some conditions. It is also generally true that the absolute difference in initial reserve between the two methodologies decreases with increases in the certain period of the annuity contract.

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For further information on this subject, actuaries may wish to consult the article entitled “NAIC Actuarial Guideline IX-A,” in the July 1989 issue of the *Financial Reporter*, the newsletter of the Financial Reporting Section of the Society of Actuaries. The article was also reprinted as a Society of Actuaries Study Note, number 443-92-90.

Section B—Guideline IX-B Questions

Q. What does Guideline IX-B require?

A. Guideline IX-B defines a new commissioner's reserve valuation method for individual single-premium immediate annuities (and any deferred payments associated therewith), some deferred annuities, and structured settlement annuity contracts. The new reserve method typically requires the use of nonlevel interest rates, under either option 1, the *carve out method*, or option 2, the *graded interest rate method*. Insurers are no longer permitted to use level interest rate reserves.

If a block of annuities issued in a given calendar year can pass either the *110% year of issue aggregate test* or the *115% individual contract test*, then the block can be reserved using the (level) valuation interest rate appropriate for Plan Type A contracts without cash settlement options for that calendar year.

If the block fails the tests, then Guideline IX-B requires one of two methods to be used:

1. the carve out method, which requires lump-sum benefits to be reserved at a lower interest rate; or
2. the graded interest rate method, which requires all benefits to be reserved using graded interest rates.

Q. Guideline IX-B provides two methods for the reserving of single-premium immediate annuities (SPIAs): the carve out method and the graded interest rate method. Of the two methods, which one generally provides the lower total reserve?

A. Except for the case where there are no lump-sum benefit payments, the graded interest rate reserve methodology will produce the lowest initial reserve, ${}^{\text{Gr}}V_0$, because a level (x%) interest rate for the first 20 years is calculated such that ${}^{\text{Gr}}V_0$ is equal to an initial level interest rate reserve, ${}^{\text{L}}V_0$, which uses the appropriate level Plan Type A valuation rate for all benefits. Because the carve out method requires that any failing lump-sum benefits (or groups of benefits) be segre-

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gated and reserved at level Plan Type A rates appropriate for their duration, the initial carve out reserve, cV_0 , is greater than or equal to ${}^{Gr}V_0$. Where a contract has no lump-sum benefits, ${}^{Gr}V_0 = {}^cV_0$.

The graded interest rate reserves ultimately exceed carve out reserves as a result of the low ultimate interest rates that the graded methodology uses after the first 20 years. Under the carve out methodology, the lump-sum benefits are reserved at appropriately lower-level interest rates, whereas the benefit components that do not fail the 110% or 115% test can be reserved at the applicable level immediate annuity interest rate.

Under the graded interest rate methodology, all benefits payable beyond the first 20 years are subjected to a lower ultimate interest rate, whereas under the carve out method, only the lump-sum benefits are subjected to a lower valuation interest rate. The optimal reserve may be to start out using the graded methodology and, as appropriate, perhaps by year of issue, move to the carve out method at or near where the two reserves are equal and cross over.

In any event, no SPIA reserve can be considered sufficient under Guideline IX-B in the absence of adequate cash flow testing, especially in the generally downward interest rate scenarios.

Q. Of the two carve out techniques (that is, the 110% aggregate test and the 115% seriatim test), which gives the lower reserve?

A. Generally speaking, the 110% aggregate test will probably give the lower reserve because it permits the aggregation of contracts within a year of issue. Contracts without lump-sum benefits can be combined with contracts with lump-sum benefits. The potential exists for two contracts with differing benefit patterns, each of which has lump-sum benefits that would fail the 115% seriatim test, to *cancel* each other out to some extent in the aggregate. However, a situation can exist where the 115% test would produce the lower reserve because of its larger tolerance, but, in general, this is not the case.

As yet, the law does not permit benefit aggregation across years of issue, which could potentially provide an even lower reserve.

Q. What is the rationale behind Guideline IX-B?

A. Single-premium immediate annuity (SPIA) benefits in general, and structured settlement annuity (SSA) benefits in particular, are frequently quite long in duration. Prudent investment

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strategy usually dictates that portfolio managers invest as long and with as much call protection as possible. However, it is rarely possible to cash flow match the assets and liabilities, since many of the annuity contracts will have benefit payments extending 50 or more years into the future. Given the C-3 risk from asset calls and prepayments, the utilization of a level valuation interest rate forever usually would not be conservative actuarial practice, irrespective of whether the underlying contracts contain deferred lump-sum payments or have increasing benefit patterns. Level interest rate reserves would then likely be insufficient.

Thus, reserves based upon level valuation interest rates are no longer permitted for these liabilities under the Guideline. Instead, an actuary must choose one of the two approaches given in the Guideline: the carve out method or the graded interest rate method.

SPIA reserves usually need adequate cash flow testing, especially in the generally downward interest rate scenarios.

Q. Are there any additional considerations to using Option A versus Option B reserves for structured settlements?

A. If the actuary uses Option B (graded) reserves, then the reserves usually become stronger over time. For example, if they are strengthened by 20 basis points per year, one builds up more of a sufficiency in later years. If interest rates go down, one would still have sufficient earnings to support the reserves. If one looks at only the market value of ending surplus, the effect of the graded reserve is not seen. In fact, if two companies are otherwise equal but one has reserves based on more strongly graded interest rates, then that company might be in a position to weaken reserves later on, while the other company might need to strengthen its reserves.

Q. What are the effective dates for the guidelines?

A. An insurer must be in compliance for all of its in-force business that is subject to the 1980 Amendments to the Standard Valuation Law by its year-end 1993 valuation.

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**Section C—Questions on Cash Flow Testing for
Immediate Annuities and Structured Settlements**

Q. May cash flow testing be based on an open block of business with future issues, or must the current in-force business be treated as a closed block?

A. Testing the in-force business as a closed block is a way to confirm that existing reserves and assets are sufficient to back the existing liabilities.

Q. What length of time period should be used for cash flow testing?

A. Since structured settlements are sometimes issued at very young actual ages, a case can be made for doing at least some of the projections over a period of many decades—perhaps as long as 50 years or more. This would usually mean that virtually all of the initial assets would have matured, and replacement assets typically would have been in place for many years.

A number of actuaries feel that the period chosen should be long enough that 50–70% of the benefits (and 80–90% of the present value of the benefits) will have been paid by the end of the projection period. In general, 30 to 40 years may be an appropriate time frame for an average block.

Q. Are there any special considerations on the scenarios to be tested for structured settlements and other payout annuities?

A. For structured settlements and other products where the testing period is more than 10 years, many actuaries test random scenarios in order to test the effect of varying the interest rates beyond 10 years, since the scenarios mentioned in New York Regulation 126 and in the NAIC model *Actuarial Opinion and Memorandum Regulation* only vary interest rates for a 10-year period.

For structured settlements and other products where long testing periods are used, consideration may be given to testing variations in interest rates greater than the maximum variation of 5%, which is mentioned in New York Regulation 126 and in the NAIC model *Actuarial Opinion and Memorandum Regulation*, since interest rates have varied by more than 5% in the past 15 years.

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Q. What are some other sources available to the actuary wishing to become more familiar with this topic?

A. The *Record of the Society of Actuaries* (v. 17), pp. 1787–1808, is one such source of information.