

CORRECTION OF CERTAIN DEFICIENCIES IN THE
EXPERIENCE RATING PLAN BY THE SO-CALLED
"ACCOUNT CURRENT" METHOD

BY

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INTRODUCTION

The Experience Rating Plan has been designed to measure the departure of the experience of the individual risk from the average experience of the class. Such measurement is being accomplished by a comparison of the *actual* losses incurred for the risk during a certain period of time with the *expected* losses for the class based on the risk payrolls for the corresponding time interval.* In abstract theory, it would be necessary that all losses be paid or that all cases are finally disposed of by awards or court decisions. Since such requirement would bar the use of the most recent experience, in actual practice a substantial number of claims is included in the rating where the loss values are estimated. Such estimate is made on the basis of judgment of the claim expert who takes into consideration all the available facts as well as his experience on cases of similar character in the past.

By reason of this practical situation involving the use of judgment which, by its very nature is subject to error, certain difficulties have developed in the application of the Experience Rating Plan and it is the purpose of this paper to outline such difficulties as well as a proposed method of remedy.

I.

The rules of the New York Experience Rating Plan† which provide for the valuation of losses exactly as of six months prior to the effective date of renewal insurance and permit a revision

* Since the expected losses are determined by the use of pure premiums underlying rates effective on date of renewal, certain factors are applied to the losses and payrolls reported for the risk to adjust them to the same level.

† The observations and conclusions of this paper apply, of course, in other states having similar provisions as to the valuation of losses.

of ratings only under certain circumstances and within certain time limits† result, in many instances, in what may be considered as excessive or deficient modifications.

Since the valuation of most recent claims entering the experience period or claims where there is a lack of sufficient information is a matter of judgment, it is unavoidable that the loss value of some claims be over or underestimated. On the other hand, it may take a considerable period of time, in some instances several years from the date of the original valuation, until the ultimate value of the claim can be determined. This results in a disadvantage either to the assured or the carrier, in that the experience modifications for the ratings based on previous inaccurate loss estimates have not produced such results as would have been obtained if the ultimate value of the claims had been used.

† *Rule 41 of the Plan reads as follows:* "It shall not be permissible to revise values because of developments in the nature of injury which may increase or reduce the cost subsequent to the date of valuation or because of departmental and judicial decisions made subsequent to the date of valuation, provided, however, that in cases where loss values are included or excluded through mistake other than error of judgment, or where the claim is declared non-compensable, or where the claimant has recovered in an action against a third party, such loss values shall be revised if prior to the end of the term for which rates are established the mistake is reported to the Board, or the case is officially declared non-compensable, or the recovery against the third party results in final settlement. In all other respects, claims involving recoveries by injured employees against third parties shall be treated in accordance with the provisions of Rule 45 of this plan."

Rule 45 of the Plan reads as follows: "Where negligence suits have been instituted by claimants against third parties, the procedure shall be as follows: Include in the experience application all accident reports for valuation purposes regardless of whether a claimant in any particular case has instituted a suit for negligence against a third party, because failure to recover against a third party is no bar to compensation and the insurance carrier may eventually be obliged to indemnify the claimant in whole or in part for the loss sustained.

In those cases where there may be good reason to believe that the claimant will obtain full recovery against the third party and the insurance carrier saved harmless from any loss, the question as to whether the accident is to be included for experience valuation, together with a detailed statement of facts giving the nature of the injury and the circumstances under which it has been incurred, may be presented as part of the application for experience rating for review and decision by the Board.

In cases where the carrier receives reimbursements under subrogation rights, or where the injured employee or his dependents recover from a third party, the treatment shall be as follows:

In the case of accidents, other than those involving death and permanent total disabilities, only the net loss shall be reported, provided, however, that where the entire loss on any case is recovered, the case shall not be included in the rating. In the case of accidents involving death or permanent total disability, both the full loss and the net loss shall be reported and the amount of loss included for experience rating purposes shall be such proportion of the average value as the net loss bears to the total loss."

As an illustration, let us consider the following case: A claim is declared compensable by the referee, and on appeal such decision is reversed by the Industrial Board after an appreciable lapse of time. In the meanwhile the rating has been established for the risk on the basis of experience which includes the value of the claim as per the award of the referee. Many examples may be given where the loss appraisal of the claim predicated on expert medical testimony proved after final adjudication to be greatly under or overestimated.

This situation becomes even more acute if final adjudication of such claims is effected long after the accident or date when the reserve thereon was fixed, which condition is not of infrequent occurrence. Third party recovery cases in which settlement may have been made several years after the establishment of the reserve also belong in this group of examples where the assured or the carrier is penalized by the fact that the time limits provided for consideration of cases of this and similar character in Rule 41 do not permit a rerating of the risk if the final disposition of the claim occurs after the expiration of the policy for which the rating based on estimated loss values has been promulgated.

On the other hand, in order to make the administration and application of rates practicable, such a time limit must be provided. Even the recent extension of the time limit from the inception to the expiration of the policy does not and cannot satisfy the assured who still considers himself a victim of bureaucracy and red tape. Since practically all revisions increasing the value of the loss are barred after the valuation date, the carrier has no alternative but to resign itself to its fate and accept the unfavorable rating with good grace and hope that the future will bring about an improvement in the loss experience of the risk.

Aside from the discontent of the assured and frequent requests for reratings on one ground or another, the situation assumed recently more serious proportions due to the injection of competitive abuses. This situation has been very ably summarized by Miss Maycrink in her report of the examination of the Compensation Insurance Rating Board as follows:

"In connection with experience ratings, questions have arisen particularly as to reserves for unpaid losses which are used in the determination of the experience rate. The mechanics of obtaining this data has been improved by the

use of the Unit reporting data instead of the former method of obtaining the data from carriers. However, since the valuation of the losses reported under the Unit System is left to the carriers' judgment and the Board has little or no check on the reserve data, there is evidence pointing to unfair competition. Competing carriers may question reserves which have been put up in good faith. A company which puts up adequate reserves to cover all cases even where they are contested can be accused of penalizing an assured by means of an increase in rate. To meet this type of competition, a company which was conservative in the matter of reserves would be tempted, in self-defense, to reduce the reserve in order to hold the risk from any aggressive competitor. The Board should take action without delay to remove what is a tantamount to an invitation to unfair competition by means of changing reserves."

The subject of reserves in connection with experience rating has been studied for a long time and is being considered at the present time by the Actuarial Committee of the Board.

II.

In this paper a method is developed which is designed to eliminate injustice to both the assured and the insurance carrier resulting from the application of the present rules of the Experience Rating Plan and due to over and underestimates of losses. The method has been evolved from the idea of a so-called "account current" suggested by the late Roy A. Wheeler.

The principle of the "account current" method is to give to both the assured and the insurance carrier the benefit of the use of the ultimate incurred losses in the rating of an individual risk. In abstract theory, this would mean that the risk should be re-rated after all the losses have been actually paid and then the difference between the revised rating and the original rating either refunded to the assured or paid to the carrier, whichever the case may be. Such procedure, however, could not be adopted in practice for the following reasons:

- (a) The assured would not like to enter into a contract to pay premiums whereby he would not know for a long period of time what such premiums would be.
- (b) The contract would, in some cases, extend for a considerable number of years and the possibility of collection may

be impaired on account of the assured going out of business or changing the legal identity of the risk.

- (c) Statistics of premiums for any given policy year could not be completed for a considerable length of time.
- (d) The cost of rerating and rebilling might become prohibitive.

In order to find the practical approach to the problem, certain limitations must be imposed upon the definitions of the ultimate cost and the "true" rating (that is, the rating based on ultimate costs). Furthermore, a procedure must be evolved which will effect "corrections" of previous ratings in subsequent ratings in such a manner that over a period of years the result will approximate the "true" rating. We shall now proceed with the development of a practical formula of "account current" method of experience rating:

The assumption is made that losses are ultimate at the time of fourth reportings. This assumption is reasonable because at the time of the valuation of fourth reportings there will have elapsed forty-two (42) to fifty-four (54) months from the date of accident and such time is sufficient in practically all instances to determine, with a reasonable degree of accuracy, the ultimate cost of the case. This assumption is also practical, as it does not impose upon the carriers any additional burden of filing reports other than those filed at the present time.

The method proposes to make adjustments in the current rating for the changes in loss values during the period between the preceding and the current rating in connection with claims within the scope of the three preceding ratings, i. e., the changes between the third and fourth reportings in connection with the three previous ratings; the changes between the second and third report as affect the two previous ratings, and finally, the changes between the first and second report as affect the immediately preceding rating.

In order to develop a formula for the needed corrections, let us introduce the following notation:

- Let E_{in} = Normal expected losses for year i .
- E_{ix} = Excess expected losses for year i .
- c_{in} = Normal credibility for year i .
- c_{ix} = Excess credibility for year i .

L_{in} = Modified normal losses for year i .

L_{ix} = Modified excess losses for year i .

A_{in}^k = Additional modified normal losses for year i developed during the k^{th} year after the original year of rating.

A_{ix}^k = Additional modified excess losses for year i developed during the k^{th} year after the original year of rating.

M_i = Present plan modification for year i .

\bar{M}_i = True modification for year i .

We have then:

$$M_i = \frac{(L_{in} - E_{in}) c_{in} + (L_{ix} - E_{ix}) c_{ix} + (E_{in} + E_{ix})}{E_{in} + E_{ix}} \quad (1)$$

and the true modification would be:

$$\bar{M}_i = \frac{(L_{in} - E_{in}) c_{in} + (L_{ix} - E_{ix}) c_{ix} + (E_{in} + E_{ix})}{E_{in} + E_{ix}} + \frac{\sum_{k=1}^3 (A_{in}^k c_{in} + A_{ix}^k c_{ix})}{E_{in} + E_{ix}} \quad (2)$$

It is evident, therefore, that in order to develop any formula providing for annual adjustments of previous ratings, it is necessary that such formula should produce in the aggregate the additional modification reflected by the second term of (2) above. In symbols, if m_i denotes the modification under the proposed method it is necessary that

$$\sum_{i=1}^r m_i = \sum_{i=1}^r \bar{M}_i \quad (3)$$

where r is sufficiently large.

$$\text{Let:} \quad \frac{A_{in}^k c_{in} + A_{ix}^k c_{ix}}{E_{in} + E_{ix}} = \frac{k A_i}{E_i} \quad (4)$$

and let us consider the following formula for the proposed method:

$$m_i = M_i + \frac{{}^1 A_{i-1}}{E_{i-1}} + \frac{{}^2 A_{i-2}}{E_{i-2}} + \frac{{}^3 A_{i-3}}{E_{i-3}} \quad (5)$$

Using notation (4) in (2) we obtain:

$$\bar{M}_i = M_i + \frac{\sum_{k=1}^3 k A_i}{E_i} \quad (6)$$

It can be readily seen that

$$\left| \sum_{t=1}^7 \bar{M}_t - \sum_{t=1}^7 m_t \right| = \left| \frac{\sum_{k=1}^3 {}^k \mathcal{A}_n}{E_n} + \frac{\sum_{k=2}^3 {}^k \mathcal{A}_{n-1}}{E_{n-1}} + \frac{{}^3 \mathcal{A}_{n-2}}{E_{n-2}} \right| \quad (7)$$

The above result indicates that the proposed method will, after a number of years, effect corrections to the "true" rating on ratings for all years except as follows:

- (a) No correction whatsoever for the current year of rating (which is evidently impossible as the future development of losses is unknown).
- (b) Correction of only one year's development on the preceding rating.
- (c) Correction of only two years' development on the second preceding year of rating.

The proposed method, therefore, will lag behind the true modification, but any given year of rating will be corrected to the true rating in the next three ratings.

The foregoing considerations are applicable solely to the risk modification and do not reflect in any way the effect of variation in payrolls and rates. It can be readily demonstrated that in order to recognize changes in payroll distribution and manual rates, formula (5) would have to be amended as follows:

$$m_t = M_t + \frac{P_{t-1} {}^1 \mathcal{A}_{t-1}}{P_t E_{t-1}} + \frac{P_{t-2} {}^2 \mathcal{A}_{t-2}}{P_t E_{t-2}} + \frac{P_{t-3} {}^3 \mathcal{A}_{t-3}}{P_t E_{t-3}} \quad (8)$$

where P_t is the manual premium for year i .

It is evident that formula (8) could not be applied in practice for the reason that neither P_t nor P_{t-1} are known at the time of the rating for the year i .

It remains, therefore, to investigate whether formula (5) although not exactly accurate nevertheless is capable of producing satisfactory results. For this purpose the Actuarial Division of the Compensation Insurance Rating Board has selected fifty-nine (59) risks from among the ratings promulgated during one calendar month which have had one or more changes affecting one or more ratings and tested such risks by calculating the true modification and the modification on the basis of formula (5). This test (see Exhibit I) seems to indicate that the proposed method produces, in practically all instances, results which are very close to the true ratings, both from the standpoint of modification and premium.

In general, it may be stated that in terms of premium, formula (5) has the effect of decreasing credits (and debits) with falling payrolls and increasing credits (and debits) with rising payrolls. This should be, however, considered as an advantage, since the present rating plan does not give sufficient recognition to the trend of payrolls so that high credibility of past experience may apply to very limited exposure and vice versa. It should be also observed that since second, third and fourth reportings show in the aggregate an increase in losses, the net effect from the application of the proposed method would be a higher premium to the carriers on rated risks. The effect of the corrections as produced by the proposed method could be, of course, subjected to artificial limitation by fixing an arbitrary percentage limit for corrections applicable to previous years, say for example, no more than 20 per cent. credit and no more than 20 per cent. debit to be added to current modifications on account of corrections for previous ratings. The tests made by the Board do not seem to indicate the necessity for such limitations in actual practice. However, there may be valid and potent reasons where such a limitation would be necessary.

The rules regarding new ownership might have to be tightened and made more strict in order to prevent creation of fictitious new corporate entities as a method to evade charges. The practical application of formula (5) does not present any difficulties. Exhibit II shows the necessary changes in the rating blank and a study of this exhibit will bring out the fact that the amount of work involved is not very great. If we consider that such additional work will be required only in connection with risks showing changes in the valuation of losses, it becomes apparent that it will not cause any appreciable increase in the cost of experience ratings. On the other hand, it will not be necessary to revise the ratings in connection with a large number of cases now falling within the provisions of Rules 41 and 45 cited previously, which economy will tend to offset a considerable portion of the additional work created by the proposed method.

III.

Let us now consider the advantages and disadvantages of the proposed method.

It may be stated without exaggeration that the plan will appeal

to both the public and supervisory authorities as regards its reasonableness as well as equitable treatment of the assured and insurance carrier because over a period of years it would refund excess premiums paid by the policyholders and recover for the carrier additional premiums to which it was entitled by reason of actual experience. The temptation to underestimate loss values for rating purposes would be eliminated and the competitive arguments in connection with loss reserves would become meaningless.

The most serious objection to the proposed method arises from the fact that it will produce in various instances very large fluctuations in rates from year to year and that in the case of a change in carriers the benefit of additional premium would accrue to the new carrier or else the new carrier will be penalized for underestimates in reserves made by the previous carrier. This criticism, however, applies also in general to the Experience Rating Plan as it exists at the present time and the new method only tends to aggravate the existing conditions. The elimination or modification of weights used at the present time would go a long way toward the dampening of the annual fluctuations in rates.

It has been also pointed out that the Experience Rating Plan has been primarily designed as a further refinement of the manual classification and, therefore, furnishes merely an indication of what will happen in the future rather than a reflection of what has happened in the past. From this point of view it is, however, difficult to justify wide differences in rates caused by over or underestimates of one single claim. Serious doubts can be raised as to whether the rating plan actually accomplishes this purpose. This subject, however, leads to considerations which lie beyond the scope of this paper.

An extensive investigation and study of the entire Experience Rating Plan is being conducted by the Compensation Insurance Rating Board and the author hopes to make the results of this research a subject of another communication to this Society.

In conclusion, the author wishes to emphasize that the "account current" principle will be necessary from the point of view of fairness under any rating plan which is based on claim frequency or claim severity or both unless a plan can be devised whereby over or underestimates on one hand and the exclusion or addition of claims on the other hand could not affect the final modification to any appreciable extent.

Exhibit I

Sheet 1

TEST OF THE "ACCOUNT CURRENT" METHOD OF EXPERIENCE RATING
Ratings for Policy Years 1928 to 1933 Incl.

| Premium Size Group* | Risk No. | TOTAL MODIFICATION | | | MAXIMUM SWING IN CONSECUTIVE RATINGS | | | PREMIUMS OBTAINED† | | |
|---------------------------|-------------|--------------------|-------|-----------------|---|------|-----------------|--------------------|-------|-----------------|
| | | Actual | True | A. C. Method | Actual | True | A. C. Method | Actual | True | A. C. Method |
| \$500- \$1000 | 1 | 563.0 | 569.1 | 569.1 | 3.7 | 6.1 | 6.1 | 3,811 | 3,847 | 3,847 |
| | 2 | 548.8 | 542.7 | 542.7 | 15.9 | 9.8 | 22.0 | 3,504 | 3,468 | 3,467 |
| | 3 | 548.5 | 550.9 | 551.0 | 19.7 | 24.7 | 25.2 | 3,702 | 3,715 | 3,718 |
| | 4 | 608.7 | 619.0 | 619.1 | 11.6 | 27.1 | 26.1 | 3,342 | 3,374 | 3,372 |
| | 5 | 269.9 | 275.3 | 275.2 | 8.7 | 14.1 | 3.4 | 3,065 | 3,091 | 3,092 |
| | 6 | 549.6 | 536.3 | 536.3 | 27.3 | 13.6 | 41.4 | 3,738 | 3,660 | 3,657 |
| | 7 | 218.4 | 224.6 | 224.6 | 1.4 | 4.8 | 7.6 | 4,430 | 4,504 | 4,504 |
| | 8 | 532.0 | 519.1 | 519.1 | 11.2 | 2.0 | 24.1 | 3,641 | 3,538 | 3,580 |
| | 9 | 523.7 | 517.8 | 517.8 | 9.6 | 15.5 | 9.6 | 9,943 | 9,856 | 9,884 |
| | 10 | 812.2 | 812.1 | 812.0 | 36.4 | 38.4 | 35.0 | 3,909 | 3,911 | 3,908 |
| | 11 | 595.5 | 594.9 | 594.9 | 18.3 | 17.7 | 18.3 | 4,273 | 4,270 | 4,269 |
| | 12 | 646.5 | 639.5 | 639.4 | 32.2 | 27.8 | 33.2 | 6,626 | 6,553 | 6,553 |
| | 13 | 575.8 | 579.1 | 579.2 | 21.6 | 21.8 | 21.6 | 5,003 | 5,029 | 5,031 |
| | 14 | 611.9 | 625.7 | 625.6 | 14.6 | 14.7 | 14.6 | 5,892 | 5,988 | 5,987 |
| | 15 | 700.2 | 744.5 | 744.5 | 33.1 | 35.8 | 33.1 | 3,244 | 3,442 | 3,424 |

Average of Actual Premiums for the last two policy years reported (1930 and 1931).

Manual Premiums for policy years 1932 and 1933 were assumed on the basis of the trend disclosed by the Manual Premiums for the policy years 1928 to 1931 inclusive.

NOTE: Total modification is the sum of the individual experience modifications for the various policy years. In most instances, six policy years were used but in some instances, the number of policy years was smaller.

Exhibit I

Sheet

TEST OF THE "ACCOUNT CURRENT" METHOD OF EXPERIENCE RATING
Ratings for Policy Years 1928 to 1933 Incl.

| Premium Size Group* | Risk No. | TOTAL MODIFICATION | | | MAXIMUM SWING IN CONSECUTIVE RATINGS | | | PREMIUMS OBTAINED† | | |
|----------------------------------|-------------|--------------------|----------|-----------------|---|------|-----------------|--------------------|---------|-----------------|
| | | Actual | True | A. C. Method | Actual | True | A. C. Method | Actual | True | A. C. Method |
| \$500- \$1000 (Contd.) | 16 | 604.6 | 602.3 | 602.2 | 31.7 | 30.5 | 31.7 | 7,334 | 7,305 | 7,311 |
| | 17 | 728.4 | 725.9 | 726.0 | 27.3 | 26.5 | 27.5 | 5,312 | 5,298 | 5,270 |
| | 18 | 602.4 | 591.3 | 591.4 | 12.3 | 7.3 | 34.9 | 4,855 | 4,662 | 4,679 |
| | 19 | 768.0 | 767.4 | 767.4 | 26.8 | 27.4 | 28.3 | 3,881 | 3,879 | 3,875 |
| | 20 | 578.2 | 558.3 | 558.4 | 24.4 | 25.8 | 30.4 | 3,941 | 3,837 | 3,847 |
| | 21 | 480.2 | 480.5 | 480.4 | 18.1 | 17.7 | 18.5 | 3,057 | 3,059 | 3,059 |
| | 22 | 836.9 | 828.2 | 828.3 | 74.8 | 72.9 | 74.8 | 5,531 | 5,487 | 5,498 |
| | 23 | 399.0 | 399.3 | 399.3 | 24.7 | 24.5 | 24.9 | 2,208 | 2,210 | 2,208 |
| | 24 | 561.7 | 592.9 | 592.9 | 15.0 | 13.3 | 38.4 | 3,095 | 3,317 | 3,258 |
| | 25 | 660.0 | 657.8 | 657.8 | 22.7 | 21.0 | 22.7 | 4,050 | 4,033 | 4,038 |
| | 26 | 605.6 | 600.1 | 600.1 | 5.4 | 3.4 | 9.5 | 2,841 | 2,826 | 2,828 |
| | 27 | 583.9 | 583.7 | 583.6 | 17.4 | 16.6 | 16.8 | 2,696 | 2,702 | 2,698 |
| | 28 | 561.0 | 539.8 | 539.7 | 23.5 | 2.9 | 39.8 | 4,754 | 4,584 | 4,584 |
| | 29 | 386.7 | 382.6 | 382.6 | 36.5 | 32.4 | 36.5 | 3,649 | 3,632 | 3,638 |
| | 30 | 666.8 | 635.7 | 635.7 | 26.6 | 29.1 | 27.4 | 6,521 | 6,363 | 6,364 |
| Total | | 17,328.1 | 17,296.4 | 17,296.3 | .... | .... | .... | 131,848 | 131,440 | 131,438 |
| \$1000- \$2000 | 31 | 580.4 | 584.4 | 584.5 | 18.0 | 22.0 | 18.0 | 5,668 | 5,708 | 5,701 |
| | 32 | 603.2 | 619.1 | 619.2 | 10.0 | 24.9 | 25.1 | 5,353 | 5,439 | 5,437 |
| | 33 | 502.3 | 501.6 | 501.5 | 49.5 | 49.8 | 49.5 | 9,614 | 9,560 | 9,588 |
| | 34 | 628.2 | 635.4 | 635.4 | 32.3 | 39.4 | 32.3 | 8,023 | 8,138 | 8,131 |
| | 35 | 570.0 | 571.3 | 571.2 | 28.8 | 29.3 | 28.8 | 7,645 | 7,661 | 7,661 |

Exhibit I

Sheet 3

TEST OF THE "ACCOUNT CURRENT" METHOD OF EXPERIENCE RATING
 Ratings for Policy Years 1928 to 1933 Incl.

| Premium Size Group* | Risk No. | TOTAL MODIFICATION | | | MAXIMUM SWING IN CONSECUTIVE RATINGS | | | PREMIUMS OBTAINED† | | |
|-----------------------------------|-------------|--------------------|----------------|-----------------|---|-------------|-----------------|--------------------|----------------|-----------------|
| | | Actual | True | A. C. Method | Actual | True | A. C. Method | Actual | True | A. C. Method |
| \$1000- \$2000 (Contd.) | 36 | 436.0 | 506.6 | 506.6 | 36.3 | 34.9 | 36.3 | 14,081 | 14,273 | 14,230 |
| | 37 | 696.6 | 740.2 | 740.1 | 35.5 | 40.5 | 37.5 | 6,009 | 6,348 | 6,321 |
| | 38 | 576.6 | 565.5 | 565.6 | 19.0 | 18.3 | 21.2 | 9,369 | 9,187 | 9,193 |
| | 39 | 607.3 | 598.2 | 598.2 | 21.1 | 15.7 | 21.1 | 6,773 | 6,688 | 6,680 |
| | 40 | 628.0 | 604.6 | 604.5 | 33.1 | 21.4 | 57.3 | 9,640 | 9,350 | 9,230 |
| | 41 | 746.3 | 765.0 | 765.0 | 35.9 | 31.7 | 42.8 | 17,945 | 18,465 | 18,253 |
| | 42 | 700.1 | 697.2 | 697.3 | 25.8 | 24.0 | 35.7 | 15,898 | 15,879 | 15,873 |
| | 43 | 657.9 | 654.8 | 654.7 | 8.3 | 9.3 | 7.1 | 26,854 | 26,701 | 26,866 |
| | 44 | 547.9 | 536.4 | 536.4 | 29.3 | 29.3 | 39.9 | 5,769 | 5,656 | 5,653 |
| | 45 | 623.6 | 627.2 | 627.1 | 25.5 | 24.2 | 27.3 | 14,364 | 14,670 | 14,583 |
| Total | | 9,104.4 | 9,207.5 | 9,207.3 | .... | .... | .... | 163,005 | 163,723 | 163,398 |
| \$2000- \$5000 | 46 | 622.2 | 625.7 | 625.8 | 13.6 | 14.2 | 12.1 | 20,045 | 20,142 | 20,148 |
| | 47 | 748.1 | 743.6 | 743.5 | 36.2 | 38.4 | 37.6 | 21,037 | 20,916 | 20,909 |
| | 48 | 620.7 | 625.8 | 625.8 | 12.3 | 12.3 | 19.2 | 24,587 | 24,778 | 24,842 |
| | 49 | 762.9 | 769.0 | 769.1 | 14.7 | 11.3 | 27.2 | 20,203 | 20,422 | 20,454 |
| | 50 | 506.2 | 507.2 | 507.2 | 25.1 | 25.1 | 27.3 | 26,667 | 26,703 | 26,562 |
| Total | | 3,260.1 | 3,271.3 | 3,271.4 | .... | .... | .... | 112,539 | 112,961 | 112,915 |
| \$5000 & over | 51 | 455.3 | 458.0 | 458.1 | 17.1 | 11.1 | 25.3 | 22,384 | 22,117 | 22,379 |
| | 52 | 181.3 | 169.6 | 169.7 | 6.5 | 5.2 | 18.1 | 35,609 | 34,439 | 34,449 |
| | 53 | 633.6 | 631.6 | 631.8 | 17.6 | 12.9 | 24.4 | 55,203 | 55,024 | 54,984 |
| | 54 | 800.5 | 788.2 | 788.3 | 50.0 | 50.1 | 61.6 | 44,555 | 43,934 | 43,926 |

Exhibit I

Sheet

TEST OF THE "ACCOUNT CURRENT" METHOD OF EXPERIENCE RATING
Ratings for Policy Years 1928 to 1933 Incl.

| Premium Size Group* | Risk No. | TOTAL MODIFICATION | | | MAXIMUM SWING IN CONSECUTIVE RATINGS | | | PREMIUMS OBTAINED† | | |
|---------------------------|----------|--------------------|---------|--------------|--------------------------------------|------|--------------|--------------------|-----------|--------------|
| | | Actual | True | A. C. Method | Actual | True | A. C. Method | Actual | True | A. C. Method |
| \$5000 & Over (Contd.) | 55 | 592.6 | 583.7 | 583.5 | 18.5 | 14.6 | 20.5 | 256,529 | 252,652 | 252,685 |
| | 56 | 626.1 | 601.9 | 602.0 | 26.7 | 22.3 | 34.3 | 54,177 | 52,258 | 51,719 |
| | 57 | 530.8 | 506.5 | 506.6 | 14.5 | 10.2 | 31.2 | 27,499 | 26,170 | 26,293 |
| | 58 | 492.0 | 495.7 | 495.7 | 21.8 | 21.1 | 19.8 | 38,519 | 38,842 | 38,816 |
| | 59 | 546.1 | 528.1 | 528.0 | 8.3 | 15.1 | 21.6 | 1,093,833 | 1,058,108 | 1,059,440 |
| Total | | 4,858.3 | 4,763.3 | 4,763.7 | .... | .... | .... | 1,628,308 | 1,583,544 | 1,584,691 |

SUMMARY

| Premium Size Group | Number of Risks | TOTAL MODIFICATION | | | PREMIUMS OBTAINED | | |
|--------------------|-----------------|--------------------|----------|--------------|-------------------|-----------|--------------|
| | | Actual | True | A. C. Method | Actual | True | A. C. Method |
| \$ 500-\$1000 | 30 | 17,328.1 | 17,296.4 | 17,296.3 | 131,848 | 131,440 | 131,439 |
| 1000- 2000 | 15 | 9,104.4 | 9,207.5 | 9,207.3 | 163,005 | 163,723 | 163,398 |
| 2000- 5000 | 5 | 3,260.1 | 3,271.3 | 3,271.4 | 112,539 | 112,961 | 112,915 |
| \$5000 & Over | 9 | 4,858.3 | 4,763.3 | 4,763.7 | 1,628,308 | 1,583,544 | 1,584,691 |
| GRAND TOTAL | 59 | 34,550.9 | 34,538.5 | 34,538.7 | 2,035,700 | 1,991,668 | 1,992,443 |

Exhibit II

CHANGES IN THE EXPERIENCE RATING BLANK REQUIRED FOR THE PROPOSED METHOD

FRONT—COMPILING PORTION

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
|-------------|--------------------------|-------------|----------------|-------------|----------------|-------------|----------------|--------------------------|-------------|----------------|-------------|----------------|-------------|----------------|
| Policy Year | NORMAL INDEMNITY CHANGES | | | | | | | EXCESS INDEMNITY CHANGES | | | | | | |
| | Net Amount* | 19.. Rating | | 19.. Rating | | 19.. Rating | | Net Amount* | 19.. Rating | | 19.. Rating | | 19.. Rating | |
| | | Mod. Factor | Modif. Losses* | Mod. Factor | Modif. Losses* | Mod. Factor | Modif. Losses* | | Mod. Factor | Modif. Losses* | Mod. Factor | Modif. Losses* | Mod. Factor | Modif. Losses* |
| 19.. | | | | | | | | | | | | | | |
| 19.. | | X | X X | | | | | | X | X X | | | | |
| 19.. | | X | X X | X | X X | | | | X | X X | X | X X | | |
| Total | | X | | X | | X | | | X | | X | | X | |
| Pol. Yr. | NORMAL MEDICAL CHANGES | | | | | | | EXCESS MEDICAL CHANGES | | | | | | |
| 19.. | | | | | | | | | | | | | | |
| 19.. | | X | X X | | | | | | X | X X | | | | |
| 19.. | | X | X X | X | X X | | | | X | X X | X | X X | | |
| Total | | X | | X | | X | | | X | | X | | X | |
| Grand Total | | X | | X | | X | | | X | | X | | X | |

* Use plus (+) sign for an increase and minus (-) sign for a decrease.

BACK—RATING PORTION

| (1) Year of Original Rating | (2) Total Expected Losses in Orig. Rating | Credibility in Original Rating | | Changes in Incurred Losses | | (7) Correction* (3) (5) + (4) (6) <u>2</u> | (8) Current Rating Modif. | (9) Final Modif. (7) + (8) | (10) Credit or Debit |
|--------------------------------|--|--------------------------------|--------------|----------------------------|----------------|---|------------------------------|----------------------------------|-------------------------|
| | | (3) Z_n | (4) Z_e | (5) Normal* | (6) Excess* | | | | |
| 19.. | | | | | | | X X | X X | X X |
| 19.. | | | | | | | X X | X X | X X |
| 19.. | | | | | | | X X | X X | X X |
| Total | X X X | X X | X X | X X X | X X X | | | | |