

**LIFE AGENTS' RETIREMENT PLANS UNDER NEW
YORK STATE EXPENSE LIMITATIONS**

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INTRODUCTION

DURING the last 15 years we have experienced an unprecedented development in security benefits for wage and salary workers. Today a great majority of the working population of the United States expects and receives a variety of special types of compensation for its services in addition to straight wages and salaries. These are deferred in their effect, accruing to the benefit of the workers in the future upon the occurrence of specific events such as death, permanent or temporary disability, loss of work or retirement.

In their original philosophy security benefits were restricted to cases where a direct employer-employee relationship existed. But the idea has expanded beyond its original scope. In the life insurance industry, at least, there are many individuals who, though not employees in the common law sense, spend most or all of their time under a commission form of contract with one company. These people render essential services under conditions which strongly suggest the desirability of establishing security benefit programs. I am referring, of course, to the full-time life insurance agent and to the general agent. Today a large percentage of these men are covered by their companies' security benefits program. It is with this class of personnel and their retirement benefits that this paper deals.

Field personnel of other types, such as salaried branch office managers and supervisors, salaried soliciting agents, and members of the field office clerical staff, are employees in the common law sense and are usually covered as such under the security benefits program for home office employees, or under a special plan similar to the home office plan in scope and structure. These are not considered in this paper.

In section I of this paper the provisions of typical agents' and general agents' retirement plans are presented and discussed.

The cost limitations imposed by section 213 of the New York Insurance Law as they apply to agents' compensation in general and to retirement plans in particular form section II. As an essential feature of this discussion section III presents a technique acceptable to the New York Insurance Department for demonstrating compliance with the provisions of section 213. Finally in section IV the practical application of this technique is demonstrated in an example of a model submission.

I. TYPICAL AGENTS' RETIREMENT PLANS

The Retirement Concept as Applied to Agents

Before we discuss some typical provisions of agents' retirement plans, it might be helpful to discuss the meaning or philosophy of "retirement" as used in the context of agents' plans. In the generally accepted sense of the term an employee retires by ceasing to work, by ceasing to receive an income from past work, other than the retirement benefit itself, and by quitting the premises of the employer. In the case of most existing agents' plans it is evident that no such complete retirement is contemplated. The agent will usually continue to produce some business after retirement, on a decreasing scale as time goes on, either retaining his pre-retirement contract or changing over to a part-time or brokerage form of contract. Office space and office services will continue to be available to the retired agent, although on a scale fitting the new circumstances.

The easing-off character of agent retirement is evident in other aspects of the picture. The agent receives renewal commissions on business written before retirement, regardless of the extent of his postretirement activity. Generally, production quotas are not applied to reduce or eliminate renewal commissions on preretirement production or future renewal commissions on postretirement production. Thus the typical retired agent receives a substantial though decreasing commission income from past and present activities, apart from whatever retirement benefits are available.

This situation creates in the minds of the agents, at any rate, a strong tendency to regard retirement benefits as a supplement which takes on some of the characteristics of commission income. This quality of being a supplement to the commission income of an "independent contractor," who often tends to think of that income in capitalized form as part of his property, permeates other aspects of the retirement benefit structure. Thus the most frequently used method to provide retirement benefits is to build up a fund or capital account by contributions from the agent and the company. The fund built up from these contributions with interest, similar to a savings bank account, is then available to provide retirement benefits on the "money purchase" principle.

Not all company retirement plans follow this pattern. There are some companies which attempt to apply the usual conception of employee retirement to agents' retirement plans. Some commute and redistribute postretirement renewal commissions in the form of a level income and combine this with retirement benefits built up under the unit benefit pattern typical of employees' retirement plans. Some companies (generally when benefits are noncontributory) require the agent to give up his

contract and cease production of new business as a condition for receiving retirement benefits. Possibly some of these companies allow continued production under a different type of contract. How this approach works out in practice is something on which I have no information. Perhaps one of our members whose company operates on this basis will enlighten us in the discussion.

Provisions of Typical Retirement Plans for Soliciting Agents

In the short description of agents' retirement plans contained in the *Handbook of Agents' Contracts* published by the Life Insurance Agency Management Association, one fact stands out: There are no two plans alike. Each company seems to have developed its own plan independently. If it has followed another's model, it has made many changes to fit its own peculiar conditions, pocketbook, or limits available under section 213 of the New York Insurance Law.

The following material represents an effort to classify and generalize the available information.

Normal Retirement Age: Usually age 65, often with the restriction that the agent must have a minimum number, say 15, years of service (or participation in the plan) before he may receive retirement benefits. In many plans the number of "service years" is restricted by a production qualification, a stated production requirement which must be met to validate a contract or service year as a year to be counted toward the required minimum. This concept of "qualified service year" is embodied in the plans of many companies. In some plans the annual contributions of the agent and the company, or at least those of the company, are conditioned upon qualification in the preceding year by achieving a certain minimum production or minimum commission income.

Early Retirement Benefits: Generally available at age 60, provided the agent has met the minimum service year or participation year requirement.

Deferred Retirement Benefits: Most plans permit the deferment of retirement to age 70. At that age minimum service or participation year requirements are usually waived.

Type of Plan: The most common type is a money purchase plan, with the agent contributing a certain percentage of commission earnings (sometimes a larger percentage of the renewal commission earnings, evidently in the interest of stabilization) and the company matching the agent's contributions. The percentage varies between 3% and 5%. In lieu of one year's earnings as a base in many plans the average of a few years is used, again to avoid wide fluctuations. In many plans the agent is allowed to

increase his own contributions, usually up to double the formula amount, without, however, the company matching such additional amounts.

The combined contributions are then accumulated at interest (at a fixed rate, or at a rate to be determined annually, subject to a minimum) and applied at retirement as a single premium, using a mortality table and rates of interest fixed at the time the contribution is made.

Under some plans the combined contributions are applied annually to purchase a piece of deferred paid-up annuity at retirement, using a specified mortality table and rate of interest. The difference between the two methods is often only in the fixed rate of interest in the latter, applying to the period prior to retirement. Otherwise the results are the same, provided the same treatment of reserves is provided for in case of death, disability, or withdrawal before retirement.

Death Benefits: In case of death of the agent before retirement, the agent's contributions, usually with interest at a specified rate, are refunded. Some plans also provide for the payment of the company's contributions on death, usually also with interest, either without qualification or only after a certain number of years (or qualified years) of service or participation in the plan.

Withdrawal Benefits: Again, the agent's contributions with or without interest are refunded upon withdrawal from the plan. Most plans provide that the agent has the right to leave his own contributions with the company to further accumulate at interest and to be applied at normal retirement age as a single premium for the purchase of a life annuity. If in such event the agent has had a certain number of years (or qualified years) of service or participation before withdrawal, the company's contributions (or a portion of them, graded by number of service or participation years) are vested and are added to the agent's contributions to increase the retirement income after normal retirement age. The company's contributions are never paid out in cash on withdrawal.

Disability Benefits: Generally, after a number of years (or qualified years) of service or participation at the inception of total and permanent disability the combined contributions at interest are applied to purchase an immediate annuity, or a deferred annuity to begin at some future date, such as age 55. A few plans have a provision for special disability payments over and above those derived from past agent's and company contributions.

Eligibility to Join the Plan: Usually there is no minimum age limit, but a maximum age is often stipulated. In many companies the maximum is automatically controlled by a company rule under which a full-time agent's contract is not made beyond a certain age. There is almost in-

variably a service requirement of one year, and many plans also require a certain amount of annual production, or commission income, before qualifying the agent to participate in the plan.

Past Service Credits: For agents with certain qualifications at the time the plan was established, some plans provide for additional retirement income. This may take the form of an amount per \$1,000 of insurance in force at retirement, produced before the plan became effective, or may be defined similarly to the annuity credits derived from production during the plan's existence, without, however, requiring additional contributions from the agent. Generally there are no death or withdrawal benefits connected with the past service credits.

Form of Annuity at Retirement: In the typical case, the annuity is of an instalment refund type, the refund being defined in the same way as the death benefit before retirement—that is, covering either the agent's contributions only, generally with interest, or including the combined contributions of agent and company. Usually there is provision for the election of a joint and survivorship option, and the usual safeguards of group annuity practice against adverse selection are incorporated in the plan.

Typical General Agents' Retirement Plans

Retirement plans for general agents are of more recent origin than those for producing agents.

Unless it is the company's practice to allow the general agent to operate as a glorified agent with a large volume of personal production, without much stress on agency building, the philosophy of retirement plans for general agents necessarily differs to some extent from that for producing agents.

In companies which require the general agent to do agency building work, such as hiring and training of new agents, the general agent cannot retain his contract after retirement. In many instances his productivity as far as agency building is concerned decreases considerably with increasing age and approaching retirement. In addition to the normal physiological slow-down there is usually the anticipated impact of the after-termination deduction on overriding commissions due after retirement which acts as a damper on the general agent's activities in the direction of agency building.

Such companies have good reason to replace the general agent on normal retirement by a younger man, but may find themselves hampered here unless they can offer retirement benefits to supplement the necessarily declining income of the general agent after retirement. Often, too, it is desirable to keep the general agent's good will and to encourage him to

help the new man by taking some form of producer's contract and continuing in personal production.

Depending upon the company's objectives in its general agency program, the retirement plan for general agents takes different forms.

For companies which stress the general agent's personal production, the best solution seems to be not to have a special plan for general agents but to permit the general agent to participate in the agents' retirement plan on the basis of his personal production. On the other hand such a plan would obviously not be very useful for companies which stress continuous agency building by the general agent, as it would encourage him to concentrate even more on personal production to the detriment of other agency work.

If continuous agency building is one of the company's objectives, its general agents' retirement plan should exhibit a difference in philosophy from that applied to the producing agents' plan. While the agents' plan is the typical money purchase type, the plan for the general agents in such companies approaches in concept and structure the unit benefit type plan provided for the salaried employees of the company. Here the entire commission income of the general agent (overriding and personal commissions) is used as the basis for contributions and retirement income, just as if such income were a salary. With the general agent being assured of an adequate retirement income, the company will encounter a reduced resistance in making the necessary replacements at normal retirement age.

An intermediate position is taken by some companies which have a retirement plan for general agents similar in structure to a typical agents' retirement plan on the money purchase principle. The member's contributions are determined as a percentage of total income (overriding commissions and commissions from personal production), with the company matching the contributions. The general agent is generally permitted to increase his contributions up to double the normal amount. Provisions for death, disability and withdrawal are duplicated from the retirement plan for soliciting agents.

II. THE PROVISIONS OF SECTION 213 OF THE NEW YORK INSURANCE LAW, AS THEY APPLY TO AGENTS' RETIREMENT PLANS

Introduction

Maximilian Hollenberg's paper¹ has taught many of us how to reconcile the commission and security benefits structure of a life insurance company authorized to operate in New York State, with the requirements of section 213 of the New York Insurance Law.

¹ *TASA* XLI, 37.

Since the publication of that paper, there have been developments which suggest modifications of some of the techniques used and of some of the conclusions reached by Mr. Hollenberg.

The most obvious of these developments is the importance that security benefits, especially retirement plans, have gained in the compensation structure of life insurance salesmen. While Mr. Hollenberg stated in 1940 that "... there are comparatively few companies in the United States which make provision for such benefits to their agents," in 1950 Mr. Thomas Irvine, at that time Actuary of the Life Insurance Agency Management Association, reported² that 72% of their United States member companies reviewed had retirement plans for their agents. Although I have no later figures available, I feel certain that the percentage has increased since then.

In looking over the synopses presented by LIAMA in their *Handbook of Agents' Contracts* I find that all companies listed in the *Handbook* as operating in New York State have agents' retirement plans.³ Of the companies listed as not authorized in New York State, a large majority report such plans.

In addition, more and more companies operating on a general agency basis provide a retirement plan for their general agents. A 1953 LIAMA study reports that 20 companies out of 39 reporting have retirement plans for their general agents, and I assume more companies have joined the ranks since then. As noted previously, in some companies the general agent may qualify for the agents' retirement plan on the basis of his personal production. This type of general agents' retirement plan does not create an additional problem of compliance with section 213, since the cost for general agents is included with agents' costs. However, if the cost to the company of a general agents' retirement plan is in excess of that provided by participation in the agents' plan, such cost requires separate treatment.

Companies operating under the branch office system do not face a special section 213 problem in this connection, as the cost of the pension plan for salaried managers is considered part of the compensation or salary, and as such does not fall under the commission and security benefit limitations imposed by that section.

Section 213 has been revised so that there are now higher margins

² TSA II, June, 107.

³ See also Mr. Irvine's similar statement in TSA IV, 357, with respect to 28 companies. According to information received informally, there is only one large-sized life insurance company operating in New York State which does not provide any form of retirement plan for its agents.

available for security benefits. The minimum interest rate for commuting renewal commissions has been lowered from four percent to three percent.

Finally, Mr. E. M. McConney and Mr. R. C. Guest have published their fundamental papers on agents' compensation⁴ and have developed an Agents' Survival Table and a model company approach to the valuation of nonvested compensation which have become accepted as standards in the life insurance industry.

Some Provisions of Section 213

Subsection 8 of section 213 of the New York Insurance Law as amended in 1954 defines in paragraph (a) the "maximum renewal commission schedule" as $7\frac{1}{2}\%$ of the premiums annually for nine years after the first year (that is, for the second to the tenth years) and 5% for the next five years (except that the maximum for endowments with less than 20 premiums is 5% of the premiums for fourteen years after the first year).

It allows in paragraph (aa) as an "additional renewal commission schedule" 1% of the premiums annually for the first eight years after the first year (that is, for the second to the ninth years) with the proviso that two-thirds of this additional renewal commission is available only to provide security benefits (or else has to be deferred beyond the fifteenth policy year).

According to paragraph (d), 3% of the premiums is available after the fifteenth policy year, but only for the payment of a collection fee to the general agent, or a service fee to the agent, or a combination of both.

It is the position of the New York Insurance Department that the value of all security benefits to the agent and the general agent has to be added to the value of commissions and collection and service fees payable during the second to fifteenth policy years to determine compliance with subsection 8. Authority for this interpretation is derived from a sentence in the last paragraph of subsection 8 which reads: "If any such company shall compensate its agents, or any of them, after the first insurance year, in whole or in part, *upon any other plan than commissions* (italics supplied) the aggregate sum so paid shall not in any year exceed the limitations imposed by this subsection, and no such schedule or plan of compensation shall be made effective until it has been submitted to the superintendent and approved by him." The position of the New York Insurance Department is that the granting of security benefits constitutes a plan of partial compensation other than by commissions and is, as such, subject to the limitations of this subsection.

The fact that the value of renewal commissions (and collection and

⁴ *TASA* XLIII, 287 and XLVI, 315.

service fees for the second to fifteenth policy years) plus security benefits exceeds the limits of paragraphs (a) and (aa) of subsection 8 does not in itself mean that the compensation structure is disapproved automatically. The company has the possibility of charging annually any such excess against the first year field expense limit of subsection 4, provided the company has a margin under that limit. This relief is granted in paragraph (e) of subsection 8. A calculation must be submitted to the superintendent of insurance for his approval, showing the aggregate present value of such excess obligations incurred in any one year. The computation must be based on an interest rate not higher than four percent, and on mortality and lapse rates to be approved.

Basic Assumptions and Tables for Valuation of Commissions and Security Benefit Costs

Policy Termination Rates and Interest Rate: Paragraph (b) of subsection 8 of section 213 permits commutation of the commission limits of paragraphs (a) and (aa) and redistribution over three or more years by a calculation approved by the superintendent of insurance and based upon mortality and lapse rates and an interest rate not lower than three percent per annum. This commuting is restricted by the two provisions that in any one of the fourteen policy years after the first, $1\frac{1}{2}\%$ of the premium is not subject to commutation, and that in none of those years may the payment exceed two-fifths of the remaining commuted value (after excluding such $1\frac{1}{2}\%$).

In a ruling of the New York Insurance Department dated December 29, 1928 the use of Linton A policy termination rates for insurance other than term, and 300% of Linton A policy termination rates for term insurance, was specified for submissions in connection with redistribution of renewal commissions. The rate of interest specified in the ruling is 4%, but this has been regarded as superseded by the subsequent modification of the statute, which lowered the minimum rate to 3%. In any event the New York Insurance Department permits the use of a 3% rate.

It was a quite natural step for the New York Insurance Department to permit the use of the policy termination and interest rates required for commission valuations for the valuation of security benefits.

In the absence of any special circumstances the New York Insurance Department has usually accepted a demonstration of compliance based on the Ordinary (Whole) Life plan of insurance, using Linton A policy termination rates. Special circumstances which might require separate demonstrations by plan would include such cases as basically different renewal commission scales by plan or a forward heaping of renewal commissions

with different effects for different plans. Separate calculations for representative plans and averaging by volume would also be necessary where the renewal commission margins are exhausted and the company wishes to take advantage of the provisions of paragraph (e) of subsection 8 by charging excess costs against the first year limit as explained above.

Agents' Termination Rates: Section 213 of the New York Insurance Law does not make specific reference to additional discounting of costs for agents' withdrawals where payments are conditioned upon the continued existence of a contract between the agent and the company. Here again it requires an interpretation of the words "the aggregate sum so paid" as used in the last paragraph of subsection 8 to permit discounting for agents' termination rates. The concept of "aggregate" is applied to the community of all agents holding the same type of contract in a company. According to information received from the New York Insurance Department, they have been interpreting this to mean that agents' termination rates may be used only if there is a plan of compensation which consists at least partly of payments other than commissions. Any type of security benefits qualifies the plan of compensation as one consisting partly of payments other than commissions.

Before talking about the specific tables to be used it seems advisable to digress from the presentation of the material on hand and to discuss briefly the technique of valuing costs.

There are two distinct classes of costs each of which requires a different method of handling. This results in figures which are not directly commensurable.

The first class comprises costs which arise and are allocable by policy years: renewal commissions, collection fees, service fees. The valuation of these costs, if they are not conditioned upon the continued existence of a contract between the agent and the company (*i.e.*, if they are "vested" payments), was treated by Linton and the policy termination rates⁵ developed by him for this purpose have become standards in the industry.

The valuation of such of these costs as arise only if the contractual relationship between agent and the company continues to exist (*i.e.*, "nonvested" payments) was discussed by McConney and Guest, who developed valuation factors⁶ on the basis of weighted production assumptions by agent's contract year using a model company approach. At the same time the authors proposed a "Modified Agents' Survival Table"⁷ to serve as a basis for the valuation factors.

Whether the payments are vested in the agent or nonvested, by the use

⁵ *RAIA* XIII, 287.

⁶ *TASA* XLIII, 324-326.

⁷ *Ibid.*, 307.

of these tables the costs are expressed directly as a percentage of one year's premium.

The second class comprises costs which are not allocable by policy years and cannot be expressed directly as a percentage of one year's premium. These are the costs for security benefits. To bring the value of these costs to a common denominator, it is necessary to proceed in a roundabout way. The technique suggested here is similar to that used in pension mathematics to develop entry age normal costs expressed as a percentage of earnings. This method requires the use of a service table for the employee (in our case, for the agent). The same table which underlies the valuation factors for costs allocable by policy years will naturally be considered appropriate as the service table, with a possible adjustment as to the entry age used in the calculations.⁸

Using the service table decided upon, the present value of the costs for the benefits under consideration is determined, and at the same time the present value of the lifetime income of the agent, other than security benefits, is found. By relating the two resulting items, the lifetime cost of security benefits is expressed as a percentage of earnings. Finally, this percentage is applied to the present value of the same earnings when allocated by policy years—that is, to the present value of commissions, collection fee and service fee income expressed as a percentage of one year's premium. The multiplication of these two percentages yields the cost of security benefits expressed as a percentage of one premium and in this way the value of the costs of the second class (*i.e.*, costs not allocable by policy years) is brought to a common denominator with the value of costs of the first class (*i.e.*, those allocable by policy years).

⁸ McConney and Guest used over-all service termination rates, without dividing them into death and other withdrawal rates, with the only proviso that the rate at any attained age must not be lower than the American Men mortality rate, and not lower than .025. Any adjustment of the entry age 35 tables to a different entry age may then be conveniently made by continuing the ultimate rate of .025 until attained age 59 and using from attained age 60 the American Men mortality rate, as shown in the entry age 35 table for agent's contract years 26 and higher. This suggestion of not adjusting all rates for other entry ages may be defended by the relatively minor importance of the death rate at early durations as compared with the over-all termination rate and by the somewhat arbitrary assumptions involved in all termination rates. This suggestion is equivalent to the assumption that the early service year over-all termination rates are independent of the entry age (*i.e.*, that a higher mortality rate is offset by a correspondingly lower other withdrawal rate at higher entry ages). This adjustment as to entry age is applied only where the table is used as the basic service table for the pension fund type of valuation of costs not allocable by policy years. No adjustment is suggested in the use of the policy year valuation tables which are aggregate tables based on entry age 35.

To the best of my knowledge, the New York Insurance Department, in the absence of any circumstances which make the table patently inapplicable, has always accepted, since its publication, the use of the McConney-Guest "Modified Agents' Survival Table" (which we propose to call the MCG table) for the valuation of costs of the second class for soliciting agents. They have also accepted the policy year valuation factors referred to earlier (which we propose to call LA-MCG 3% tables) for costs of the first class for such agents. The proposed designation denotes the three elements involved, the Linton A table, the MCG table, and the interest rate.

For the termination rates of general agents the use of the McConney-Guest table stepped forward ten years has been suggested repeatedly. This means that the termination rate given in the table for agents in their 11th year (7.4%) applies for general agents in their first year, that for agents in their 12th year (6.2%) applies for general agents in their second year, and so on.⁹ The ultimate rate would be 2.5% per year, until the mortality rate of the American Men Ultimate table exceeds that rate at attained age 60. I have no supporting data to prove that these rates are proper, but offhand they look reasonable and they probably approximate actual facts. Such agents' survival table, which we propose to call the MCG (+10) table, is reproduced in Table 1, assuming entry age 35.

There are some companies which recruit a majority of their soliciting agents from the ranks of the much larger body of general insurance brokers. The termination rates of such agents are much lower than those of newly hired salesmen who have never been in any branch of the insurance business. For such a group of agents the use of the termination rates of the McConney-Guest modified agents' survival table stepped forward five years may be suggested. The first year termination rate in such a table would be 15.2%, the second year rate 13%, and so forth, with an ultimate rate of 2.5% up to attained age 59 as in the McConney-Guest table. This agents' survival table, which we propose to call the MCG (+5) table, is reproduced in Table 2, again assuming entry age 35.

Table 3 shows valuation factors of the type developed by McConney and Guest for nonvested payments allocable by policy years. All tables are based on Linton A policy termination rates which are reproduced for

⁹ Again, there is no adjustment suggested for a difference in the mortality rates; while the 7.4% rate in the McConney-Guest agents' table may be interpreted as containing the mortality rate at attained age 45, it is used here for the first service year of a general agent, at any entry age, and so on for other durations. The somewhat arbitrary way of deriving these rates may be used as a defense for this practice, which is rather in the nature of a convention than "exact" science.

convenience in valuing vested payments. All factors are shown without interest and with 3% interest. The tables are denoted LA, LA-MCG (+10), LA-MCG (+5) and LA-MCG, depending upon the agents' survival table underlying the factors.

III. SUBMISSION TO THE NEW YORK INSURANCE DEPARTMENT IN
COMPLIANCE WITH THE PROVISIONS OF SUBSECTION 8 OF
SECTION 213 OF THE INSURANCE LAW

The description of an acceptable technique of submission to the New York Insurance Department is developed here for a company operating on the general agency basis. I do not want to imply that this technique is the only one, or even the best one. Many companies have made submissions in the past proceeding along different lines, which have been found to be entirely satisfactory to the New York Insurance Department.

The method of submission used as an illustration in this paper proceeds along the following lines:

(1) The objective is to develop margins by determining the excess of the limits allowed by the statute over the related costs to the company. All values are ultimately to be expressed as percentages of one year's premium, although in intermediate stages of the necessary calculations they may be expressed differently. As stated above, in most cases compliance will need to be demonstrated using only the Ordinary Life plan of insurance.

(2) The value of the limits is determined on the basis of the provisions of paragraphs (a) and (aa) of subsection 8 of section 213 using the proper table of policy terminations and rate of interest. In this connection two-thirds of the special limit of paragraph (aa) should be kept apart to prove that none of it is used for compensation other than security benefits. Agents' service termination rates do not enter into these calculations.

The allowance of 3% of the premium after the 15th policy year as provided in paragraph (d) of subsection 8, is not subject to commuting. Neither is any excess of such allowance over actual collection and service fees after the 15th policy year commutable as a margin for security benefits. If, on the other hand, collection and service fees after the 15th policy year exceed 3% of the premium, the value of any excess is to be added to the costs, as described in (3) immediately below.

Subsection 8 of the statute deals with renewal commissions only. First year commissions are treated in subsection 4, the provisions of which are complied with by a maximum first year commission scale of 60% for general agents (with the proper restrictions if the general agent produces over 50% of the total agency production).

(3) The determination of the value of compensation and security benefit costs is performed in two steps as already noted:

a) The value of renewal commissions, collection and service fees between the second and the fifteenth policy years and, in general, of any compensation allocable by policy years within such period (and of any such compensation beyond the fifteenth year in excess of the 3% limit of paragraph (d)):

Assumptions are to be made as to the service termination rates of agents and general agents, if nonvested compensation is involved. The assumptions as to policy termination rates and the rate of interest are the same as those used in the development of the value of the limits in (2) immediately above. For this part of the calculation the valuation factors are of the type developed by Linton for vested payments and by McConney and Guest for nonvested payments.

b) The value of security benefit costs and, in general, of any compensation which is difficult to allocate other than by agents' contract year:

This is the major part of the job and can be performed in several ways. The method developed here is one involving pension fund techniques. Separate calculations will be necessary for soliciting agents and general agents. For each calculation, an average service entry age and an average production and commission scale will need to be established. Generally an average service entry age of 35 has been found acceptable, unless it can be shown that another age more properly fits the circumstances. It is also necessary to build up a pension fund type of service table and, if death benefits and disability benefits are involved, to make assumptions as to the division of the agents' and general agents' termination rates into death, disability retirement, service retirement and other withdrawal rates. The total service termination rates, the policy termination rates, and the rate of interest are the same as underlie the factors used in the valuation of commission costs as described in (3) *a)* immediately above, with the service termination rates adjusted to the entry age if an age other than 35 is used in the calculations.

The security benefit cost calculation will embrace all such benefits provided for agents in addition to the retirement plans, such as group life insurance, group accident and health, group major medical, group hospitalization.

The cost of security benefits is initially determined as a level percentage of earnings. Subsequently it is converted into a percentage of one annual premium. This involves three distinct steps:

First, on the basis of the average production and commission scale, the present value, on the date of entry into service, of the lifetime commission

income is determined. In this calculation is embraced all commission and similar income, first year and renewal, vested and nonvested. The object here is to obtain a present value of all compensation other than the security benefits themselves and in such form that the cost of security benefits can properly be related to it. For first year commissions (average rate) and vested renewal commissions the present value is determined as a percentage of one year's premium, discounted for policy termination rates and interest only. This percentage is applied to the average premium production per agent per year, and the result is multiplied by the sum of the discounted number of survivors from the entry age to the age before normal retirement. To this is added the present value of nonvested renewal commissions and other similar income, determined by a service table technique. As the service table has to be established to value the security benefit costs, its use in this connection is quite convenient. The use of the valuation factors derived by McConney-Guest on an aggregate model company basis reflecting all years of service does not appear to be in order.

All assumptions as to policy terminations, agents' terminations and the rate of interest will enter into these calculations.

Next, the present value, on the date of entry into service, of the lifetime cost to the company of all security benefits is determined, using the service table technique.

Costs for security benefits other than retirement plans are determined as one year term premiums depending upon the attained age of the agent and an average claim cost. For group life insurance this reduces to a multiplication of the number of covered deaths, from the service table, by the amount of death benefit paid. If the coverage is purchased from another insurance carrier the premium charged by attained age, less an average dividend, will be used. For contributory plans the agents' contributions should be taken into consideration as a partial offset of the cost to the company.

Pension benefit costs are generally easily allocable as present values to the agent at the time when he first becomes eligible to receive benefits other than a refund of his own contributions. The bulk of the cost will thus emerge at the normal retirement age, as the difference between the total value of the retirement benefit at that age and the accumulated agent's contributions. Before normal retirement age, the costs consist of the value of disability benefits, vested withdrawal benefits and early retirement benefits, in every instance after deduction of accumulated agent's contributions.

For retirement plans where the agent's normal contributions are

matched annually by the company, an alternative procedure would be the annual allocation of costs equal to agents' contributions, with offsets for terminations without vesting or with only partial vesting of the company's contributions. Additional costs are to be assessed if the plan calls for disability benefits in excess of those produced by agents' and company's contributions. The two methods obviously yield the same result.

Finally, the value of the security benefits as found is expressed as a percentage of the value of the commission income. This percentage is then translated into a percentage of one year's premium by relating it to the present value of all commission income (earnings base) expressed as a percentage of one year's premium. The latter is the sum of the first year commission rate, the value of compensation between the second and fifteenth policy years, as calculated in (3) *a*) above, and the value of collection and service fees beyond the fifteenth year, also determined by the method of computing present values of policy year cost allocations.

The entire calculation is performed separately for agents and for general agents, and the results in terms of a percentage of one premium are added to the cost to the company of the compensation items for the second to the fifteenth policy years (and possibly excess items over 3% of the premiums beyond the fifteenth year) as found in (3) *a*) above.

The sum of the costs for agents and general agents is then the total cost to the company. This must be compared with the limits.

(4) The resulting over-all margins are found by subtracting the total cost, per (3) above, from the value of the limit determined in (2) above.

As two-thirds of the special limit of paragraph (aa) of subsection 8 of section 213 is available for security benefits only, the statute is not complied with unless it can be shown that the cost of renewal commissions and similar payments for the second to the fifteenth policy years as developed in (3) *a*) above does not exceed the sum of the limits of paragraph (a) and one-third of the special limit of paragraph (aa) of that subsection.

For companies operating on the managerial basis, the calculations are simpler. The cost to the company is to be determined for the soliciting agent only. The limits of paragraph (a) of subsection 8 of section 213 are to be reduced to two-thirds of their value, as required by the provisions of paragraph (c). The special limit of paragraph (aa) may be utilized fully with one-third available for compensation other than security benefits.

For companies operating on a mixed basis, the margins are to be determined separately, but if necessary a combined average may be calculated and submitted using as weights the proportions of new business produced by general agents and salaried managers, respectively.

IV. EXAMPLE AND MODEL SUBMISSION

The assumptions used in the following example are not taken from the benefit structure of any specific life insurance company, nor are they supposed to represent recommendations as to retirement benefit provisions or commission scales. They are merely used to illustrate the principles outlined above by an example.

Assumptions

Basis of agency operations:	General Agency
Policy termination rates:	LA table
Interest rate:	3%
Service termination rates	
For agents:	MCG table, adjusted ¹⁰ to entry age 29
For general agents:	MCG (+10) table, adjusted ¹⁰ to entry age 39
Death and disability rates:	According to the table below
Early retirement rates:	Excess of total service termination rate over death rate

Age	Death Rate* per 1,000	Disability Rate† per 1,000	Age	Death Rate* per 1,000	Disability Rate† per 1,000
29.....	1.2	.7	47.....	5.5	3.6
30.....	1.2	.8	48.....	6.0	4.0
31.....	1.3	.8	49.....	6.7	4.5
32.....	1.4	.9	50.....	7.4	5.0
33.....	1.5	1.0	51.....	8.2	5.6
34.....	1.6	1.0	52.....	9.1	6.3
35.....	1.7	1.1	53.....	10.0	7.0
36.....	1.9	1.2	54.....	11.0	7.8
37.....	2.1	1.3	55.....	12.0	8.8
38.....	2.3	1.5	56.....	13.2	9.8
39.....	2.5	1.6	57.....	14.5	11.2
40.....	2.7	1.8	58.....	15.9	12.7
41.....	3.0	2.0	59.....	17.3	14.8
42.....	3.3	2.2	60.....	18.8	.....
43.....	3.7	2.4	61.....	20.3	.....
44.....	4.1	2.6	62.....	21.9	.....
45.....	4.5	2.9	63.....	23.6	.....
46.....	5.0	3.3	64.....	25.4	.....

* Death rates are calculated from the results of the 1946-1950 group insurance reports (nonrated industries), TSA 1951 Reports, 74-75.

† Disability rates are those stated for clerks on page 34 of *Report of the Commission on Pensions* issued by the Commission on Pensions of the State of New York (March 30, 1920). Where these rates are higher than the excess of the total service termination rates over the death rates, such excess is substituted for these rates in our example.

¹⁰ As stated previously, an average entry age of 35 should be acceptable in most instances. Different entry ages are used here to illustrate the adjustments.

	General Agent: Agency business	Soliciting Agent: Personal business
COMMISSION SCALE:		
First year commissions	5%	45%
Renewal commissions, collection and service fees:		
Years 2-10	2½%	5%
Years 11-15	5%	1½% (Not payable on GA's personal production)
Years 16-Life	1½%	1½%
Termination deduction	1½%	1½%
LEVEL ANNUAL PRODUCTION:	\$2,500,000	\$300,000
Including personal production	\$ 200,000	
Average premium rate per M	\$ 30.00	\$ 30.00
Average service entry age	39	29
Normal retirement age	65	65
GROUP LIFE INSURANCE:	Preceding year's earnings, to next higher \$1,000. Maximum: \$25,000	Preceding year's earnings, to next higher \$1,000. Maximum: \$10,000
After service retirement	\$2,500	\$2,500
Eligibility period	1 year	1 year
Member's contributions	None	None
OTHER GROUP COVERAGES:	None	None
RETIREMENT PLAN:		
Normal retirement benefit	1½% per year of service (min.: 30%) times average income of last 5 years before retirement, to \$15,000, ¾% per year of service (min.: 18%) of excess to \$25,000. Maximum pension: \$10,500 per annum	Purchased by agent's and company's contributions, accumulated at 3% to retirement. Applied at retirement, using 1937 Standard Annuity 2½% values
Agent's contributions	4% of previous year's income to \$15,000, 2% of excess to \$25,000	4% of previous year's income
Company's contributions	Balance required	Matching agent's contributions
Early retirement age	60-64	60-64
Early retirement benefit	Formula as above, but actuarial equivalent paid	Formula as above
Eligibility period	1 year	1 year
Production qualifications	None	\$100,000 per annum to age 60, \$50,000 per annum thereafter
Valuation at retirement	1937 Standard Annuity 2½%	1937 Standard Annuity 2½%
Death benefit	Agent's contributions with 3% interest	Agent's contributions with 3% interest. After 11 years of service 20% of company's contributions with interest, increasing by 20% yearly, 100% payable after 15 years of service

RETIREMENT PLAN— <i>Continued</i>		
Withdrawal benefit	Agent's contributions with 3% interest. After 15 years of service (if contributions left with company) full deferred paid-up income at 65, according to formula (omitting the minimum pension percentages)	Agent's contributions with 3% interest. After 11 years of service (if contributions left with company) company's contributions partly or fully vested, same as death benefit, in form of paid-up annuity
Disability benefit (total and permanent disability)	Pension credits according to service retirement formula payable immediately, not actuarially reduced. The minimum percentage provisions apply. No disability retirement after age 60 or before completing 10 years of service. Group life insurance benefit not reduced until age 65	Accumulated company contributions increased by 50% and combined contributions applied to purchase annuity (using 1937 Standard Annuity 2½%, age 65 values). No disability retirement after age 60 or before completing 10 years of service. Group life insurance benefit not reduced until age 65

Calculations

LIMITS

Paragraph (a) of subsection 8 of section 213

Policy Year	Rate	Valuation Factor LA 3%	Present value as percent of one premium
2-10	7.5%	5.739	43.04%
11-15	5 %	1.918	9.59
			<u>52.63%</u>

Special limit, paragraph (aa)

2- 9	.333%	5.273	<u>1.76</u>
2- 9	Limit for renewal commissions only		54.39%
	.667%	5.273	<u>3.52</u>
	Limit for renewal commissions and security benefits		<u>57.91%</u>

COSTS

General Agents' renewal overriding commissions

Policy Year	Rate and vesting	Valuation Factor Vested: LA 3% Other: LA-MCG (+10) 3%	Present value as percent of one premium
2-10	1% vested	5.739	5.74%
11-15	3½% vested	1.918	6.71
2-15	1½% nonvested	6.676	10.02
			<u>22.47%</u>

Soliciting Agents' renewal commissions (and service fees to 15th year)

Policy Year	Rate and vesting	Valuation Factor Vested: LA 3% Other: LA-MCG 3%	Present value as percent of one premium
2-10	3½% vested	5.739	20.09%
2-15	1½% nonvested	4.727	7.09%
			<u>27.18%</u>

Security benefits—General Agents

Value of earnings base:

First year overriding commissions	5.00%
Renewal overriding commissions (2-15 years, see above)	22.47
Collection fees (16-life, on LA-MCG (+10) 3% basis, 1½% × 1,589)	2.38

Total value as percent of one year's premium 29.85%

Retirement benefit cost: 4.49% ¹¹ of 29.85%	1.34%
Group insurance cost: 1.03% ¹¹ of 29.85%	.31

Cost of security benefits as percent of one year's premium 1.65%

Security benefits—Soliciting Agents

Value of earnings base:

First year commissions	45.00%
Renewal commissions and service fees (2-15 years, see above)	27.18
Service fees (16-life, on LA-MCG 3% basis, 1½% × .951)	1.43

Total value as percent of one year's premium 73.61%

Retirement benefit cost: 1.60% ¹² of 73.61%	1.18%
Group insurance cost: .50% ¹² of 73.61%	.37

Cost of security benefits as percent of one year's premium 1.55%

MARGINS

Limit for renewal commissions only	54.39%
Renewal commission cost, general agents	22.47%
Renewal commission cost, soliciting agents	27.18

Margin on renewal commissions 4.74%

Limit for renewal commissions and security benefits	57.91%
Renewal commission cost	49.65%
Security benefit cost, general agents	1.65
Security benefit cost, soliciting agents	1.55

Over-all margin (.32% available for security benefits only) 5.06%

¹¹ See results of Table 4.

¹² See results of Table 5.

Conclusions and Remarks

The commission and security benefit structure illustrated in our example complies with the requirements of section 213 of the New York Insurance Law.

Some portion or all of the nonvested compensation of a general agent has to be valued on a vested basis if it is the company's practice to allow a collection fee to the successor general agent, equal to a portion or all of the nonvested commissions ("termination deduction") of his predecessor. Let us assume in our example, that 1% is so allowed to the successor. This would increase the cost by the difference in values for 1% for years 2 to 15, on LA 3% and LA-MCG (+10) 3% bases, or by $1\% \times (7.657 - 6.676) = .98\%$. Consequently, the over-all margin is reduced to 4.08%, of which .32% is available for security benefits only. However, as this change does not increase the earnings of the general agent derived from the production of his own agency, the earnings base value used to convert the cost of security benefits to a "percentage of one year's premium" basis should not be changed.

Most companies do not impose a termination deduction on the commissions of a full-time agent for the first ten policy years, or if they do impose it, pay such forfeited amounts to the general agent as additional compensation. In either event the cost would be increased in our example by the difference in values for 1½% for nine years, on LA 3% and LA-MCG 3% bases, or by $1\frac{1}{2}\% \times (5.739 - 3.895) = 2.77\%$. This, combined with the modification of the previous paragraph, would reduce the margin available to 1.31%, including a margin of .32% available only for a modification or liberalization of the security benefits. Again, as there is no actual increase in the earnings of the agent, the earnings base value would not be affected.

The reader will appreciate that I chose the nonvested assumptions in the example in order to illustrate the application of the corresponding valuation tables.

The submission should contain a statement to the effect that the compensation paid beyond the fifteenth year does not exceed the 3% limit of paragraph (d) of subsection 8.

Throughout the calculation of Tables 4 and 5 some assumptions were made to short-cut lengthy calculations which would not have affected the results considerably. If a comfortable margin is shown as a result of the calculations, with the cost of the security benefits a small portion of the over-all cost, such short-cuts and simplified calculations have in the past been acceptable to the New York Insurance Department. The Depart-

ment will probably insist on exact calculations where the resulting margin is small and the substitution of such exact calculations for those arrived at by short-cuts or simplifications may conceivably dissipate the margin or reverse it to a deficiency.

The calculations for security benefits illustrated in Tables 4 and 5 apply to a class of newly hired agents and develop costs for such a class similar to an entry age normal cost calculated for the purpose of funding a pension plan. This is all that the New York Insurance Department has required in the past. It is recognized, however, that at initiation of a security benefit plan the actual cost to the company is increased by a past service liability. The control over such additional cost is in the over-all expense limitations of subsection 1 of section 213.

V. CONCLUSION

When I originally planned this paper I had in mind inclusion of a section on the current status of agents under the Old Age and Survivor Insurance provisions of the Social Security Law, as an important part of the retirement benefit picture.

In the meantime I discovered that Mr. Carlyle M. Dunaway had written an article for the September 1955 issue of *Life Association News*, the official organ of the National Association of Life Underwriters, in which he explained the status of life insurance agents under the Social Security Law so competently that I decided to refrain from duplicating this effort and to recommend its reading to anyone who is interested in this aspect of the agents' retirement benefits. The article also explains and interprets the understanding reached between representatives of the government bureaus involved and the life insurance industry, as outlined in a memorandum dated May 24, 1955.

Contributions of a life insurance company toward the OASI benefits of its agents who are statutory employees are excluded from the limitations of subsection 8 of section 213 of the New York Insurance Law.¹³

I am grateful to Principal Actuaries Allen L. Mayerson and James O. Challenger of the New York State Insurance Department for several helpful discussions concerning the phases of this paper which deal with section 213 of the New York Insurance Law. It must be understood, however, that this paper cannot, and does not purport to represent the official views and interpretations of the New York Insurance Department. My special thanks go to one of my company associates, Mr. Irving Rosenthal, for innumerable suggestions for the improvement of this paper.

¹³ A. Straub, *Examination of Insurance Companies*, Vol. 5, p. 409.

TABLE 1
 AGENTS' SURVIVAL TABLE MCG (+10)
 ENTRY AGE: 35

AGENT'S CONTRACT YEAR	NUMBER ENTERING	RATE OF TERMINA- TION	NUMBER TERMI- NATING	AGENT'S CONTRACT YEAR	NUMBER ENTERING	RATE OF TERMINA- TION	NUMBER TERMI- NATING
n	l_{n-1}	$(wq)_n$	w_n	n	l_{n-1}	$(wq)_n$	w_n
1	10,000	.074	740	31	3,912	.041	160
2	9,260	.062	574	32	3,752	.044	165
3	8,686	.051	443	33	3,587	.048	172
4	8,243	.041	338	34	3,415	.052	178
5	7,905	.032	253	35	3,237	.057	185
6	7,652	.028	214	36	3,052	.061	186
7	7,438	.025	186	37	2,866	.067	192
8	7,252	.025	181	38	2,674	.072	193
9	7,071	.025	177	39	2,481	.078	194
10	6,894	.025	172	40	2,287	.085	194
11	6,722	.025	168	41	2,093	.092	193
12	6,554	.025	164	42	1,900	.100	190
13	6,390	.025	160	43	1,710	.108	185
14	6,230	.025	156	44	1,525	.116	177
15	6,074	.025	152	45	1,348	.126	170
16	5,922	.025	148	46	1,178	.136	160
17	5,774	.025	144	47	1,018	.146	149
18	5,630	.025	141	48	869	.158	137
19	5,489	.025	137	49	732	.170	124
20	5,352	.025	134	50	608	.183	111
21	5,218	.025	130	51	497	.197	98
22	5,088	.025	127	52	399	.212	85
23	4,961	.025	124	53	314	.227	71
24	4,837	.025	121	54	243	.244	59
25	4,716	.025	118	55	184	.262	48
26	4,598	.027	124	56	136	.280	38
27	4,474	.029	130	57	98	.299	29
28	4,344	.032	139	58	69	.321	22
29	4,205	.034	143	59	47	.342	16
30	4,062	.037	150	60	31	.364	11
				61	20		

TABLE 2
 AGENTS' SURVIVAL TABLE MCG (+5)
 ENTRY AGE: 35

AGENT'S CONTRACT YEAR	NUMBER ENTERING	RATE OF TERMINA- TION	NUMBER TERMI- NATING	AGENT'S CONTRACT YEAR	NUMBER ENTERING	RATE OF TERMINA- TION	NUMBER TERMI- NATING
n	l_{n-1}	$(wq)_n$	w_n	n	l_{n-1}	$(wq)_n$	w_n
1	10,000	.152	1,520	31	2,381	.041	98
2	8,480	.130	1,102	32	2,283	.044	100
3	7,378	.115	848	33	2,183	.048	105
4	6,530	.100	653	34	2,078	.052	108
5	5,877	.086	505	35	1,970	.057	112
6	5,372	.074	398	36	1,858	.061	113
7	4,974	.062	308	37	1,745	.067	117
8	4,666	.051	238	38	1,628	.072	117
9	4,428	.041	182	39	1,511	.078	118
10	4,246	.032	136	40	1,393	.085	118
11	4,110	.028	115	41	1,275	.092	117
12	3,995	.025	100	42	1,158	.100	116
13	3,895	.025	97	43	1,042	.108	113
14	3,798	.025	95	44	929	.116	108
15	3,703	.025	93	45	821	.126	103
16	3,610	.025	90	46	718	.136	98
17	3,520	.025	88	47	620	.146	91
18	3,432	.025	86	48	529	.158	84
19	3,346	.025	84	49	445	.170	76
20	3,262	.025	82	50	369	.183	68
21	3,180	.025	80	51	301	.197	59
22	3,100	.025	78	52	242	.212	51
23	3,022	.025	76	53	191	.227	43
24	2,946	.025	74	54	148	.244	36
25	2,872	.025	72	55	112	.262	29
26	2,800	.027	76	56	83	.280	23
27	2,724	.029	79	57	60	.299	18
28	2,645	.032	85	58	42	.321	13
29	2,560	.034	87	59	29	.342	10
30	2,473	.037	92	60	19	.364	7
				61	12		

TABLE 3
VALUE AT ISSUE OF \$1 OF RENEWAL COMMISSION

POLICY YEAR	LA				LA-MCG (+10)			
	No Interest		3% Interest		No Interest		3% Interest	
	P_t	Σ_1^t	$v^{t-1}P_t$	Σ_2^t	$(1-O_t)P_t$	Σ_2^t	$v^{t-1}(1-O_t)P_t$	Σ_2^t
1								
2	.896	.896	.870	.870	.888	.888	.862	.862
3	.838	1.734	.790	1.660	.817	1.705	.770	1.632
4	.791	2.525	.724	2.384	.756	2.461	.692	2.324
5	.751	3.276	.667	3.051	.701	3.162	.623	2.947
6	.716	3.992	.618	3.669	.651	3.813	.562	3.509
7	.684	4.676	.573	4.242	.605	4.418	.507	4.016
8	.656	5.332	.533	4.775	.563	4.981	.458	4.474
9	.631	5.963	.498	5.273	.526	5.507	.415	4.889
10	.608	6.571	.466	5.739	.491	5.998	.376	5.265
11	.586	7.157	.436	6.175	.459	6.457	.342	5.607
12	.565	7.722	.408	6.583	.428	6.885	.309	5.916
13	.545	8.267	.382	6.965	.399	7.284	.280	6.196
14	.525	8.792	.357	7.322	.371	7.655	.253	6.449
15	.506	9.298	.335	7.657	.344	7.999	.227	6.676
16	.488	9.786	.313	7.970	.319	8.318	.205	6.881
17	.470	10.256	.293	8.263	.295	8.613	.184	7.065
18	.452	10.708	.273	8.536	.272	8.885	.165	7.230
19	.433	11.141	.254	8.790	.249	9.134	.146	7.376
20	.415	11.556	.237	9.027	.227	9.361	.129	7.505
21	.397	11.953	.220	9.247	.206	9.567	.114	7.619
22	.378	12.331	.203	9.450	.186	9.753	.100	7.719
23	.359	12.690	.187	9.637	.167	9.920	.087	7.806
24	.340	13.030	.172	9.809	.149	10.069	.075	7.881
25	.322	13.352	.158	9.967	.133	10.202	.065	7.946
26	.304	13.656	.145	10.112	.118	10.320	.056	8.002
27	.285	13.941	.132	10.244	.103	10.423	.048	8.050
28	.267	14.208	.120	10.364	.090	10.513	.041	8.091
29	.249	14.457	.109	10.473	.078	10.591	.034	8.125
30	.231	14.688	.098	10.571	.068	10.659	.029	8.154
Life		16.445		11.193		10.946		8.265

TABLE 3—Continued
 VALUE AT ISSUE OF \$1 OF RENEWAL COMMISSION

POLICY YEAR	LA-MCG (+5)				LA-MCG			
	No Interest		3% Interest		No Interest		3% Interest	
	$(1-O_t)P_t$	Σ_2^t	$v^{t-1}(1-O_t)P_t$	Σ_2^t	$(1-O_t)P_t$	Σ_2^t	$v^{t-1}(1-O_t)P_t$	Σ_2^t
1								
2	.881	.881	.855	.855	.816	.816	.792	.792
3	.800	1.681	.754	1.609	.683	1.499	.644	1.436
4	.730	2.411	.668	2.277	.581	2.080	.532	1.968
5	.669	3.080	.594	2.871	.503	2.583	.447	2.415
6	.616	3.696	.531	3.402	.442	3.025	.381	2.796
7	.568	4.264	.476	3.878	.393	3.418	.329	3.125
8	.527	4.791	.428	4.306	.354	3.772	.288	3.413
9	.491	5.282	.388	4.694	.323	4.095	.255	3.668
10	.457	5.739	.350	5.044	.296	4.391	.227	3.895
11	.426	6.165	.317	5.361	.273	4.664	.203	4.098
12	.397	6.562	.287	5.648	.253	4.917	.183	4.281
13	.369	6.931	.259	5.907	.234	5.151	.164	4.445
14	.344	7.275	.234	6.141	.217	5.368	.148	4.593
15	.320	7.595	.212	6.353	.202	5.570	.134	4.727
16	.297	7.892	.191	6.544	.187	5.757	.120	4.847
17	.274	8.166	.171	6.715	.173	5.930	.108	4.955
18	.252	8.418	.152	6.867	.160	6.090	.097	5.052
19	.231	8.649	.136	7.003	.147	6.237	.086	5.138
20	.211	8.860	.120	7.123	.135	6.372	.077	5.215
21	.192	9.052	.106	7.229	.123	6.495	.068	5.283
22	.174	9.226	.094	7.323	.111	6.606	.060	5.343
23	.157	9.383	.082	7.405	.101	6.707	.053	5.396
24	.141	9.524	.071	7.476	.090	6.797	.046	5.442
25	.126	9.650	.062	7.538	.081	6.878	.040	5.482
26	.112	9.762	.053	7.591	.072	6.950	.034	5.516
27	.098	9.860	.045	7.636	.063	7.013	.029	5.545
28	.085	9.945	.038	7.674	.055	7.068	.025	5.570
29	.074	10.019	.032	7.706	.048	7.116	.021	5.591
30	.063	10.082	.027	7.733	.042	7.158	.018	5.609
Life		10.360		7.843		7.345		5.678

TABLE 4a
SERVICE TABLE FOR GENERAL AGENTS AND EARNINGS RECORD
 (Illustrative Example—See notes on page 42)

CON-TRACT YEAR	AGE, BE-GINNING OF YEAR	(1)	(2)	(2a)	(2b)	(2c)	(2d)	(3)	(4)	(5)	(6)
		Survivors	Terminators	Death Claims	Dis-ability Claims	Vested With-drawals and Early Retire-ments	Non-vested With-drawals	Dis-counted Number of Survivors	Earn-ings per Survivor	Non-vested Portion of (4)	Dis-counted Value of (5), All Survivors ('000 omitted)
1...	39	10,000	740	0	0	0	740	10,000	\$ 6,450	\$ 0	\$ 0
2...	40	9,260	574	25	0	0	549	8,991	8,399	1,089	9,791
3...	41	8,686	443	26	0	0	417	8,187	10,221	2,107	17,250
4...	42	8,243	338	27	0	0	311	7,543	11,941	3,068	23,142
5...	43	7,905	253	29	0	0	224	7,024	13,574	3,980	27,956
...											
15...	53	6,074	152	60	43	0	49	4,016	30,967	11,051	44,381
16...	54	5,922	148	65	46	37	0	3,801	31,516	11,600	44,092
17...	55	5,774	144	69	51	24	0	3,598	32,045	12,129	43,640
...											
21...	59	5,218	130	90	51	0	0	2,889	33,954	14,039	40,559
22...	60	5,088	137	96	0	41	0	2,735	34,379	14,464	39,559
23...	61	4,951	144	101	0	43	0	2,584	34,783	14,868	38,419
24...	62	4,807	154	105	0	49	0	2,436	35,166	15,250	37,149
25...	63	4,653	158	110	0	48	0	2,289	35,528	15,612	35,736
26...	64	4,495	166	114	0	52	0	2,147	35,870	15,954	34,253
	65	4,329									
Total								125,977			\$926,956

Per General Agent, per year of production

Present value of vested overriding commissions:

First year	5.00%	of one premium
Renewal years (LA 3%)	12.45%	of one premium
	17.45%	of \$75,000
		\$13,087.50

Present value of vested personal commissions:

First year	45.00%	of one premium
Renewal years (LA 3%)	20.09%	of one premium
	65.09%	of \$6,000
		3,905.40
		\$16,992.90

TABLE 4b
VALUE OF GENERAL AGENTS' SERVICE BENEFIT COSTS
 (Illustrative Example—See notes on page 42)

CON- TRACT YEAR	AGE, BE- GINNING OF YEAR	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
		GROUP LIFE INSURANCE			RETIREMENT PLAN COST TO COMPANY				RETIREMENT PLAN	
		Coverage per General Agent	Total Claims (000 omitted)	Dis- counted Value (000 omitted)	Per Disability Claim	Per Vested Termina- tion and Retirement	Total Cost to Com- pany (000 omitted)	Discounted Value (000 omitted)	Contri- bution per Survivor	Accumu- lated at 3% to End of Year
1....	39	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2....	40	7,000	175	170	0	0	0	0	258	262
3....	41	9,000	234	221	0	0	0	0	336	611
4....	42	11,000	297	272	0	0	0	0	409	1,044
5....	43	12,000	348	309	0	0	0	0	478	1,560
•										
•										
15....	53	25,000	2,300	1,521	63,920	0	2,749	1,817	800	10,163
16....	54	25,000	2,475	1,589	62,834	18,363	3,590	2,291	800	11,280
17....	55	25,000	2,675	1,667	61,747	20,463	3,640	2,268	800	12,430
•										
•										
21....	59	25,000	3,200	1,772	57,300	0	2,992	1,618	800	17,387
22....	60	25,000	2,650	1,425	0	56,310	2,309	1,241	800	18,721
23....	61	25,000	2,800	1,461	0	56,173	2,415	1,260	800	20,095
24....	62	25,000	2,925	1,482	0	56,036	2,746	1,391	800	21,510
25....	63	25,000	3,050	1,500	0	55,899	2,683	1,320	800	22,967
26....	64	25,000	3,175	1,516	0	55,763	2,900	1,385	800	24,468
	65	2,500	8,176	3,791	0	55,627	240,809	111,661	.....	.....
Total				\$31,633				\$137,686		

For all General Agents, present value at date of contract

Vested commissions: \$16,992.90 × 125,977 (000 omitted).....	\$2,140,715
Nonvested commissions (Col. 6, Table 4a) (000 omitted).....	926,956
Present value of lifetime commission income (000 omitted).....	\$3,067,671
Value of Group Life Insurance cost: \$ 31,633 ÷ \$3,067,671 = 1.03% of income	
Value of Retirement Plan cost: \$137,686 ÷ \$3,067,671 = 4.49% of income	

TABLE 5a
SERVICE TABLE FOR SOLICITING AGENTS AND EARNINGS RECORD
 (Illustrative Example—See notes on page 43)

CON-TRACT YEAR	AGE, BE-GINNING OF YEAR	(1)	(2)	(2a)	(2b)	(2c)	(2d)	(3)	(4)	(5)	(6)
		Sur-vivors	Termi-nators	Death Claims	Dis-ability Claims	Vested With-drawals and Early Re-tirements	Non-vested With-drawals	Discounted Number of Survivors	Earnings per Survivor	Non-vested Portion of (4)	Discounted Value of (5), All Sur-vivors (000 omitted)
1....	29	10,000	4,300	0	0	0	4,300	10,000	\$4,050	\$ 0	\$ 0
2....	30	5,700	2,109	7	0	0	2,102	5,534	4,453	121	669
3....	31	3,591	1,023	5	0	0	1,018	3,385	4,830	234	792
4....	32	2,568	578	4	0	0	574	2,350	5,186	341	801
5....	33	1,990	368	3	0	0	365	1,768	5,524	442	781
.....											
.....											
15....	43	688	22	3	2	17	0	455	7,375	1,255	571
16....	44	666	19	3	2	14	0	427	7,441	1,321	564
17....	45	647	16	3	2	11	0	403	7,505	1,385	558
.....											
.....											
31....	59	453	11	8	3	0	0	187	8,134	2,014	377
32....	60	442	12	8	0	4	0	177	8,160	2,040	361
33....	61	430	12	9	0	3	0	167	8,184	2,064	345
34....	62	418	13	9	0	4	0	158	8,206	2,086	330
35....	63	405	14	10	0	4	0	148	8,226	2,106	312
36....	64	391	14	10	0	4	0	139	8,245	2,124	295
.....	65	377	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....								36,277			\$18,885

Per Agent, per year of production

Present value of vested commissions:

First year..... 45.00% of one premium
 Renewal years (LA 3%)..... 20.09% of one premium

65.09% of \$9,000..... \$5,858.10

TABLE 5b
VALUE OF SOLICITING AGENTS' SERVICE BENEFIT COSTS
 (Illustrative Example— See notes on page 43)

CON-TRACT YEAR	AGE, BE- GINNING OF YEAR	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
		GROUP LIFE INSURANCE			RETIREMENT PLAN COST TO COMPANY				RETIREMENT PLAN	
		Cover- age per Agent	Total Claims (000 omitted)	Dis- counted Value (000 omitted)	Per Dis- ability Claim	Per Vested Termination, Death and Retirement	Total Cost to Company (000 omitted)	Dis- counted Value (000 omitted)	Contri- bution per Survivor	Accumu- lated at 3% to End of Year
1....	29	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2....	30	5,000	35	34	0	0	0	0	162	165
3....	31	5,000	25	24	0	0	0	0	178	351
4....	32	5,000	20	18	0	0	0	0	193	558
5....	33	6,000	18	16	0	0	0	0	207	785
•										
•										
15....	43	8,000	40	26	6,194	3,303	78	52	292	4,129
16....	44	8,000	40	26	6,828	4,552	91	58	295	4,552
17....	45	8,000	40	25	7,486	4,991	85	53	298	4,991
•										
•										
31....	59	9,000	72	37	19,045	12,697	159	65	324	12,697
32....	60	9,000	81	32	0	13,408	161	64	325	13,408
33....	61	9,000	90	35	0	14,141	170	66	326	14,141
34....	62	9,000	90	34	0	14,897	194	73	327	14,897
35....	63	9,000	99	36	0	15,677	219	80	328	15,677
36....	64	9,000	99	35	0	16,481	231	82	329	16,481
	65	2,500	712	246	.....	16,481	6,213	2,144	.....	.....
Total..				\$1,161				\$3,691		

For all Agents, present value at date of contract

Vested commissions: $\$5,858.10 \times 36,277$ (000 omitted) \$212,514
 Nonvested commissions (Col. 6, Table 5a) (000 omitted) 18,885

Present value of lifetime commission income (000 omitted) \$231,399

Value of Group Life Insurance cost: $\$1,161 \div \$231,399 = .50\%$ of income

Value of Retirement Plan cost: $\$3,691 \div \$231,399 = 1.60\%$ of income

NOTES TO TABLES 4a AND 4b

- Col. (1) MCG (+10) table, adjusted to entry age 39 (see footnote 8 on page 22).
- Col. (2b) Ages 57-59: Excess of total terminations over deaths.
- Col. (2c) From age 60 on, vested terminators are considered early retirements.
- Col. (3) Col. (1) $\times v^{t-1}$ (3%).
- Col. (4) Includes overriding commissions and personal production commissions, according to production assumptions, policy termination scale and commission scales. Represents earnings while under contract, as received. After-termination commissions are not included here.
- Col. (5) $1\frac{1}{2}\%$ of premiums, 2d policy year on; plus $1\frac{1}{2}\%$ of premiums on personal production, 2d to 10th policy years.
- Col. (6) Col. (5) \times Col. (3).
- Col. (7) Amount of Col. (4) for preceding year, to next higher multiple of \$1,000. Maximum: \$25,000. From age 65 on: \$2,500.
- Col. (8) Col. (7) \times [Col. (2a) + $\frac{3}{4}$ Col. (2b)] to age 59. Col. (7) \times [Col. (2a) + $\frac{1}{4}$ Col. (2c)] ages 60-64.
 Note: Adjustments from Cols. (2b) and (2c) to take care of death claims among disabled and retired participants.
 For age 65: Present value for survivors S , including those surviving from among disabled and retired participants. $S = 4329 + \frac{1}{4} \Sigma_{49}^{59}$ Col. (2b) + $\frac{3}{4} \Sigma_{60}^{64}$ Col. (2c). Present value = $S \times A_{65}$ ('37 Stand. Ann. $2\frac{1}{2}\%$) \times \$2,500. $A_{65} = .70699$.
- Col. (9) Col. (8) $\times v^{t-1}$ (3%).
- Col. (10) To provide for disability benefits per formula, at '37 Stand. Ann. $2\frac{1}{2}\%$, rated age 65 for all disabilities, irrespective of attained age at date of claim, less general agent's contributions.
- Col. (11) For early and normal retirements: To provide for service retirement benefit less accumulated general agent's contributions. For vested terminators: To provide for deferred paid-up retirement benefit at age 65, less accumulated general agent's contributions. All benefits are valued at '37 Stand. Ann. $2\frac{1}{2}\%$.
- Col. (12) Col. (2b) \times Col. (10), plus Col. (2c) \times Col. (11). Age 65: Col. (1) \times Col. (11).
- Col. (13) Col. (12) $\times v^{t-1}$ (3%).
- Col. (14) 4% to \$15,000, 2% over \$15,000 to \$25,000, of Col. (4) for preceding year.
- Col. (15) Contributions assumed made at mid-point of year.

NOTES TO TABLES 5a AND 5b

- Col. (1)* MCG table, adjusted to entry age 29 (see footnote 8 on page 22).
- Col. (2c)* Partial vesting between 12th and 15th years. From age 60 on, vested terminators are considered early retirements.
- Col. (3)* $\text{Col. (1)} \times v^{t-1}$ (3%).
- Col. (4)* According to production assumptions, policy termination scale and commission scales. Represents earnings while under contract, as received. After-termination commissions are not included here.
- Col. (5)* $1\frac{1}{2}\%$ of premiums, 2d policy year on.
- Col. (6)* $\text{Col. (5)} \times \text{Col. (3)}$.
- Col. (7)* Col. (4) for preceding year to next higher multiple of \$1,000. From age 65 on: \$2,500.
- Col. (8)* $\text{Col. (7)} \times [\text{Col. (2a)} + \frac{3}{4} \text{Col. (2b)}]$ to age 59. $\text{Col. (7)} \times [\text{Col. (2a)} + \frac{1}{4} \text{Col. (2c)}]$ ages 60-64.
 Note: Adjustments from Cols. (2b) and (2c) to take care of death claims among disabled and retired participants.
- For age 65: Present value for survivors S , including those surviving from among disabled and retired participants. $S = 377 + \frac{1}{4} \Sigma_{38}^{28} \text{Col. (2b)} + \frac{3}{4} \Sigma_{38}^{28} \text{Col. (2c)}$. Present value = $S \times A_{65}$ ('37 Stand. Ann. $2\frac{1}{2}\%$) \times \$2,500. $A_{65} = .70699$.
- Col. (9)* $\text{Col. (8)} \times v^{t-1}$ (3%).
- Col. (10)* 150% of Col. (15) per plan.
- Col. (11)* $m_t\%$ of Col. (15). [$m_{12} = 20$, $m_{13} = 40$, $m_{14} = 60$, $m_{15} = 80$, $m_{16+} = 100$].
- Col. (12)* $\text{Col. (2b)} \times \text{Col. (10)}$, plus $[\text{Col. (2a)} + \text{Col. (2c)}] \times \text{Col. (11)}$. Age 65: $\text{Col. (11)} \times \text{Col. (1)}$.
- Col. (13)* $\text{Col. (12)} \times v^{t-1}$ (3%).
- Col. (14)* 4% of Col. (4) for preceding year.
- Col. (15)* Contributions assumed made at mid-point of year.