EDUCATIONAL NOTE

Educational notes do not constitute standards of practice. They are intended to assist actuaries in applying standards of practice in specific matters. Responsibility for the manner of application of standards in specific circumstances remains that of the practitioner.

VALUATION OF POLICY LIABILITIES
P&C INSURANCE CONSIDERATIONS REGARDING CLAIM LIABILITIES AND PREMIUM LIABILITIES

COMMITTEE ON PROPERTY AND CASUALTY FINANCIAL REPORTING

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MEMORANDUM

TO: All Fellows, Associates and Correspondents of the Canadian Institute of Actuaries

DATE: June 3, 2003

FROM: Marthe Lacroix, Chairperson
Committee on P&C Financial Reporting

SUBJECT: **Educational Note: Valuation of Policy Liabilities: P&C Insurance Considerations Regarding Claim Liabilities and Premium Liabilities**

The Committee on Property and Casualty (P&C) Financial Reporting has developed the attached educational note. This document is intended as a companion document to the Consolidated Standards of Practice Sections 2220 and 2230 for Valuation of Policy Liabilities: P&C Insurance. It provides additional guidance relating to the valuation of claim liabilities and premium liabilities.

This educational note is based on the "Recommendations for Property and Casualty Insurance Company Financial Reporting (accession numbers 9005 and 9354)" that have been repealed effective January 1, 2003 following the introduction of the Practice-Specific Standards for Insurers (Section 2000 of CSOP).

In accordance with the Institute's policy for Due Process, this educational note has been approved by the Committee on P&C Financial Reporting, and has received final approval for distribution from the Practice Standards Council.

Educational notes are covered under Section 1220 of the Consolidated Standards of Practice (CSOP). Section 1220 prescribes that "The actuary should be familiar with relevant educational notes and other designated educational material." It further explains that a "practice which the notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation." As well, "educational notes are intended to illustrate the application (but not necessarily the only application) of the standards, so there should be no conflict between them."

Questions should be addressed to me at my *Yearbook* address.

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VALUATION OF POLICY LIABILITIES:
P&C INSURANCE CONSIDERATIONS REGARDING CLAIM LIABILITIES AND PREMIUM LIABILITIES

This educational note is intended as a companion document to the Consolidated Standards of Practice Sections 2220 and 2230 for Valuation of Policy Liabilities: P&C Insurance. It provides additional guidance relating to the valuation of claim liabilities and premium liabilities. The defined terms from the Consolidated Standards are similarly identified in this document (dotted underline).

CLAIM LIABILITIES

The valuation of claim liabilities can be considerably improved by subdividing the claims experience into well-defined and homogeneous groups. Where possible, claims data that is relatively unaffected by changes in operations and external influences should be used. The possibility of subdividing or combining the data so as to increase its homogeneity, or to minimize the distorting effects of underlying changes on the data, would be fully explored.

Considerations – operational changes and external influences

It is not sufficient for the actuary to merely apply historical analytical procedures in the calculation of claim liabilities. Whenever the impact of internal or external changes on claims data can be isolated or reasonably quantified, adjustment of the data is warranted before applying various valuation methods. Whenever possible, the assumptions underlying each method would be tested statistically. It may be possible to adjust past experience data so that a method's underlying assumptions are more nearly satisfied.

Examples of operational changes include but are not limited to:

- changes in underwriting practice,
- changes in claims handling including case estimate practice,
- changes in data processing, and
- changes in accounting.

Examples for external influences include but are not limited to:

- the judicial, regulatory and legislative environment,
- residual or other involuntary market mechanisms, and
- economic variables such as inflation.

Considerations – homogeneity and credibility

Homogeneity is enhanced by grouping claims with similar characteristics including:

> coverage provisions and net exposure, including policy deductibles and limits, and reinsurance cessions,
>
> emergence patterns (the delay between the occurrence of claims and their recording on the insurer's books), settlement patterns (the length of time between the recording of claims on the insurer's books and their final settlement), and development patterns,
>
> frequency and severity of claims, which then requires that more care be taken in the analysis of low frequency/high severity claims experience because of its greater inherent variability,
>
> reopened claims potential, and
>
> size of loss distributions, which are sensitive to change in coverage provisions.

The degree to which consideration is given to homogeneity is related to the consideration of credibility. Reliability is increased by proper homogeneous groupings on the one hand, and by increasing the number of claims analyzed within each group on the other. Obtaining homogeneous groupings requires refinement and fragmentation of the total database. Clearly, there is a point at which refinement scatters data into cells too small to provide reliable development patterns. Each situation requires a fresh balancing of the considerations of homogeneity and statistical reliability. Thus, line and coverage definitions suitable for the establishment of claim liabilities in large companies can be in much finer detail than in the case of small companies.

Where a small group of claims is involved, the use of external information such as industry aggregates may be necessary.

Considerations – aggregate limits

Aggregate limits will act to restrict total potential incurred losses and therefore claim liabilities. For groups of claims where aggregate limits apply, tests of the data will reveal to what extent limit ceilings have been reached, and in what respect reserve projections may have to be modified to take this factor into account. Defense costs in many instances will not be limited by the aggregate limit.

Considerations – collateral sources

A proper valuation of an insurer's claim liabilities includes consideration of salvage, subrogation and any other pertinent collateral sources including, but not limited to, deductible, coinsurance, coordination of benefits and loss transfers.

Considerations – pools and associations

An insurer's claim liabilities depend to some degree on forces beyond its control, such as business assumed through participation in voluntary or non-voluntary underwriting pools and associations. The actuary should be aware that the operating and case estimate practices of such business, as well as the resulting development and other patterns, may be different from the insurer's own operation.

Considerations – time periods

Claims experience can be grouped into accident periods, report periods, calendar/fiscal or underwriting periods. The type of time period grouping may enhance homogeneity, and has implications for the selection of an appropriate valuation method.

The duration of the time periods (for example, quarters versus years) used for the grouping of the claims experience may also enhance homogeneity, but credibility should be assessed when considering a more refined basis.

Considerations – valuation methods

No one valuation method can produce the best estimates in all situations. Each technique rests on a set of underlying assumptions that may or may not be satisfied in any given situation. Consequently, different methods will need to be applied in different circumstances. In selecting the most appropriate valuation technique, the actuary should therefore have an in depth knowledge of the underlying assumptions inherent in the valuation technique, as well as the special circumstances pertaining to the insurer.

Detailed discussion of the technology and applicability of current claim valuation practices is beyond the scope of this educational note. Selection of the most appropriate method of valuation is the responsibility of the actuary. An actuary would ordinarily examine the indications of more than one method before arriving at a proper provision for an insurer's claim liabilities.

An actuary would know and consider the types of reinsurance plans and retentions currently in force. To the extent that current arrangements might differ from plans in effect during the claim experience period, the member should estimate the effect such differences might have on observed emergence and development patterns.

PREMIUM LIABILITIES

Considerations – claims estimates

The actuary would consider the standards for claim liabilities in selecting assumptions about claims for the determination of premium liabilities.

Considerations – premium development

While premiums are usually recorded before the policies come into force, there are certain instances where the ultimate premiums are not known on policies already in force. This may happen because of reporting of processing delays or because of the very nature of the insurance rated risks, and especially assumed reinsurance business where the contract is in effect non-cancelable and may cover all policies issued by the ceding insurers for a certain future period.

Considerations – premium level

The estimated claim ratios of the unexpired policies would be evaluated in light of the results of current and previous years, taking into account the changes in average premium level. Consideration would be given to the rate level underlying the unearned premium.

Considerations – reinsurance

The actuary would know and consider the types of reinsurance programs, their conditions, and the retentions currently in force as well as those that will apply to the run-off of the unexpired portion of the policies in force. Projected future losses and premiums would be adjusted to the new conditions and retention level if there is a change. All future adjustments to reinsurance commissions or reinsurance premium as provided by the reinsurance contracts would be taken into consideration in the valuation of the net premium liabilities and consistent with the anticipated reinsurance recoveries.

Considerations – seasonality of losses

The nature (frequency and severity) of claims tends to vary according to season. Usually the exposure underlying the unexpired portion of the policies is not evenly distributed over the earning period, so the seasonality of claims would be considered.

Considerations – trend factors

Appropriate trend factors would be applied to past and current claim ratios in order to evaluate the claim level for the unexpired portion of the policies in force.