

Note: This version of ASOP No. 9 is no longer in effect.
It was superseded in 1991 by ASOP No. 9, Doc. No. 027.



ACTUARIAL STANDARDS BOARD

ACTUARIAL STANDARD OF PRACTICE

**DOCUMENTATION AND DISCLOSURE
IN PROPERTY AND CASUALTY INSURANCE
RATEMAKING AND LOSS RESERVING**

**Adopted by the Actuarial Standards Board
April 14, 1989**

**Developed by the
Casualty Committee of the ASB**

April 1989

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Memorandum of Transmittal	iii
PREAMBLE	
1. Purpose, Scope, and Effective Date	1
2. Definitions	1
3. Background and Historical Issues	2
4. Current Practices and Alternatives	2
STANDARD OF PRACTICE	
5. Analysis of Issues and Recommended Practices	3
5.1 Introduction	3
5.2 Extent of Documentation	3
5.3 Prevention of Misuse	3
5.4 Disclosure of Conflicts	3
5.5 Availability of Documentation	4
5.6 Conflicting Interests	4
5.7 Signature on Work Product	4
5.8 Reliance on Another	4
5.9 Deviations from Standards of Practice	4
<u>Appendix 1</u> : Statement of Principles Regarding Property and Casualty Insurance Ratemaking	5
<u>Appendix 2</u> : Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves	10

April 1989

TO: Members of the American Academy of Actuaries (AAA) and other Persons
Interested in Property and Casualty Insurance Ratemaking and Loss Reserving

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice:
Documentation and Disclosure In Property and Casualty Insurance Ratemaking
and Loss Reserving

Background

This booklet contains an Actuarial Standard of Practice concerning Documentation and Disclosure in Property and Casualty Insurance Ratemaking and Loss Reserving. This Standard has been prepared jointly by the Subcommittee on Ratemaking and the Subcommittee on Loss Reserving of the Casualty Committee of the ASB and it has been reviewed by the full Casualty Committee. The Standard relies heavily on Interpretative Opinion 3 of the Guides and Interpretative Opinions as to Professional Conduct of the AAA.

The Casualty Committee is one of six operating committees of the ASB; it is charged with drafting actuarial standards of practice relating to property and casualty insurance. The enclosed document represents the initial standard of practice for property and casualty ratemaking and reserving.

The Casualty Committee acknowledges that the professional practice of actuaries varies widely. In some property and casualty areas, there may be significant differences of opinion as to what is generally accepted actuarial practice. The committee, along with the ASB, firmly believes that standards of practice are needed in the property and casualty field. The enclosed Standard sets forth recommended practices for documentation and disclosure that actuaries must consider in property and casualty ratemaking and reserving. They are intended to guide actuaries in performing their professional responsibilities.

The Standard was submitted to the members of the AAA and to other interested persons in Exposure Draft form in August 1988; comments were received into October 1988. In addition, the Standard was discussed at a session on this subject at the Casualty Actuarial Society (CAS) meeting in November 1988. The Casualty Committee has considered these comments in preparing a revised Standard for adoption by the ASB. A detailed report of comments received and the committee's disposition of them follows.

Change in Format

After the Exposure Draft was distributed, the ASB adopted, at its October 1988 meeting, a new, uniform format for standards of practice. At the ASB's direction, this Standard has been reformatted to conform as closely as possible with the new format.

Responses to Comments on Exposure Draft

The Casualty Committee is grateful to the respondents who submitted comments on the Exposure Draft. A total of nine individuals responded, and additional comments were made at a special session on this topic at the November CAS meeting. All comments have been carefully considered by the Casualty Committee, and a number of changes have been made to the Exposure Draft as a result.

Four respondents commented on the fact that this standard limits its application to ratemaking and loss reserving, rather than to all facets of actuarial work. The committee agrees in principle that disclosure and documentation are equally appropriate for other work products. However, the Standard is in support of established Statements of Principles in ratemaking and loss reserving, and is therefore appropriate as written. To the extent that other Statements of Principles are adopted, this Standard may need to be revised. One respondent commented that the loss reserving Principles do not specifically refer to documentation and disclosure. The committee believes that this Standard of Practice is equally applicable to those Principles and that the Principles need not be revised. Also, the last sentence of the first paragraph under Section 3 (Background and Historical Issues) has been revised to make clear that this Standard, not the Statements of Principles, states the criteria for documentation and disclosure.

Several other respondents raised a question as to whether this Standard requires actuaries to take positive action if they believe their work is being relied upon inappropriately. This question was raised in response to Appendix 1 in the Exposure Draft containing "Casualty Committee Comments," which specifically stated that this responsibility exists. The Standard requires that actuaries take reasonable steps to ensure that actuarial work products are presented fairly in order to minimize the risk of misquotation, misinterpretation, or other misuse of the product's actuarial aspects. The Standard does not in and of itself require positive action on the actuary's part if he/she is aware of any such misuse. Such an intent is beyond the purpose of this Standard. Rather, it is more an issue related to the Guides to Professional Conduct, or normal work ethics. However, it is not the intent of Casualty Committee that a "comments" section be included with the final Standard of Practice. The committee has also added wording at the end of section 5.3 (Prevention of Misuse) to clarify what is intended by the phrase, "presented fairly."

In Section 4 (Current Practices and Alternatives), last sentence, the clause, "as there have been no formal Standards of Practice," was deleted, since it would be inappropriate to imply causality in this statement.

In Section 5.2 (Extent of Documentation), the Standard has been revised to incorporate a "minimal" criterion. This was done by moving the word "appropriate" to modify records, worksheets, and other documentation, and by specifying that documentation should be sufficient

for another actuary practicing in the same field to evaluate the work. Documentation is required—whether or not there is a legal or regulatory requirement for documentation and the Standard defines what that documentation should entail.

One respondent questioned whether the word “must” should have been used instead of “should” in several instances. The committee has not made this change because it believes that the word “should” expresses obligation and propriety, but also allows for deviation, in some cases. (See Section 5.9.)

One respondent commented on the roles of standards of practice, relative to the Guides and Interpretative Opinions as to Professional Conduct, which are “standards” of professional conduct. He commented that this Standard could raise questions and perhaps cause confusion unless guidance is provided as to whether the Standard of Practice or the “standard” of professional conduct applies. The committee has written this Standard to be complete and sufficient, so that the Standard will provide specific guidance on documentation and disclosure in ratemaking and loss reserving, within the general framework provided by Interpretative Opinion 3.

Other changes of a grammatical or editorial nature have been adopted, many in response to comments received.

Casualty Committee of the ASB

Michael J. Miller, Chairperson

Subcommittee on Ratemaking

LeRoy A. Boison, Jr., Chairperson

Subcommittee on Reserving

James A. Faber, Chairperson

Members of the Casualty Committee, past and present

Martin Adler	Gary Grant
James R. Berquist	James A. Hall, III
Richard Beverage	Bertram A. Horowitz
Richard S. Biondi	Eldon J. Klaassen
Randall E. Brubaker	Michael R. Lamb
Douglas J. Collins	Stephen P. Lowe
Robert V. Deutsch	Robert A. Miller, III
Daniel J. Flaherty	Gary K. Ransom
David P. Flynn	Alfred O. Weller
Spencer M. Gluck	Paul E. Wulterkens
David J. Grady	

ACTUARIAL STANDARD OF PRACTICE

DOCUMENTATION AND DISCLOSURE IN PROPERTY AND CASUALTY INSURANCE RATEMAKING AND LOSS RESERVING

PREAMBLE

Section 1. Purpose, Scope, and Effective Date

- 1.1 Purpose - The purpose of this Standard of Practice is to define the documentation and disclosure required of an actuary in property and casualty insurance ratemaking and loss reserving.
- 1.2 Scope - This Standard of Practice is limited to the practices that relate to the Statement of Principles Regarding Property and Casualty Insurance Ratemaking and the Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves as adopted by the Casualty Actuarial Society (CAS).
- 1.3 Effective Date - This Standard's effective date is July 14, 1989.

Section 2. Definitions

- 2.1 Actuarial Work Product - The result of an actuary's work. The term applies to the following actuarial communications, whether written or oral, Statements of Actuarial Opinion, Actuarial Reports, Statements of Actuarial Review, and Required Actuarial Documents.
- 2.2 Statement of Actuarial Opinion - A formal statement of the actuary's professional opinion on a defined subject. It outlines the scope of the work but normally does not include descriptive details.
- 2.3 Actuarial Report - A document, or other presentation, prepared as a formal means of conveying the actuary's professional conclusions and recommendations, of recording and communicating the methods and procedures, and of ensuring that the parties addressed are aware of the significance of the actuary's opinion or findings.
- 2.4 Statement of Actuarial Review - A formally communicated appraisal of actuarial work done by another person.

- 2.5 Required Actuarial Document - An actuarial communication of which the formal content is prescribed by law or regulation.

Section 3. Background and Historical Issues

Professional documentation and communication are essential components of actuarial practice. In the absence of specific standards of practice, the amount of documentation and disclosure has varied. As the nature of casualty actuarial work has become more complex and more open to and available for public review, the need to formalize standards has increased. The CAS has adopted a Statement of Principles Regarding Property and Casualty Insurance Ratemaking and a Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves. Those statements serve as guides to this Standard. This Standard states that the methodology and material assumptions utilized in ratemaking and reserving should be documented and, in some cases, available for disclosure.

This Standard addresses the following issues:

- The extent to which an actuarial work product should be documented
- The persons to whom that documentation should be available
- The extent to which deviations from Standards of Practice should be documented
- The requirement that actuaries sign work products within their responsibility
- The requirement that actuaries disclose the names of others upon whose work they have relied.

Section 4. Current Practices and Alternatives

Current practices have been governed by the Guides and Interpretative Opinions as to Professional Conduct promulgated by the American Academy of Actuaries, the CAS, the Conference of Actuaries in Public Practice, and the Society of Actuaries. Current practices have varied with individual interpretations of those Guides and Opinions.

STANDARD OF PRACTICE

Section 5. Analysis of Issues and Recommended Practices

- 5.1 Introduction - Ratemaking and loss reserving take place in a variety of settings depending upon the legal and regulatory environment involved. The form and content of any actuarial communication should meet the needs of the particular circumstances, taking into account the knowledge and understanding of the users and the actuary's relationship to the users. Users may be either direct or indirect. A client or employer is the direct user of the actuary's service, as distinguished from an indirect user. The direct user selects the actuary and communicates directly with the actuary about qualifications, work, and recommendations.
- 5.2 Extent of Documentation - This Standard requires documentation of an actuarial work product whether or not there is a legal or regulatory requirement for the documentation. Appropriate records, worksheets, and other documentation of the actuary's work should be maintained by the actuary and retained for a reasonable period of time. Documentation should be sufficient for another actuary practicing in the same field to evaluate the work. The documentation should describe clearly the sources of data, material assumptions, and methods. Any material changes in sources of data, assumptions, or methods from the last analysis should be documented. The actuary should explain the reason(s) for and describe the impact of the changes.
- 5.3 Prevention of Misuse - Information prepared by an actuary may be used by another person in a way which may influence the actions of a third party. If someone other than an actuary might convey such information to any such indirect users, the actuary should recognize the risk of misquotation, misinterpretation, or other misuse of its actuarial aspects. The actuary should take reasonable steps to ensure that an actuarial work product is presented fairly, that the presentation as a whole is clear in its actuarial aspects, and that the actuary is identified as the source of the actuarial aspects and as the individual who is available to answer questions. An actuarial report is customarily considered to be presented fairly if it describes the data, material assumptions, methods, and material changes in these with sufficient clarity that another actuary practicing in the same field could make an appraisal of the reasonableness and validity of the report.
- 5.4 Disclosure of Conflict with Professional Judgment, and of Advocacy - If the service requested by a client or employer produces a result that conflicts materially with the actuary's professional judgment, the actuary should advise the client or employer of the conflict and should include appropriate qualifications or disclosures in any related actuarial communication. When an actuary acts, or may seem to be acting as advocate by a client or employer, the nature of that relationship should be disclosed to directly interested parties.

- 5.5 Availability of Documentation - Documentation should be available to the actuary's client or employer, and it should be made available to other persons when the client or employer so requests, assuming appropriate compensation, and provided such availability is not otherwise improper. Ownership of documentation is normally established by the actuary and the client or employer, in accordance with law.
- 5.6 Conflicting Interests - The actuary does not normally have an obligation to communicate with any person other than the client or employer. If aware of any significant conflict between the interests of indirect users and the interests of the client or employer, the actuary should advise the client or employer of the conflict and should include appropriate qualifications or disclosures in any related actuarial communication.
- 5.7 Signature on Work Product - When required by law or regulation or when called upon by the client or employer to provide documentation of work, the actuary should provide such disclosure in writing. Any such disclosure must be signed with the name of the actuary responsible for the work. The name of an organization with which the actuary is affiliated may be incorporated into the signature. The actuary's responsibilities to comply with this Standard are not affected by the form of the signature.
- 5.8 Reliance on Another - An actuary who makes an actuarial communication assumes responsibility for it, except to the extent the actuary disclaims responsibility by stating reliance on another person. Reliance on another person means using that person's work without assuming responsibility therefor. A communication should define the extent of any such reliance.
- 5.9 Deviations from Standards of Practice - The actuary should clearly disclose any deviations from Principles or Standards of Practice and the reasons for such deviations. The waiving of a fee for professional services, either partially or totally, does not relieve the actuary of the need to observe professional standards.

APPENDIX 1

STATEMENT OF PRINCIPLES REGARDING PROPERTY AND CASUALTY INSURANCE RATEMAKING

(As adopted by the Board of Directors of the Casualty Actuarial Society, May 1988)

The purpose of this Statement is to identify and describe principles applicable to the determination and review of property and casualty insurance rates. The principles in this Statement are limited to that portion of the ratemaking process involving the estimation of costs associated with the transfer of risk. This statement consists of four parts:

- I. Definitions
- II. Principles
- III. Considerations
- IV. Conclusion

The principles contained in this Statement provide the foundation for the development of actuarial procedures and standards of practice. It is important that proper actuarial procedures be employed to derive rates that protect the insurance system's financial soundness and promote equity and availability for insurance consumers.

Although this Statement addresses property and casualty insurance ratemaking, the principles contained in this Statement apply to other risk transfer mechanisms.

I. DEFINITIONS

Ratemaking is the process of establishing rates used in insurance or other risk transfer mechanisms. This process involves a number of considerations including marketing goals, competition and legal restrictions to the extent they affect the estimation of future costs associated with the transfer of risk. This Statement is limited to principles applicable to the estimation of these costs. Such costs include claims, claim settlement expenses, operational and administrative expenses, and the cost of capital. Summary descriptions of these costs are as follows:

- Incurred losses are the cost of claims insured.
- Allocated loss adjustment expenses are claims settlement costs directly assignable to specific claims.
- Unallocated loss adjustment expenses are all costs associated with the claim settlement function not directly assignable to specific claims.
- Commission and brokerage expenses are compensation to agents and brokers.

- Other acquisition expenses are all costs, except commission and brokerage, associated with the acquisition of business.
- Taxes, licenses and fees are all taxes and miscellaneous fees except federal income taxes.
- Policyholder dividends are a non-guaranteed return of premium charged to operations as an expense.
- General administrative expenses are all other operational and administrative costs.
- The underwriting profit and contingency provisions are the amounts that, when considered with net investment and other income, provide an appropriate total after-tax return.

II. PRINCIPLES

Ratemaking is prospective because the property and casualty insurance rate must be developed prior to the transfer of risk.

Principle 1: A rate is an estimate of the expected value of future costs.

Ratemaking should provide for all costs so that the insurance system is financially sound.

Principle 2: A rate provides for all costs associated with the transfer of risk.

Ratemaking should provide for the costs of an individual risk transfer so that equity among insureds is maintained. When the experience of an individual risk does not provide a credible basis for estimating these costs, it is appropriate to consider the aggregate experience of similar risks. A rate estimated from such experience is an estimate of the costs of the risk transfer for each individual in the class.

Principle 3: A rate provides for the costs associated with an individual risk transfer.

Ratemaking produces cost estimates that are actuarially sound if the estimation is based on Principles 1, 2, and 3. Such rates comply with four criteria commonly used by actuaries: reasonable, not excessive, not inadequate, and not unfairly discriminatory.

Principle 4: A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.

III. CONSIDERATIONS

A number of ratemaking methodologies have been established by precedents or common usage within the actuarial profession. Since it is desirable to encourage experimentation and innovation

in ratemaking, the actuary need not be completely bound by these precedents. Regardless of the ratemaking methodology utilized, the material assumptions should be documented and available for disclosure. While no ratemaking methodology is appropriate in all cases, a number of considerations commonly apply. Some of these considerations are listed below with summary descriptions. These considerations are intended to provide a foundation for the development of actuarial procedures and standards of practice.

Exposure Unit

The determination of an appropriate exposure unit or premium basis is essential. It is desirable that the exposure unit vary with the hazard and be practical and verifiable.

Data

Historical premium, exposure, loss and expense experience is usually the starting point of ratemaking. This experience is relevant if it provides a basis for developing a reasonable indication of the future. Other relevant data may supplement historical experience. These other data may be external to the company or to the insurance industry and may indicate the general direction of trends in insurance claim costs, claim frequencies, expenses and premiums.

Organization of Data

There are several acceptable methods of organizing data including calendar year, accident year, report year and policy year. Each presents certain advantages and disadvantages; but, if handled properly, each may be used to produce rates. Data availability, clarity, simplicity, and the nature of the insurance coverage affect the choice.

Homogeneity

Ratemaking accuracy often is improved by subdividing experience into groups exhibiting similar characteristics. For a heterogeneous product, consideration should be given to segregating the experience into more homogeneous groupings. Additionally, subdividing or combining the data so as to minimize the distorting effects of operational or procedural changes should be fully explored.

Credibility

Credibility is a measure of the predictive value that the actuary attaches to a particular body of data. Credibility is increased by making groupings more homogeneous or by increasing the size of the group analyzed. A group should be large enough to be statistically reliable. Obtaining homogeneous groupings requires refinement and partitioning of the data. There is a point at which partitioning divides data into groups too small to provide credible patterns. Each situation requires balancing homogeneity and the volume of data.

Loss Development

When incurred losses and loss adjustment expenses are estimated, the development of each should be considered. The determination of the expected loss development is subject to the principles set forth in the Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves.

Trends

Consideration should be given to past and prospective changes in claim costs, claim frequencies, exposures, expenses and premiums.

Catastrophes

Consideration should be given to the impact of catastrophes on the experience and procedures should be developed to include an allowance for the catastrophe exposure in the rate.

Policy Provisions

Consideration should be given to the effect of salvage and subrogation, coinsurance, coverage limits, deductibles, coordination of benefits, second injury fund recoveries and other policy provisions.

Mix of Business

Consideration should be given to distributional changes in deductibles, coverage limitations or type of risks that may affect the frequency or severity of claims.

Reinsurance

Consideration should be given to the effect of reinsurance arrangements.

Operational Changes

Consideration should be given to operational changes such as changes in the underwriting process, claim handling, case reserving and marketing practices that affect the continuity of the experience.

Other Influences

The impact of external influences on the expected future experience should be considered. Considerations include the judicial environment, regulatory and legislative changes, guaranty funds, economic variable, and residual market mechanisms including subsidies of residual market rate deficiencies.

Classification Plans

A properly defined classification plan enables the development of actuarially sound rates.

Individual Risk Rating

When an individual risk's experience is sufficiently credible, the premium for that risk should be modified to reflect the individual experience. Consideration should be given to the impact of individual risk rating plans on the overall experience.

Risk

The rate should include a charge for the risk of random variation from the expected costs. This risk charge should be reflected in the determination of the appropriate total return consistent with the cost of capital and, therefore, influences the underwriting profit provision. The rate should also include a charge for any systematic variation of the estimated costs from the expected costs. This charge should be reflected in the determination of the contingency provision.

Investment and Other Income

The contribution of net investment and other income should be considered

Actuarial Judgment

Informed actuarial judgments can be used effectively in ratemaking. Such judgments may be applied throughout the ratemaking process and should be documented and available for disclosure.

IV. CONCLUSION

The actuary, by applying the ratemaking principles in this Statement, will derive an estimation of the future costs associated with the transfer of risk. Other business considerations are also a part of ratemaking. By interacting with professionals from various fields including underwriting, marketing, law, claims and finance, the actuary has a key role in the ratemaking process.

APPENDIX 2

STATEMENT OF PRINCIPLES REGARDING PROPERTY AND CASUALTY LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES

(As adopted by the Board of Directors of the Casualty Actuarial Society, May 1988)

The purpose of this statement is to identify and describe principles applicable to the evaluation and review of loss and loss adjustment expense reserves. Because of their size and the uncertainties in the estimation process, the evaluation of these reserves requires the use of proper actuarial and statistical procedures. The financial condition of a property and casualty insurer cannot be assessed accurately without sound reserve estimates.

This statement consists of three parts:

- I. Definitions
- II. Principles
- II. Considerations

The definitions in the next section apply to both loss reserves and loss adjustment expense reserves. For the purpose of this statement the terms “loss” and “claim” are used interchangeably, and the term “insurer” is meant to represent any risk bearer for property and casualty exposures, whether as insurance company, self-insured entity, or other.

I. DEFINITIONS

A loss reserve is a provision for its related liability. A total loss reserve is composed of five elements, although the five elements may not necessarily be individually quantified:

- case reserve
- provision for future development on known claims
- reopened claims reserve
- provision for claims incurred but not reported
- provision for claims in transit (incurred and reported but not recorded).

Before these five elements are discussed, certain key dates and terms need to be defined.

The accounting date is the date that defines the group of claims for which liability may exist, namely all insured claims incurred on or before the accounting date. The accounting date may be any date selected for a statistical or financial reporting purpose.

The valuation date is the date through which transactions are included in the data base used in the evaluation of the liability, regardless of when the analysis is performed. For a defined group of claims as of a given accounting date, reevaluation of the same liability may be made as of

successive valuation dates. A valuation date may be prior to, coincident with or subsequent to the accounting date.

The carried loss reserve is the amount shown in a published statement or in an internal statement of financial condition.

As indicated loss reserve is the result of the application of a particular loss reserving evaluation procedure. An indicated loss reserve for a given accounting date likely will change from one valuation date to another.

A division is often required between reserves for known claims and reserves for claims which have been incurred but not reported (IBNR). The reserve for known claims (*) represents the amount, estimated as of the valuation date, that will be required for future payments on claims that already have been reported to the insurer. The IBNR reserve represents the amount that must be provided for future payments on insured losses that have occurred but that have not been reported.

The case reserve (**) is defined as the sum of the values assigned to specific known claims whether determined by claims adjusters or set by formula. Adjusters' estimates are the aggregate of the estimates made by claims personnel for individual claims, based on the facts of the particular claims. Formula reserves are reserves established for groups of claims for which certain classifying information is provided. Formula reserving may be applied to individual claims or to aggregations of claims with similar characteristics through use of average claim values or factor applied to representative statistics (for example, premiums in force or earned premiums).

Development is defined as the change between valuation dates in the observed values of certain fundamental quantities that may be used in the loss reserve estimation process. For example, the observed number of reported claims associated with losses occurring within a particular calendar period often will be seen to increase from one valuation date to the next until all claims have been reported. The pattern of accumulating claims represents the development of the number of claims.

In a similar fashion the amount of claim payments for losses occurring within a specific calendar period also will be seen to increase at succeeding valuation dates. In this case the pattern of accumulating payments represents the development of claim costs and is usually referred to by the term paid development. The concept of development also applies to incurred losses. Incurred development is defined as the difference between estimates of incurred costs at two valuation dates for a defined group of claims.

(*) The reserve for known claims is also sometimes referred to by other labels such as the "reported reserve," the "reserve for claims adjusted or in the process of adjustment," or the "reserve for unpaid losses excluding IBNR."

(**) The term case reserve is sometimes used in place of the reserve for known claims. However, as defined, the case reserve does not include the provision for future development on known claims.

The provision for future development on known claims relates to incurred development on those claims reported to an insurer on or before a specific accounting date that are still open on that accounting date. Incurred development on such claims can be either increasing or decreasing.

The reopened claims reserve is a provision for future payments on claims closed as of the accounting date that may be reopened due to circumstances not foreseen at the time the claims were closed. In some instances, post-closing payments or recoveries for claims not actually reopened may be included with the development on known claims.

For many insurers a claim is considered to be reported when it is first recorded in the accounting records of the insurer. Conceptually, two elements form the IBNR reserve. The first of these elements is the provision for claims incurred but not reported, referred to as the “pure” IBNR. This provision results from the normal delay that occurs in reporting losses. The second element is the provision for claims in transit, which are incurred and reported but not recorded. This provision represents the additional time consumed by the insurer’s recording procedures. As a practical matter it is not always feasible to measure these two elements separately, but it is important to understand the effect reporting procedures can have on the amount of IBNR reserve. For some insurers claims in transit are considered known claims. The IBNR reserve must provide for the ultimate value of IBNR claims including the development which is expected to occur on these claims after reporting.

Loss adjustment expenses include allocated loss adjustment expenses and unallocated loss adjustment expenses. Allocated loss adjustment expenses are those expenses, such as attorneys’ fees and other legal costs, that are incurred in connection with and are assigned to specific claims. Unallocated loss adjustment expenses are all other claim adjustment expenses and include salaries, utilities and rent apportioned to the claim adjustment function but not readily assignable to specific claims. The definition of allocated and unallocated loss adjustment expenses for reserving purposes varies among insurers, and an individual insurer’s practice for reserving may not always conform to its definition for statistical reporting or ratemaking purposes.

Since allocated expenses are assigned to specific claims, all of the analyses performed on loss data can also be performed on allocated loss expense data. Thus, the allocated loss adjustment expense reserve can be divided into known and IBNR components. All of the concepts discussed in the preceding paragraphs, as well as each of the five elements of the loss reserve, have similar meanings with regard to the allocated loss adjustment expense reserve.

Although the same statistical procedures normally do not apply to unallocated expenses, the unallocated loss adjustment expense reserve can still be divided into known reserve and IBNR components, and the concept of a particular valuation date is meaningful.

II. PRINCIPLES

1. An actuarially sound loss reserve for a defined group of claims as of a given valuation date is a provision, based on estimates derived from reasonable assumptions and

appropriate actuarial methods for the unpaid amount required to settle all claims, whether reported or not, for which liability exists on a particular accounting date.

2. An actuarially sound loss adjustment expense reserve for a defined group of claims as of a given valuation date is a provision, based on estimates derived from reasonable assumptions and appropriate actuarial methods, for the unpaid amount required to investigate, defend, and effect the settlement of all claims, whether reported or not, for which loss adjustment expense liability exists on a particular accounting date.
3. The uncertainty inherent in the estimation of required provisions for unpaid losses or loss adjustment expenses implies that a range of reserves can be actuarially sound. The true value of the liability for losses or loss adjustment expenses at any accounting date can be known only when all attendant claims have been settled.
4. The most appropriate reserve within a range of actuarially sound estimates depends on both the relative likelihood of estimates within the range and the financial reporting context in which the reserve will be presented.

Although specific reserve requirements may vary, the same basic principles apply in each context in which the reserves are stated, including statutory balance sheets, statements of opinion on loss reserves, and reports to shareholders or securities regulators. Guidance in the application of these principles is provided in the Considerations section of this statement.

III. CONSIDERATIONS

Understanding the trends and changes affecting the data base is a prerequisite to the application of actuarially sound reserving methods. A knowledge of changes in underwriting, claims handling, data processing and accounting, as well as changes in the legal and social environment, affecting the experience is essential to the accurate interpretation and evaluation of observed data and the choice of reserving methods.

A knowledge of the general characteristics of the insurance portfolio for which reserves are to be established also is important. Such knowledge would include familiarity with policy provisions that may have a bearing on reserving, as well as deductibles, salvage and subrogation, policy limits, and reinsurance.

Data Organization

The categorization of claims by time unit is extremely important. The successful organization of a data base for reserving revolves around five key dates:

- accident date, which is the date on which the loss occurred, or for those losses that cannot be identified with a single isolated event, the date on which the loss is deemed to have occurred.

- report date, which is the date on which the loss is first reported to the insurer (in practice it is often taken to be the recorded date)
- recorded date, which is the date on which the loss is first entered in the statistical records of the insurer
- accounting date
- valuation date

Commonly, insurers compile claim data by accident periods (accident year, accident quarter, accident month, etc.), which group together all claims with accident dates falling within particular fiscal periods; or by policy periods, which group all claims relating to policies written during particular fiscal periods. Claim information by accident year is required for various financial reporting schedules. Many insurers also compile claim data by report periods, which group together all claims with report dates falling within specified fiscal periods.

Claims with report dates equal to or prior to a particular accounting date would be classified as known or reported claims with respect to the accounting date, but claims with report dates later than a particular accounting date and with accident dates equal to or earlier than the accounting date would be classified as IBNR with respect to the accounting date.

The preceding paragraph gives the precise definition of IBNR claims. In practice a broader definition is sometimes used in which the IBNR reserve denotes the provision for late reported claims, development on known claims, and a provision for reopened claims.

The ambiguity regarding the definition of IBNR can result from the differing strategies insurers may employ in approaching loss reserving. The two common strategies are the report period approach and the accident period approach. In the report period approach the adequacy of existing reserves on reported claims is estimated on the basis of the historical results. Further analysis is required in order to measure the emergence of IBNR claim. In a pure accident period approach the ultimate cost of all claims, both reported and unreported, arising from each accident period is estimated. This approach results in an estimate of the loss reserve without segregation of claims incurred but not reported. The estimated loss reserve is then apportioned between reserves for IBNR and known claims on a suitable basis. Because accident period techniques do not necessarily require separate treatment of reported and unreported claims, their use can lead to a broader definition IBNR as mentioned above.

The method of assigning report dates to reopened claims can also affect the IBNR reserve. Because reopened claims are generated from claims previously reported and closed, there is general agreement that the provision for this liability should be included in the reserve for known claims. Some insurers, however, establish new report dates for reopened claims and thereby consider the provision for these claims as a component of the IBNR reserve.

Homogeneity

Loss reserving accuracy often is improved by subdividing experience into groups exhibiting similar characteristics, such as comparable claim experience patterns, settlement patterns or size of loss distributions. For a heterogeneous product, such as commercial multi-peril or miscellaneous liability insurance, consideration should be given to segregating the experience into more homogeneous groupings. Other example applications concern the distinctions between personal and commercial risks and between primary and excess coverage. Additionally, subdividing or combining the data so as to minimize the distorting effects of operational or procedural changes should be fully explored.

Credibility

Credibility is a measure of the predictive value that the actuary attaches to a body of data. The degree to which consideration is given to homogeneity is related to the consideration of credibility. Credibility is increased by making groupings more homogeneous or by increasing the number of claims analyzed within each group. A group of claims should be large enough to be statistically reliable. Obtaining homogeneous groupings requires refinement and partitioning of the total data base. There is a point at which partitioning divides data into cells too small to provide credible development patterns. Each situation requires a balancing of the homogeneity and amount of data in each grouping. Thus, line and coverage definitions suitable for the establishment of reserves for large insurers can be in much finer detail than in the case of small insurers. Where a very small group of claims is involved, use of external information such as industry aggregates may be necessary.

Data Availability

Data should meet requirements for the proper evaluation of reserves. Existing information systems may impose constraints while more suitable data are being developed. Whatever data are used in analysis of reserves, they must reconcile to the insurer's financial records. If reserves are established in less detail than necessary for reporting requirements, procedures for properly assigning the reserves to required categories must be developed.

Emergence Patterns

The delay between the occurrence of claims and the recording of claims depends upon both the line of business and the insurer's practices. In general, property claims are reported quickly, whereas the reporting of liability claims may be substantially delayed.

A review of the insurer's claims practices should be made to assure that assumptions regarding the claims process are appropriate. If a change in claims procedures is identified, its impact on emergence patterns should be evaluated.

Settlement Patterns

The length of time that it normally takes for reported claims to be settled will affect the choice of the loss reserving methods. Lines of business for which claims settle quickly generally are less subject to reserve uncertainty. A claim arising under collision coverage, for example, tends to be settled quickly, and the amount of settlement is usually close to the original estimate. Conversely, a bodily injury liability claim often requires a long time to settle. Moreover, the amount of settlement often varies considerably from the original estimate, since it depends on the interaction of complex variables such as the type and severity of the injury and the intricacies of the judicial process.

Development Patterns

The pattern of development on known claims should be carefully reviewed. An insurer's claims procedures will affect the manner in which the case reserves develop for any group of claims, and changes in claims practices may affect the consistency of historical developments. Further, the length of time to settlement may affect the observed development.

If reserves have been established at present values, the payments of claims, by themselves, cause an appearance of upward development apart from development due to other factors. To interpret development patterns correctly, the development history should be restated to remove the effect of discounting.

Frequency and Severity

The same total dollars of losses may arise from a few very large claims or from many small claims. Reserve estimates will tend to be more accurate for losses resulting from a high frequency/low severity group of claims than from a low frequency/high severity group of claims. Therefore, the evaluation of reserves for low frequency/high severity groups of claims will ordinarily require more extensive analysis. If the exposure for the group of claims being considered includes the potential for claims of a magnitude not present in historical data, adjustments should be made to reflect the expectation of such claims.

Reopened Claims Potential

The tendency for closed claims to reopen varies substantially among lines of business. Judicial opinions and legislation can affect the reopening of claims, as can changes in an insurer's procedures.

Claims-Made

Some coverages may be provided on a policy form covering claims reported during a certain period rather than claims arising out of occurrences during that period. Claims-made data should be segregated from experience on occurrence policies. It may be necessary to augment claims-made statistics with appropriate report period statistics generated under occurrence programs.

Certain provisions may modify the claims-made policy upon fulfillment of conditions stipulated in the contract. Review of the contract wording is necessary to determine the appropriate reserve, if any, for occurrences prior to the policy effective date or claims reported after the policy expiration.

Aggregate Limits

For certain insurance coverages, such as products and professional liability, aggregate policy limits may act to restrict total potential incurred losses and therefore reserve requirements. In the review of groups of claims where aggregate limits apply, modeling techniques or audit tests of the data will reveal to what extent limit ceilings have been reached and assist in determining how reserve projections may have to be modified.

Salvage, Subrogation, and Collateral Sources

For a proper evaluation of an insurer's total reserve position, the potential impact of salvage and subrogation on the group of claims under consideration should be evaluated even though statutory accounting may prohibit a deduction from loss reserves. In addition, the impact of coinsurance, deductibles, coordination of benefits, second injury fund recoveries, as well as any other collateral sources, should be considered.

Generally Accepted Accounting Principles

Reports to shareholders and to securities regulators are governed by generally accepted accounting principles (GAAP). GAAP reserves may be defined differently from statutory reserves. For example, GAAP reserves are ordinarily reduced by anticipated salvage and subrogation. The same principles of analysis used for statutory estimates can be applied to GAAP reserve estimates.

Reinsurance

Reserves are affected by the types of reinsurance plans and retentions that were and are in force, and the impact of changes in net retentions should be evaluated. To determine the effect of reinsurance it may be appropriate to analyze direct and ceded experience separately. The recoverability of ceded reinsurance is a further consideration; generally, it is addressed separately from the reserve evaluation process.

Portfolio Transfers, Commutations, and Structured Settlements

Portfolio transfers, commutations, and structured settlements generally recognize the time value of money. Such transactions should be evaluated for their impact on the loss reserves and the development patterns.

Pools and Associations

The loss liabilities of an insurer depend to some degree on forces beyond its control, such as business obtained through participation in voluntary and non-voluntary underwriting pools and associations. The operating and reserving policies of these organizations vary, and adjustments to reserves reported by the pools and associations may be warranted.

Operational Changes

The installation of a new computer system, an accounting change, a reorganization of claims responsibility or changes in claims handling practices or underwriting programs are examples of operational changes that can affect the continuity of the loss experience. The computation of the reserves should reflect the impact of such changes.

Changes in Contracts

Changes in contract provisions, such as policy limits, deductibles, or coverage attachment points, may alter the amounts of claims against an insurer. Such contractual changes may affect both the frequency and severity of claims.

External Influences

Due regard should be given to the impact of external influences. External influences include the judicial environment, regulatory and legislative changes, residual or involuntary market mechanisms, and economic variables such as inflation.

Discounting

There are circumstances where loss reserves are stated on a present value basis. To calculate or evaluate such reserves, it is generally appropriate to perform an analysis on an undiscounted basis and then apply the effect of discounting.

Provision for Uncertainty

A reserve estimate should take into account the degree of uncertainty inherent in its projections. A reserve stated at its ultimate value may include an implicit provision for uncertainty due to the time value of money. If a reserve is to be stated at a present value, it may be appropriate to include an explicit provision for uncertainty in its undiscounted amount. Further, an explicit provision for uncertainty may be warranted when the indicated ultimate reserve value is subject to a high degree of variability.

Reasonableness

The incurred losses implied by the reserves should be measured for reasonableness against relevant indicators, such as premiums, exposures, or numbers of policies, and expressed wherever possible in terms of frequencies, severities, and loss ratios. No material departure from expected results should be accepted without attempting to find an explanation for the variation.

Loss-Related Balance Sheet Items

The loss reserve analysis may have implications for other loss-related balance sheet items. These include contingent commissions, retrospective premium adjustments, policyholder dividends,

premium deficiency reserves, minimum statutory reserves and the deduction for unauthorized reinsurance.

Loss Reserving Methods

Detailed discussion of the technology and applicability of current loss reserving practices is beyond the scope of this statement. Selection of the most appropriate method of reserve estimation is the responsibility of the actuary. Ordinarily the actuary will examine the indications of more than one method when estimating the loss and loss adjustment expense liability for a specific group of claims.

Standards of Practice

This statement provides the principles of loss reserving. The actuary should also be familiar with standards of practice, which address the application of these principles.