



FINAL

**RECOMMENDATIONS -
DIVIDEND DETERMINATION
AND ILLUSTRATION**

**RECOMMENDATIONS CONCERNING ACTUARIAL
PRINCIPLES AND PRACTICES IN CONNECTION WITH
DIVIDEND DETERMINATION AND ILLUSTRATION FOR
PARTICIPATING INDIVIDUAL LIFE INSURANCE AND ANNUITIES**

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Section I

Recommendations concerning Actuarial Principles and Practices in Connection with Dividend Determination and Illustration for Participating Individual Life Insurance and Annuities.

RECOMMENDATIONS FOR DIVIDEND DETERMINATION AND ILLUSTRATION

SECTION 1

GENERAL

1.1 These Recommendations describe the basic responsibilities of the actuary in the application of sound actuarial principles and practices to the determination and illustration of dividends under participating individual life insurance and annuity policies.

1.2 These Recommendations apply to the determination and illustration of dividends under participating individual life insurance and annuity policies issued for delivery in Canada.

However, in the opinion of the Institute, the Contribution Principle (see section 2), which is the basis for the generally accepted method of determining dividends in Canada, cannot be applied over the longer term for participating business of stock companies unless:

- a) it is possible to determine the surplus earnings of the participating business, and
- b) there is a limitation on the amount that may be transferred from participating business, and surplus to the shareholders' account.

Under the Canadian and British Insurance Companies Act, Section 83 requires the maintenance of separate and distinct accounts for participating and non-participating business and Section 84 imposes limitations on the distribution of participating profits to shareholders. These provisions do make it possible for the Contribution Principle to be followed for the participating business of a federally licensed stock company; similarly for a stock company which is subject under provincial law, foreign law or company charter to substantially similar provisions. In Canada, because there are very few companies which are not subject to such provisions, the general practice is to maintain separate accounts for participating business, non-participating business and the shareholders' account and to significantly restrict transfers from participating surplus to the shareholders' account.

The actuary's report should describe the method of determination of surplus earnings of the participating business, and, in the case of a stock company, the limitation on the distribution of participating profits to shareholders. If there is no separation of accounts and the method which is used for determining the earnings of participating business does not meet the criteria described in Section 12.1, or if the restriction on transfers from participating surplus to the shareholders' account is not substantially the same as that of Section 84 of the Canadian and British Insurance Companies Act, the actuary's report should state that it has not been possible to follow the Contribution Principle, and should describe the method which has been employed. However, the report itself should follow the general principles of the Recommendations and the general principles for the preparation of actuarial reports.

When the actuary makes dividend recommendations for policies issued for delivery outside Canada, the actuary should take cognizance of the actuarial principles and practices in the particular country. In the absence of such actuarial principles and practices, these recommendations apply.

1.3 These Recommendations do not address the determination of divisible surplus, the aggregate amount of dividends to be distributed to policyholders. This determination is a decision to be made by company management in light of many factors, the most significant being the continuing solvency of the company and its ability to fulfil all contractual obligations.

1.4 These Recommendations address both the determination of currently payable dividends for policies in force and the closely related process of determining illustrated future dividends for both in-force business and new business.

1.5 Individual life insurance and annuity policies may be composed of several distinct agreements, each of which has a defined consideration and benefit structure. For example, in addition to the basic benefits, a life insurance policy may include disability and accidental death benefit provisions, term riders, etc. These Recommendations may be applied separately to any of these different types of agreements which is participating.

1.6 When preparing a report in accordance with these Recommendations, the actuary should take into account the following considerations:

a) An actuarial report is essentially a statement of actuarial findings, conclusions or recommendations resulting from the actuary's experience and judgement, applied within the framework of a particular set of facts and assumptions.

b) Any manner of transmittal of an actuarial report which involves the risk that the underlying facts and assumptions, and the limitations resulting from their use, are not fully communicated to the client involves a corresponding risk that the conclusions or recommendations may be misinterpreted or misapplied. It is important, therefore, that this risk be minimized or eliminated.

c) When a member advises an insurance company on premiums, dividends, reserves and related matters the client is the company, its policy-making executives and in some situations its board of directors, whether or not he is an employee of the insurance company. Thus, in such circumstances, the member should satisfy himself that the persons who requested his report are fully cognizant of the significance of his findings.

d) An actuarial report should include such underlying data as are essential to the findings or conclusions reported. The key test is whether another actuary, unfamiliar with the situation, would find the information sufficient to appraise the conclusions.

1.7 **RECOMMENDATION 1:** Whenever an actuary advises an insurance company on dividends, either illustrated dividends or current dividends, he or she should prepare a written report which documents the advice. Such a framework should include a statement describing the framework of facts, assumptions and procedures upon which the advice was based. In particular, if an actuary uses assumptions and procedures which deviate materially from those prescribed in these Recommendations, he or she should support the use of such assumptions and procedures and should include in the report an appropriate and explicit statement with respect to the nature, rationale and effect of such deviations.

1.8 "Sound actuarial principles" are the generally accepted actuarial principles and practices which emerge from the utilisation and adaptation of concepts described in actuarial literature. The actuarial literature includes, but is not limited to, the professional journals of recognized professional actuarial organizations; the recommendations and explanatory notes published under the auspices of the Institute; the recommendations and interpretations published under the auspices of the American Academy of Actuaries; recognized actuarial textbooks and study materials; and applicable provisions of law and regulations; and may include standard textbooks or other professional publications in related fields such as mathematics, statistics, accounting, economics and law.

SECTION 2

THE CONTRIBUTION PRINCIPLE

2.1 Under the Contribution Principle, the basic principle of dividend determination is to distribute the aggregate divisible surplus among policies in the same proportion as the policies are considered to have contributed to divisible surplus. In its pure form, the Contribution Principle applies to each year's divisible surplus. However, the Contribution Principle can also be related to divisible surplus over an extended period of time when constraints on divisible surplus or the dividend distribution system prevent the application of the Principle each year. In such event, the procedures which lead to the longer term operation of the Contribution Principle should be described in the actuary's report.

2.2 **RECOMMENDATION 2:** The use of the Contribution Principle in determining dividends is generally accepted practice in Canada. The Actuary's report should state whether or not the principle has been followed. If it has not been followed, the report should explicitly state any deviations and their rationale.

SECTION 3

THE PROCESS OF DIVIDEND DETERMINATION

3.1 The application of the Contribution Principle to the determination of the dividends requires two basic types of elements: policy factors and experience factors. Policy factors are those elements which reflect the assumptions inherent in the standard against which experience is measured. In contrast, experience factors are those elements which reflect actual experience. Both of these types of factors are discussed in more detail in subsequent Sections of these Recommendations.

3.2 The process of dividend determination leads to a formulation which is used to calculate specific dividends. This process always requires the use of policy and experience factors. However, those factors may or may not appear in the formulation actually used to calculate the dividends.

3.3 Methods of dividend determination described in actuarial literature include:

- a) The Source of Earnings Method (or "Contribution Method");
- b) The Asset Share Method;
- c) The Fund Method;
- d) The Experience Premium Method;
- e) The Percentage of Premium Method; and
- f) The Reversionary Bonus Method

Other methods, including combinations and modifications of the methods above, are also described in the literature. Some methods, such as the Percentage of Premium Method, refer primarily to the formulation used to calculate dividends. Other methods, such as the Asset Share Method, refer primarily to the process used (as opposed to the wide variety of mathematical formulations which may be employed under that method). On the other hand, the Reversionary Bonus Method provides for dividends in the form of paid-up additional insurance and could satisfy the Contribution Principle over an extended period of time.

It is the application of a particular method, by means of the experience factors, which determines whether or not it follows the Contribution Principle - not the method itself.

Also, it may be that a particular method which does not itself satisfy the Contribution Principle will do so when termination dividends (see Section 11) are taken into account.

3.4 **RECOMMENDATION 3:** The actuary's report should include a description of the process used to determine dividends as well as the manner in which the policy and experience factors are reflected in that process. The report should also describe the formulations used to calculate dividends.

3.5 Dividend determination is a process subject to practical constraints. The application of these Recommendations may reasonably be limited by the cost of calculation, the size of a particular group of policies, the cost and practical difficulty of making a dividend scale change and other similar conditions and circumstances.

3.6 **RECOMMENDATION 4:** When it would be impractical to apply these Recommendations directly to all policies and benefits, the actuary may continue a dividend scale or use approximations or simpler processes and formulations. When such actions are taken, their rationale and impact should be disclosed in the actuary's report.

SECTION 4**POLICY FACTORS**

4.1 Policy factors are those elements which reflect the assumptions inherent in the standard against which experience is measured. Policy factors are elements which are based on the guarantees or underlying actuarial structure of the policy. Examples of policy factors are: cash values, reserves and their associated net premiums, gross premiums, policy loan interest rate, and the rates of interest and mortality used in calculating cash values and reserves.

4.2 In calculating dividends for a particular policy, the policy factors may be the actual factors of that policy or they may be reasonable approximations to the actual factors when practical considerations indicate the need for such approximations.

For example, the actual gross premium per unit of coverage may vary with mode of premium payment, size of policy, sex of insured, rating classification or other items. Often dividends are calculated using a gross premium which may be the annual mode premium for a particular size of policy of an insured of a particular sex who is classified as a standard risk. The differences between such a gross premium and the actual gross premium are intended to provide for the variations in cost associated with the items generating such differences.

4.3 RECOMMENDATION 5: The use of actual or approximate policy factors is generally accepted practice. However, the actuary should include in the report a description of the policy factors and of any changes in practice with respect to their determination for the period covered by the report.

SECTION 5**EXPERIENCE FACTORS**

5.1 Experience factors are those elements which reflect actual experience. A particular experience factor reflects actual experience of a specific type. Examples of experience factors are: investment income rates, mortality rates, termination rates, and expense rates. The experience factor for a given type of experience may have several different numerical values. For example, the experience factor corresponding to investment income may have one numerical value for policies containing a six percent maximum loan rate, and a different numerical value for policies with a different maximum loan rate or no maximum loan rate. Policies may be combined into groups whose dividends are determined by using a common numerical value of a particular experience factor. Such a group will be referred to as an experience factor class with respect to that factor.

5.2 As used in this opinion, actual experience of a factor class means such experience and trends in experience to the extent that they are determinable, available and statistically credible. When such suitable data are lacking, actual experience is to be interpreted with sound professional judgment based on experience and trends in experience of other similar classes of business either in the same company or other companies or from other sources, generally in that order of preference.

5.3 If any projection of experience trends is made in determining the experience factor value of any factor class, then such trend projections to the same point in time should be made uniformly for all classes. Such projection should be limited to a relatively short time frame (for example, to reflect the average experience expected during a period for which a dividend scale is likely to remain appropriate) and in particular, they should be used in a consistent manner for both current dividends for policies in force and for illustrated future dividends.

5.4 **RECOMMENDATION 6:** The actuary's report should describe the experience factor values used. If projection has been used, the type and extent of usage should be stated.

5.5 **RECOMMENDATION 7:** When there is more than one factor class with respect to a particular experience factor, differences in the value of such factor between any two classes should be based on differences in actual experience between those two classes. In the report, the actuary should identify each such difference. The actuary should also be prepared to provide a demonstration necessary to support such differences.

5.6 The placement of a policy within one experience factor class or another should be based on uniformly applied criteria designed to group together policies with similar levels of experience. In regard to claim factor classes, the actual occurrence or non-occurrence of a claim on a particular policy should not be as criterion for class placement of that policy.

5.7 **RECOMMENDATION 8** The actuary's report should include an identification for the period covered by the report of all changes in values of experience factors and of any changes in values of experience factors and of any changes in practice with respect to determination of experience factor classes or placement of policies within them.

SECTION 6

CLAIMS FACTORS

6.1 Statistical data demonstrate significant and valid variations in claims rates by age for most coverages subject to these Recommendations. Therefore, an organized set of internally consistent experience factors corresponding to all ages will be considered as one factor in defining a claims factor class.

6.2 Claim rates vary to a significant extent depending on the sex of the insured. When this element is directly reflected in the experience factors, then the set of factors by age and sex will be considered as one factor in defining a claims factor class.

6.3 Another element which is significant for some coverages is the time elapsed since policy issue. When this element is directly reflected in the experience factors, then the entire set of factors by age and sex will be considered as one factor in defining a claims factor class.

6.4 RECOMMENDATION 9: When there is more than one claims factor class, distinctions may be made on the basis of: risk selection class, selection process, marketing method, policy provisions, plan, premium rate, geographic location, size of policy and date of policy issue. If a basis different from any of these is used, such other basis should be stated in the report, along with an explanation of the rationale and effect of such other basis.

SECTION 7**INVESTMENT INCOME FACTORS**

7.1 The investment income experience factor generally reflects the investment experience of the individual line of business for which dividends are being determined. This may include not only interest earnings reduced by investment expense, but also the effects of capital gains and losses. Furthermore, the effect of taxation may be reflected as a reduction of before tax investment income. Alternatively, such tax may be treated separately and is addressed on a more general basis in Section 10. The investment income experience factor which results from taking account of the items above, as well as those discussed in the balance of this Section, may have several different numerical values. A group of policies with a common numerical value for this factor constitutes an experience factor class with respect to investment income.

7.2 The investment income for a given group of policies may be directly affected by policy loans. The effect depends on the contractual or actual policy loan interest rate; the policy loan expense levels; and whether policy loan interest is aggregated with other investment income, recognizing the utilization rate of loanable funds (which may depend on the contractual loan interest rate, the plan and the size of policy), or whether policy loan interest is passed through directly to borrowing policyholders.

7.3 RECOMMENDATION 10: It is generally accepted practice to reflect the effect of policy loans in the investment income factors.

7.4 The investment income, excluding the effect of policy loans, for a given group of policies is directly affected by:

- a) the amount and timing of investable cash flow generated by the insurance operations of the group of policies;
- b) the investment income rates initially and subsequently applicable to that cash flow due to investments actually made;
- c) the rate of rollover of those investments, which affects investable cash flow in subsequent periods.

The portfolio average approach for determining rates of investment income averages the effect of these items over all groups of policies. The investment generation approach recognizes the effect of these items separately on various groups of policies. Various mixed approaches are possible. For example, a company may use an investment generation approach to allocate investment income to the various annual statement lines of business, but use a portfolio average approach to allocate investment income within one or more such lines of business.

7.5 RECOMMENDATION 11: The use of either the portfolio average approach or the investment generation approach is considered generally acceptable practice. The detailed procedures for implementing either approach should have a sound theoretical basis. The actuary's report should state which approach is used for allocating investment income to the policies covered by the report. Furthermore, if the approach for a given group of policies has been changed, or if a previously unused approach is to be introduced for a new group of policies, the actuary's report should state that fact and should include a full description of the nature, rationale and effect of such new or revised approach.

SECTION 8

TERMINATION FACTORS

8.1 The termination factors represent annual rates of termination of coverage for reasons other than claim.

8.2 Termination factors display significant variation by the time elapsed since policy issue. Other elements which have a significant impact on termination factors include age at issue, sex, frequency of premium payment, plan and size of the policy. An organized set of internally consistent experience factors corresponding to the preceding elements will be considered as one factor in defining a termination rate factor class.

SECTION 9**EXPENSE FACTORS**

9.1 Expense incurred on behalf of a group of policies may in fact depend on most or all of the various elements present in the policies and on the risks insured. Such elements include, but are not limited to, the items listed elsewhere in these Recommendations which affect claims, investment income and termination factors. Some expenses are direct in that they can be specifically related to a particular policy. For example, a portion of marketing compensation is usually a direct expense as are certain costs relating to risk selection and policy issue and maintenance. Other expenses are indirect, such as general overhead costs.

Marketing, underwriting and other costs connected with acquisition of policies may be allocated to all policies or may be recognized specifically as non-level costs to be charged to a policy and amortized. Select mortality savings may be used as an offset to these costs. To the extent that these costs are specifically recognized and amortized, the period and the pattern of amortization will depend on assumptions as to rates of interest and termination.

9.2 RECOMMENDATION 12: In the determination of unit expense rates for dividend purposes, direct costs should be charged to the groups of policies generating those costs and indirect costs should be allocated using sound principles of expense allocation. To the extent that non-level costs are amortized, the amortization should be based on realistic interest and termination rates appropriate for the groups of policies to which they are applied.

9.3 An expense factor class is defined as a group of policies which share a consistent and uniformly applied approach for assessing expenses among policies within that group. More specifically, such a group of policies share a common set of unit expense rates. Those unit rates may be a combination of amounts which, for example, are applied per policy, termination and claim; per unit of risk, coverage, premium, loading, reserves, cash value and expected claims; and per year of premium paying period and coverage period. Further, any of these unit rates may vary by issue age or policy duration and may be modified for tax status, risk class, policy size or other elements. In addition, when there is amortization of non-level costs, a common approach is necessary for that amortization, as well as a common interest rate and set of appropriate termination rates.

9.4 There is considerable latitude in the possible approaches for allocating indirect costs within various groups of policies. Amortization periods and patterns may also vary widely. Different approaches may have been taken at the inception of various historical blocks of business. These variations make reconciliation of different expense factor classes a complex process. One approach to reconciliation is to consider the total expenses charged to one class in relation to another. Total expenses charged to a class are those based on the unit expense rates for that class with due regard for the amortization of non-level expenses.

9.5 RECOMMENDATION 13: A minimum test of consistency between two expense factor classes is that any difference in the total expense charged to each class should be justifiable and in accordance with sound principles of expense analysis. The actuary should include a statement to this effect in the report.

SECTION 10**TAX AND OTHER FACTORS**

10.1 Tax factors may be incorporated in the determination of dividends. Details of taxation may vary widely depending on the application of law and regulation in various jurisdictions. Differences in dividends resulting from differences in taxation should reflect the elements addressed in the tax law.

10.2 RECOMMENDATION 14: Variations in tax factors used in determining dividends should reflect corresponding variations inherent in the applicable laws and regulations imposing that tax and should be consistent with other experience factors.

10.3 An important element in the determination of dividends for stock company participating business is the charge for stockholder retention. This charge can be reflected at an aggregate level in determining divisible surplus. Alternatively the charge can be a separate factor in the formula for the dividend scale or can be implicitly included as a part of one or more of the other experience factors. Shareholder retention charges may vary by series, type of policy, etc. Shareholder retention charges ordinarily should not be changed from the scale of charges used in the original dividend illustration. If the retention charges are changed from the scale of charges used in the original dividend illustrations, corresponding changes should ordinarily be made for all policies in force.

10.4 RECOMMENDATION 15: The actuary's report should describe the method used by the company for shareholder retention charges. If the dividend scale contains a specific experience factor for such charges, the actuary's report should describe the shareholder retention factors used and any changes during the year in the values of these changes.

10.5 Adjustments to dividends are frequently made for a variety of special reasons such as:

- a) to reflect unusual gains or losses on certain supplementary benefit riders;
- b) to reflect losses arising from the presence of settlement option guarantees;
- c) to smooth the transition from one dividend scale to another;
- d) to provide consistency in quantity discounts made to varying degrees in the gross premium structure;
- e) to serve as a balancing item so that aggregate dividends equal aggregate divisible surplus;
- f) to distribute gains from extraneous sources such as non-par benefits or lines of business;
and
- g) to smooth the incidence of dividends within a dividend scale by policy duration.

10.6 RECOMMENDATION 16: The actuary's report should specifically state any special adjustments which are made to dividends, and the actuary should be prepared to provide demonstrations which support the existence and magnitude of such adjustments.

SECTION 11**TERMINATION DIVIDENDS**

11.1 The preceding Sections have primarily been directed toward the determination of annual dividends. A number of companies also provide for termination dividends payable upon events such as death, maturity and surrender. Termination dividends paid on death, maturity and surrender generally reflect a policyholder's share of surplus which has not been distributed through the annual dividend. This surplus may be generated by investment in common stocks and real estate, but other types of gains, including non-investment gains, may also be recognized. The termination dividend program may be part of a recurring process by which such gains are distributed, and/or it may be a one time distribution over a period such as one to three years.

11.2 RECOMMENDATIONS 17: The actuary's report should specifically state whether termination dividends equitably reflect the incidence, size and growth of the policy's share of the amounts previously accumulated on behalf of the policies on which such dividends are payable, whether differences in termination dividends among different policies reflect differences in the corresponding amounts accumulated, and whether termination dividends are expected to be recurring and/or for a temporary period. The actuary's report should include a description of the process used to determine termination dividends, the sources of funds or the types of investment gains which are being used to support the dividend, and any changes in practice with respect to the determination of termination dividends since the last report.

SECTION 12**DETERMINATION OF PARTICIPATING EARNINGS LIMITATIONS ON AMOUNTS TRANSFERRED AMONG ACCOUNTS**

12.1 In section 1.2 it was noted that the generally accepted method for determining the earnings of participating business is via separation of accounts. Unless there is some systematic means of determining these earnings, any limitation on transfers from participating surplus to the shareholders' account will be ineffective. If separate accounts are not maintained for this purpose, but instead some other method is applied consistently from year to year, uses sound accounting and actuarial principles, is capable of independent review and gives results similar to those which would be produced by separate accounts, the Contribution Principle can be followed. The actuary should describe the method in his report and compare it to separation of accounts. If the method does not meet these requirements, the actuary will not be able to say that the Contribution Principle has been followed in the determination of dividends.

Given that there is an appropriate method in place, the degree of limitation on transfers to the shareholders' account can be addressed. The limitation which generally applies in Canada is that of Section 84 of the Canadian and British Insurance Companies Act. If any less stringent limitation applies, as noted in Section 1.2 it is deemed that the Contribution Principle can not be followed. Where separation of accounts is not employed, moving an amount from the experience of a participating line to another line or to the shareholders' account will, in these Recommendations, be regarded as equivalent to a transfer from the particular participating line to the other line or to the shareholders' account.

If the Contribution Principle is to be followed in practice, transfers from one participating line of business to another, or to a nonparticipating account, may be as important as transfers to the shareholders' account. The actuary's report should describe any such transfers which are being proposed and state why the amounts involved are considered to be reasonable or unreasonable.

12.2 RECOMMENDATION 18: The actuary should state in the report whether a separation of accounts is maintained and, if it is, whether it is maintained on the basis of statutory or regulatory standards and methods and/or generally accepted accounting/actuarial standards and principles.

12.3 RECOMMENDATION 19: The actuary should state in the report whether a current limitation exists, by reason of charter, statute, or other regulation, on amounts transferred from a participating account to a non-participating account and/or the shareholders' account.

12.4 RECOMMENDATION 20: The actuary should report, or incorporate by reference, the current earnings and policy holder surplus of each participating account, and the amounts proposed to be distributed to policyholders or proposed to be transferred to other accounts. The report should state why the transfers are reasonable or unreasonable. The report should also indicate whether, in the actuary's judgment, the transfers might impair the company's ability to maintain the current dividend scale.

SECTION 13**ILLUSTRATED DIVIDENDS**

13.1 The methods and procedures stated in these Recommendations are intended to apply equally to currently payable dividends for policies in force and to illustrated future dividends for both inforce policies and new policies. When a factor value different from any value of the same factor applicable to older policies is applied to any new policies, special care and attention is required to ensure that the differences in experience factors are based upon sound data, reasonable expectations and equitable methods.

13.2 The actuary may find it desirable to assume a conservative posture in determining an experience factor value applicable only to new or recent issues, if such value differs from values used for any existing policies. In such a case, it is important to bear in mind the degree of uncertainty that exists when factor variations are based upon limited experience data.

13.3 Circumstances can arise under which there is a substantial probability that an illustrated dividend scale will not be maintained in the near future. In such a situation, the actuary may find it appropriate to have as the illustrated dividend scale a reduced scale which is consistent with the expected experience.

13.4 RECOMMENDATION 21: The actuary should conduct tests of illustrated dividends which are adequate to judge whether those illustrated dividends could be paid in the near future. If there is a substantial probability that the illustrated dividend scale will not be supportable in the near future, the actuary's report should include a statement to that effect.

13.5 Recommendation 11 states that both the portfolio average approach and the investment generation approach are considered to be generally acceptable practice. However, the difference in effect of these two approaches on illustrated dividends may be considerable. This difference is essentially due to the difference in time periods over which an investment generation is determined. For the portfolio method, the time period is the age of the oldest outstanding investment. For the investment generation method, the time period may be 1 year but may also be longer or shorter. For long periods, the two approaches become more and more similar regardless of the past pattern of new investment yields available, for short periods, they may become more dissimilar depending on that past pattern.

13.6 RECOMMENDATION 22: The actuary's report should identify the time period used to determine the portfolio investment generation rate of return for policies to which the illustrated dividends apply.

13.7 RECOMMENDATION 23: The actuary's primary professional responsibility with regard to illustrated dividends is to ensure that the dividends appropriately reflect the current financial results of the company and are related to paid dividends in an equitable, justifiable manner.