

MONTH OF LOSS DEFICIENCY RESERVES FOR AUTOMOBILE  
BODILY INJURY LOSSES INCLUDING RESERVES FOR  
INCURRED BUT NOT REPORTED CLAIMS

BY

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"The subject of reserves for incurred but not reported claims has received very scant consideration in our proceedings, nor is there available to the writer's knowledge any written aspects of the subject."

The above quotation of the opening paragraph of a paper by Mr. Thomas F. Tarbell titled "Incurred But Not Reported Claim Reserves" published in Volume XX, Part II of the Proceedings of the Casualty Actuarial Society dated May 18, 1934, is almost as appropriate today as it was then. During the past twenty years relatively little new information on this subject has been published in the Proceedings of the Society.

The reserve for incurred but not reported claims as described by Mr. Tarbell and also by Mr. Nellas C. Black in a prior report published in the 1927 Proceedings of the Society relates exclusively to such losses. It is of interest to note that neither of these gentlemen advanced the premise that the incurred but not reported claim reserve together with reserves for reported losses would offset the total liability of the company for losses incurred but undisposed. Instead, losses incurred but not reported were recognized as comprising a hidden liability which cannot be evaluated under reserve practices appropriate to reported losses.

In contrast to the reserves for incurred but not reported claims, the concept of the month of loss deficiency reserve, as discussed herein, is based on the premise that all hidden reserve need, whether it result from unreported or reported claims, must be statistically measurable as a segment of the company's total liability for undisposed claims. Under this premise, the total incurred losses for each month of loss will at any time be composed of one or more of the following groups of claims:

- (a) Paid losses.
- (b) Investigated losses reserved for case values.
- (c) Reported losses in the course of investigation.
- (d) Unreported losses.

The concept of the month of loss deficiency reserve is principally concerned with the current evaluation of losses in the course of investigation and unreported losses in combination as a single unit of reserve need. The manner in which this may be accomplished under month of loss analyses can best be described in terms of specific data taken from Exhibit I, which shows how we maintain such experience.

The reported incurred losses for the January, 1954, month of loss developed as follows:

<i>Date of Evaluation</i>	<i>Reported Loss Reserves</i>	<i>Cumulative Paid Losses</i>	<i>Reported Losses</i>	<i>Ratios</i>
1-31-54	\$1,219,985	\$43,716	\$1,263,701	.478
2-28-54	2,095,646	172,407	2,268,053	.858
3-31-54	2,232,006	314,643	2,546,649	.963
4-30-54	2,181,910	462,841	2,644,751	1.000
5-31-54	2,034,060	600,990	2,635,050	.996
6-30-54	1,898,731	743,371	2,642,102	.999
9-30-54	1,518,285	1,110,081	2,628,366	.994
12-31-54	1,182,510	1,482,498	2,665,008	1.008
3-31-55	947,590	1,707,817	2,655,407	1.004
6-30-55	762,980	1,876,037	2,639,017	.998
9-30-55	649,140	1,928,000	2,577,140	.974

It may be observed that the rates at which losses are reported and investigated together with our opening reserve practice constitute the principal factors which control the early development of reported losses. For this month of loss, the total reported losses after four months of development reach a level that continues to be maintained in subsequent months of development in a relatively stable manner. The exhibits which accompany this report will indicate the extent to which this level of losses is reasonably representative of the final disposed value of such losses for every month of loss. For the moment we shall assume that for each month of loss the reported losses will, after an observable minimum period of development, represent the first reasonably accurate indication of disposed value, including, of course, the effect of any contingency margin maintained in reserves. This minimum period of development, in the above data, is four months. For ease of reference, the end of this minimum period of development will hereafter be called the point of stability, and the reported incurred losses at this point will be called "base" losses.

We may now define deficiency reserves as the amounts by which reported losses are inadequate or "deficient" as compared to base losses at every date of evaluation preceding the point of stability for each month of loss.

The concept of reserve for losses incurred but not reported cannot easily be statistically reconciled to the concept of deficiency reserves, nor, for that matter to the actual development pattern of month of loss experience. Referring again to the January, 1954, month of loss data set forth above, it may be noted that after the fourth month of development any supplemental reserve for incurred but not reported claims appears excessive in terms of total need. As a matter of record, between the dates of April 30, 1954, and September 30, 1955, we received original reports of losses incurred in January of 1954 totaling 129 claims in number and \$103,482 of case reserves. An additional reserve of this size at any point during the period stated is clearly not needed because our estimated value of total incurred losses actually

declined during the period by the amount of \$67,611. This decline resulted from the combined effect of several types of loss transactions. Specifically, new reports, reopened claims and reserve increases were offset by reserve takedowns on paid claims and claims closed without payment.

This interplay of loss transactions occurs during every month of development of every month of loss. Furthermore the reserve for incurred but not reported claims can be seen to have no necessary and consistent relation to the need for deficiency reserves. The deficiency reserve need is solely dependent upon the development pattern of reported losses. The development pattern is in turn principally dependent upon the claim policies of the company.

These general relationships cannot be observed unless the claim policies and procedures of the company can be shown to be reasonably accurate and consistent under statistical analysis. The month of loss experience we have developed for this purpose must be recognized as being the product of our own claim operation. These data may not be assumed to be representative of the operations of any other company.

Exhibit II—Part 1 sets forth the recorded value of reported losses (a) by year of loss for 1953 and prior years and (b) by month of loss for 1954 and 1955 through October, as of the end of every month of development in 1954 and 1955 through October.

It will be noted that our reserves for years of loss 1953 and prior had a very satisfactory development in 1954 and 1955 through October. More importantly it will be seen that for each 1954 and 1955 month of loss shown, the monthly development of reported losses followed a very similar pattern. Specifically, the reported losses after one month of development continued to increase during the second, third and fourth months of development. Thereafter, they displayed at each subsequent month of development a high degree of stability. In other words after four months of development, the reported losses for each month of loss consistently reached a point of stability and on current expectations they may be presumed to represent at that point a reasonably accurate indication of the disposed value of the total incurred losses. Thus "base" losses in our company are usually obtained at the fourth month of development for each month of loss.

Exhibit II—Part 2 sets forth certain ratios derived from Exhibit II—Part 1 data as follows:

- A. For years of loss prior to 1954 the ratios shown reflect the monthly development throughout 1954 and 1955 through October of the December 31, 1953, outstandings.
- B. For each 1954 and 1955 month of loss shown the ratios represent the relation of reported incurred losses by 1954 and 1955 months of development shown to "base" losses for each such month.

Exhibit III sets forth the development pattern, as described and illustrated in connection with Exhibit II, Part 2, for each state in which we operate. There is one difference. All 1954 months of loss for

each state have been combined by month of development to produce these state patterns. At this time we will say only that our larger states produce "base" losses that are reasonably consistent while smaller states do not. In all other respects these by state data are highly erratic. We have not attempted to apply the methods described in this report to individual states for the obvious reasons that our present exposures are too limited to produce satisfactory indications and because there is no need for this type of refinement in the procedures under discussion.

Under some circumstances, "base" losses may not necessarily be a reasonable indication of the disposed value of such losses. No system of analysis will circumvent the effect of strong economic trends on claim values. But based on current and expected conditions, the insurance industry has over the years done a highly creditable job of maintaining sound and consistent case reserves. The concept of "base" losses is dependent upon sound practice in the same manner that is applicable to any kind of reserve evaluation. Any excess or inadequacy in the reserves included in base losses will eventually show up in the subsequent development of the experience. The greatest source of month to month development distortion observed in these data appears to be an occasional tendency reflected in individual state development patterns to be over-sensitive to apparent changes in case reserve values. Sound and consistent procedures for disposing of losses are a prerequisite to any successful method for evaluating reserve needs.

It can be seen that our opening reserve practice has an important influence on the early development of reported losses. Let us again consider the developments of January, 1954, month of loss. The reported losses during the first four months of development and the indicated early deficiencies were:

<i>Month of Development</i>	<i>Reported Incurred Losses</i>	<i>Deficiencies</i>	<i>Ratio to "Base" Losses</i>
1	\$1,263,701	\$1,381,050	.5222
2	2,268,053	376,698	.1424
3	2,546,649	98,102	.0371
4	2,644,751	—	—

Had the average of the opening reserves been higher, then the indicated deficiency for each of the first three months of development would have been smaller. Had the average of the opening reserves been lower, these deficiencies would have been greater.

As a matter of information our opening reserve practice is to assign a specific factor reserve to each new claim reported. This factor reserve is varied by state and in certain areas it varies within state to recognize the influence of unusual local conditions. These factor reserves run as low as about \$500 and as high as about \$1,000 per claim. There are two exceptions to this factor reserve practice. If a loss is discovered by an adjuster in the course of an investigation, he is permitted to establish a case value reserve. Similarly, reopened claim reserves are usually based on case values.

In order to observe the influence of our opening reserve practices on the development of reported incurred losses we have separately coded and tabulated several different kinds of important loss transactions. These transactions, which we call "elements" or "components" of loss, are as follows:

- (a) Reported losses in number and amount.
- (b) Reopened losses in number and amount.
- (c) Paid losses in number and amount.
- (d) Paid revisions in amount. A paid revision is defined as the difference between the amount of a closing payment and the amount of the reserve so disposed.
- (e) Regular revisions in amount. Regular revisions are defined as amounts of reserve changes not resulting from closing payments.
- (f) Claims closed without payment in number and amount of disposed reserves.
- (g) Reserves in number and amount.

The data obtained from these month of loss tabulations have been combined for each element of loss by month of loss and month of development and related to "base" losses for purposes of comparison. These data are too detailed for inclusion in this report. Their principal indications are summarized as follows.

The great majority of all losses reported within 90 days after occurrence are investigated and reserved on a case basis before the end of the fourth month of development of each month of loss. During this four month period the opening reserves are rapidly replaced by case reserves. Consequently the influence of the opening reserve on the development of incurred losses on report is quickly offset by the influence of reserve revisions and takedowns resulting from the conversion of opening reserves to case values, payments and losses closed without payment.

The opening reserve can be increased or decreased over substantial ranges without creating large distortions in the development pattern of reported incurred losses. Furthermore, such changes in opening reserves are not proportionate in their effect on the outstandings as of the first, second and third month of development. For example, in one test analysis we doubled the opening reserve and still did not remove the deficiency in incurred losses after one month of development. At two and three months of development, however, the reported loss reserves were found to be too high. It is our opinion that the opening reserve level cannot be used to control the development of reported incurred losses during the early months of development so as to uniformly eliminate the need for deficiency reserves.

One final comment on the opening reserve may be of interest. Our company records bodily injury losses on a per accident basis. This tends to minimize the effect of changing the opening reserve as compared to what would occur if claims were counted on a per claimant

basis. In addition we record a loss count in the event that a report contains any reasonable indication that injuries have been sustained. This has a dual effect. It gives us a substantial number of reports that will later close without payment. It also somewhat increases the effect of changes in opening reserve levels. Our practices in recording claim count have made it necessary for us to adopt a method for disposing claims to be closed without payment on a continuous and uniform basis. Any other method creates very large distortions in our reserve adequacies from month to month.

If we should use no opening reserve prior to the completion of investigations, our deficiency reserve needs would be much larger. If we should use very large opening reserves we would create excessive indications of incurred losses at the second and third months of development for each month of loss. In the opinion of the writer, the opening reserve should be maintained at that level which will produce minimum indications of deficiency reserve need without creating excessive indications of incurred losses after two and three months of development. This means that our need for deficiency reserves after three months of development should be kept as small as possible. We are not dissatisfied when our statistics occasionally indicate a small credit at this point.

The basic objective of any loss reserve program is to set aside sufficient funds to defray the eventual cost of disposing losses that are currently outstanding, whether they be reported or unreported. Conversely, if our total loss reserves for every immature month and year of loss are wholly adequate at every monthly date of reserve evaluation, the above objective will be achieved. The clear indication of this comment is that the loss reserves for every month of loss should be predicated upon the expected total incurred losses for each such month of loss.

Through the years we, like most companies, have at monthly intervals tabulated our paid and outstanding losses. The total of our reserves for both reported and unreported losses was presumed to represent the company's total liability for undisposed losses at each such monthly date of evaluation. Since these reserves together with paid losses established the current estimate of our total incurred losses by calendar year and by policy year, it is a necessary consequence that they also established our combined total incurred losses by year of loss and by month of loss. Consider the following example:

From Exhibit II—Part 1, the reported losses for the years and months of loss shown may, as of April 30, 1955, be summarized as follows:

<i>Month or Years of Loss</i>	<i>Reported Incurred Losses</i>
1954 and Prior .....	\$163,584,547
1955—January .....	3,023,048
February .....	2,678,907
March .....	2,833,488
April .....	1,768,352

From Exhibit II it may be observed that as of April 30, 1955, the reported losses for the three latest months above were deficient in terms of "base" losses as follows:

<i>Month of Loss</i>	<i>Deficiency of Reported Losses as of April 30, 1955 As Subsequently Developed</i>
February, 1955 .....	\$ 154,894
March, 1955 .....	509,387
April, 1955 .....	1,684,728
Total	<u>\$2,349,009</u>

Assume for the moment that we had no reserve established as of April 30, 1955, to offset these deficiencies. In this case our management report for April of 1955 would have shown \$2,349,009 more profit on the current calendar month experience for these months of loss than was justified by subsequent development. An examination of Exhibit II, Part 1 reveals that, in the absence of an appropriate reserve, this entire \$2,349,009 would have shown up in the management reports for May, June and July as underwriting losses on the experience for the February, March and April months of loss. In all instances these profits and losses noted would have been entirely fictitious.

We would have completely eliminated these particular "paper" profit and loss distortions in our management reports if our deficiency reserve for these three months of loss had been exactly (a) \$2,349,009 as of April 30, 1955, (b) \$688,443 as of May 31, 1955, and (c) \$34,272 as of June 30, 1955.

As of April 30, 1955, our incurred but not reported claim reserve, which we maintain for purposes of comparison, was \$1,849,969. Had this reserve been on our records as of that date, our April, 1955, Management Reports would have contained a "paper" profit of \$499,040. This amount would have shown up in our Management Reports during the subsequent months of May and June as a fictitious underwriting loss.

Finally our indicated deficiency reserves of record as of April 30, 1955, were \$2,146,637 and the fictitious effects of the inadequacy of this reserve were limited to about \$200,000 or only 40% of the distortions that otherwise would have resulted from the incurred but not reported reserve indication.

Distortions in our Management Reports arising from the source described above will also affect our rating data to whatever extent they may exist as of June 30 and December 31 of each year. As a matter of record, the maximum potential distortion as of December 31, 1954, could have affected pure premiums for the last half of that year and the first half of 1955 to the extent of more than 5% in each period. These potential distortions always approximate from 40% to 60% of the total incurred losses for every month of loss. The incurred but not reported reserve, if used, would have created distortions for individual months of loss in 1954 and 1955 through July ranging

from a minimum of \$11,348 to a maximum of \$958,836, and which would have averaged in excess of \$450,000 per month. Even on our substantial volume of business, "paper" distortions of such size are highly undesirable.

The best method we have found to date for limiting the effects of these "paper" distortions is to reserve each month of loss as accurately as possible from its inception. This obviously involves the computation of expected "base" losses for each month of loss during the first three months of development. By so doing we obtain a test for adequacy on the total reserves for each month of loss at every stage of development and in the process also obtain a precise check upon our computation of expected "base" losses.

The computation of expected "base" losses by month of loss is at best a somewhat uncertain process. Customary criteria, such as loss frequencies and average claim costs, when applied to month of loss experience, are neither sufficiently developed at the time such data is needed, nor are they sufficiently consistent from one month to another to be of much value in the computation of expected losses for any month of loss during its first, second and third months of development. The criteria which appear to be the most dependable for computing expected "base" losses comprise two principal groups of information. The first relates to accident month data. The second includes all other factors which may from time to time influence the current level of incurred losses. These two groups of criteria shall, for purposes of clarity, be separately discussed as follows.

We have tested a number of methods for computing expected "base" losses for the current month of loss which make use of the experience of prior months. Most of these proved to be unsatisfactory. Furthermore, it is procedurally difficult to obtain fully detailed data appropriate to the current month of loss in the short time available before monthly closing entries must be made. If such detailed data could be available, it is possible to compute expected "base" losses that are relatively accurate. We recognized, in the early stages of our studies, however, that any statistical or formula method which might be developed would of necessity be based on very limited current information. This meant that it would be necessary to test any such method over a fairly long period to determine whether it was equal or superior to accepted practice. The single method which has met this test involves a combination of prior month experience and current month developments on paid and reserved losses. It is described and evaluated as follows.

The only loss element for which we have so far been able to obtain a breakdown by month of loss in advance of monthly closing deadlines is the reported reserve. A review of Exhibit VI-A reveals that the ratios of reported reserves by month of development have given a rather consistent reflection of "base" losses during early development periods. For example:

(a) After one month of development, for thirteen of the nineteen

months tested these ratios did not vary from a ratio of .500 by more than .025 points either way.

- (b) After two months of development, for fourteen out of the nineteen months tested, the maximum variation from a ratio of .760 was .030 either way.
- (c) After three months of development, for fifteen out of nineteen months tested the maximum variation from a ratio of .840 was .040 either way.

By using the ratios of .500, .760 and .840 in connection with reserves at the end of the first, second and third months of development respectively, expected "base" losses were projected and compared to actual "base" losses as shown on Exhibit VII.

The use of the expected "base" losses for obtaining indicated deficiency reserves is described as follows. These expected "base" losses are assumed to consist of (a) cumulative paid losses, (b) reported reserves and (c) needed deficiency reserves. By deducting from expected losses the actual reported reserves and the paid losses, a remainder would be obtained which would represent the indicated deficiency reserve needed. Since paid losses by month of loss are not available before monthly closing entries must be made, we have obtained satisfactory paid loss allowance factors in the same manner reserve factors were obtained.

On exhibit VIII, the indicated deficiencies are obtained:

- (a) After one month of development by reducing expected "base" losses from Exhibit VII by a paid loss allowance of 6% and by the actual month of loss reserve.
- (b) After two months of development by reducing such expected losses by an 8% paid loss allowance and by the actual month of loss reserve.
- (c) After three months of development by reducing such expected losses by a 12% paid loss allowance and by the actual month of loss reserve.

It can be seen that our selection of the ratios stated above relating to both reported reserves and paid losses has been accomplished as simply as possible. We are handicapped in the determination of maximum ranges of potential fluctuation by the sheer lack of available samples. At the time this report was originally prepared we had only 19 "sample" months available and not all of these were sufficiently developed to be considered reliable. At the present time we have available some 31 "sample" months and of these about 15 are sufficiently developed to be meaningful. This is still a very limited body of experience from which to derive these particular development factors. Nevertheless investigation of such criteria has been started and the results obtained to date are highly encouraging.

On Exhibit VIII, the sum of the deficiencies for the three latest months of loss represents the total indicated deficiency reserve appropriate to each date of evaluation.

Exhibit IX shows the manner in which needed deficiency reserves are retrospectively obtained from developed experience.

Exhibit X sets forth a comparison of (a) deficiency reserves actually needed as shown on Exhibit IX, (b) indicated deficiency reserves developed as shown on Exhibit VIII and (c) indicated reserves for incurred but not reported claims.

It is not pertinent to this report to detail our method for obtaining a record of the incurred but not reported claim reserve. The methods we employ are in keeping with accepted practices. But it may be seen that our reserves for losses incurred but not reported as developed by our company are highly stable in comparison to needed deficiency reserves.

From Exhibit X we may obtain an exact indication of the sufficiency of both IBNR reserves and indicated deficiency reserves in terms of actual need for the period January, 1954, through July, 1955, as follows:

<i>Month, Year of Evaluation</i>	<i>Variation of IBNR Res. From Actual Need</i>	<i>Ratio to Actual Need</i>	<i>Variation of Indicated Deficiency Reserve From Actual Need</i>	<i>Ratio to Actual Need</i>
1954, March	—244,827	— .137	—127,960	— .072
April	+22,766	+ .015	+247,198	+ .160
May	—579,843	— .269	—348,619	— .161
June	—235,653	— .129	+84,249	+ .046
July	—324,611	— .166	—83,894	— .043
August	—355,824	— .178	—74,377	— .037
September	—915,029	— .355	—828,993	— .321
October	—935,670	— .357	—618,051	— .236
November	—958,836	— .358	—615,280	— .230
December	—849,523	— .327	—83,624	— .032
1955, January	—440,772	— .198	—59,382	— .027
February	—346,681	— .162	—269,981	— .126
March	—453,788	— .201	—227,030	— .101
April	—499,040	— .212	—202,372	— .086
May	—557,949	— .229	—126,341	— .052
June	—11,348	— .994	+317,194	+ .164
July	+129,393	+ .071	+521,785	+ .287

In summary of the methods described above for computing expected "base" losses by month of loss, they have produced a considerable improvement over the results obtained from our record of needed reserves for losses incurred but not reported. Specifically the extreme range of error of the deficiency reserve has been 14% lower than that of the incurred but not reported claim reserve. Similarly, the average range of error has been about 40% lower for the entire period from January, 1954, through July of 1955.

In the time that has elapsed since this report was originally prepared we have extended the development of data set forth on the

exhibits of experience attached hereto through August 31, 1956. In addition corresponding data for the months of October, 1955, through August, 1956, have also become available.

No effort has been made to incorporate these additional data into this report; first, for lack of time and second, because they continue to bear out the indications of the experience already discussed subject to the following additional comments. The reserve level and paid claim factors for the first three months of development as previously described continue to provide very satisfactory indications of total incurred losses on record after four months of development for every month of loss. Thus throughout the entire period from January, 1954, until August of 1956 the methods described in this report for evaluating our hidden reserve needs by month of loss during the early months of development uniformly produce more acceptable results than were previously obtained.

The additional data developed since July of 1955 does reveal a substantial trend toward higher frequencies and also toward higher paid claim costs. The trend of increased frequency apparently has not tended to disturb the uniform development of our accident month data. However the trend toward higher average costs and the accompanying needed higher average reserves on older claims is being reflected in increased indications of total incurred losses which become apparent after the fourth month of development. Specifically the point of stability in our later experience has moved out beyond the fourth month of development and as a result we have increased our deficiency reserves applicable to each month of loss in accordance with the indications obtained. Because of this particular development we are continuing to observe our monthly experience very closely in order that we may introduce adjustments in our procedure to be reflective of developing conditions as promptly as they appear in the experience.

From an over-all standpoint, neither the reserves for losses incurred but not reported nor the indicated deficiency reserves have, as yet, fully reflected the large monthly fluctuations of needed deficiency reserves as noted on Exhibit IX. These fluctuations are a direct result of the large changes that take place in the current level of "base" losses for each succeeding month of loss. The available month of loss statistics used in the computation of expected "base" losses obviously need to be supplemented by factors which will give greater recognition to these large monthly changes in "base" losses by month of loss. These additional factors, which comprise the second group of information previously mentioned, are not readily susceptible of statistical segregation and evaluation. For the present, these factors must be considered as being integral components of sound judgment. For example, the May, 1955, month of loss developed incurred losses that were much lower in proportion to May of 1954 than we had anticipated. Similarly, the December, 1955, month of loss now appears to be much more severe than expected. In the former instance, at least, we did not fully anticipate the effect of the tremendous campaign for highway safety that was carried out over the Decoration Day

holiday period. Abrupt changes in public temperament respecting highway safety are difficult to anticipate under any form of statistical analysis.

This second group of "judgment" factors also includes certain components which we have analyzed statistically. For example, long term and year to year comparisons of loss frequencies, average paid claim costs, "base" losses and other items have been productive of useful results. In a general way these kinds of comparisons provide reasonably accurate indications of current month expected "base" losses; but such indications must always be supplemented by indications based on (a) whether or not the current month contains a major holiday, (b) the number of days in the current month, (c) National Safety Council reports and predictions and (d) any other particular factors that can strongly influence the expected losses for the current period. History reveals that various other influencing factors can and do arise, such as the outbreak or threat of war, gasoline rationing, strikes and other occurrences of national interest. We should like to devote a considerable discussion to our findings in relation to all these potential factors of importance. We are restrained from doing so for reasons of brevity and because such findings, being based on data accumulated under our own company procedures, would be of limited interest to other carriers.

In general summary, we are certain that this second group of judgment factors must enter the determination of expected "base" losses. We are also sure that the observation of additional periods of month of loss data now being accumulated, will contribute to a more effective anticipation and evaluation of such "judgment" factors. Long term and seasonal trends will, in our opinion, eventually be at least partly removed from the "judgment" area. The remaining factors which can create very large monthly changes are so few in number and so distinctive from the ordinary that it is not unreasonable to hope that we shall learn how to cope with them more effectively.

The foregoing comments show clearly that no exact method for computing "base" losses is conceivable. Furthermore, the same areas of potential error that plague the determination of expected "base" losses by month of loss also occur with equal force in the determination of total reserves and total incurred losses, whether on a calendar year, policy year or accident year basis, and including any monthly, quarterly or semi-annual segment thereof. A fundamental test of any method for evaluating current reserve need is to determine whether or not such method produces results that are equal or superior to the results of the method it is intended to replace. Our deficiency reserve program has up to the present proved superior to our past practice.

The principal hope for further improvement appears to depend upon four possible developments. First, the expanded use of electronic data processing equipment should make it possible to extend this kind of research into areas that are presently unavailable from a practical standpoint. Second, such equipment may permit the inclusion of additional current month loss element factors into the computation of

expected "base" losses by month of loss. Third, the accumulation of month of loss data over a longer period of observation will help remove certain important trend data from the area of judgment. Fourth, additional experience in dealing with the shock effects of major holidays, unusual and abrupt economic influences and the like, may minimize the degrees of error we have encountered from these sources in the past.

There is one important advantage to the employment of the "base" loss concept described herein that is worthy of note even though it is not directly related to the computation of deficiency reserves. One of the great problems in checking upon the adequacy of case reserves is the sheer mass of files that must be handled in any such process. By maintaining a record of case reserves and paid losses by month of loss we can observe the over-all adequacy of such reserves for each month of loss separately. This helps to pinpoint any particular month of loss in which reserves may be developing either excessively or inadequately. Furthermore it may be seen on Exhibit XIV that after six months of development, only a very small proportion of the total number of reported losses for each month of loss remain as open claims. Thus, very early in the development of any individual month of loss, it is possible to review the adequacy of total reserves for such month in any single state and this process will involve the handling of only a limited number of files in proportion to the total number of cases pending at any given time.

We believe that a continued effort to improve the accuracy of our reserve procedures is mandatory for many reasons. From the standpoint of administration, it has been stated that we compile a calendar month record of experience by state and by coverage which is used by management to aid in carrying out its many functions. Unless this report is as accurate as possible it can be of only limited value. The underwriting gain and loss data set forth thereon is substantially influenced by the accuracy of reserves. If such data are allowed to become misleading, they also become potentially harmful.

From the standpoint of rating data, the accuracy of reserves is of great importance. Consider for a moment the results that would have been obtained from our record of needed reserves for losses incurred but not reported. Had this reserve been in use as of June 1, 1954, it would have proved to be about \$235,000 inadequate for total need and as of December 31, 1955, it would have proved to be inadequate by almost \$850,000. These inadequacies would have shown up as "paper" profits in the current management reports for these months. More importantly they also would have reduced the pure premiums for the first half and second half of 1953 experience periods below a correct indication. Finally, the pure premiums for the next subsequent periods of experience would have been inflated to a corresponding degree. These effects would have been severe because \$235,000 is about 35% of the expected underwriting gain for the entire first half of 1954. The \$850,000 inadequacy is over 100% of the expected underwriting gain during the last six months of that year.

As serious as these actual and potential distortions appear, they are not believed to be peculiar to our company. By every publicized test, our loss disposal procedures produce results that compare favorably to industry averages. We, therefore, believe that these distortions principally serve to emphasize the inherent difficulties of loss reserve procedures in general.

The procedures we have described in this report are not new. We have simply extended the usual concept for testing reserve adequacy by year of loss to month of loss experience. We have used the earliest reasonable indication of actual incurred losses by month of loss as a base for computing reserve adequacy. In this respect our concept of "base" losses is no different from the concept of "incurred losses" used for testing adequacy on a year of loss basis, or from the concept of total incurred losses used in developing pure premium and loss ratio information. The accuracy of any method for obtaining an acceptable estimate of "base" losses will be dependent upon the same operational factors that underlie the accuracy of total incurred losses on either a calendar year, an accident year or a policy year basis of analysis.

In working with month of loss data we have found that such data separates the total area of loss reserve needs into conveniently sized packages which can be analyzed and interpreted in terms of operations and procedures. In our application of these data to the problem of our hidden reserve needs we have so far obtained an important "average" improvement over other methods available for this purpose. This has been accomplished even though we have had only a bare minimum of information and experience on which to rely. For this reason, we anticipate that the specific method we now use to develop deficiency reserves will be considerably revised and improved in the future.

EXHIBIT I  
COMPANYWIDE MONTH OF LOSS DEVELOPMENT DATA  
JANUARY, 1954, MONTH OF LOSS

	OUTSTANDING		REPORTED		REOPENED		PAID		PD REVISIONS	RED. REVISIONS	CMP	OUTSTANDING		TOTAL INCURRED	
	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	AMOUNT	AMOUNT	NO.	AMOUNT	NO.	AMOUNT	LOSSES
1954 Jan.			2,129	1,017,536			322	43,716	133,150	-18,250	81	39,150	1,720	1,219,985	1,263,701
Feb.	1,720	1,219,985	1,510	944,699	1	550	832	128,691	298,169	-575,495	422	212,075	1,974	2,095,646	2,268,053
Cumulative			3,639	2,359,235	1	550	1,154	172,407	431,319	-593,745	503	251,225			
March	1,974	2,095,646	233	111,526	11	6,900	484	142,236	201,759	-519,150	291	140,965	1,437	2,232,006	2,546,649
Cumulative			3,872	2,470,761	12	7,450	1,638	314,643	633,078	-1,112,895	794	392,190			
April	1,437	2,232,006	90	40,327	8	3,860	273	118,198	155,210	-279,340	150	76,900	1,108	2,181,910	2,644,751
Cumulative			3,962	2,511,088	20	11,310	1,911	462,841	788,288	-1,392,235	944	469,090			
May	1,108	2,181,910	28	28,371	12	10,135	159	138,149	112,437	-132,525	86	64,020	908	2,034,060	2,625,050
Cumulative			3,990	2,539,459	32	21,445	2,070	600,990	900,725	-1,524,760	1,030	533,110			
June	908	2,034,060	20	12,706	5	3,600	133	112,381	100,335	-138,086	68	47,580	731	1,898,731	2,642,102
Cumulative			4,010	2,552,165	37	25,045	2,203	743,371	1,001,060	-1,662,846	1,098	580,690			
July	731	1,898,731	23	11,230	11	10,170	94	124,704	111,510	-116,574	42	34,630	627	1,768,600	2,636,675
Cumulative			4,033	2,563,395	48	35,215	2,297	868,075	1,112,570	-1,779,420	1,140	615,320			
August	627	1,768,600	9	5,745	2	2,050	56	111,331	112,570	-102,555	34	20,560	547	1,737,615	2,717,021
Cumulative			4,042	2,569,140	50	37,265	2,353	979,406	1,226,144	-1,881,975	1,174	635,880			
Sept.	547	1,737,615	4	6,300	4	1,730	68	130,675	86,005	-31,480	36	39,910	451	1,518,285	2,628,366
Cumulative			4,046	2,575,440	54	38,995	2,421	1,110,081	1,212,149	-1,913,455	1,210	675,790			
Oct.	451	1,518,285	6	12,240	3	7,050	54	116,456	79,139	-42,710	12	11,820	397	1,372,870	2,599,407
Cumulative			4,052	2,587,680	57	46,045	2,472	1,226,537	1,291,488	-1,956,165	1,222	687,610			
Nov.	397	1,372,870	10	12,270	8	14,800	44	94,038	47,392	-83,690	6	5,890	368	1,336,310	2,656,885
Cumulative			4,062	2,599,950	65	60,845	2,513	1,320,575	1,338,880	-2,039,855	1,228	693,500			
Dec.	368	1,336,310	6	3,030	3	4,680	45	161,923	72,737	-68,950	10	13,300	322	1,182,510	2,665,008
Cumulative			4,068	2,602,980	68	65,525	2,558	1,482,498	1,411,617	-2,108,805	1,238	706,800			
1955 Jan.	322	1,182,510	15	11,970	2	700	34	87,130	46,030	-54,530	11	11,300	293	1,104,050	2,673,678
Cumulative			4,083	2,614,950	70	66,225	2,592	1,569,628	1,457,647	-2,163,335	1,249	718,100			
Feb.	293	1,104,050	5	3,170	5	5,700	20	56,025	36,795	-50,210	12	12,060	271	1,058,550	2,684,203
Cumulative			4,088	2,618,120	75	71,925	2,612	1,625,653	1,494,442	-2,213,545	1,261	730,160			
March	271	1,058,550	2	-470	4	2,590	31	82,164	30,646	-3,010	6	3,240	240	947,590	2,655,407
Cumulative			4,090	2,617,650	79	74,475	2,643	1,707,817	1,525,088	-2,216,555	1,267	733,400			
April	240	947,590	2	720	3	3,150	11	44,490	29,330	-45,110	5	9,680	229	912,470	2,664,477
Cumulative			4,092	2,618,370	82	77,625	2,654	1,752,007	1,554,418	-2,269,665	1,272	743,080			
May	229	912,470	-1	-450	3	2,510	14	29,789	60,791	-25,420	8	7,950	209	841,420	2,623,216
Cumulative			4,091	2,617,920	85	80,135	2,668	1,781,796	1,615,209	-2,287,085	1,280	751,030			
June	209	841,420	6	8,470	17	8,470	17	94,214	20,976	-21,950	9	17,570	188	762,980	2,639,017
Cumulative			4,091	2,617,920	91	88,605	2,685	1,876,037	1,594,233	-2,309,035	1,289	768,600			
July	188	762,980	1	550	1	1,100	15	23,737	21,338	-5,700	5	4,050	171	721,130	2,620,904
Cumulative			4,092	2,618,470	92	89,705	2,700	1,899,774	1,615,671	-2,314,735	1,294	772,650			
August	171	721,130	-	-	2	1,150	8	30,355	8,045	-13,280	4	1,550	161	695,610	2,625,739
Cumulative			4,092	2,618,470	94	90,855	2,708	1,930,129	1,623,716	-2,326,015	1,298	774,200			
Sept.	161	695,610	-1	-3,900	-	-	9	-2,129	40,329	-	8	11,080	144	649,140	2,577,140
Cumulative			4,091	2,614,570	94	90,855	2,717	1,928,000	1,663,955	-2,328,595	1,306	785,280			

NO. YR. OF LOSS	1954 MONTH OF DEVELOPMENT											
	AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUG. 31	AS OF SEPT. 30	AS OF OCT. 31	AS OF NOV. 30	AS OF DEC. 31
1945	\$6,826,301	6,826,301	6,826,301	6,826,301	6,826,301	6,823,951	6,824,601	6,825,651	6,823,951	DISPOSED		
1946	10,855,029	10,855,029	10,855,029	10,855,029	10,848,529	10,855,529	10,855,529	10,855,529	10,855,529	10,854,949	10,854,949	10,855,879
1947	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907
1948	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754
1949	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521
1950	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866
1951	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117
1952	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663
1953	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311
Jan. 1954	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904
Feb.	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851
March	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845
April	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469
May	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640
June	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353
July	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700
August	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553
Sept.	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110
Oct.	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904
Nov.	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317
December	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053

EXHIBIT II -- PART 1

TOTAL REPORTED INCURRED LOSSES BY MONTH AND YEAR OF LOSS BY MONTH OF DEVELOPMENT

NO. YR. OF LOSS	1955 MONTH OF DEVELOPMENT											
	AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUG. 31	AS OF SEPT. 30	AS OF OCT. 31		
1946	\$10,855,897	10,855,897	10,855,897	10,855,897	10,855,897	10,855,897	10,855,897	10,855,897	10,855,897	10,854,397	10,854,397	
1947	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,127,754	10,125,589	
1948	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	9,265,907	
1949	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	10,475,521	
1950	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	11,068,866	
1951	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	18,384,117	
1952	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	24,196,663	
1953	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	29,931,311	
Jan. 1954	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	2,620,904	
Feb.	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	2,697,851	
March	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	2,492,845	
April	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	2,590,469	
May	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	3,280,640	
June	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	2,644,353	
July	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	3,297,700	
August	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	3,165,553	
Sept.	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	2,992,110	
Oct.	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	3,522,904	
Nov.	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	3,301,317	
December	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	2,268,053	

MONTH OF LOSS DEFICIENCY RESERVES

EXHIBIT II -- PART 1

TOTAL REPORTED INCURRED LOSSES BY MONTH AND YEAR OF LOSS BY MONTH OF DEVELOPMENT

MONTH OF LOSS	YEAR	1955 MONTH OF DEVELOPMENT									
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31
January	1955	1,640,277	2,504,871	2,909,320	3,023,048	3,106,836	3,185,923	3,197,976	3,128,854	3,089,401	3,127,097
February			1,443,445	2,307,133	2,678,907	2,833,801	2,879,850	2,942,358	2,893,034	2,867,091	2,914,095
March				1,727,204	2,833,488	3,254,682	3,342,875	3,303,533	3,264,553	3,193,255	3,194,187
April					1,768,352	2,852,830	3,448,808	3,453,080	3,403,230	3,331,743	3,442,197
May						1,787,151	2,968,077	3,462,319	3,540,405	3,447,648	3,589,715
June							1,927,384	2,985,234	3,358,565	3,253,690	3,361,835
July								2,091,257	3,088,276	3,356,823	3,562,085
August									2,290,943	2,972,425	3,483,083
September										1,792,541	2,842,584
October											2,454,327

EXHIBIT II -- PART 2

RATIO OF REPORTED INCURRED LOSSES BY MONTH AND YEAR OF LOSS AND MONTH OF DEVELOPMENT TO BASE\*

MONTH OF LOSS	YEAR	1954 MONTH OF DEVELOPMENT											
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31	AS OF NOV. 30	AS OF DEC. 31
	1945	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	DISPOSED	1.000
	1946	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		.998
	1947	1.000	1.000	1.001	1.001	1.001	1.001	1.001	1.001	.999	.999		.999
	1948	1.000	1.000	1.000	1.000	1.000	1.000	1.002	1.001	1.002	1.002	1.002	1.002
	1949	1.001	1.002	.997	1.001	1.001	1.000	1.000	1.001	1.001	1.001	.999	.999
	1950	1.001	.997	1.000	.998	.998	.996	.996	.993	.992	.992	.990	.991
	1951	.999	.998	.996	.990	.989	.988	.986	.988	.985	.983	.981	.980
	1952	1.002	.997	.994	.988	.981	.977	.972	.968	.962	.958	.955	.954
	1953	.997	1.006	1.012	1.014	1.001	.992	.991	.990	.983	.974	.973	.975
January	1954	.478	.858	.963	1.000	.996	.999	.997	1.027	.994	.983	1.005	1.008
February			.425	.836	.954	1.000	1.003	1.025	1.038	1.026	1.008	1.004	1.047
March				.515	.848	.952	1.000	.946	.926	.926	.915	.933	.960
April					.591	.869	.969	1.000	1.015	1.010	1.007	1.016	1.027
May						.466	.874	.977	1.000	.997	1.008	1.013	1.023
June							.552	.883	.966	1.000	.920	.920	.932
July								.849	.834	.939	1.000	1.027	1.059
August									.527	.808	.935	1.000	1.050
September										.431	.831	.910	1.000
October											.465	.796	.961
November												.494	.840
December													.527

\*Base is: Total Incurred Losses as of December 31, 1953, for each year of loss.  
Total Incurred Losses after four months of development for each month of loss.

EXHIBIT II -- Part 2

RATIO OF REPORTED INCURRED LOSSES BY MONTH AND YEAR OF LOSS AND MONTH OF DEVELOPMENT TO BASE\*

MONTH OF LOSS	YEAR	1955 MONTH OF DEVELOPMENT									
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31
	1946	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	1947	.999	.999	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001
	1948	1.000	.999	.998	.997	.997	.998	.998	.999	.997	.997
	1949	.999	.998	.997	.997	.996	.996	.997	.997	.997	.998
	1950	.999	.997	.997	.998	.997	.997	.998	.997	.998	.996
	1951	1.000	.998	.998	.998	.998	.996	.996	.995	.994	.993
	1952	.999	.996	.995	.993	.991	.989	.987	.984	.983	.982
	1953	.995	.988	.979	.976	.969	.968	.964	.962	.954	.952
January	1954	1.011	1.015	1.004	1.007	.992	.998	.991	.993	.974	.992
February		1.037	1.017	1.024	1.016	1.007	1.007	.995	.998	.976	.975
March		.962	.949	.921	.940	.935	.936	.937	.945	.952	.954
April		1.024	1.015	1.009	1.017	1.020	1.035	1.022	1.011	1.005	1.004
May		1.029	1.031	1.028	1.011	1.002	.998	.992	.987	.986	.970
June		.942	.941	.947	.945	.940	.936	.921	.916	.899	.895
July		1.080	1.088	1.077	1.101	1.102	1.107	1.102	1.088	1.072	1.070
August		1.074	1.064	1.079	1.056	1.049	1.043	1.036	1.033	1.020	1.017
September		.934	.919	.899	.892	.894	.890	.882	.870	.858	.859
October		1.000	1.008	.992	.983	.995	.999	1.012	1.000	.972	.979
November		.966	1.000	1.002	1.022	1.035	1.035	1.024	1.024	1.025	1.009
December		.821	.943	1.000	.964	.974	1.007	1.019	1.007	.969	.981

\*Base is: Total incurred losses as of December 31, 1954 for each year of loss.  
Total incurred losses after four months of development for each month of loss.

MONTH OF LOSS DEFICIENCY RESERVES

## EXHIBIT II -- PART 2

## RATIO OF REPORTED INCURRED LOSSES BY MONTH AND YEAR OF LOSS BY MONTH OF DEVELOPMENT TO BASE\*

MONTH OF LOSS	YEAR	1955 MONTH OF DEVELOPMENT									
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31
January	1955	.543	.829	.963	1.000	1.028	1.054	1.058	1.035	1.022	1.035
February			.509	.814	.945	1.000	1.016	1.038	1.021	1.012	1.028
March				.517	.848	.974	1.000	.988	.977	.955	.956
April					.512	.826	.990	1.000	.986	.965	.997
May						.505	.838	.978	1.000	.974	1.014
June							.592	.917	1.032	1.000	1.033
July								.587	.867	.942	1.000
August											
September											
October											

\*Base is: Total incurred losses after four months of development for each month of loss.

**EXHIBIT III**  
**TOTAL REPORTED INCURRED LOSSES BY STATE - ALL 1954 MONTHS OF LOSS COMBINED BY MONTH OF DEVELOPMENT AND EXPRESSED AS RATIOS TO COMBINED "BASE" LOSSES.**

MONTH OF DEVELOPMENT	STATE CODES																MONTHS OF LOSS DEFICIENCY RESERVES
	A	AA	B	BB	C	CC	D	DD	E	EE	F	FF	G	GG	H	HH	
1	.592	.596	.687	.496	.453	.503	.590	.725	.501	.383	.476	.547	.391	.473	.419	.606	
2	.900	1.184	1.031	.895	.839	.699	1.007	1.082	.715	.827	.779	.805	.871	.846	.696	1.133	
3	.963	1.012	1.050	.996	.895	.866	1.021	1.001	.976	.878	.903	.834	.990	1.008	.905	.790	
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5	1.023	.977	.958	.981	1.027	.962	.962	.959	1.102	.976	.987	1.027	.924	.956	.971	1.148	
6	1.049	.957	.966	.920	.951	.944	.963	.985	1.150	.913	.984	1.012	.821	.921	.926	1.088	
	I	II	J	JJ	K	KK	L	LL	M	MM	N	NN	O	OO	P	Q	
1	.600	.498	.509	.489	.303	.460	.466	.399	.298	.410	.478	.503	.820	.512	.431	.340	
2	.846	1.327	.767	.867	.694	.843	1.014	.873	.792	.823	.963	.859	1.178	.924	.872	.628	
3	1.001	1.267	.886	1.029	.894	.934	1.066	.992	.912	.943	.969	.939	1.137	.996	.976	.888	
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
5	1.067	.686	.918	.983	1.061	1.061	.846	.953	.951	.991	.866	.969	1.020	.993	.969	.975	
6	1.069	.659	.939	.926	1.037	1.084	.853	1.123	.882	1.015	.871	.977	1.019	.992	.949	.939	
	R	S	T	U	V	W	X	Y	Z	COMPANYWIDE							
1	.538	.438	.519	.556	.533	.392	.551	.463	.419	.493							
2	.827	.860	.812	.889	.832	.705	.794	.773	.769	.840							
3	.989	.958	.913	.993	.971	.867	.968	1.009	.928	.953							
4	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
5	.994	.975	.977	.968	.992	.980	.950	.998	.946	.988							
6	1.013	.966	.995	.986	1.015	.938	.996	.941	.938	.996							

EXHIBIT IV  
 NUMBER OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1954 MONTH OF LOSS											
	January	February	March	April	May	June	July	August	September	October	November	December
1	322	294	420	442	406	436	430	470	547	523	459	631
2	832	732	992	824	1,040	1,436	1,057	1,047	1,209	1,024	1,049	1,377
3	484	375	398	445	484	475	491	471	446	537	456	525
4	273	191	424	213	315	325	246	243	42	254	241	349
5	159	180	-144	162	220	-235	149	179	-155	187	192	-1
6	133	91	20	132	131	70	134	121	114	153	126	99
7	94	75	70	87	86	76	86	99	89	117	101	128
8	56	66	61	64	89	46	50	74	69	78	88	67
9	68	61	39	63	58	55	60	75	57	78	52	87
10	51	40	52	34	46	42	57	58	70	51	63	77
11	41	35	26	38	61	51	35	50	33	55	71	60
12	45	39	24	41	50	36	38	30	40	60	56	
13	34	28	36	24	40	41	36	44	55	58		
14	20	29	22	26	20	29	33	39	20			
15	31	17	19	16	21	16	32					
16	11	16	19	20	29	33	18					
17	14	14	6	18	34	21						
18	17	19	9	20	18							
19	15	14	17	13								
20	8	17	10									
21	9	19										
22	14											
CURRENT TOTAL	2,731	2,352	2,520	2,682	3,148	2,953	2,952	3,025	2,936	3,175	2,954	3,399

MONTH OF LOSS DEFICIENCY RESERVES

EXHIBIT IV

NUMBER OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1955 MONTH OF LOSS									
	January	February	March	April	May	June	July	August	September	October
1	483	403	567	519	598	815	875	1,017	1,271	1,050
2	1,007	1,015	1,204	1,050	1,134	866	943	1,071	568	
3	488	375	421	452	491	525	612	475		
4	232	231	139	271	328	387	242			
5	147	154	70	199	283	166				
6	138	104	120	170	105					
7	95	104	134	86						
8	77	116	100							
9	93	43								
10	43									
<b>CURRENT TOTAL</b>	<b>2,803</b>	<b>2,545</b>	<b>2,755</b>	<b>2,747</b>	<b>2,939</b>	<b>2,759</b>	<b>2,672</b>	<b>2,563</b>	<b>1,839</b>	<b>1,050</b>

MONTH OF LOSS DEFICIENCY RESERVES

**EXHIBIT V**  
**AMOUNT OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT**  
**JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE**  
**COMPANYWIDE**

MONTHS OF DEVELOPMENT	1954 MONTH OF LOSS											
	January	February	March	April	May	June	July	August	September	October	November	December
1	\$ 43,716	27,934	51,434	40,054	31,164	34,829	38,456	47,892	48,647	55,049	45,932	73,693
2	128,691	102,358	196,204	107,228	163,688	328,715	156,961	150,379	279,090	152,166	158,255	269,135
3	112,236	133,478	141,545	142,812	143,256	143,224	183,694	137,581	117,166	178,266	136,772	227,415
4	148,198	129,500	240,025	120,077	158,168	164,123	140,771	151,317	292,260	151,358	125,936	294,329
5	138,149	178,662	46,169	103,648	178,569	41,169	168,050	184,911	74,269	141,589	167,463	79,040
6	142,381	125,801	97,722	165,279	114,386	129,386	183,146	177,787	149,198	166,875	174,447	140,180
7	124,704	100,308	98,894	131,125	151,640	191,719	175,377	126,145	149,890	182,938	197,972	218,291
8	111,331	113,922	129,519	123,733	227,725	96,130	71,669	168,819	125,265	166,058	139,857	123,977
9	130,675	159,300	116,320	99,774	126,609	90,895	132,144	149,786	90,662	162,778	83,484	162,334
10	116,456	60,664	134,731	70,404	140,363	76,386	119,295	161,881	157,030	108,799	115,397	176,552
11	94,038	86,352	49,770	92,821	156,681	151,639	149,749	128,790	107,021	106,969	199,084	206,692
12	161,923	152,277	75,236	135,821	146,364	97,811	105,393	89,278	86,643	140,179	225,735	
13	87,130	82,943	101,420	78,821	112,850	75,149	113,246	94,949	66,354	179,634		
14	56,025	81,238	59,858	108,005	89,830	59,657	99,420	91,874	74,670			
15	82,164	53,279	71,140	68,498	102,969	49,923	73,963	85,398				
16	44,190	40,296	49,794	48,471	50,179	63,241	75,744					
17	29,789	37,089	16,950	41,971	75,819	88,872						
18	94,241	51,952	31,919	35,815	46,027							
19	23,737	48,705	27,857	32,043								
20	30,335	51,334	38,731									
21	-2,129	54,251										
22	53,213											
CURRENT TOTAL	\$1,982,213	1,911,643	1,682,900	1,746,400	2,218,287	1,800,530	1,987,078	1,946,787	1,669,627	1,892,658	1,770,334	1,974,638

EXHIBIT V

AMOUNT OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1955 MONTH OF LOSS									
	January	February	March	April	May	June	July	August	September	October
1	\$ 51,852	50,237	66,035	43,584	50,135	194,609	250,027	212,783	315,421	279,081
2	138,045	139,303	317,827	162,071	166,825	74,520	36,126	101,503	-36,925	
3	170,055	113,636	151,687	147,674	157,070	189,828	207,879	188,551		
4	131,355	138,459	143,338	169,944	188,141	217,563	153,913			
5	112,454	137,889	40,403	180,922	272,442	127,135				
6	175,732	146,868	129,008	183,288	137,822					
7	144,468	162,496	154,477	168,589						
8	117,953	148,748	199,752							
9	141,852	159,459								
10	125,736									
CURRENT TOTAL	\$1,309,502	1,197,095	1,202,527	1,056,072	972,435	803,655	647,945	502,837	278,496	

MONTH OF LOSS DEFICIENCY RESERVES

## EXHIBIT V A

RATIOS OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT TO "BASE" LOSSES  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1954 MONTH OF LOSS											
	January	February	March	April	May	June	July	August	September	October	November	December
1	.017	.011	.020	.016	.010	.012	.013	.016	.015	.016	.014	.018
2	.049	.039	.076	.042	.051	.117	.051	.051	.087	.043	.048	.066
3	.054	.051	.055	.056	.045	.051	.060	.047	.037	.051	.041	.056
4	.056	.050	.093	.047	.050	.058	.046	.051	.091	.043	.038	.072
5	.052	.069	-.018	.041	.056	-.015	.055	.063	-.023	.040	.051	.019
6	.054	.048	.038	.065	.036	.046	.060	.060	.047	.047	.053	.034
7	.047	.039	.038	.052	.048	.068	.057	.043	.047	.052	.060	.053
8	.042	.044	.050	.049	.072	.034	.023	.057	.039	.047	.042	.030
9	.049	.061	.045	.039	.040	.032	.043	.051	.028	.046	.025	.040
10	.044	.023	.052	.028	.044	.272	.039	.055	.049	.031	.035	.043
11	.036	.033	.019	.037	.049	.054	.049	.044	.033	.030	.060	.051
12	.061	.059	.029	.054	.046	.035	.035	.030	.027	.040	.068	
13	.033	.032	.039	.031	.035	.027	.037	.032	.021	.051		
14	.021	.031	.023	.043	.028	.021	.033	.031	.023			
15	.031	.020	.027	.027	.032	.018	.024	.029				
16	.017	.031	.019	.019	.016	.023	.025					
17	.011	.014	.007	.017	.024	.032						
18	.035	.020	.012	.014	.011							
19	.009	.019	.011	.013								
20	.011	.020										
21	-.001	.021										
22	.020											
CURRENT TOTAL	.749	.735	.649	.691	.696	.641	.651	.660	.521	.537	.534	.483

"Base losses are total reported losses for each month after four months of development.

EXHIBIT V A

RATIOS OF PAID LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT TO "BASE"\* LOSSES  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1955 MONTH OF LOSS									
	January	February	March	April	May	June	July	August	September	October
1	.017	.018	.020	.013	.014	.060	.070	----NO BASE AVAILABLE-----		
2	.046	.049	.095	.047	.047	.023	.010			
3	.056	.040	.045	.043	.044	.058	.058			
4	.043	.049	.043	.049	.053	.067	.043			
5	.037	.049	.012	.052	.077	.039				
6	.058	.052	.039	.053	.039					
7	.048	.057	.046	.049						
8	.039	.052	.060							
9	.047	.056								
10	.042									
CURRENT TOTAL	.415	.422	.360	.306	.275	.247	.182			

\*Base losses are total reported losses for each month of loss after four months of development.

MONTH OF LOSS DEFICIENCY RESERVES



EXHIBIT VI

AMOUNT OF RESERVED CLAIMS BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1955 MONTH OF LOSS									
	January	February	March	April	May	June	July	August	September	October
1	\$1,588,425	1,393,208	1,661,169	1,724,768	1,737,016	1,732,775	1,841,230	2,078,160	1,477,120	2,175,246
2	2,314,974	2,117,593	2,449,626	2,647,175	2,751,117	2,716,105	2,802,123	2,658,157	2,564,088	
3	2,549,368	2,375,731	2,719,133	3,065,479	3,088,289	2,899,608	2,862,791	2,980,246		
4	2,531,741	2,392,166	2,663,988	2,929,807	2,978,234	2,577,170	2,914,140			
5	2,503,075	2,300,326	2,584,243	2,699,035	2,613,035	2,558,180				
6	2,406,430	2,215,966	2,416,255	2,444,260	2,617,280					
7	2,274,015	2,004,146	2,190,480	2,386,125						
8	2,086,940	1,829,455	1,991,660							
9	1,905,635	1,717,000								
10	1,817,595									

MONTH OF LOSS DEFICIENCY RESERVES

## EXHIBIT VI A

## RATIOS OF RESERVED CLAIMS BY MONTH OF LOSS AND MONTH OF DEVELOPMENT TO "BASE"\* LOSSES

MONTH OF DEVELOPMENT	1954 MONTH OF LOSS JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE COMPANYWIDE											
	January	February	March	April	May	June	July	August	September	October	November	December
1	.461	.414	.495	.575	.456	.509	.476	.510	.416	.449	.480	.509
2	.792	.786	.752	.811	.813	.754	.769	.740	.729	.738	.778	.737
3	.844	.853	.802	.854	.871	.786	.814	.821	.771	.852	.863	.804
4	.825	.849	.757	.838	.844	.761	.830	.835	.770	.848	.859	.788
5	.769	.784	.721	.811	.785	.696	.801	.822	.727	.816	.811	.733
6	.718	.757	.680	.742	.761	.650	.784	.786	.666	.752	.778	.708
7	.669	.731	.625	.687	.718	.593	.738	.733	.599	.691	.731	.688
8	.657	.676	.565	.647	.656	.569	.722	.691	.552	.656	.689	.670
9	.574	.597	.538	.618	.622	.536	.667	.617	.527	.614	.653	.617
10	.519	.569	.512	.588	.580	.514	.652	.555	.474	.596	.617	.536
11	.505	.578	.495	.541	.528	.458	.604	.505	.432	.554	.558	.498
12	.447	.510	.453	.482	.465	.419	.575	.468	.393	.486	.475	
13	.417	.458	.386	.459	.420	.388	.532	.433	.360	.441		
14	.400	.434	.382	.419	.389	.352	.486	.389	.338			
15	.358	.406	.350	.407	.350	.329	.446	.357				
16	.345	.366	.331	.375	.329	.290	.419					
17	.318	.352	.326	.347	.305	.254						
18	.288	.320	.322	.327	.274							
19	.273	.304	.317	.313								
20	.263	.262	.304									
21	.245											
22	.243											

\*Base losses are total reported losses for each month of loss after four months of development.

RATIOS OF RESERVED CLAIMS BY MONTH OF LOSS AND MONTH OF DEVELOPMENT TO "BASE" LOSSES  
 JANUARY, 1954, TO OCTOBER, 1955, INCLUSIVE  
 COMPANYWIDE

MONTH OF DEVELOPMENT	1955 MONTH OF LOSS									
	January	February	March	April	May	June	July	August	September	October
1	.525	.492	.497	.499	.491	.533	.517			
2	.766	.747	.733	.767	.777	.835	.787			
3	.843	.838	.813	.888	.872	.891	.804			
4	.837	.844	.797	.848	.841	.792	.818			
5	.828	.812	.773	.782	.738	.786				
6	.796	.782	.723	.708	.739					
7	.752	.707	.655	.691						
8	.690	.646	.596							
9	.630	.606								
10	.601									

--NO BASE AVAILABLE--

\*Base losses are total reported losses for each month of loss after four months of development.

EXHIBIT VII

COMPARISON OF "BASE" LOSSES TO EXPECTED LOSSES BASED ON RESERVE DEVELOPMENT

MONTH	YEAR	"BASE" LOSSES	RESERVE AT ONE MONTH OF DEV.	EXPECTED LOSSES (.500 FACTOR)	% OF ERROR	RESERVE AT TWO MONTHS OF DEV.	EXPECTED LOSSES (.760 FACTOR)	% OF ERROR	RESERVE AT THREE MONTHS OF DEV.	EXPECTED LOSSES (.840 FACTOR)	% OF ERROR
January	1954	\$2,644,751	1,219,985	2,439,970	-7.75	2,095,646	2,757,429	4.26	2,232,006	2,657,150	0.47
February		2,601,345	1,076,390	2,152,780	-17.24	2,044,595	2,690,257	3.42	2,219,170	2,641,869	1.56
March		2,592,144	1,282,225	2,564,450	-1.17	1,950,345	2,566,243	1.00	2,078,196	2,474,043	-4.56
April		2,529,150	1,453,503	2,907,006	14.94	2,051,237	2,698,996	6.72	2,160,044	2,571,481	1.67
May		3,187,757	1,453,494	2,906,988	-8.81	2,591,992	3,410,516	6.99	2,776,688	3,305,581	3.70
June		2,808,420	1,430,438	2,860,876	1.87	2,116,279	2,784,578	-0.85	2,207,242	2,627,669	-6.44
July		3,052,252	1,454,098	2,908,196	-4.72	2,348,671	3,090,357	1.25	2,485,459	2,958,880	-3.06
August		2,947,794	1,504,540	3,009,080	2.08	2,182,555	2,871,783	-2.58	2,421,281	2,882,477	-2.22
September		3,204,539	1,331,760	2,663,528	-16.88	2,336,295	3,074,072	-4.07	2,471,621	2,942,406	-8.18
October		3,522,904	1,581,820	3,163,640	-10.20	2,598,319	3,418,841	-2.95	3,000,609	3,572,154	1.40
November		3,313,348	1,591,920	3,183,840	-3.91	2,577,767	3,391,799	2.37	2,860,358	3,405,188	-2.77
December		4,080,729	2,077,689	4,155,378	1.83	3,006,378	3,955,761	-3.06	3,279,486	3,904,150	-4.33
January	1955	3,023,048	1,588,425	3,176,850	5.09	2,314,974	3,046,018	0.76	2,549,368	3,034,962	0.39
February		2,833,801	1,393,208	2,786,416	-1.67	2,117,593	2,786,307	-1.68	2,375,731	2,828,251	0.20
March		3,342,875	1,661,169	3,322,338	-0.61	2,449,626	3,223,192	-3.58	2,719,133	3,237,063	-3.17
April		3,453,080	1,724,768	3,444,953	-0.10	2,647,175	3,483,125	0.87	3,065,479	3,649,380	5.66
May		3,540,405	1,737,016	3,474,032	-1.87	2,751,117	3,619,891	2.25	3,088,289	3,676,535	3.85
June		3,253,690	1,732,775	3,465,550	6.51	2,716,105	3,573,822	9.84	2,899,608	3,451,944	6.09
July		3,562,085	1,841,230	3,682,460	3.38	2,802,123	3,687,004	3.51	2,862,791	3,408,085	-4.32

MONTH OF LOSS DEFICIENCY RESERVES

## EXHIBIT VIII

INDICATED EARLY DEFICIENCIES OF REPORTED INCURRED LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
BASED ON THE PROJECTION OF REPORTED RESERVES AND PAID LOSS ALLOWANCE FACTORS

MO. OF LOSS	YR.	CALENDAR DATE OF EVALUATION											
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31	AS OF NOV. 30	AS OF DEC. 31
1954													
January		\$1,073,587	441,189	106,286									
February			947,223	430,441	105,675								
March				1,128,358	110,599	98,962							
April					1,279,083	431,839	102,859						
May						1,279,075	545,683						
June							1,258,785						
July								112,223					
August								445,533	105,107				
September								1,279,606	494,457	118,355			
October									1,323,995	459,485	115,299		
November										1,171,949	1,921,851	117,696	
December											1,392,002	547,015	112,887
Indicated Deficiency Reserve				1,655,085	1,795,357	1,809,876	1,907,327	1,867,362	1,923,559	1,749,789	1,999,152	2,065,601	1,828,366
1954													
Nov., 1954		136,207											
Dec., 1954		632,922	156,166										
Jan., 1955		1,397,814	487,363	121,399									
Feb., 1955			1,226,023	445,809	113,130								
March				1,461,829	515,711	219,482							
il					1,517,796	557,300							
May						219,482							
June						1,538,574							
July							115,975						
August							579,183						
September							1,524,842						
October								117,062					
Indicated Def. Reserve									138,076				
2,166,943		1,869,552	2,029,037	2,146,637	2,315,356	2,250,000	2,339,155	2,556,778	1,995,802	2,595,941			
									571,811				
									136,324				
									589,921	136,324			
									1,828,781	559,612	141,917		
										1,299,866	539,808		
											1,914,216		

EXHIBIT IX

ACTUAL EARLY DEFICIENCIES OF REPORTED INCURRED LOSSES BY MONTH OF LOSS AND MONTH OF DEVELOPMENT  
COMBINED TO INDICATE NEEDED DEFICIENCY RESERVES

MO. OF LOSS	YR.	CALENDAR DATE OF EVALUATION											
		AS OF JAN. 31	AS OF FEB. 28	AS OF MARCH 31	AS OF APRIL 30	AS OF MAY 31	AS OF JUNE 30	AS OF JULY 31	AS OF AUGUST 31	AS OF SEPT. 30	AS OF OCT. 31	AS OF NOV. 30	AS OF DEC. 31
Jan., 1954		\$1,381,050	376,698	98,102									
Feb			1,497,021	426,458	118,405								
March				1,258,485	394,161	124,765							
April					1,035,593	330,631	79,012						
May						1,703,099	400,913	72,961					
June							1,343,153	328,597	94,410				
July								1,549,698	508,164	187,682			
August									1,395,362	566,968			
September										1,824,132	190,661	288,015	
October											540,507	717,370	136,814
November												1,675,496	531,394
December													1,929,347
Needed Deficiency Reserve				1,783,045	1,548,159	2,158,495	1,823,078	1,951,256	1,997,936	2,578,782	2,617,203	2,680,881	2,597,565
Nov., 1954		112,031											
Dec.		731,523	231,000										
Jan., 1955		1,382,771	518,177	113,728									
Feb.			1,390,356	526,668	154,894								
March				1,615,671	509,387	88,193							
April					1,684,728	600,250	34,272						
May						1,753,254	572,228	78,086					
June							1,326,306	268,456	-104,875				
July								1,470,828	473,809	205,262			
Needed Def. Reserve		2,226,325	2,139,533	2,256,067	2,349,009	2,441,697	1,932,806	1,817,370					

MONTH OF LOSS DEFICIENCY RESERVES

## EXHIBIT X

## COMPARISON OF NEEDED DEFICIENCY RESERVES TO INDICATED DEFICIENCY RESERVES AND TO RESERVES FOR INCURRED BUT NOT REPORTED CLAIMS

<u>MONTH, YEAR OF EVALUATION</u>	<u>NEEDED DEFICIENCY RESERVES</u>	<u>I. B. N. R. RESERVES</u>	<u>INDICATED DEFICIENCY RESERVES</u>
1954 JANUARY Ratio	NOT AVAILABLE	\$1,479,360	NOT AVAILABLE
February Ratio	NOT AVAILABLE	1,500,836	NOT AVAILABLE
March Ratio	\$1,783,045 1.000	1,538,218 .863	\$1,655,085 .928
April Ratio	1,548,159 1.000	1,570,925 1.015	1,795,357 1.160
May Ratio	2,158,495 1.000	1,578,652 .731	1,809,876 .839
June Ratio	1,823,078 1.000	1,587,425 .871	1,907,327 1.046
July Ratio	1,951,256 1.000	1,626,645 .834	1,867,362 .957
August Ratio	1,997,936 1.000	1,642,112 .822	1,923,559 .963
September Ratio	2,578,782 1.000	1,663,753 .645	1,749,789 .679
October Ratio	2,617,203 1.000	1,681,533 .643	1,999,152 .764
November Ratio	2,680,881 1.000	1,722,045 .642	2,065,601 .770
December Ratio	2,597,565 1.000	1,748,042 .673	2,513,941 .968
1955 JANUARY Ratio	2,226,325 1.000	1,785,553 .802	2,166,943 .973
February Ratio	2,139,533 1.000	1,792,852 .838	1,869,552 .874
March Ratio	2,256,067 1.000	1,802,279 .799	2,029,037 .899
April Ratio	2,349,009 1.000	1,849,969 .788	2,146,637 .914
May Ratio	2,441,697 1.000	1,883,748 .771	2,315,356 .948
June Ratio	1,932,806 1.000	1,921,458 1.006	2,250,000 1.164
July Ratio	1,817,370 1.000	1,946,763 1.071	2,339,155 1.287