SELF-INSURER SOLVENCY AND ESTIMATING THE COLLECTIBILITY OF THE RETROSPECTIVE PREMIUM RESERVE

BIOGRAPHY:

Mr. Brown is an Actuary in the Milwaukee, Wisconsin office of Milliman & Robertson, Inc.. He is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. Brian has substantial experience in evaluating the credit risk associated with alternative funding mechanisms. In addition, Brian is experienced in workers compensation pricing and reserving and was an examination consultant in the recent M&R review of the National Council on Compensation Insurance's data collection and ratemaking operations.

ABSTRACT

The financial hardship on society is similar whether an insurance company or self-insurer becomes insolvent. In fact, the financial hardship may be greater if a self-insurer becomes insolvent as most self-insurers are not covered by guarantee funds.

Several states have various requirements to provide funds for claimants and injured workers in the case of a self-insured entity's bankruptcy. Typically, the state requires self-insurers to post surety bonds or other collateral with the state in order to minimize the burden on society in the case of a bankruptcy. The collateral should be a function of at least the following three factors:

1) The amount of the self-insurers' unpaid claim liability;
2) The financial condition of the self-insured employer; and
3) The variability of the actual unpaid claim liability around the expected value.

This paper describes two statutes in detail that attempt to relate the collateral to the above three factors. In addition, provisions from other state statutes that do a particularly good job of meeting one of the three criteria are discussed.

The paper also discusses the credit exposure associated with writing retrospectively rated policies and outlines a procedure that can be used to estimate a bad debt reserve - for expected premium defaults on retrospectively rated policies - for GAAP statements. Credit exposure refers to the risk that the insurance company will not be able to collect premium when due on expired policies due to the financial condition of the insured. A procedure utilizing Moody's bond default probabilities is used to estimate the bad debt reserve.

The credit exposure is similar to the potential burden on society due to a self-insured's bankruptcy. In the case of a bankruptcy of a self-insurer the burden (of the bankruptcy) is on society. Whereas if a retrospectively rated insured becomes bankrupt, the burden (credit exposure) falls on the insurance company. Therefore, the credit exposure will be a function of the same three factors which should be used to set collateral requirements for self-insurers.

I. INTRODUCTION

This paper describes the methods that states use to regulate self insurers and protect claimants in the case of a self-insurers bankruptcy. Several state self-insurer statutes are discussed and improvements to the statutes are suggested. A procedure is also described that can be used to determine a bad debt reserve for insurance companies - for expected premium defaults on retrospectively rated policies - for GAAP statements.

Several states allow employers and firms to self-insure various insurance exposures. For example, in most states employers can self-insure their workers' compensation exposure. In addition, several states allow hospitals to self-insure their hospital professional liability exposure through a trust mechanism.

The financial hardship on society is similar whether an insurance company or self-insurer becomes insolvent. In fact the financial hardship may be greater if a self-insurer becomes insolvent as most self-insurers are not covered by guarantee funds. Therefore, injured workers or claimants may not be able to receive compensation and society may have to support and care for these individuals.

Several states have various mechanisms to provide funds for claimants and injured workers in the case of a self-insured entity's bankruptcy in order to minimize the burden on society. For example, most states require workers' compensation self-insured employers to post surety bonds with the state insurance department or the state workers' compensation

commission. If the self-insured employer becomes unable to pay claims, the surety would stand in the place of the employer up to the full value of the surety bond. In a similar manner, some states require hospitals to establish trust accounts with banks or provide the insurance department with a letter of credit (LOC). These funds would then be available to satisfy future self-insurance obligations.

This paper describes the need for security for self-insured employers and firms and outlines methods that various states utilize to minimize the burden on society due to a bankruptcy (the burden). In particular the paper describes self-insurance statutes for workers' compensation insurance and for hospital professional liability. The Iowa workers' compensation and Wisconsin hospital liability statutes are highlighted because they appear to work well to minimize the burden.

The last section of the paper describes a procedure that can be used to determine the collectibility of an insurance company's retrospective premium reserve. The retrospective premium reserve is an asset or negative liability depending on the booking procedure the insurance company utilizes. The quality of the asset is dependent on the financial condition of the insureds. For a typical incurred loss retrospective rating plan, an insured receives a return premium at the first retrospective accounting and thereafter the insured pays additional premium to the insurance company as losses develop. If the insured becomes bankrupt, and unable to pay the additional premiums, the burden falls on the insurance company instead of on society, for the insurance

company essentially is "lending" the insured the difference between ultimate premium and the collected retrospective premium. When the insurance company can accurately determine the collectibility of its retrospective premium reserve, it can better estimate its potential liability.

II. DESCRIPTION OF THE BURDEN

The burden refers to the possibility that the self-insurer will not be able to pay claims (due to its poor financial condition) and society will suffer either because the claimants' will increase their use of governmental programs (e.g. Welfare), and/or the claimants will not receive compensation for their injuries.

Three key concepts which impact the potential burden are:

1) Magnitude of the exposure;
2) Quality of the exposure; and
3) Bankruptcy mechanism.

The magnitude refers to the absolute amount of the exposure (e.g. the outstanding claim liability related to the self-insured period). For example, for both workers' compensation and hospital professional liability, claim payments are made over an extended period of time and the unpaid claim liability can amount to a multiple of the current years' premium equivalent.

The quality refers to how likely it is that the self-insurer will be able to pay claims when due. The quality is a function of the financial condition of the insured. In general, a self-insured firm in strong financial condition at the inception of the self-insured period is less likely to become insolvent than a firm in poor financial condition.

The bankruptcy mechanism refers to the procedure that the state has in place to compensate claimants in the case of a bankruptcy of a self-insured employer or firm. States currently use surety bonds or other forms of collateral (e.g. LOC's, trust account) or a guarantee fund.

Exhibit 1 graphically displays the projected claim payments for a hypothetical account for a particular self-insured year for workers' compensation. As the graph displays, at the end of the self-insured period only 17% of the ultimate losses are paid. Thus if the insured were to declare bankruptcy at this time and the state did not have a bankruptcy mechanism the burden on society would equal 83% of the ultimate losses less any recovery in bankruptcy proceedings. However, the claimants represent unsecured creditors and in general unsecured creditors on average only collect about 8% of their claim in a bankruptcy proceeding[1].

Exhibit 2 displays the magnitude of the potential burden assuming that the hypothetical account self-insures for three annual periods and

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[1] R.A. Brealy, S.C. Myers, Principles of Corporate Finance, Third Edition, McGraw-Hill, Ch. 30, pg. 42

1) Ultimate losses are $100 a year;

2) There is no claim inflation or payroll trend;

3) Losses following the payment pattern in Exhibit 3; and

4) In year four and subsequent years, the self-insurer commercially insures.

As Exhibit 2 displays, after the end of the three year self-insured period, the self-insured employer has paid $120 in workers' compensation payments and the unpaid claim liability is $180. If the ultimate losses were $200 per year, the unpaid claim liability at the end of the third year would be $360; therefore, the larger the self-insured employer, all other things being equal, the larger the magnitude of the potential burden.

III. THE IOWA WORKERS' COMPENSATION EXAMPLE

This section of the paper describes the procedures that Iowa uses to minimize the potential burden for workers' compensation self-insurers. The initial filing requirements for self-insurers in Iowa are:[2]

1) A parental guarantee (if applicable);

2) The most recent audited financial statement;

3) An actuarial opinion regarding reserves; and

4) Loss experience and payroll information for Iowa.

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[2] "The Self-Insurance Manual" by C. C. Lilly and H. G. Boggs, NILS Publishing Company summarizes each state's statute related to workers' compensation self-insurance requirements.

The parental guarantee is a promise by the parent corporation to "guarantee" the workers' compensation payments of subsidiaries. Most states require parent corporations to guarantee the payments of subsidiaries. This procedure will minimize the burden by committing not only the subsidiaries' assets but also the parents' assets to guarantee the self-insurers workers' compensation payments.

The second requirement, a recent audited financial statement, allows the state to financially underwrite the potential (or current) self-insured employer in order to determine if the employer is financially strong enough to self-insure. Again, almost all states require audited financial statements and presumably utilize the statements to financially underwrite the self-insured employer. In fact a few states even specify financial ratios that must be satisfied for the employer to self-insure.

In particular, the Vermont regulations require that the applicant must meet target ratios in six categories to self insure. There are target ratios for minimum

1) cash flow,
2) liquidity,
3) working capital,
4) net worth,
5) profitability, and
6) turnover.

It is appropriate for states to financially underwrite potential and current self-insurers. This procedure will increase the quality of the potential exposure.

The next initial filing requirement in Iowa is an actuarial opinion on the self-insured employer's reserves. Iowa is relatively unique with respect to this requirement. Minnesota and Utah (if the applicant's Dun and Bradstreet rating is below a certain level) also require actuarial opinions. These states use the actuarial opinion on reserves to set collateral amounts which reflect the self-insured employers unpaid claim liability. The author believes that actuaries are the most qualified to determine the unpaid claim liability. Thus the state can set the collateral amount equal to the unpaid claim liability and on an expected value basis the potential burden is zero.

The next requirement, of requesting loss and payroll experience, allows the Insurance Department to determine the reasonableness of the collateral. States should request loss and payroll information for self-insured employers to allow the state to independently review the unpaid claim liabilities.

Some states have established additional requirements in order to financially underwrite the self-insured employer.

Oklahoma, for example, is one of several states which require employers to be in business continuously for five years. In general, the longer a

firm has been in business the less likely it is to fail. Most bankruptcies are attributable to firms in business less than five years. Thus, this requirement is used to screen potentially financially weak firms. Oklahoma also establishes minimum requirements with respect to:

1) Payroll ($1 million for the previous three years);
2) Stockholders' equity (not less than $500,000); and
3) Number of employees (at least 100).

If a self-insured employer in Iowa meets the initial filing requirements then two additional requirements may be required with respect to:

1) Excess insurance; and
2) Security or bonding.

The rational for excess insurance is related to the predictability of the self-insured employer's losses. Excess insurance may make the loss experience more predictable from year to year and may reduce the probability of an insolvency due to poor loss experience in one particular year. The Iowa statute may require excess insurance if the employer has:

1) insufficient liquid assets or retained earnings;
2) a deteriorating financial condition;
3) higher than average loss experience;
4) loss experience which is higher than the company can withstand; or

5) any other relevant considerations.

Thus, the statute attempts to identify employers that are more likely to become insolvent due to poor loss experience .

Some states are more strict than Iowa and require specific per occurrence excess insurance and may require annual aggregate excess insurance for all self-insureds. For example, Kansas requires a per-occurrence retention between $50,000 and $3 million depending on the financial condition of the applicant.

The importance of excess insurance may best be illustrated through an example. Assume that a self-insurer has expected annual workers' compensation losses of $80,000; a net worth of $240,000; and will generate no net income during the next year. Exhibit 4 displays the loss ratio distribution supporting the NCCI Table M charges. As the exhibit displays, an insured with expected losses of $80,000, will sustain losses in excess of $240,000 six percent of the time. If the self-insured employer in this example sustains losses above $240,000, the employer is technically bankrupt.

This example illustrates the importance of excess insurance for self-insureds with:

1) A relatively large variation in expected losses; and

2) The self-insured exposure representing a significant percentage of net worth.

If the self-insured in the above example had purchased annual aggregate excess coverage of $1 million excess of $120,000, then the probability of bankruptcy due to a year with poor loss experience would be insignificant. Based on Table M the expected value of the aggregate losses above $120,000 are $22,560. Therefore, the reinsurance premium may be affordable and necessary for the self-insured employer in this example.

The last portion of the Iowa statute that will be discussed is the security requirements. As most states do not have guarantee funds for self-insured employers, the security or collateral is the mechanism the states have established to compensate claimants in the event of a self-insured employers bankruptcy. The collateral should be a function of at least the following:

1) The amount of the unpaid claim liability;
2) The financial condition of the self-insured employer; and
3) The variability of the actual unpaid claim liability around the expected value.

The Iowa statute is displayed on Exhibit 5 and the security formula is contained in section 57.3(1). The Iowa formula attempts to address the above mentioned three points.

The first component of the Iowa formula computes the average annual workers' compensation payments for the most recent three year period. This average is then multiplied by 2.0. This procedure adds conservatism to the process and attempts to address the issue of the variability of actual losses around the expected value. To this product the amount of reserves related to fatalities, permanent total and permanent partial claims is added. Thus, the current unpaid claim liability for certain claims is incorporated into the formula. The sum (line 4) represents a conservative estimate of the self-insured employer's unpaid claim liability. This sum is then multiplied by a ratio which varies from 0 to 1.00 in order to determine the amount of collateral for the self-insured employer.

The ratio is computed based on three financial ratios and a ratio of 0.00 indicates that the firm is in strong financial condition. The ratio gradually increases to 1.00 as the indicated financial condition of the firm deteriorates. The ratio calculation is displayed on Exhibit 5 - page 2. This is a cook book type approach to determine a firm's financial condition and therefore some firms may be misclassified; however, the general concept is sound.

In addition, the insurance department does not rely solely on the above mentioned formula in the determination of collateral. As was mentioned previously, Iowa requires an actuarial opinion regarding reserves and this opinion is one factor used to determine the amount of collateral. In addition, the department reviews firm's financial statements and may

factor other financial information into the determination of collateral. Also, low security amounts relative to the size of the unpaid claim liability are reviewed by the department. In addition, the minimum bond requirement is $200,000. The above mentioned factors are all considered in the final security determination.

It appears that states use three basic approaches to establishing security requirements. First, some states require a flat dollar amount regardless of the size and financial condition of the self-insured employer. This approach is faulty as it does not match the collateral with the potential burden.

Second, some states require that collateral be equal to a percentage of case reserves. For example, under certain circumstances Alaska requires the collateral to be equal to $300,000 or 125% of the total outstanding accrued liabilities, whichever is greater. As the percentage of case reserves is greater than 100%, the formula attempts to estimate IBNR (or a provision for adverse development). Therefore, it appears that the formula attempts to match the collateral with the potential burden. However, the formula does not reflect the insured's financial condition in the security determination except to the extent that some employers are not allowed to self-insure due to unacceptable financial condition.

Lastly, many states utilize a formula approach where the security amount is a function of the recent loss experience of the insured. The formula attempts to estimate the total reserves (case reserves plus IBNR). The

security amount is then equal to the total reserves increased by a factor to incorporate contingencies. For example, the Kansas formula includes a development factor for increased medical costs. The factor varies between 1.2 and 1.45 depending on the size and financial strength of the company. This approach attempts to match the collateral requirements to the potential burden.

Most states reserve the right to vary from any mentioned formula approach under certain circumstances. For example, the California statute states that the security amount may be increased at the discretion of the director.

Two additional points related to security requirements are:

1) The type of employers excluded; and
2) The list of acceptable types of security.

First, in general, most states do not require security for municipalities and political subdivisions. The rational is that these employers have taxing authority and therefore a small probability of bankruptcy.

Second, many states do not allow employers to post LOC's in order to meet the security requirement. This requirement is punitive to employers. If a surety bond is required the self-insured employer in most cases:

1) Pays an insurance company a premium for issuing the surety bond; and

2) The insurance company requires a LOC (for a portion of the surety bond) as collateral for the surety bond and the bank requires a fee for issuing the LOC.

Thus, the self-insured employer pays twice.

States should financially underwrite potential and current self-insurers and not allow financially weak firms to self-insure. The collateral for self-insurers should be a function of:

1) The unpaid claim liability;
2) The financial condition of the self insurers; and
3) The variability of the actual claim liability around the expected value.

The Iowa statute meets all of the above criteria with the possible exception of point 3. The medical professional statute discussed in the next section explicitly addresses the variability of actual losses around the expected value.

IV. WISCONSIN MEDICAL PROFESSIONAL SELF INSURANCE STATUTE

Wisconsin has established well defined standards that a health care provider must meet to self-insure their medical professional liability exposure. The Wisconsin standards provide a great deal of protection for claimants through the bankruptcy mechanism. The Wisconsin statute requires the provider to deposit (fund) a specific amount of cash into a

trust account and also provide the state with a LOC under certain circumstances. Both the trust account and LOC are collateral which can be exercised in the case of a bankruptcy.

The collateral required relative to the expected value of the outstanding claim liability is greater for medical professional liability in Wisconsin than under virtually any state's workers' compensation statute. The conservative nature of the statute is not unreasonable given the greater uncertainty associated with medical professional occurrence coverage. As was discussed previously, the collateral should be a function of the variability of the actual unpaid claim liability around the expected value. Exhibit 6 displays the distribution of actual losses for workers' compensation and medical professional liability around the expected value for a one year policy period for two hypothetical accounts.

The initial filing requirements under the Wisconsin statute related to bankruptcy protection are:

1) The provider must provide an actuarial estimate of the liabilities which will be incurred by the self-insured plan in the first year of operation and a description of how the self insured plan will be funded;

2) An actuarial feasibility study which includes a 5-year projection of expected results; and

3) The providers most recent audited annual financial statement.

These requirements will make the provider aware of the costs involved in self-insuring and allow the state to determine if the provider is financially strong enough to self-insure.

The security for most providers will consist of two specific types of collateral:

1) A trust account; and
2) A LOC

A trust account is an account established with a bank; whereby, the bank is the trustee for the account and funds can only be withdrawn from the account to pay costs associated with the self-insured plan.

Initially, the provider must deposit cash in the trust equal to the undiscounted first self-insurance year's estimated liability, plus a risk margin to bring the total funds in the trust to the 90% undiscounted confidence level.

In addition, if the amount deposited in the trust is less than $2,000,000 the provider also is required to provide the state with a LOC equal to the difference between the amount in the trust account and $2,000,000.

As was discussed in Section III, collateral should be a function of:

1) The amount of the unpaid claim liability;
2) The financial condition of the self-insured employer; and
3) The variability of the actual unpaid claim liability around the expected value.

The Wisconsin statute addresses both the first and third points. The security is related to the unpaid claim liability and provides for adverse loss experience (by requiring funding at the 90% confidence level). In addition, for some insureds an extra provision for adverse experience is incorporated by requiring a LOC.

The statute does not explicitly address the self-insured's financial condition, however, the provisions of the statute make it very unlikely that the security would not be sufficient to pay future claims considering that:

1) The security amount is established at a minimum at the 90% undiscounted confidence level of the unpaid claim liability; and

2) Due to the extended payment pattern for medical professional liability substantial investment income will be earned on both the trust account and the LOC draw.

In subsequent self-insured years the statute provides for funding in the trust account to be at a minimum:

1) At the 90% undiscounted confidence level during the first 5 years of operation of the self-insurance plan; and

2) At the 75% undiscounted confidence level after the plan has been in operation for 5 years.

The statute does not require excess insurance because Wisconsin has a mandatory excess insurance program through the Patients Compensation Fund which provides coverage excess of $400,000 per claim and $1,000,000 in the aggregate per medical facility.

The Wisconsin statute for medical professional appears to be unique with respect to:

1) The amount of security required; and
2) The detail of the statute.

It appears that many states do not require security and have not established detailed funding requirements for facilities that self-insure their medical professional liability exposure. The lack of a security requirement may be based on the fact that historically many hospitals have been owned by large religious orders and therefore the possibility of bankruptcy was unlikely. However, given the current trends in the health care field, (e.g., increased ownership of health care providers by non-religious private corporations and reduced federal payments for

services) states may want to consider establishing detailed security requirements for facilities that self-insure.

V. COLLECTIBILITY OF RETROSPECTIVE PREMIUMS

A) Introduction

"Credit exposure" refers to the risk that the insurance company will not be able to collect premiums when due on expired policies. This risk is associated with retrospectively rated insureds due to the nature of the retrospective rating plan. For retrospectively rated policies, the insurance company typically will collect premium based on paid losses (and in some cases paid loss plus case reserves) from the insured until all claims are closed or until the insured and insurance company agree on a price to end the retrospective accountings. Thus, if the insured files for bankruptcy, the insurance company will not be able to collect additional retrospective premiums when due. These additional premiums represent a credit exposure to the insurance company. Typically, the insurance company is obligated to pay claims associated with the expired policy even though additional premiums are not forthcoming from the insured.

Two terms associated with credit exposure are magnitude and quality. The magnitude of the credit exposure refers to the absolute amount of additional premiums due the insurance company on expired policies. For incurred loss retrospectively rated plans, an insured typically receives a return premium at the first retrospective accounting and thereafter the insured pays additional premiums to the insurance

company as losses develop. This procedure is similar to the insurance company "lending" the insured the difference between ultimate premium and the collected retrospective premium. The difference between the ultimate premium and the collected premium is the magnitude of the credit exposure.

For an incurred loss retrospective rating plan, the insurance company collects standard premium during the first 12 months of the policy period. 18 months after the beginning of the policy period and annually thereafter a retrospective accounting is performed via the following formula:

$$R_t = (B + (C \times E) + (C \times L_t)) \times T$$

R_t is the retrospective premium at time period t and is usually subject to a maximum premium and a minimum premium. The maximum and minimum premiums are usually factors of the standard premium.

B is the basic charge and normally covers expenses, profit, and the insurance charge. The basic charge usually is a factor multiplied by standard premium. The factor C is called the loss conversion factor and includes a provision for loss adjustment expenses. E is the charge for limiting losses, at the per claim limit, that enter the retrospective rating formula. T is the tax multiplier and includes a provision for the premium tax. For combined dividend/retrospective rating plans, the tax multiplier and basic charge may include a provision for assigned risk assessments.

L_t is the aggregate case incurred loss amount at time period t limited by the per claim amount. Thus, there is no provision for IBNR reserves in the standard incurred loss retrospective rating plan.[3] The magnitude of the credit exposure is proportional to IBNR.

Exhibit 7 graphically displays the projected transfer of funds for a standard incurred loss retrospective rating plan. In this example, it is assumed that the insured is written for a one year term and then does not renew its coverage. The retrospective rating parameters and incurred loss development pattern are contained on Exhibit 8. For simplicity, I assumed that the tax multiplier and loss conversion factor are both equal to one. These assumptions do not affect the conclusions of the paper. Exhibit 9 displays the figures underlying the graph on Exhibit 7. The insurance company collects $2.0 million in standard premium during the first year. The first retrospective accounting is performed with incurred losses evaluated as of 18 months and $674,000 is returned to the insured.[4] Over the next seven years, the insurance company will collect the difference between the ultimate retrospective premium ($2.1 million) and the first retrospective accounting premium ($1.326 million) or $774,000. The $774,000 is the credit exposure as of 24 months and in essence represents a loan by the insurance company to the insured.

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[3] IBNR is defined to include both incurred but not reported losses as well as development on existing case reserves.

[4] The example in this paper assumes that the billing and collection process takes 6 months. Therefore the insurance company will return funds to the insured as of 24 months.

The credit exposure decreases as losses develop (assuming the insured pays the premium when due). The exposure equals zero when incurred losses equal ultimate losses. The credit exposure equals $774,000 or 38.7% of standard premium as of the first retrospective accounting in this example. If the insured filed for bankruptcy 25 months after the inception of the retrospectively rated policy (one month after the insurance company returned funds to the insured), the insurance company could suffer an incremental earnings loss equal to $774,000.

The magnitude of the credit exposure for a specific insured at a specific point in time depends upon how much premium is yet to be collected. In general the quicker the premium is collected the smaller the credit exposure. Thus plans with low loss limits will have a smaller credit exposure. In addition, the faster the incurred pattern the quicker premium will be collected and the lower the credit exposure.

Exhibit 10 graphically displays the situation where the insurance company insures the above mentioned risk for three years at a standard premium of $2.0 million a year and then the insured non-renews. Exhibit 11 displays the numerical backup for Exhibit 10. The collected premium at year two of $3.326 million equals the first retrospective accounting premium of $1.326 million for the first year of the three year period plus the $2.0 million in standard premium for the second year of the three year period. The credit exposure is largest at year four, after all policies have had a retrospective

accounting. The credit exposure at year four (four years after the inception of the first policy) is $1.53 million or 76.5% of the annual standard premium.

The NAIC has recognized the significance of the credit exposure and has altered the convention Blank to provide more information on credit exposure. The 1988 convention Blank was altered to display the amount of additional premium that the insurance company anticipates collecting on retrospectively rated plans. Line 9.3 on page 2 of the Blank or line 33 of page 8 displays the additional premium amount (accrued retrospective premium). The Blank also requires companies to display the amount of letters of credit, collateral and other funds that secure the accrued retrospective premiums (General Interrogatory # 31). Also, the NAIC was considering changing the 1991 blank to require companies to take a surplus penalty for 10% of the amount by which the accrued retrospective premium is not secured. Thus the NAIC is recognizing the possibility that the additional premiums due may not be collectible. The collectibility of the additional premium is a function of the quality of the credit exposure.

Francis Hope stated that "negative reserves, i.e., the anticipation of additional premiums due the company, [should] be included in the annual statement, provided that one is fully confident that the money

is truly forthcoming."[5] Mr. Hope probably intended this statement to refer to the accuracy of the retrospective premium reserve, however; it is equally important that the monies due the insurance company be collectible. Amounts due the insurance company may be uncollectible due to the insured's financial condition.

The quality (collectibility) of the credit exposure is largely determined by the insured's financial condition. If the insured files for bankruptcy the insurance company may not be able to collect additional premiums. Clearly, an insured in strong financial condition at policy inception is less likely to file for bankruptcy in the future than an insured in poor financial health at policy inception.

Nationally the quality (collectibility) of the credit exposure has decreased as the financial strength of American companies has decreased. The middle 1980's saw a large increase in the number of Leveraged Buy Outs (LBO's). The LBO activity resulted in companies exchanging debt for equity and therefore the financial strength of companies in general has decreased. Bonds rated Caa by Moody's, the bonds closest to default, increased from $7.2 billion at 12/87 to $23.7 billion by 3/90.[6] Also for non-financial corporations, net interest expense as a percentage of earnings before interest and

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[5] Francis J. Hope, discussion of "Reserving for Retrospective Returns" by W. J. Fitzgibbons PCAS LIII, p. 185

[6] Moody's Special Report: "Corporate Bond Default and Default Rates", April, 1990

taxes rose from 18.2% in 1979 to 42.9% by year-end 1989. This clearly displays the decrease in credit quality of American corporations. Thus insurance companies may not be able to collect the additional retrospective premiums due from policies written during the 1980's as relatively more insureds file for bankruptcy.

B) BAD DEBT RESERVE

Due to the fact that some insureds will default on retrospective premium payments, it may be appropriate for insurance companies to establish a bad debt reserve - for expected premium defaults on retrospectively rated policies - for GAAP statements. In order to establish this reserve, three quantities are needed:

1) The retrospective premium reserve by insured;
2) The premium collection pattern for the insured; and
3) The probability that an insured will not be able to pay premiums when due.

It is assumed that the first two quantities are known. Several procedures can be used to estimate the retrospective reserve by account and the payment pattern by account. For accounts that have had a retrospective accounting performed, average loss development factors (which vary by state, line, and loss limit) can be used to estimate ultimate losses which are used to determine the ultimate retrospective premium. In addition, some accounts may be large enough to incorporate their own loss development patterns in

estimating ultimate losses. The retrospective premium paid to date can be subtracted from the ultimate retrospective premium in order to derive the retrospective premium reserve. Average or account specific factors can be utilized to model the future retrospective premium payments.

For accounts that have not yet had a retrospective accounting performed, several methods can be used in order to estimate the ultimate retrospective premium by account.

1) Adjust the estimated ultimate losses for prior years for changes in exposure and claims inflation. Ultimate losses will then determine the ultimate retrospective premium; or

2) Use standard premium as an estimate of the ultimate retrospective premium.

Again, average or account specific patterns can be utilized to model the projected flow of funds between the insurance company and the insured.

This paper suggests using Moody's bond default probabilities as a proxy for retrospective premium defaults[7]. The insurance company or auditor may want to introduce their own estimate of the default probability and will be required to do so for

[7] IBID 5

companies not rated by Moody's. Another method to estimate the probability of a premium default is to utilize a financial model.[8]

Moody's studied bonds by initial rating over a 20 year period in order to determine default probabilities by year and initial rating. Part of the Moody's table is reproduced below:

AVERAGE CUMULATIVE DEFAULT RATES
(YEARS)

BOND RATING	1	2	3	4	5	6
Baa	0.2%	0.5%	0.9%	1.3%	1.7%	2.2%
Ba	1.7%	3.7%	5.5%	7.2%	8.9%	10.4%
B	7.0%	11.8%	15.9%	18.9%	21.1%	23.0%

The interpretation of the 23.0% for year 6 for Bonds with a senior unsecured bond rating of B is that 23.0% of the bonds rated B at time period t will default by time period t+6.

The Moody's probabilities are somewhat conservative for premium payment defaults because:

[8] E.I. Altman "Financial Ratios, Discrimination Analysis and the Prediction of Corporate Bankruptcy", Journal of Finance, 23: 589-609 (September, 1968)

1) Moody's defined default as any missed or delayed interest or principal payment; and

2) Any funds received through the bankruptcy proceeding are ignored.

The bad debt reserve can be calculated based on the Moody's bond default probabilities and the expected stream of premium collections.

Exhibit 12 displays a sample bad debt reserve calculation for an account, two years after policy inception. It is assumed that the account's bonds are rated B two years after policy inception. Column (1) displays the collected premium pattern from Exhibit 9. Column (2) displays the incremental collected premium. Column (3) displays the cumulative default probabilities for an account with a bond rating of B two years after policy inception. Column (4) is the expected incremental default amount and is equal to column (2) times column (3). For this account the undiscounted bad debt reserve is $97,630 or 12.6% of the retrospective premium reserve of $774,000 as of the first retrospective accounting.

Three factors which will significantly impact the bad debt reserve are:

1) The type of retrospectively rated plan;
2) The amount of collateral; and
3) The financial condition of the insured.

For a paid loss retrospectively rated plan, the premium is collected much slower and therefore the expected default amount is much larger. Exhibit 13 displays the projected transfer of funds for the account displayed on Exhibit 12 with the modification that the retrospective rating plan is based on paid losses instead of incurred losses.

The premium bad debt reserve is $143,760 for the paid loss plan or 47% greater than the amount for the incurred loss plan of 97,630 as of the first retrospective accounting.

The second factor that will impact the bad debt reserve is the amount of collateral the insurance company holds to offset the bad debt reserve. For example, if for the account displayed on Exhibit 13 the insurance company had collateral (e.g., surety bond or LOC) for $100,000 for the entire 10 year period then the expected default amount would only be 47,958[9]. The bad debt calculation should be computed on an account by account basis and collateral should be used to reduce the bad debt reserve on an account by account basis (and for some years only on an account and policy year combination). In other words, the collateral should be matched with the account (and possibly year) that it covers according to the finance agreement.

For accounts which have not yet had a retrospective accounting, the premium collection vector must be estimated. Based on the factors

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[9] 47,958 = (398,000-100,000) x .07 + (300,000-100,000) x .118 + (122,000-100,000) x .159

contained on Exhibit 8, Exhibit 14 displays the expected premium payments over the life of the policy period. On Exhibit 14, it is assumed that the insurance company financially underwrites the risk and therefore the probability of bankruptcy is insignificant during the first two years. In addition, if the insured declared bankruptcy during the first 18 months (before a retrospective accounting is performed) there is a legal question as to whether the insurance company is obligated to return funds as of the first retrospective accounting. Therefore for illustrative purposes it is assumed that the probability of a bankruptcy during the first two years after policy inception is zero.

For the account displayed on Exhibit 14 the bad debt reserve is 149,000 as of policy inception. The .159 default probability for the insured on Exhibit 14 is the probability that the insured will default during the three year period after policy inception.

As was discussed previously, the bad debt reserve is largely a function of the financial condition of the insured. Exhibit 15 is similar to Exhibit 14 except the insured has a bond rating of Baa (investment grade). For this account the bad debt reserve is only 11,660 or 1.5% of the retrospective premium reserve.

In order to establish an overall bad debt premium reserve, the above calculations would be performed by account and policy year.

Collateral, if valid and collectible, would then be used to reduce the reserve for a specific account and policy year combination. The amounts would then be summed by account to produce the overall reserve. The company or auditor performing the calculation needs to estimate default probabilities by account and calendar year. While Moody's default probabilities have been used in this paper not all companies are rated by Moody's.

Insurance companies can also use the concepts discussed in this section to price for the credit exposure in order to have funds available to offset the bad debt reserve. A procedure to price for the credit exposure is outlined in "Pricing for Credit Exposure".[10]

[10] This paper is not yet published. If anyone is interested they can receive a copy from the author.

Exhibit 1

WORKERS' COMPENSATION
PROJECTED PAID LOSS PATTERN

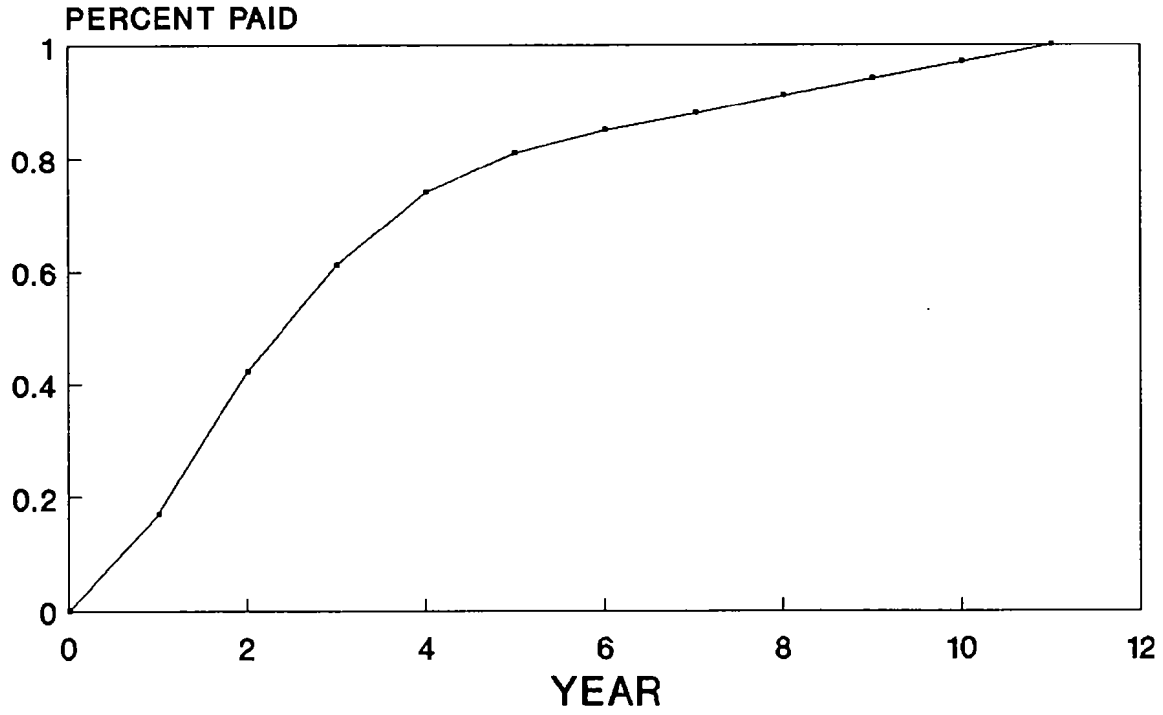


Exhibit 2

WORKERS' COMPENSATION
THREE YEAR UNPAID CLAIM LIABILITY

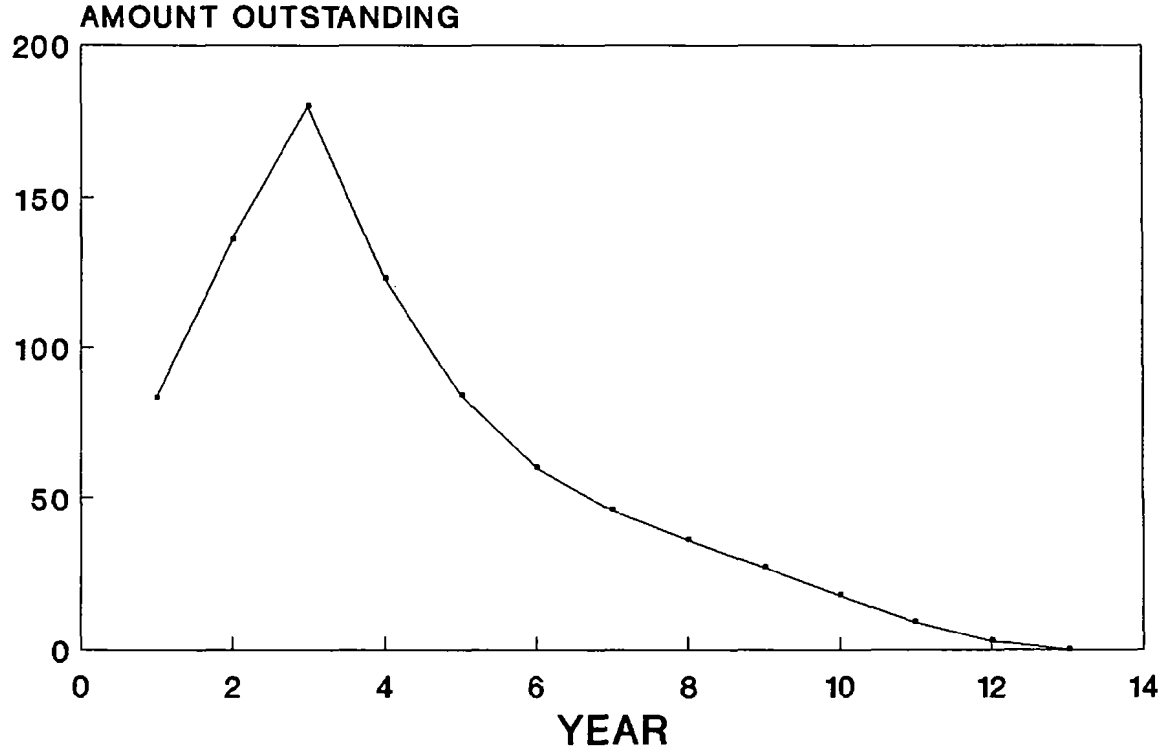


Exhibit 3

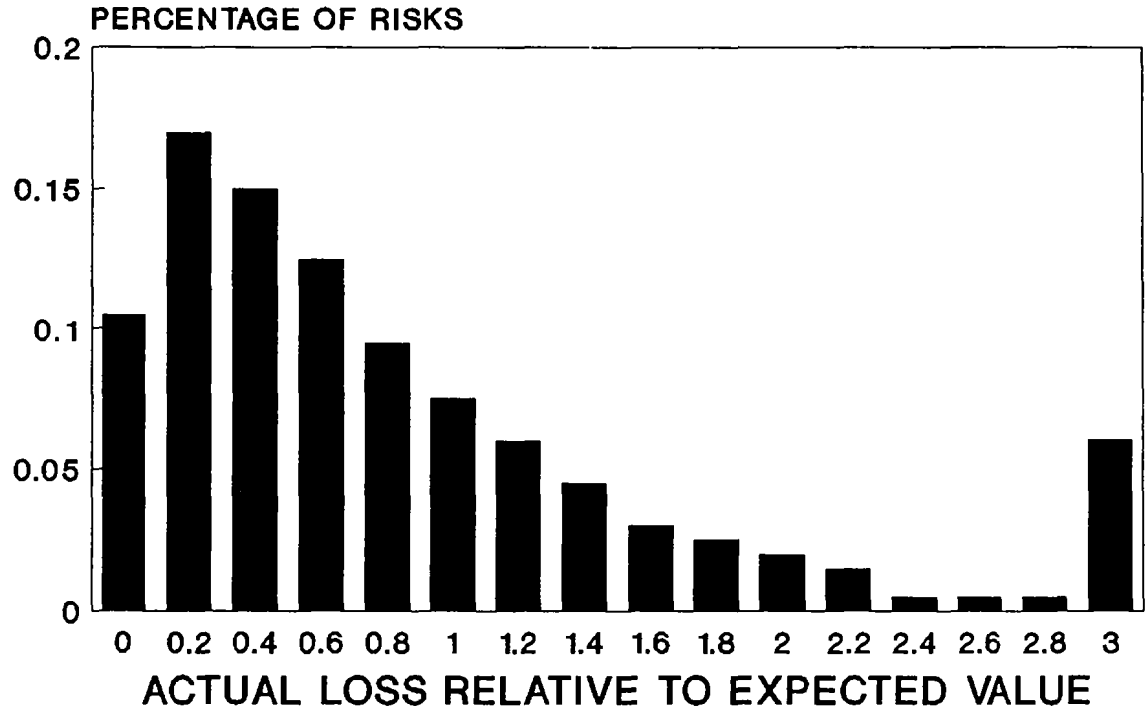
WORKERS' COMPENSATION

LOSS PAYMENT PATTERN

($000's)

Number of Years From Inception of Exposure	Payout Pattern	Percentage Outstanding
1	17%	83%
2	42	58
3	61	39
4	74	26
5	81	19
6	85	15
7	88	12
8	91	9
9	94	6
10	97	3
11	100	0

WORKERS' COMPENSATION
DISTRIBUTION OF RISKS



CHAPTER 57
WORKERS' COMPENSATION SELF-INSURANCE FOR INDIVIDUAL EMPLOYERS
[Prior to 10/22/86, Insurance Department(510)]

191—57.1(87,505) General provisions.

57.1(1) The purpose of this chapter is to provide general guidelines for the approval of self-insurance for workers' compensation liability for individual employers.

57.1(2) The authority to promulgate these rules is found in Iowa Code section 505.8.

57.1(3) Certificates of relief from insurance shall not exempt an employer from Iowa Code chapters 85, 85A, 85B, 86 and 87.

57.1(4) The state of Iowa shall be exempt from the requirements of this chapter.

57.1(5) A political subdivision of the state filing for a certificate of relief from insurance under this chapter shall be exempt from the requirements of subrule 57.3(1), but must comply with the other provisions of this chapter.

191—57.2(87,505) Definitions.

57.2(1) *"Commissioner"* shall mean the commissioner of the insurance division of Iowa, appointed by the governor pursuant to Iowa Code section 505.2.

57.2(2) *"Division"* shall mean the insurance division of Iowa.

57.2(3) *"Employer"* shall be defined as set forth in Iowa Code section 85.61.

57.2(4) *"Self-insurer"* shall mean an employer who has been granted relief from the requirement of insurance by the commissioner after having complied with the relevant portions of this chapter but shall not include an employer who is a member of a group of employers under chapter 56 of the rules of the division.

57.2(5) *"Insolvent"* or *"insolvency"* means the inability of a workers' compensation self-insurer to pay its outstanding lawful obligations as they mature in the regular course of business, as may be shown either by an excess of its liabilities over its assets or by its not having sufficient assets to insure all of its outstanding liabilities after paying all accrued claims owed by it.

57.2(6) *"Parent company"* shall mean a company that owns a least twenty percent (20%) of the outstanding stock of another company.

191—57.3(87,505) Requirements for self-insurance. To qualify to receive a certificate of relief from insurance, an employer must satisfy the following requirements:

57.3(1) File with the division an annual surety bond issued by an insurance company licensed to do business in the state of Iowa in an amount determined by applying the formula below, but in no case shall the bond be less than $200,000 or, if an employer cannot obtain a bond, then any other security such as cash or negotiable securities which is agreeable to the commissioner, in an equal amount. Such surety bond shall be in the form prescribed by the commissioner and, in the event of insolvency of the employer, shall be payable to the division to ensure the payment of the employer's workers' compensation liabilities in the same manner as if the division were such employer, subject to the dollar limitation of such surety bond.

The following formula will be used to determine the appropriate amount of security required:

a. Determine the following three ratios:

(1) Current assets: Current liabilities

(2) Capital + retained earning (net of treasury stock) as a percentage of sales (less discounts)

(3) Long term debt: Capital + retained earnings

b. Upon determination of the value for the above ratios, points will be calculated from the following tables:

(1) Current assets to current liabilities
2 : = 6 Points
1.75 : = 5 Points
1.6 : = 4 Points
1.4 : = 3 Points
1.25 : = 2 Points
1.1 : = 1 Point
1 : = 0 Points
(2) Equity to sales
20% = 6 Points
17.5% = 5 Points
13.5% = 4 Points
10% = 3 Points
8.5% = 2 Points
7% = 1 Point
5% = 0 Points
(3) Long term debt to equity
1 : 2 = 6 Points
1 : 1.75 = 5 Points
1 : 1.6 = 4 Points
1 : 1.4 = 3 Points
1 : 1.25 = 2 Points
1 : 1.11 = 1 Point
1 : 1 = 0 Points

c. Total the number of points for the three ratios and assign the appropriate percentage:
18 Points = 0%
16 - 17 Points = 20%
14 - 15 Points = 40%
12 - 13 Points = 60%
9 - 11 Points = 70%
less than 9 Points = 100%

d. The amount of the required security shall then be calculated as follows:
(1) Determine the three years average of medical payments and compensation paid under the Workers' Compensation Laws (If fiscal year, specify dates _____ through _____.)

Year 1	Year 2	Year 3	Total
$ _____	+ _____	+ _____	= $ _____

Divide the total by 3 = $ _____
(2) Multiply this average by 2 = $ _____
(3) Enter the total amount of compensation for fatalities and permanent disabilities, both permanent total and permanent partial for which the employer is presently liable but has not paid, including medical reserves. $ _____
(4) Add lines 2 and 3 $ _____
(5) Multiply line 4 by the percentage determined in subrule 57.3(1)"c." This, when rounded to the nearest thousand, will be the security required. _____

57.3(2) For a private employer, a parental guarantee, completed on forms provided by the division, to cover statutory losses and any loss adjusting expense is required from any parent company.

a. The parental guarantee shall provide for giving the commissioner sixty (60) days' notice for cancellation. Once notice is given, the division reserves the right to require additional security to be obtained prior to the effective date of the cancellation.

b. For a subsidiary that is to be sold, which desires to avoid cancellation of the certificate of relief from insurance, it must file pro forma financial statements representing the condition of the subsidiary before and after sale, sales agreement, financial statement of acquiring company and the parental guarantee of acquiring company.

57.3(3) Each employer shall have within its own organization ample facilities and competent personnel to service its own program with respect to claims, administration, loss prevention, loss control, safety engineering and rehabilitation services for injured employees or shall contract with a service company to provide these services.

191—57.4(87,505) Additional security requirements.

57.4(1) If at any time the commissioner feels additional security is necessary because any one or more of the following factors are present, the commissioner may require such additional security as provided in subrule 57.4(2):

a. Insufficient liquid assets or retained earnings;

b. A deteriorating financial condition, as evidenced by a comparison of current financial statements to recent past financial statements;

c. The workers' compensation loss experience is significantly higher than the average for the industry the company is in;

d. The loss potential within and without the state is higher than what the company can apparently withstand;

e. Any other relevant consideration(s).

57.4(2) When the commissioner determines the conditions of subrule 57.4(1) have been met, any one or more of the following types of additional security may be required, in an amount determined by the commissioner:

a. Additional surety bond;

b. Irrevocable letter of credit;

c. Annual aggregate excess insurance;

d. Specific per occurrence excess insurance; or

e. Trust fund.

(1) If a trust fund is established, the commissioner shall be the trustee. The employer may invest the funds in accordance with Iowa Code section 682.23, subsections 1 through 12. The trust document and the evidence of invested assets are to be kept in the vault of the division or in some other secure place designated by the commissioner.

(2) Interest or dividends, or both, on the trust assets are to accumulate to the trust unless the commissioner deems the trust has sufficient assets, in which case the interest or dividends, or both, are to be delivered to the employer.

(3) The trust fund is to be used to pay losses and loss adjustment expenses if the employer, is unable to pay the statutorily required compensation benefits.

191—57.5(87,505) Application for an individual self-insurer.

57.5(1) An applicant for a certificate of relief from insurance shall submit a completed application to the division together with the following:

a. A surety bond or other security, in the amount determined under rule 57.3(87,505);

b. Parental guarantee from the ultimate controlling parent, if applicable;

c. Most recent audited financial statement, such as that included in the shareholders annual report. If such statement is over six (6) months old, also include the latest unaudited financial statement and an affidavit signed by the treasurer of the company stating that there has been no material lessening of net worth or other adverse changes since the last audited statement, or, if there were, an explanation of such changes. For subsidiaries, this information is to be furnished on the ultimate controlling parent company;

d. Data from the immediate past five (5) years on paid and outstanding Iowa workers' compensation losses subject to self-insurance; and

e. A fee of $100 per application review and $100 per certificate issued, paid in separate checks. If the application is denied, the fee for the issuance of a certificate will be returned to the

applicant. The division will either issue one certificate for each parent and each subsidiary or the division will issue one certificate only for the approved parent and all approved subsidiaries, at the applicant's option.

57.5(2) After an initial review, the division may require additional relevant information or additional security, as provided in rule 57.4(87,505).

57.5(3) Within a reasonable time, the division will rule on the application and either issue a certificate of relief from insurance or send a letter denying the application with a specific explanation.

57.6 Rescinded, effective 4/27/88.

191—57.7(87,505) Excess insurance. No contract or policy of per occurrence or aggregate excess insurance shall be recognized in considering the ability of an applicant to fulfill its financial obligations under the workers' compensation Act, unless such contract or policy complies with the following:

57.7(1) Is issued by a company:

a. Licensed to transact casualty business in this state; or

b. Listed in the most recent NAIC publication "Financial Review of Alien Insurers" (commonly known as the white list); or

c. Listed on the most recent List of Acceptable Non-Admitted Insurers prepared by this department.

57.7(2) Has a term of not less than one year.

57.7(3) No cancellation, termination or alteration of coverage whether by or at the request of the insured or by the underwriter, shall take effect prior to the expiration of ninety (90) days after written notice of such cancellation, termination, or alteration has been filed with the commissioner unless an earlier date is approved by the commissioner.

191—57.8(87,505) Insolvency. If the individual employer becomes insolvent, the commissioner may appoint a party to receive funds on the surety bond or other posted security to be dispersed to individual claimants.

191—57.9(87,505) Renewals.

57.9(1) *Individual employers.*

a. A certificate of relief from insurance is valid for one year, unless sooner revoked under the provisions of rule 57.11(87,505). Such certificate is effective from August 1 to July 31.

b. By June 1 of each year, each individual employer must submit:

(1) A completed application;

(2) A statement of financial condition audited by an independent certified public accountant as of the end of the most recently completed fiscal year. The financial statement shall be on a form prescribed by the commissioner and shall include, but not be limited to, actuarially appropriate reserves for (a) known claims and expenses associated therewith, (b) claims incurred but not reported and expenses associated therewith, (c) unearned premiums and (d) bad debts, which reserves shall be shown as liabilities. An actuarial opinion regarding reserves for items (a) and (b) above shall be included in the audited financial statement. The actuarial opinion shall be given by a member of the American Academy of Actuaries or other qualified loss reserve specialist as defined in the annual statement adopted by the National Association of Insurance Commissioners;

(3) Any additional relevant information required by the division; and

(4) The required fee.

c. Depending on any change in financial condition, the commissioner may require additional security, as provided in rule 57.4(87,505).

d. The commissioner reserves the right to require financial reports more frequently than once each year if a deterioration in financial security warrants a closer scrutiny of an individual employer.

57.9(2) Rescinded, effective 4/27/88.

191—57.10(87,505) Periodic examination. The commissioner reserves the right to examine an employer as often as it deems necessary. Cost of the examination is to be paid by the employer. Examination shall include but not be limited to adequacy of loss reserves and claims handling practices.

191—57.11(87,505) Grounds for nonrenewal or revocation of a certificate of relief from insurance. The following constitute grounds for nonrenewal or revocation of a certificate of relief from insurance:

57.11(1) Failure to comply with any provisions of these rules or of Iowa Code chapters 85, 85A, 85B, 86 or 87;

57.11(2) Failure to comply with any lawful order of the commissioner;

57.11(3) Failure to promptly pay lawful compensation claims;

57.11(4) Committing an unfair or deceptive act or practice;

57.11(5) Deterioration of financial condition adversely affecting the certificate holder's ability to pay expected losses.

191—57.12(87,505) Hearing and appeal. Prior to denying a renewal application or revoking a certificate issued under this chapter, a certificate holder shall be given a hearing and a right to appeal as provided in rules 3.1(17A,502,505) et seq.

191—57.13(87,505) Existing approved self-insurers.

57.13(1) All individual employers which were given a certificate of relief from insurance or some other approval to self-insure from the division prior to the effective date of these rules shall bring themselves into full compliance with these rules within 90 days after their effective date or by the filing time set out for renewals, whichever comes later.

57.13(2) An existing individual self-insurer may petition the commissioner for a waiver of a rule, or rules. The commissioner may grant such waiver upon showing to the commissioner's satisfaction that the employer is solvent and has the ability to pay workers' compensation benefits as required by law.

191—57.14(87,505) Severability clause. If any provision of this chapter, or the application thereof to any person or circumstance, is subsequently held to be invalid, such invalidity shall not affect other provisions or applications of this chapter.

These rules are intended to implement Iowa Code sections 87.11 and 87.20.

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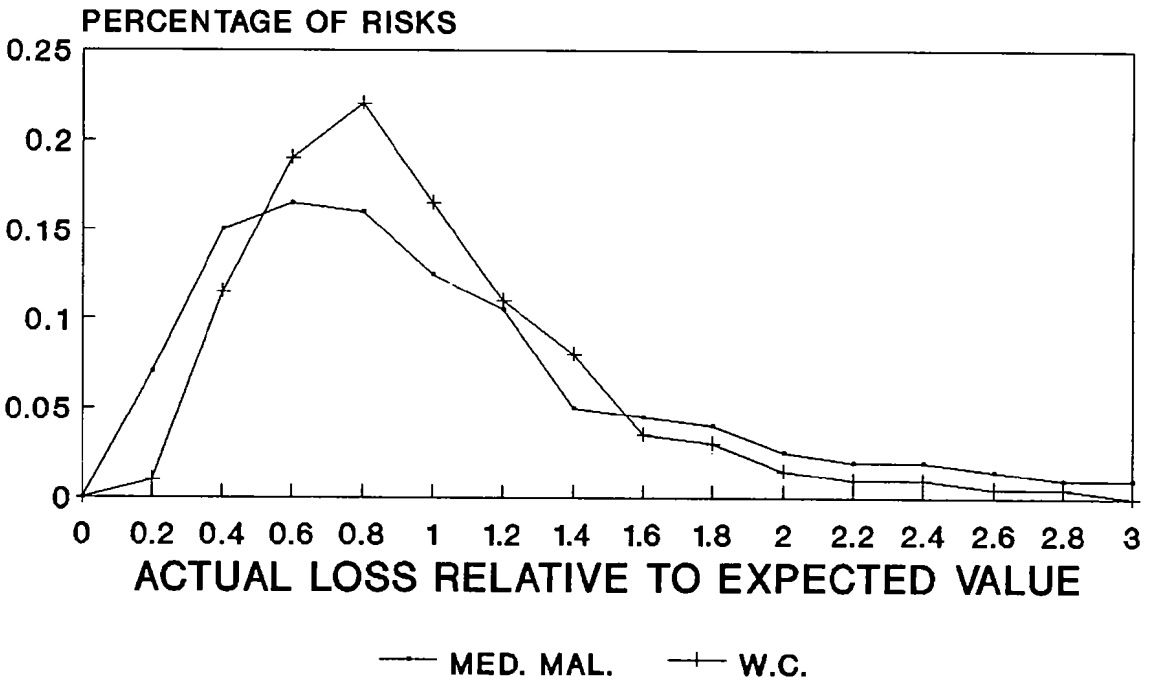
[Filed emergency 7/23/84—published 8/15/84, effective 8/1/84]
[Editorially transferred from [510] to [191] IAC Supp. 10/22/86; see IAB 7/30/86]
[Filed 3/4/88, Notice 1/27/88—published 3/23/88, effective 4/27/88]
[Filed 4/14/89, Notice 11/30/88—published 5/3/89, effective 6/7/89]

W.C. AND MED MAL.
DISTRIBUTION OF RISKS



Note: Expected Losses = $1.5 million

Exhibit 7

Standard Incurred Loss Retro Plan

Insured Written for One Year

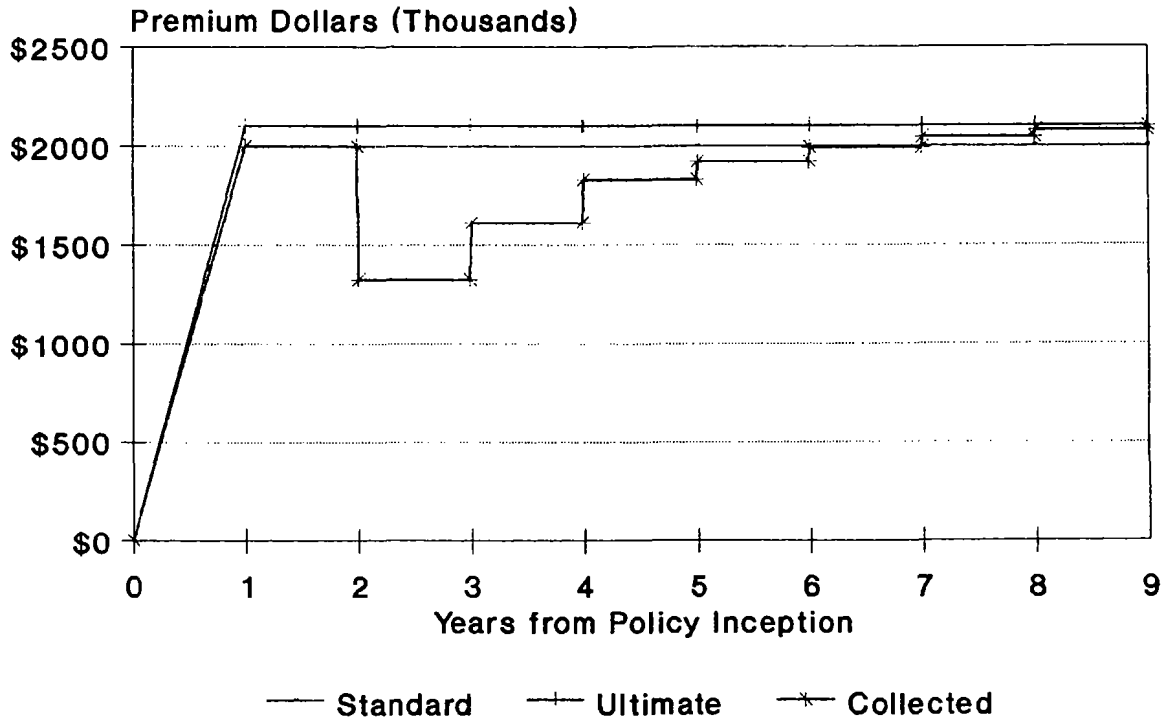


Exhibit 8

STANDARD INCURRED LOSS RETROSPECTIVE RATING PLAN

ASSUMPTIONS:

EXPECTED LOSSES = $1,800,000
STANDARD PREMIUM = $2,000,000
LCF = 1.0
TAX MULTIPLIER = 1.0
BASIC FACTOR = .15
LINES OF INSURANCE: WORKERS' COMPENSATION, GENERAL LIABILITY, AUTOMOBILE LIABILITY

QUARTER	INCURRED LOSS % ULTIMATE LOSSES
4	38%
6	57
10	73
14	85
18	90
22	94
26	97
30	99
34	100
38	100
42	100

Exhibit 9

STANDARD INCURRED LOSS RETROSPECTIVE RATING PLAN
(000'S)

INSURED WRITTEN FOR A ONE YEAR TERM *

NUMBER OF YEARS FROM INCEPTION OF POLICY	ULTIMATE PREMIUM	COLLECTED** PREMIUM	CREDIT EXPOSURE
1	2,100	2,000	100
2	2,100	1,326	774
3	2,100	1,614	486
4	2,100	1,830	270
5	2,100	1,920	180
6	2,100	1,992	108
7	2,100	2,046	54
8	2,100	2,082	18
9	2,100	2,100	0

* ASSUMING INSURED NON-RENEWS AFTER THE ONE YEAR PERIOD.

** ASSUMES A TWO QUARTER LAG IN PERFORMING AND COLLECTING/RETURNING FUNDS. STANDARD PREMIUM EQUALS 2,000; BASIC EQUALS 15% EXPECTED LOSSES = 1,800, LCF AND TM = 1.00.

Standard Incurred Loss Retro Plan

Insured Written for Three Years

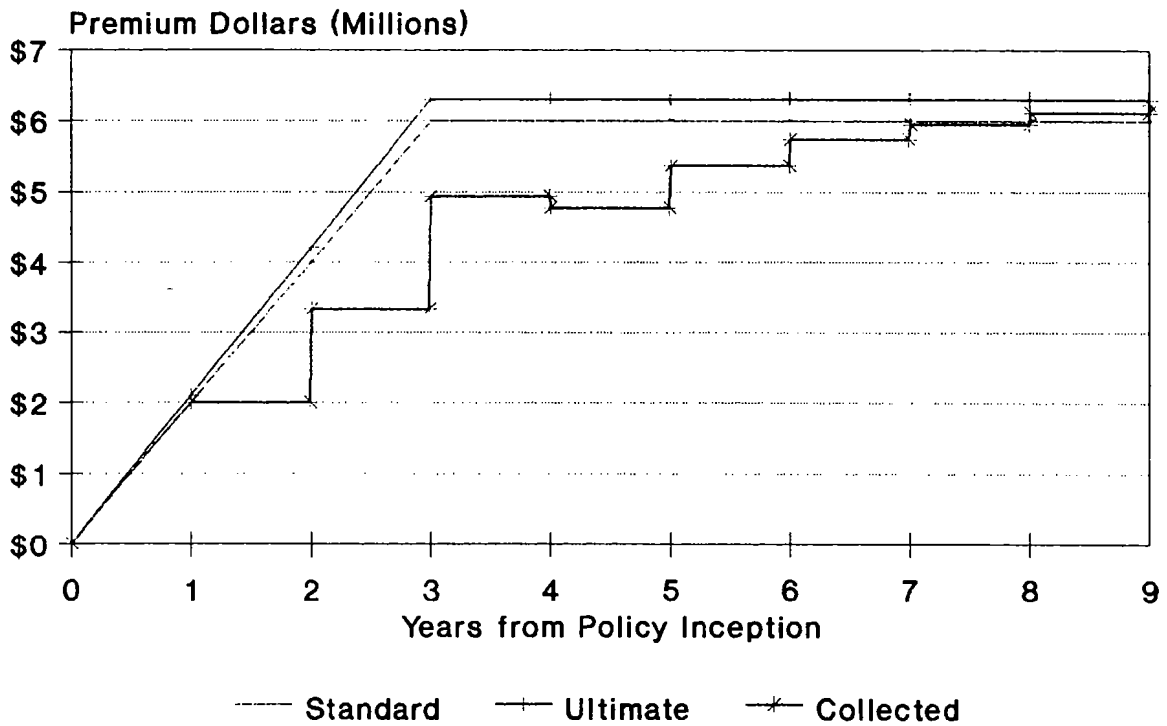


Exhibit 11

STANDARD INCURRED LOSS RETROSPECTIVE RATING PLAN
($000'S)

INSURED WRITTEN FOR A THREE YEAR TERM *

NUMBER OF YEARS FROM INCEPTION OF POLICY	ULTIMATE PREMIUM	COLLECTED** PREMIUM	CREDIT EXPOSURE
1	2,100	2,000	100
2	4,200	3,326	874
3	6,300	4,940	1,360
4	6,300	4,770	1,530
5	6,300	5,364	936
6	6,300	5,742	558
7	6,300	5,958	342
8	6,300	6,120	180
9	6,300	6,228	72

* ASSUMES INSURED IS WRITTEN FOR THREE CONSECUTIVE ANNUAL POLICY PERIODS AND THEN NON-RENEWS.

Exhibit 12

BAD DEBT RESERVE

INCURRED LOSS PLAN

FIRM'S BOND RATING B

($000'S)

Number of Years From Inception of Policy	(1) Collected Premium	(2) Incremental Collected Premium	(3) Cumulative Default Probability	(4) Expected Default Amount
1	2,000	-	-	-
2	1,326	-	-	-
3	1,614	288	.07	20.16
4	1,830	216	.118	25.49
5	1,920	90	.159	14.31
6	1,992	72	.189	13.61
7	2,046	54	.211	11.39
8	2,082	36	.230	8.28
9	2,100	18	.244	4.39
Total		774		97.63

Exhibit 13

BAD DEBT RESERVE

PAID LOSS PLAN

FIRM'S BONDS RATED B

($000:s)

Number of Years From Inception of Policy	(1) Collected Premium	(2) Incremental Collected Premium	(3) Cumulative Default Probability	(4) Expected Default Amount
1	606	-	-	-
2	1,000	-	-	-
3	1,398	398	.07	27.86
4	1,698	300	.118	35.40
5	1,820	122	.159	19.40
6	1,900	80	.189	15.12
7	1,970	70	.211	14.77
8	2,030	60	.230	13.80
9	2,070	40	.244	9.76
10	2,100	30	.255	7.65
Total		1100		143.76

Exhibit 14

BAD DEBT RESERVE

INCURRED LOSS PLAN

FIRM'S BOND RATING B

($000'S)

Number of Years From Inception of Policy	(1) Collected Premium	(2) Incremental Collected premium	(3) Cumulative Default Probability	(4) Expected Default Amount
1	2,000	-	-	-
2	1,326	-	-	-
3	1,614	288	.159	45.79
4	1,830	216	.189	40.82
5	1,920	90	.211	18.99
6	1,992	72	.230	16.56
7	2,046	54	.244	13.18
8	2,082	36	.255	9.18
9	2,100	18	.260	4.68
Total		774		149.20

Exhibit 15

BAD DEBT RESERVE

INCURRED LOSS PLAN

FIRM'S BOND RATING BAA

($000'S)

Number of Years From Inception of Policy	(1) Collected Premium	(2) Incremental Collected premium	(3) Cumulative Default Probability	(4) Expected Default Amount
1	2,000	-	-	-
2	1,326	-	-	-
3	1,614	288	.009	2.59
4	1,830	216	.013	2.81
5	1,920	90	.017	1.53
6	1,992	72	.022	1.58
7	2,046	54	.026	1.40
8	2,082	36	.031	1.12
9	2,100	18	.035	.63
Total		774		11.66