CANADIAN RESERVE CERTIFICATION: CURRENT REQUIREMENTS AND PRACTICES

By Joanne S. Spalla

BIOGRAPHY:

Ms. Spalla is Actuary and Director of Reserves and Financial Analysis at ITT Hartford Insurance Group. She received her B. S. degree from Bucknell University and has been at The Hartford since 1980. She became a fellow of the Casualty Actuarial Society in 1985 and is a member of the American Academy of Actuaries. In 1989, she became a Fellow of The Canadian Institute of Actuaries after passing the special certification examination offered by the CIA. In addition to her reponsibilities for ITT Hartford's U. S. Property-Casualty reserves, Ms. Spalla certifies the reserves for Hartford Insurance Company of Canada and the Canadian Branch of Hartford Fire Insurance Company.

ABSTRACT:

Recent requirements passed in Canada require certification of loss and policy reserves for insurance companies licensed to conduct business in Canada. Since many U. S. insurance companies operate branches or subsidiaries in Canada, these requirements impact many Fellows of the Casualty Actuarial Society practicing in the U. S. This paper summarizes the current requirements for certifying and reporting on these reserves. The paper includes a discussion of the key differences in Canadian and U. S. accounting practices that are of concern to the actuary who is responsible for Canadian reserves.

CANADIAN RESERVE CERTIFICATION: CURRENT REQUIREMENTS AND PRACTICES

INTRODUCTION

In 1987, new requirements were implemented in Canada that require an actuarial opinion to be included in the annual statement. Since many U. S. insurers operate subsidiaries or branches in Canada, these requirements may impact Fellows of the Casualty Actuarial Society practicing in the United States. In general, certification requirements in Canada are more stringent than in the United States. Under Canadian law, only Fellows of the Canadian Institute of Actuaries may certify reserves. The content of the Canadian actuarial certification is more detailed than the actuarial certification used in the United States. In addition to the loss reserve opinion, the Canadian certification must include an opinion of the adequacy of the unearned premium reserve. The Canadian actuary must certify the gross as well as net reserves and comment on the collectibility of reinsurance recoverables.

This paper will describe the current Canadian requirements relating to certification of reserves and provide background information concerning differences between United States and Canadian regulatory and accounting practices that the actuary certifying Canadian reserves should be aware of. The paper will also describe the current status of discounting. Finally, the paper will discuss the Canadian Institute of Actuaries standards of practice and will review a recent proposal to further strengthen the role of the actuary in Canada.

BACKGROUND

On July 2, 1987 Canada passed Bill C-56, which amended Section 102(7) of the Canadian and British Insurance Companies Act and Section 47(7) of the Foreign Insurance Companies Act.[1] The bill requires all companies registered to transact business under the two Acts to attach an Actuary's Report to the annual statement. This report must set out the details of the calculation of the policy and claim reserves shown in the annual statement and must give an opinion on the adequacy of these reserves. In contrast, only certain jurisdictions in the United States require actuarial certification of reserves. The Canadian Actuary's Report is much more detailed than the standard reserve certification used in the United States.

The Canadian Acts require that this report be signed by an actuary. Canada is unique in that the term "actuary" is defined by statute. Under the Acts, an actuary is defined as a Fellow of the Canadian Institute of Actuaries (FCIA). The Acts provide that during a period of five years from the effective date of Bill C-56, the report may be signed by a non-actuary who possesses relevant training and experience in the opinion of the Superintendent of Financial Institutions. Canadian regulations grant automatic approval for certain categories of individuals including Fellows of the Casualty Actuarial Society or other foreign actuarial bodies, and senior financial, underwriting or claims officers of the company; however, these individuals must be employed in Canada in order to be automatically approved. The regulations also allow the Superintendent to grant approval on an individual basis to persons that do not fall into the above categories. Companies must submit a request for prior

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[1]Sections 102 and 47 were changed under the Revised Statutes of Canada to Sections 170 and 62, respectively.

approval identifying the person who will sign the reports to the Superintendent by December 31st each year during the interim period.[2]

Section 309 of the Quebec Insurance Act contains similar provisions for all companies licensed to conduct business in the province of Quebec. The Quebec Act, which became effective on June 20, 1984, allows acceptance of non-actuaries for an interim period of five years, expiring June 20, 1989.[3] The Actuary's Report in the annual statement of any company licensed to conduct business in Quebec must now be signed by a Fellow of the Canadian Institute of Actuaries.

Under the By-laws of the Canadian Institute of Actuaries (CIA), a member must be a Fellow of either the Society of Actuaries or the Casualty Actuarial Society who has passed those parts of the SOA or CAS examinations having substantial Canadian content. At the present time, Part 8 is the only CAS exam with separate Canadian content. In addition, the CIA By-laws contain an experience requirement consisting of three years of practical experience acceptable to the Council of the Canadian Institute.[4] As a substitute for the experience requirement for non-Canadian Fellows of the Casualty Actuarial Society, the Canadian Institute of Actuaries offered a special eligibility exam in October 1989, April 1990 and October 1990. Fellows of the CAS who passed the special exam became eligible for membership in the Canadian Institute of Actuaries. The CIA does not anticipate offering the exam again.

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[2]Office of the Superintendent of Financial Institutions Canada, *Report of the Actuary or the Reserve Specialist on the Property and Casualty Business of 1990 Pursuant to the Provisions of the Canadian and British Insurance Companies Act or the Foreign Insurance Companies Act*, 1990.

[3]Quebec Insurance Act, Section 309.

[4]Canadian Institute of Actuaries, *By-Laws*, Section II(2).

Before discussing the specific certification requirements, it is important to understand the key differences between the United States and Canadian regulatory environments and accounting practices.

CANADIAN INSURANCE REGULATION

In the United States, insurance companies are regulated by the states. Uniformity in statutory accounting practices is achieved through the NAIC, which specifies the format of the annual statement blank. Unlike the United States, domestic Canadian companies can be either provincially or federally registered. Most large national companies are federally registered. The Canadian and British Insurance Companies Act provides regulations for federally registered Canadian insurers, as well as branches of British Insurance Companies. A non-British insurer from a foreign country can also be registered to conduct a branch operation in Canada. The Foreign Insurance Companies Act provides regulations for branches of non-British foreign insurers.

The Office of the Superintendent of Financial Institutions (OSFI) has the power to regulate insurers that fall under the two Acts. The OSFI promulgates regulations covering minimum capital, surplus standards, restrictions on dividends and the types of investments, the annual report and company audits.[5] The OSFI determines the format for the annual statement for both federally registered companies and branches of foreign insurance compames. The format of the statement for branches differs slightly from the statement for federally registered companies. The OSFI requires that the annual statements contain an actuarial

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[5]Clark, John and Oakden David, 'Canadian Accounting' in Strain, R. W., *Property-Liability Insurance Accounting* (Third Edition), 1986, Chapter 16, page 339.

statement giving an opinion on both policy and claims reserves. The Canadian statement must be filed with the OSFI on March 1st of each year. The due date is March 15th for reinsurance companies.

A federally registered company must also be licensed in each province in which it conducts business. In contrast to federal regulation, provincial regulation is primarily concerned with the terms of insurance contracts, claims settlement practices, and the licensing of agents, brokers and adjusters. A federally licensed company is also required to file a copy of the federal annual statement blank in each province in which it is licensed.[6]

CANADIAN ACCOUNTING

In addition to these regulatory distinctions, it is important to be cognizant of variations between United States statutory and Canadian insurance accounting practices. Unlike the NAIC blank, which is on a statutory basis, the Canadian annual statement is on a GAAP basis. The Canadian Institute of Chartered Accountants (CICA) establishes accounting standards, which constitute generally accepted accounting principles in most provinces.[7]

Since the Canadian statement is on a GAAP basis, anticipated salvage and subrogation is a legitimate deduction from loss reserves. NAIC statutory accounting does not allow a deduction for anticipated salvage and subrogation. Furthermore, under GAAP, an asset for Deferred Policy Acquisition Expenses may be established for the equity in the unearned premium reserve in the Canadian statement. This asset must not exceed 30% of the unearned premium reserve; any excess over 30% is treated as nonadmitted when

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[6] *Ibid*, p. 339.

[7] *Ibid*, p. 341.

determining the surplus on a liquidation basis. This liquidation surplus produces a more conservative measure of surplus, which is roughly comparable to statutory surplus in the United States. The concept of liquidation surplus will be discussed in more detail in a subsequent section on Canadian solvency regulation. The Actuary's Report must contain an opinion of the adequacy of the reserves for deferred policy acquisition expenses.

Agents Balances are not reduced for amounts due over 90 days as in the United States, but are reduced for uncollectible amounts through an allowance for bad debts. Amounts in excess of 65 days overdue are non-admitted for liquidity purposes. In Canada, Retrospective Premium Adjustments are not included in the unearned premium reserve like in the U. S., but are instead included in Policyholder Dividends. Reinsurance Recoverable on Paid Losses is not shown separately on the Canadian statement but is included in Amounts Due from Other Companies. Unlike U. S. statutory accounting, stocks are shown at book rather than market value under Canadian GAAP accounting. In Canada, encumbrances on Real Estate are shown as a separate liability rather than netted against assets as is done in the United States. Additional Policy Reserves are required in Canada for Fidelity, Surety, Mortgage and Nuclear Insurance.

Loss Development Information In The Canadian Annual Statement

There are several variations in the reporting of loss development data in the Canadian annual statement. To begin with, Canadian terminology is slightly different. For example, 'claims' is used to refer to losses and 'adjustment expenses' is used for loss adjustment expenses. 'External adjustment expenses' refers to allocated loss adjustment expenses and 'Internal adjustment expenses' refers to unallocated loss adjustment expenses. Unlike the NAIC blank, the Canadian annual statement instructions do not prescribe a methodology for allocating internal adjustment expenses to line or accident year. Instead, the Canadian instructions state that any 'reasonable basis' for allocation is acceptable.[8] Presumably, the methodology prescribed in the Schedule P instructions would be an acceptable basis for the Canadian statement.

The provision for unpaid claims, including IBNR, is shown on a Direct, Assumed, Ceded and Net Basis by line of business in the Canadian Annual Statement exhibit entitled 'Claims and Adjustment Expenses - Paid and Unpaid' (Attachment 1). Detailed loss development information is contained in two additional exhibits. 'Net Claims and Adjustment Expenses - Runoff - Total', reproduced in Attachment 2, shows a historical runoff of loss and loss adjustment expense reserves for the past five accident years on a total all lines basis. Loss and loss adjustment expenses are combined in this exhibit and IBNR by accident year is displayed at the bottom of the exhibit. Attachment 3, 'One year Test of Adequacy of Net Provision for Unpaid Claims at Prior Year End,' shows a one year runoff of total loss and loss adjustment expense reserves by line of business. The one year runoff of the IBNR reserve is also shown in this exhibit.

The lines of business in the Canadian Statement differ significantly from those shown in the NAIC Schedule P. The Property lines in the Canadian statement combine Fire, Allied, Inland Marine, Earthquake, Burglary and Theft (Schedule P, Part I), Farmowners, Homeowners (Schedule P, Part A), and Commercial Multiperil (Schedule P, Part E). The Property line is further subdivided into Personal and Commercial business. The Canadian statement breaks automobile into three sublines: Liability, Personal Accident and Other. Personal Accident comprises No-Fault coverage, which is not broken out as a separate line in Schedule P. Other Automobile includes physical damage, similar to Schedule P, Part J. The Canadian

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[8]Office of the Superintendent of Financial Institutions Canada, *Instructions for Completion of the Annual Statement*, 'Net Claims and Adjustment Expenses - Runoff - Total'.

statement does not require a breakout of the automobile liability subline into Personal and Commercial business, unlike Schedule P, Parts B and C. In Canada, Medical Malpractice is included with Liability. Workers' Compensation does not appear in the Canadian annual statement since all Workers' Compensation is conducted through the provincial government and there is no private Workers' Compensation insurance. Mortgage and Title is shown as a separate line in the Canadian Statement, and the Marine line of business in the Canadian statement includes only Ocean Marine; Inland Marine is included in Property.

A actuary for a U. S. company that writes Canadian business must be aware of these line of business differences. The actuary cannot rely on a data base constructed for the Schedule P lines of business to provide the level of detail required in the Canadian statement. Furthermore, in order to include the Canadian business in a consolidated NAIC Schedule P, the Canadian lines of business must be broken down into further detail. For example, the Canadian Auto Liability and Personal Accident sublines must be split into Personal and Commercial business in order to be included in the appropriate Schedule P lines in the Consolidated NAIC statement.

It is clear from an examination of the attached schedules that the loss reserve information in the Canadian statement is much less detailed than in Schedule P. For example, claim development by accident year is not shown beyond five years in the total all lines runoff exhibit. IBNR reserves are not broken out by line, and runoff by line of business is not shown beyond one year in the one year test of adequacy. Loss Adjustment Expenses are not broken out separately from losses in either exhibit. In addition, accident year loss ratios are not available by line of business.[9] In contrast, Schedule P, Part 2 displays ten years of development by line of business and accident year for losses plus allocated loss adjustment

[9]Strain, p. 349.

expense, and Part 6 displays a history of IBNR by line and accident year for the latest ten years. Finally, the Canadian statement does not contain the level of detail for gross and ceded reserves by accident year that were included in the 1989 revisions to Schedule P. It should be noted, however, that some of the information that is not formally required in the Canadian annual statement should now be included in the Actuary's Report, which will be discussed below.

CANADIAN SOLVENCY REGULATION

While solvency regulation in Canada has the same goals as in the United States, it is achieved through a different means in the Canadian statement. Since the Canadian statement is on a GAAP basis, certain adjustments must be made to put the Canadian surplus on a more conservative liquidity basis. The "Reserves Required By the Superintendent" in the Canadian statement attempts to reconcile GAAP and liquidity accounting concepts. The "Reserves Required" consists of assets that are non-admitted for solvency purposes. The Reserves include non-admitted assets on uncollected premiums in excess of 65 days, fixed assets for autos, office furniture and equipment, reinsurance ceded to unregistered companies, deferred policy acquisition expenses in excess of 30% of unearned premiums, prepaid expenses and deferred income taxes, the Foreign Exchange Fluctuation Reserve, the Investment Valuation Reserve, the Hail Insurance Surplus Fund, and reserves for negative amounts in non-cancellable Accident and Sickness policies. In regulating for solvency, the "Reserves Required by the Superintendent" is considered part of surplus for GAAP purposes, but not for liquidation purposes.

Minimum Surplus Requirement (Section 171 Test)

A key component of Canadian solvency regulation is the minimum surplus requirement included in the annual statement. Section 171 of the Canadian and British Insurance Company Act (formerly Section 103) specifies the minimum assets a company must maintain in order to continue to write business. Since the minimum assets are defined as the liabilities plus the required margin, Section 171 is effectively a minimum surplus test. The Section 171 test requires that the liquidity surplus plus the excess of market over book value of invested assets plus deferred income taxes must be greater than or equal to a required amount. In determining the required surplus, the company must satisfy the most stringent of three tests: The 'original' test, and the Premium and Claim tests, which were added in 1987.

> **The Original Test** states that minimum surplus must be greater than or equal to the sum of 15% of unpaid claims, plus 15% of unearned premiums for lines where the expected or actual loss ratio exceeds 80%, plus deferred policy acquisition expenses plus 15% of unregistered ceded unearned premium and unpaid claims where premium is not covered by cash deposits.
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> **The Premium Test** states that minimum surplus must be greater than or equal to 15% of gross written premium during the preceding 12 months plus a supplementary margin on gross premium less a reduction for reinsurance ceded.
>
> **The Claims Test** states that minimum surplus must be greater than or equal to 22% of average gross claims incurred during the preceding 36 months plus a supplementary margin on gross claims less a reduction for reinsurance ceded.

The Section 171 Margin must be the largest margin produced by the three tests. The original test examines the net liabilities at a single point in time. The two new tests were added to reflect a company's operations over a period of time. As a result, companies that have experienced rapid growth or adverse claim experience would be required to carry a higher margin under the new tests than under the original test. The 36-month average under the Claims Test was designed to minimize fluctuations in experience. The Premium Test does not include a provision for smoothing, because it was designed to immediately reflect rapid growth. Since the relief for reinsurance is only 50% of ceded reinsurance, companies with a high level of reinsurance would also be required to carry a higher margin under the new tests. For a company with no unusual characteristics, the new tests were constucted to produce a result similar to the original test. Attachment 4 shows the calculation of the Minimum Asset Test in the Canadian annual statement for a federally registered company.

Non-British foreign insurance companies who are registered to carry on branch operations in Canada must deposit assets with the Receiver General and with a Canadian trustee to cover the company's liabilities and minimum surplus. The minimum surplus requirements are approximately the same as those for domestic insurers. Attachment 5 shows the calculation for a branch company.

CANADIAN CERTIFICATION REQUIREMENTS

Another important tool in Canadian solvency regulation is the Actuary's Report, which by law must be attached to the Canadian annual statement. The Office of the Superintendent of Financial Institutions issues guidelines to ensure a report of high quality and maximum utility. However, the OSFI leaves the format and content of the report to the professional judgment of the author. The guidelines cover the presentation, level of detail and discussion required in the report and describe the procedures for the acceptance of reserve specialists. The guidelines issued for 1990 include a recommended text for the actuarial opinion, which has been reproduced in Attachment 6. The Actuary's Report must contain separate sections for policy and claims reserves. Each section of the report must show the details of the calculation of the statement reserve and must include an opinion about its adequacy.

Policy Reserves

Policy liabilities represent the anticipated net costs of discharging the company's obligations with respect to its insurance policies and reinsurance contracts in force, excluding claims liabilities. These policy liabilities represent the provision for future claims and adjustment expenses on the unexpired portion of the policies in force. They include the administrative expenses to service those policies, net anticipated premium adjustments and anticipated reinsurance commission adjustments. The policy reserves are not shown explicitly in the Canadian annual statement. They are the net total of the unearned premium reserve, deferred premium acquisition expenses, and any other related assets and liabilities. Since the Canadian annual statement is on a GAAP basis, deferred acquisition expenses should be recognized. If the policy liabilities are less than the unearned premium reserve, the difference should be shown as deferred acquisition expenses. On the other hand, if the policy liabilities exceed the unearned premium, the difference should be shown as a premium deficiency. The deferred acquisition expenses should not be greater than the unearned portion of acquisition expenses.[10]

The Actuary's Report must include an opinion on the adequacy of policy reserves. The report must show the derivation of the unearned premium reserve and the deduction for acquisition expenses carried in the statement. The report must also show the derivation of the required provision for ultimate claims and other obligations expected to arise after the statement date under policies in force at the statement date including adjustment expenses and the expenses relating to servicing policies. The actuarial opinion must state whether the net reserve in the annual statement plus any amounts receivable from reinsurers is sufficient

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[10]Canadian Institute of Actuaries, *Recommendations for Property-Casualty Insurance Company Financial Reporting*, January 1990, Part 4.

to cover the ultimate claims and other obligations expected to arise after the statement date under policies in force at the statement date including adjustment expenses and the expenses relating to servicing policies for direct and assumed business. The OSFI guidelines state that the actuary should consider the following in expressing an opinion:

- o Ultimate loss ratio history
- o Changes in premium rates
- o Trends in frequency and severity
- o Trends in the cost of servicing policies
- o Important changes in coverage
- o Changes in the cost of reinsurance
- o Significant lags in premium collection

Claims Reserves

The Actuary's Report must show the derivation of the net carried reserve for unpaid claims and adjustment expenses, including IBNR. The report must also show the derivation of the provision for ultimate claims and other obligations incurred before the statement date including adjustment expenses. The actuarial opinion must state whether the net reserve in the annual statement plus any amounts receivable from reinsurers is sufficient to cover the ultimate claims and adjustment expenses. The actuary should consider the following in expressing an opinion:

- o Ultimate loss ratio history
- o Trends in frequency and severity
- o Important changes in coverage
- o Changes in the cost of reinsurance
- o Significant lags in claim reporting and payment patterns
- o Significant deficiencies in the run-off of prior claims reserves

Reinsurance

The Actuary's Report must state the amount assumed to be receivable from reinsurers. It must also specify any unusual problems and delays expected in collecting this reinsurance. Such situations may include disputes with reinsurers, a reinsurer's past history of slow payment, a reinsurer being subject to regulatory restrictions, or when there is a high probability that the reinsurer will deny liability. The regulations issued by the OSFI for 1990 explicitly state that the person signing the report should discuss the matter of any unusual problems or delays with management.

Content of the Report

The guidelines from the OSFI were expanded in 1988 to describe the suggested content and format of the report in more detail. For policy reserves, the report must disclose the amount of the carried unearned premium reserve, the amount of the deduction for acquisition expenses and the amount of any other reserves in the statement providing for claims and other obligations. The report must also disclose the amount that is required to make proper provision for claims and other obligations. Similarly, for claims reserves, the report must disclose the amount of the carried reserve for unpaid claims and other obligations and the required reserve for claims and other obligations. For both policy and claims reserves, the report must state the amount of reinsurance receivable, as well as the amount of any doubtful or delayed reinsurance. The 1990 guidelines further require the actuary to reconcile any discrepencies between the required reserve provision calculated in the Actuary's Report and the reserve carried in the annual statement. It should also be noted that the recommended text of the actuarial opinion contains an explicit statement that the actuary is satisfied that the data utilized are 'reliable and sufficient' and that the actuary has verified the consistency of the data with company financial records.[11]

The guidelines also suggest that the commentary in the report include a discussion of the particulars of the reserve calculation and the methodology and assumptions underlying the evaluation. The actuary should also disclose any significant changes in assumptions or techniques since the previous evaluation. The commentary should include a discussion of the principle characteristics of significant lines of business and any significant changes in marketing strategy, mix of business, retention, level or type of reinsurance, the method of recording data, and changes in settlement rates.

The report should show ultimate accident year claims and claims ratios. The following is typically displayed by accident year and development age for each of the principle lines of business:

- o Cumulative Paid Losses and Adjustment Expenses
- o Case Reserves, including Adjustment Expenses
- o Cumulative Reported Claims
- o Number of Open Claims

The 1988 changes further specified that the data included in the report should enable the reader to reproduce the calculations underlying the actuary's evaluation. The exhibits may show the following:

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[11]Office of the Superintendent of Financial Institutions Canada, *Report of the Actuary or the Reserve Specialist on the Property and Casualty Business of 1990 Pursuant to the Provisions of the Canadian and British Insurance Companies Act or the Foreign Insurance Companies Act*, 1990, page 14.

- The determination of cumulative incurred losses
- The calculation of average case reserves
- Any adjustments for changes in settlement rates or for reserve strengthening
- Any adjustments for varying retentions under reinsurance contracts
- The calculation of average development factors, tail factors and trend

These guidelines thus require some of the detailed loss development data that is not provided in the annual statement itself. Although the guidelines state that this information should be shown for the principle lines of business that the company writes, they do not not specify the criteria for including a line and the level of detail within line. Nor does the report specify the number of accident years that must be displayed in the triangles. The instructions do not require losses to be shown separately from adjustment expenses. Since these guidelines were recently issued, the OSFI interpretation is still evolving. In this author's experience, the OSFI has expected the Actuary's Report to comply with these guidelines as closely as possible.

CANADIAN INSTITUTE OF ACTUARIES STANDARDS OF PRACTICE

The Canadian Institute of Actuaries has published Recommendations for Property-Casualty Insurance Company Financial Reporting which serve to guide its members. These recommendations comprise many of the guidelines contained in the CAS Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves. In fact, the Considerations for Claims Liabilities (Part 3) are almost identical with the CAS Statement of Principles for Loss and Loss Expense Reserves.

Since the Canadian Actuary is required to give an opinion on policy reserves, the Canadian recommendations contain a separate section for policy liabilities (Part 4) that are not addressed in the CAS Statement of Principles. The CIA Recommendations list several considerations for determining policy liabilities. Premium development should be considered whenever the ultimate premium is not recorded at the inception of the policy. In addition, the estimated loss ratios for the unexpired policies in force should reflect the impact of changes in average premium levels and appropriate trend factors should be applied. Any seasonality in frequency and severity should be considered in estimating the claims ratio for the unexpired portion of the policies in force. Projected future losses and premiums should be adjusted to reflect any changes in reinsurance plans. Finally, the considerations for claims liabilities should be applied when estimating ultimate claims for the purpose of the determining policy liabilities.

Discounting

The issue of discounting is as controversial in Canada as it is in the United States. The current position of the OSFI does not allow discounting of claims and adjustment expense reserves in the annual statement. Moreover, the OSFI regulations for 1990 state that an undiscounted provision should be used in the Actuary's Report to determine the adequacy of the policy or claims reserves reserves in the Annual Statement. On the other hand, the CIA Recommendations state that it is generally accepted actuarial practice to value liabilities on a present value basis. In recognition of the need for consistency with the OSFI regulations, the Recommendations provide that when the government statement does not allow the liabilities to be stated on a present value basis, the Actuary's Report should value liabilities on an ultimate basis.[12]

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[12]Canadian Institute of Actuaries, *Recommendations for Property-Casualty Insurance Company Financial Reporting*, January 1990, Section 5.04.

The CIA Recommendations contain guidelines that the member should follow whenever it is appropriate to discount reserves. These guidelines are similar to the exposure draft issued by the American Academy of Actuaries on the standards of practice for discounting property and casualty loss and loss adjustment expense reserves. Both the CIA and American Academy recognize that the choice of a rate of return in the present value calculation is a function of the context in which the discounted reserve is used. Both also recognize that it may be appropriate to include a provision for uncertainty in the calculation of discounted reserves.

As in the NAIC blank, the notes to the Canadian annual statement ask whether the insurer has recognized the time value of money in establishing the provision for unpaid claims and adjustment expenses. If the answer to this question is yes, the company must disclose the rate of interest used by line of business and the basis for selection of the rate. In addition, the company must disclose the impact of discounting on both the income statement and balance sheet. The company must also make a similar disclosure if the calculation of deferred acquisition expenses or premium deficiencies reflects discounting. The instructions to the Canadian annual statement further stipulate that reserves shown in the run-off exhibits should be on an undiscounted basis. Similarly, the reserves in Schedule P must not be discounted, and the company must disclose the amount of the discount by line of business and accident year for other than workers' compensation tabular reserves in Schedule P, Part 1.

As in the United States, Canadian reserves must be discounted for tax purposes. However, the application of discounting in the Canadian tax law differs from the requirements issued by the Internal Revenue Service.

Reinsurance

Both the CAS and CIA Recommendations address the issue of reinsurance. While the CAS Statement of Principles states that it may be appropriate to analyze direct and ceded data separately, the CIA Recommendations are more emphatic in stating that the actuary should perform calculations on a gross and ceded basis when the amount of ceded reinsurance is material. Moreover, the CAS Principles state that the recoverability of reinsurance is a consideration that should be addressed separately from the reserve evaluation process. The CIA Recommendations specifically state that the member should address the recoverability of reinsurance.

Other Guidelines

Like the CAS Statement of Principles, the CIA Recommendations leave the choice of an appropriate reserving methodology up to the actuary. In recognition of the fact that liabilities cannot be determined with complete confidence, the CIA recommendations discuss a provision for adverse deviations. The Canadian recommendations list five factors that should be considered in determining the provision for adverse deviation, including the confidence in the expected development pattern, the depth and quality of the historical data on which the reserve evaluation is based, the ultimate fluctuations affecting frequency and severity, the inflation rate, and the conservatism of the interest rate used in discounting the liabilities. The provision for adverse deviations would be added to any discounted reserves. However, since the OSFI does not allow discounted reserves, the provision for adverse deviation is not used in practice.

The CIA Recommendations contain suggested texts for the Report of the Actuary in both published financial statements and the government statement. The Recommendations also cite situations that require disclosure and describe the recommended content of these disclosures.

Relationship With Auditors

In both the United States and Canada, the actuary often works closely with the auditor. The actuary, as a 'reporting professional' who certifies reserves, typically relies on the auditor's work as a 'specialist professional' who verifies the data on which actuarial calculations are based. In turn, the auditor in his capacity as a 'reporting professional' relies on amounts determined by the actuary as a 'specialist professional' when the auditor expresses an opinion on the fairness with which the statements present the financial position of the company. In recognition of this important relationship, the CIA and the Canadian Institute of Chartered Accountants have developed an exposure draft of a Joint Policy Statement concerning the auditors use of the work of an actuary and the actuary's use of the work of an auditor in the preparation and audit of financial statements. This Joint Policy Statement details the roles and responsibilities of both the actuary and the auditor in their capacities as 'reporting' and 'specialist' professionals. The Statement also recommends that disclosure of the respective roles of the actuary and auditor be provided by management either as part of management's report accompanying the financial statements or in a note to the financial statements.[13]

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[13]Canadian Institute of Actuaries/Canadian Institute of Chartered Accountants, *Joint Policy Statement Concerning the Auditor's Use of the Work of an Actuary and the Actuary's Use of the Work of an Auditor in Connection with the Preparation and Audit of Financial Statements* (Exposure Draft), January 17, 1990.

FUTURE DEVELOPMENTS

The Canadian Institute of Actuaries has recently made a proposal to further strengthen the role of the actuary in Canada. The CIA proposal recommends that a new position, the appointed actuary, be created for all property-casualty and life insurance companies in Canada, including both Canadian and branch operations.

In many respects, the responsibilities of the appointed actuary would parallel the role of the independent auditor. Under the CIA proposal, the appointed actuary would have the same right of access as the independent auditor to all persons and records necessary to the performance of the actuary's professional duties. The appointed actuary would report in writing to the president of the insurance company any transactions and conditions that the actuary feels would have a significant adverse effect on the financial position of the company. The CIA further recommends that this report should be automatically presented to the company's board of directors and that the appointed actuary should advise the OSFI if appropriate action is not taken to rectify the adverse conditions. Like the external auditor, the appointed actuary would be required to report in person to the board of directors at least once a year. In addition, the CIA recommends that the financial statements include a report by the appointed actuary, similar to the auditor's report, as well as a description of the roles of both the appointed actuary and auditor. Finally, to minimize the possibility that management might pressure the actuary to relax his professional standards, the company directors would be required to formally report the termination and reasons for termination of the appointed actuary to the OSFI.

As of this writing, the CIA has submitted these recommendations to the Minister of Finance and has appeared before the Commons Standing Committee on Finance in connection with legislation related to the Reform of Federal Financial Institutions. The recommendations were apparently well-received. The CIA hopes that this proposal will be incorporated in upcoming revisions to the Federal Insurance Act.

CONCLUSIONS

In summary, a Fellow of the Casualty Actuarial Society will find that the considerations in certifying Canadian reserves are more similar to the practices in this country than they are different. This paper has reviewed some of the key differences that may be of interest to a Fellow of the Casualty Actuarial Society who has responsibility for the reserves of a Canadian subsidiary. Overall, the actuary will find that the Canadian certification includes more detail than is presently required in the United States. In the future, it is likely that the role of the actuary in Canada will be expanded even further. The reader is urged to consult the appropriate references for a more detailed and up to date discussion of particular topics.

BIBLIOGRAPHY

American Academy of Actuaries, *Actuarial Standard of Practice Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*, (Exposure Draft), October 1989.

Canadian Institute of Actuaries, *By-Laws*, Section II(2).

Canadian Institute of Actuaries, *Recommendations for Property-Casualty Insurance Company Financial Reporting*, January 1990.

Canadian Institute of Actuaries/Canadian Institute of Chartered Accountants, *Joint Policy Statement Concerning the Auditor's Use of the Work of an Actuary and the Actuary's Use of the Work of an Auditor in Connection with the Preparation and Audit of Financial Statements* (Exposure Draft), January 17, 1990.

Casualty Actuarial Society, *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves*, May 1988.

Clark, John and Oakden David, 'Canadian Accounting' in Strain, R. W., *Property-Liability Insurance Accounting* (Third Edition), 1986, Chapter 16.

Office of the Superintendent of Financial Institutions Canada, *Instructions for Completion of the Annual Statement*.

Office of the Superintendent of Financial Institutions Canada, *Report of the Actuary or the Reserve Specialist on the Property and Casualty Business of 1990 Pursuant to the Provisions of the Canadian and British Insurance Companies Act or the Foreign Insurance Companies Act*, 1990.

Quebec Insurance Act, Section 309.

Reynolds, D. I. W. and Ryan, J. P., 'Professional Guidance for Casualty Actuaries in Australia, Canada, United Kingdom and USA', *Casualty Actuarial Society Discussion Paper Program*, May 1988.

HARTFORD INSURANCE COMPANY OF CANADA
Insurer

1989
Year

CLAIMS AND ADJUSTMENT EXPENSES - PAID AND UNPAID

Class of Insurance		Claims and adjustment expenses paid				Provision for unpaid claims (including unreported) and adjustment expenses			
		Direct (01)	Reinsurance assumed (02)	Reinsurance ceded (03)	Net (01 + 02 – 03) (04)	Direct (05)	Reinsurance assumed (06)	Reinsurance ceded (07)	Net (05 + 06 – 07) (08)
		$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Property - personal	01		236		236		164		164
Property - commercial	02		418		418		463		463
Property - total	03		654		654		627		627
Aircraft	04								
Automobile - liability	05		832		832		2,110		2,110
Automobile - personal accident	06		51		51		79		79
Automobile - other	07		254		254		106		106
Automobile - total	08		1,137		1,137		2,295		2,295
Boiler and Machinery	09						0		0
Credit	10								
Fidelity	11		7		7		12		12
Hail	12								
Legal Expenses	13								
Liability	14		201		201		1,091		1,091
Mortgage	15								
Surety	16		2		2		1		1
Title	17								
Marine	18		143		143		162		162
Sub-total	19		2,144		2,144		4,188		4,188
Accident and Sickness	20								
Total	21	0	2,144	0	2,144	0	4,188		4,188

HARTFORD INSURANCE COMPANY OF CANADA
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1989
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NET CLAIMS AND ADJUSTMENT EXPENSES - RUN-OFF - TOTAL

(01)	1984 and prior years (02) $'000	1985 (03) $'000	1985 and prior (02) + (03) (04) $'000	1986 (05) $'000	1986 and prior (04) + (05) (06) $'000	1987 (07) $'000	1987 and prior (06) + (07) (08) $'000	1988 (09) $'000	1988 and prior (08) + (09) (10) $'000	1989 (11) $'000	1989 and prior (10) + (11) (12) $'000
Unpaid claims, Dec. 19 84 ... 01	20,381										
Paid during 19 85 ... 02	8,336	10,245	18,581								
Unpaid claims, Dec. 19 85 ... 03	12,032	11,413	23,445								
Excess or (Deficiency) ... 04	13										
Ratio ... 05	0.1										
Paid during 19 86 ... 06	5,695	4,852	10,547	10,324	20,871						
Unpaid claims, Dec. 19 86 ... 07	9,540	6,036	15,576	11,045	26,621						
Excess or (Deficiency) ... 08	(3,190)	525	(2,678)								
Ratio ... 09	(15.7)	4.6	(11.4)								
Paid during 19 87 ... 10	8,699	5,552	14,251	10,031	24,282	1,252	25,534				
Unpaid claims, Dec. 19 87 ... 11	1,279	742	2,021	703	2,724	1,961	4,685				
Excess or (Deficiency) ... 12	(3,628)	267	(3,374)	311	(385)						
Ratio ... 13	(17.8)	2.3	(14.4)	2.8	(1.4)						
Paid during 19 88 ... 14	341	348	689	263	952	633	1,585	1,168	2,753		
Unpaid claims, Dec. 19 88 ... 15	639	459	1,098	636	1,734	947	2,681	1,623	4,304		
Excess or (Deficiency) ... 16	(3,329)	202	(3,140)	115	(347)	381	419				
Ratio ... 17	(16.3)	1.8	(13.4)	1.0	(1.3)	19.4	8.9				
Paid during 19 89 ... 18	300	85	385	103	488	218	706	485	1,191	953	2,144
Unpaid claims, Dec. 19 89 ... 19	649	446	1,095	475	1,570	609	2,179	727	2,906	1,282	4,188 *
Excess or (Deficiency) ... 20	(3,639)	130	(3,522)	173	(671)	501	215	411	207		
Ratio ... 21	(17.9)	1.1	(15.0)	1.6	(2.5)	25.5	4.6	25.3	4.8		

(lines 18 + 19)	22	6,332
Deduct (line 15, column 10)	23	4,304
Total ...	24	2,028

* Including a total of $'000 833 for net incurred but not reported claims, allocated as follows:

	(13)		(14)	
(25)	1989 $ 410	(current year)	1988 $ 187	(1st prior year)
(26)	1987 $ 93	(2nd prior year)	1986 $ 56	(3rd prior year)
(27)	1985 $ 43	(4th prior year)	1984 $ 44	(5th and all prior years)

HARTFORD INSURANCE COMPANY OF CANADA
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1989
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ONE YEAR TEST OF ADEQUACY OF NET PROVISION FOR UNPAID CLAIMS AT PRIOR YEAR END

Class of Insurance		Net Provision for Unpaid Claims — Total				IBNR Component of Net Provision			
		Net provision at prior year end (01)	Net amount paid during the year for claims of prior years (02)	Net provision at year end for claims of prior years (03)	Margin or (Deficiency) (01 – 02 – 03) (04)	Net IBNR at prior year end 05	Net amount paid during the year for IBNR of prior years (06)	Net provision at year end for IBNR of prior years (07)	Margin or (Deficiency) (05 – 06 – 07) (08)
		$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Property - personal	01	172	90	55	26	38	12	35	(9)
Property - commercial	02	496	189	223	84	110	29	68	13
Property - total	03	668	279	278	110	148	41	103	4
Aircraft	04								
Automobile - liability	05	2,356	627	1,611	118	523	27	139	357
Automobile - personal accident	06	82	39	55	(12)	18	1	5	12
Automobile - other	07	63	(10)	5	68	14	8	44	(38)
Automobile - total	08	2,501	656	1,671	174	555	36	188	331
Boiler and Machinery	09								
Credit	10								
Fidelity	11		5	8	(13)		1	2	(3)
Hail	12								
Legal Expenses	13								
Liability	14	955	183	855	(83)	212	13	87	112
Mortgage	15								
Surety	16		2		(2)			1	(1)
Title	17								
Marine	18	180	65	95	20	40	13	28	(1)
Sub-total	19	4,304	1,190	2,907	207	955	104	409	442
Accident and Sickness	20								
Total	21	4,304	1,190	2,907	207	955	104	409	442

Attachment 3

HARTFORD INSURANCE COMPANY OF CANADA
Insurer

1989
Year

Sample Minimum Asset Test for Canadian Company

MINIMUM ASSET TEST

Reference Page		Line	Current Year (01) $'000	Prior Year (02) $'000
	1. Assets Available for Test Purposes			
05	Total Assets	01	16,262	15,160
08	Less: Non-admitted Assets	02	45	53
08	Investment Valuation Reserve and Reserve for Foreign Exchange Fluctuations	03		
	Non-admitted portion of shares of property & casualty insurers (attach details)	04		
05	Deferred Policy Acquisition Expenses	05	312	248
	....	06		
70	Plus: Excess of Market Value over Book Value (page 70, line 08, column 03)	07	1,516	1,663
	....	08		
	Equals: Assets Available for Test Purposes	09	17,421	16,522
	2. Liabilities for Test Purposes			
06	Total Liabilities	10	6,047	6,409
08	Plus: Hail Insurance Surplus Fund	11		
08	Reserve for negative non-cancellable accident and sickness liabilities	12		
50	Reserve for Reinsurance Ceded to Unregistered Insurers (page 50, line 99, column 10)	13		
	....	14		
	....	15		
	Equals: Liabilities for Test Purposes	16	6,047	6,409
	3. Reinsurance Ratio (Accident and Sickness claims are excluded from the calculation)			
40	Gross claims incurred during preceding 12 months (page 40, line 19, column 08 plus column 09)	17	2,028	2,365
40	Portion of line 17 in respect of reinsurance ceded during preceding 12 months (page 40, line 19, column 10)	18	0	(7)
	Reinsurance Ratio (lesser of line 18 ÷ line 17 and 50%)	19	0	0
	4. Margins Required for Test Purposes			
	(a) Accident and Sickness Policies			
45	Margin on claims (15% of unpaid claims and adjustment expenses other than those in respect of instalment claims)	20		
45	Plus: Margin on unearned premiums (15% of unearned premiums other than those in respect of non-cancellable policies or, if applicable, page 69, line 15, column 05)	21	0	0
	Equals: Margin required for Accident and Sickness Policies	22	0	0

Attachment 4
Page 2

HARTFORD INSURANCE COMPANY OF CANADA — Insurer

1989 — Year

MINIMUM ASSET TEST - Continued

Reference Page		Line	Current Year (01) $'000	Prior Year (02) $'000
	4. Margins Required for Test Purposes (cont'd)			
	(b) Policies other than Accident and Sickness Policies			
	(i) Unpaid Claims and Unearned Premiums			
36	Margin on claims (15% of unpaid claims and adjustment expenses)	01	628	646
39	Plus: Margin on unearned premiums (15% of unearned premiums or, if applicable, page 69, line 14, column 05)	02	261	245
50	Excess of "Required Coverage" over "Reserve" for Reinsurance Ceded to Unregistered Insurers (page 50, line 99, column 11 minus column 10)	03		
	Equals: Margin required for Unpaid Claims and Unearned Premiums	04	889	891
	(ii) Premiums Written			
40	Basic margin (15% of gross premiums written during preceding 12 months)	05	584	592
	Plus: Supplementary margin on gross premiums (lesser of 5% of gross premiums written during preceding 12 months and $500,000)	06	195	197
	Equals: Gross margin	07	779	789
	Less: Margin reduction for reinsurance (Gross margin x Reinsurance Ratio)	08	0	0
	Equals: Margin required for Premiums Written	09	779	789
	(iii) Claims Incurred			
16	Basic margin (22% of average annual gross claims incurred during preceding 36 months)	10	588	659
	Plus: Supplementary margin (lesser of 7% of average annual gross claims incurred during preceding 36 months and $500,000)	11	187	210
	Equals: Gross margin	12	775	869
	Less: Margin reduction for reinsurance (Gross margin x Reinsurance Ratio)	13	0	0
	Equals: Margin required for Claims Incurred	14	775	869
	5. Excess of Assets Available Over Assets Required			
67	Liabilities for Test Purposes (page 67, line 16)	15	6,047	6,409
67	Plus: Margin required for Accident and Sickness Policies (page 67, line 22)	16	0	0
	Margin required for policies other than Accident and Sickness Policies (the greatest of above, lines 04, 09 and 14)	17	889	891
	Equals: Assets Required for Test Purposes	18	6,936	7,300
67	**Assets Available for Test Purposes (page 67, line 09)**	19	17,421	16,522
	Excess of Assets Available over Assets Required for Test Purposes	20	10,485	9,222

Attachment 5

Page 1

HARTFORD FIRE INSURANCE COMPANY — Insurer

1989 — Year

Sample Minimum Asset Test for Branch Company

FEDERAL TEST OF ADEQUACY OF DEPOSIT IN CANADA

Reference Page		Line	Current Year (01) $'000	Prior Year (02) $'000
	1. Assets Available for Test Purposes			
	Book value of total investments under control of Minister (page 04 lines 3 + 11 + 24, column 02) or (page 48, line 08, column 01)	01	129,473	127,663
	Less: Non-admitted portion of assets under control of Minister	02		
48, 49	Investment valuation reserve	03	0	47
	Plus: Cash under control of Minister (page 04, line 01, column 02)	04		
	Investment revenue due and accrued on assets under control of Minister (page 04, line 02, column 02)	05	3,015	3,020
	Excess of Market value of total investments under control of Minister over book value (page 49, lines 06 plus 07, column 02 - column 01) or (page 48, line 08, column 03)	06		
	Equals: Assets Available for Test Purposes	07	132,488	130,636
	2. Liabilities for Test Purposes			
05	Total Liabilities (excluding Marine)	08	72,044	75,682
43	Plus: Reserve for reinsurance ceded to unregistered reinsurers	09	13,885	6,773
	Non-resident taxes due and accrued	10	100	100
		11		
	Less: Instalment premiums not in arrears	12	607	400
	Amounts due from agents in respect of business written on or after November 1st (page 23, line 96, column 03)	13	6,915	5,962
	Premiums receivable from policyholders not in arrears	14		
		15		
	Equals: Liabilities for test purposes	16	78,507	76,193
	3. Reinsurance Ratio (Accident and sickness claims are excluded from the calculation)			
	Gross claims incurred during preceding 12 months (page 33, line 18, column 08 plus column 09)	17	42,691	35,325
	Portion of line 17 above in respect of reinsurance ceded during preceding 12 months (page 33, line 18, column 10)	18	15,044	8,668
	Reinsurance Ratio (lesser of line 18 ÷ line 17 and 50%)	19	0.35	0.25
	4. Margins Required for Test Purposes			
	(a) Accident and Sickness Policies			
38	Margin on claims (15% of unpaid claims and adjustment expenses other than those in respect of instalment claims)	20	179	220
38	Plus: Margin on unearned premiums (15% of unearned premiums other than those in respect of non-cancellable policies or, if applicable, page 47, line 25, column 06)	21	107	98
	Excess of Initial deposit requirements over otherwise total requirements (page 47, line 25, column 12)	22		
	Equals: Margin required for Accident and Sickness policies	23	286	318

HARTFORD FIRE INSURANCE COMPANY
Insurer

1989
Year

FEDERAL TEST OF ADEQUACY OF DEPOSIT IN CANADA
(continued)

Reference Page			Current Year (01)	Prior Year (02)
			$'000	$'000
	4. Margins Required for Tests Purposes (cont'd)			
	b) Policies Other than Accident and Sickness Policies			
	(i) Unpaid Claims and Unearned Premiums			
47	Margin on claims (15% of unpaid claims and adjustment expenses)	01	7,433	7,358
	Plus: Margin on unearned premiums (page 47, line 24, column 02 or if applicable, line 24, column 06)	02	2,705	2,556
	Excess of "Required Coverage" over "Reserve" for Reinsurance Ceded to Unregistered Insurers (page 43, line 99, column 10 minus column 09)	03	2,099	1,030
	Excess of Initial deposit requirements over otherwise total requirements (page 47, line 24, column 12)	04	295	300
	Equals: Margin required for unpaid claims and unearned premiums	05	12,532	11,244
	(ii) Premiums Written			
33	Basic margin (15% of gross premium written during preceding 12 months)	06	8,045	8,586
	Plus: Supplementary margin on gross premiums (lesser of 5% of gross premiums written during preceding 12 months and $500,000)	07	500	429
	Equals: Gross margin	08	8,545	9,015
	Less: Margin reduction for reinsurance (Gross Margin x Reinsurance Ratio)	09	2,991	2,254
	Equals: Margin required for premiums written	10	5,554	6,761
	(iii) Claims Incurred			
	Basic margin (22% of average annual gross claims incurred during preceding 36 months)	11	9,037	9,241
	Plus: Supplementary margin (lesser of 7% of average annual gross claims incurred during preceding 36 months and $500,000)	12	500	500
	Equals: Gross margin	13	9,537	9,741
	Less: Margin reduction for reinsurance (Gross margin x Reinsurance Ratio)	14	3,338	2,435
	Equals: Margin required for claims incurred	15	6,199	7,306
	5. Excess of Assets Available Over Assets Required			
45	Liabilities for test purposes (page 45, line 16)	16	78,507	76,193
45	Plus: Margin required for Accident and sickness policies (page 45, line 23)	17	286	318
	Margin required for policies other than Accident and Sickness (the greatest of above, lines 05, 10 and 15)	18	12,532	11,244
		19		
	Equals: Assets required for test purposes	20	91,325	87,755
45	**Assets available for test purposes (page 45, line 07)**	21	132,488	130,636
	Excess of assets available over assets required for test purposes	22	41,163	42,881

Reference Page			Current Year (01)	Prior Year (02)
45	Increase in liabilities over prior year	23	(3,638)	3,447
	Monthly pro-rata increase (line 23 ÷ 12 to nearest thousand dollars)	24	NIL	287

EXPECTED CLAIMS RATIO

The claims ratios shown in column 03 on page 47 are the claims ratios expected under policies issued by the Insurer for the classes of insurance shown, during the unexpired terms of such policies.

Signature

Title or Position

Attachment 6

Suggested Wording:

REPORT OF THE ACTUARY

Policy Liabilities:

In my opinion, the net unearned premium reserve less deferred policy acquisition expenses plus any other reserves as shown in the Annual Statement plus amounts receivable from reinsurers in respect of those policies is an amount at least equal to the amount that will make proper provision for all claims, all claims adjustment expenses, and servicing expenses which are expected to arise on the unexpired portion of business in force at the date of the Statement. I am satisfied that the data utilized are reliable and sufficient for the valuation of these liabilities. I verified the consistency of the valuation data with company financial records.

Claims Liabilities:

In my opinion, the net unpaid claims and adjustment expenses as shown in the Annual Statement plus amounts receivable from reinsurers in respect of those claims is an amount at least equal to the amount that will make proper provision for the ultimate claims and claims adjustment expenses incurred before the date of the Statement. I am satisfied that the data utilized are reliable and sufficient for the valuation of these liabilities. I verified the consistency of the valuation data with company financial records.