The Actuary

The Newsletter of the Society of Actuaries

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DEVELOPMENTS IN VARIABLE ANNUITIES

Variable Annuities was the subject of an address by John Antliff before the Chicago Actuarial Club April 24. We are indebted to Prudential's house organ "Ack Ack" for the material in this report. Mr. Antliff outlined the regulatory background, commencing with the 1952 formation of the College Retirement Equities Fund. This was followed by the 1959 enabling legislation in New Jersey; the SEC's claim, affirmed by the U. S. Supreme Court, of jurisdiction over variable annuity contracts; the Insurance Company Tax Act of 1959, which gave insurance companies treatment equal to that of uninsured pension funds in several respects, but exposed segregated accounts to capital gains tax; the 1962 relief from that tax and, in the same year, the SEC's no-action letter (in effect, a green light) on segregated accounts; the SEC's ruling in 1963 giving all insurance companies permission to issue, without registration under normal SEC rules, equity funding contracts to qualified pension plan groups of 25 or more lives; clearance in 1964 for a variable payout of the pension, provided no employee contributions are applied to the variable portion; and 1965 enabling legislation in New York. There are now 42 states where group variable annuities can be sold.

Variable annuities may be even more important for individuals than for groups because individuals do not have any chance of being given higher benefits to offset inflation. However, the Investment Company Act of 1940 introduces obstacles to the issue of individual variable annuities.

A few companies have arranged to have the investment fund under their contracts administered by a board of

(*Continued on page* 5)

CANADA (A Continuation)

By J. Ross Gray

This final article on the proposals of the Carter Commission will point out some relieving provisions suggested in the report.

There is one correction to be made in the previous article in the April issue. The last sentence of the third paragraph should read:

> "When a family unit terminates by the last death, all unrealized capital gains are to be determined and income tax paid on them out of the estate. In addition, an heir outside the family unit will pay income tax on the net inheritance that passes to him."

Since the Commission's proposals will include more items as income, the rates of income tax should be lower than they now are, with the proposed maximum rate being fixed at 50%, the same as for the corporation tax. This assumes a disposition to reduce taxes, a trait not usually found in Governments.

Gift Tax and Federal Estate Tax are to be discontinued and income tax will be paid only by a recipient outside the family unit; thus money can be given or left to a spouse without federal tax effects. There is no assurance that Provincial succession duties on money passing to a widow will be discontinued.

Exceptions to the foregoing are to be the proceeds of group life insurance and the mortality gains on ordinary policies which are to be taxable income to the tax unit which paid the premiums. This is because tax credit is proposed with respect to the group life premiums and the mortality cost on ordinary policies. The entire proceeds are also to be taxable as income if left to a person outside the original tax unit.

(*Continued on page* 5)

NATIONAL CONFERENCE ON MEDICAL COSTS

Most actuaries are aware of the problem of spiralling medical costs which are necessarily reflected in insurance cost estimates. As a follow-up to an earlier report to President Johnson, a National Conference on Medical Costs, called by Secretary Gardner of the Department of Health, Education, and Welfare, was held in Washington on June 28 and 29. Among those invited were several actuaries and other individuals prominent in Accident and Health insurance.

The Conference set up five panels to discuss the following subjects:

- *Hospital Costs* — panel came out strongly for development of cost reimbursement programs that would create incentives for increased hospital efficiency;
- *Community Systems* — panel stressed that community planning process should be comprehensive, recognizing that no one way is best;
- *Physician's Costs* — panel recognized shortage of medical manpower and gave attention to the lack of health care — not confined to the poor, but a growing problem with the middle class;
- *Cost of Drugs and Pharmaceutical Services*—the only agreement reached was that these services should be delivered at the lowest possible cost without compromising quality;
- *Third Party Payment - Cost and Impact* — the discussion was far ranging.

While the panel reports did not reach any definite conclusions, a number of suggestions were advanced for immediate study. Secretary Gardner said in the closing speech:

"Everyone seems to agree that the existing system—or lack of system—

(*Continued on page* 6)

The Actuary

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EDITORIAL

In the adjoining column we publish a letter from Mr. W. F. Marples making a plea for enlargement of the Society's educational services. Most of us would agree that, considering the number of new Fellows graduating each year, our present examination services are functioning well. Mr. Marples asks whether these numbers could be augmented, as they need to be, by greater practical encouragement to the students scattered throughout the North American continent.

The problem is not an easy one, if only for the reason that our students have varying educational backgrounds which would make the working of a Tuition Service quite difficult. Irrespective of this, it would be no easy matter to set up a Tuition Service, but that is no reason for us not looking carefully into the problem.

At present we rely mainly on the students acquiring actuarial knowledge by themselves. They are aided in various ways, as Mr. Marples points out, but the personal tutorial touch is completely absent and as a result the student may arrive at his Fellowship with little or no contact with individuals prominent in the profession. The Fellowship lectures of the Actuarial Society, long since abandoned for various reasons, did at least provide some bridge between the books and the people.

Tuition Service by correspondence does not fill the gap, but it might be an improvement on the present hit or miss system. The deficiencies of the correspondence course for actuaries, along with many other pertinent comments on the education of the Actuary, are well set forth in an interesting article by the late Mr. H. W. Haycocks in the *Journal of the Institute of Actuaries Students' Society, October* 1966. Mr. Haycocks ran the Actuarial Tuition Service for the Institute and the Faculty. This article, which we commend to our readers, also makes the point that in the Institute of Actuaries the Students' Society was able to help the examination committee in suggesting amendments to the Syllabus and was helpful in setting up the Tuition Service for the students. We have no Students' Society, but *The Actuary* can at least provide a forum for the members to discuss Mr. Marples' suggestions and to air their views on the educational process of the Society.

Mr. Marples also suggests the educational process should not cease with attainment of the F.S.A. degree. In this he has the support of Mr. Haycocks, who says: "Everybody will admit that a professional body cannot produce the finished professional man by examination alone." The panel discussion by the younger actuaries at the October 1966 meeting also stressed this point. On this, views of our readers would also be welcome.

— A. C. W.

LETTERS

Continuing Education

Sir:

In your first issue appeared an "Education and Examination Committee Report" by Julius Vogel. A quotation from this report follows: ". . . the Education and Examination Committee believes its main function is education and not examination." The report then goes on to give an indication, which I hope is mistaken, that the main interest in education is the updating of the Syllabus and the keeping of study material within practical limits.

I would like to advocate a wider view of the function and practice of education. Furthermore, I would like to see the Society of Actuaries supplying a full educative service to its students.

Education is a function of contact between the teaching mind and the taught mind and the contact is most advantageous to the latter when carried out either directly, by face-to-face discussion, or indirectly through correspondence. Teaching procedures follow the basic sequence that the taught mind must be conducted through a small portion of the subject to be learned. At the end of each portion of the conducted tour the student is required to respond actively to the concepts conveyed to him. He is then rewarded in some manner indicating his progress and a further section of the subject is set before him. Continued performance of this sequence of acts leads to absorption by the student of the fundamentals of his subject.

The education of the actuary is, in fact, conducted by an aggregation of colleges, actuarial clubs and private organizations, such as the employer in the insurance industry, and others. If only a small part of these efforts could be diverted into activities coordinated by the Society, much valuable material could be preserved and expanded for future generations of students.

At present, students employed in insurance companies and other organizations outside the larger population areas find great difficulty in obtaining assistance in their studies. The Society's "Student Services" could penetrate and encourage the "frontier" actuarial student to the great advantage of the student, his employer and the Society.

WILLIAM F. MARPLES

LETTERS:

Constitutional Amendment Explained By President-Elect

Sir:

The discussions of the proposed amendment to the Constitution, Article VII — Public Expression of Professional Opinion, which took place at the New York, New Orleans and Toronto regional meetings this spring, have shown the need for a more complete description of how the amendment might work in practice and the desire for several illustrations of possible applications.

The proposed Article sets forth the conditions of its application and the procedures to be followed. Paramount is the stipulation that any opinion on a question of public interest by, or on behalf of, the Society must be limited to "matters within the special competence of actuaries."

Any potential situation would have to be referred to the Board of Governors for review. The Board would first have to conclude that the question was of sufficient public interest and importance to warrant considering an expression of an opinion by the Society.

An affirmative decision on this point would not be enough by itself, however. The further judgment would have to be made by the Board that the subject was clearly one which was sufficiently related to the field of actuarial science to be within the purview of the proposed amendment.

Only then would the Board go on to the procedural question of how the determination of opinion should be made. Here a choice is available: to seek the approval of the Fellows by a mail ballot; have the expression of opinion made by the Board; or authorize a committee to look into the matter.

The types of questions which might be encompassed by the amendment would probably require deliberative study by knowledgeable members of the Society before coming to a conclusion. Hence, the committee route would seem to be the likely one in almost all instances.

Any special committee required would be carefully chosen by the Board so as to be representative of differences in background and point of view within the Society concerning the particular question. Furthermore, the work of the committee would be carried out under the Board's supervision.

One of the principal functions of the Board would be to see to it that any opinion authorized on behalf of the Society would give adequate expression to differences of view within the committee.

Another important function of the Board would be to notify the members of the Society when a particular study was initiated so as to permit individual members to promptly make their views known and, later, to communicate any opinion expressed by, or on behalf of, the Society to the membership.

Two recent situations are illustrative of possible applications of the amendment. The first arose within the scope of the Committee to Study Pension Plan Problems, under the chairmanship of John Miller. This committee was formed to study pension fund problems with particular reference to the role and responsibility of actuaries and the obligation of the Society with respect to these problems. The second came up in connection with the Committee to Study Pension Accounting, under the chairmanship of Frank Griffin. This committee was set up to explore standards of accounting for pension costs.

Referring to the first example, the Treasury Department last fall released proposed changes in the rules for integrating private pension plans with Social Security Benefits. In doing so, the Department stated that it was seeking the reaction of informed private opinion before formulating its final regulations and was most desirous of receiving the comments and suggestions of all interested groups. In the absence of a provision in the Constitution such as Article VII, the Pension Committee made its reply as individuals who were giving expression to their personal views.

In the second instance, the Pension Accounting Committee discussed with the American Institute of Public Accountants a draft of what is now referred to as Accounting Principles Board Opinion No. 8 setting forth pension cost guidelines. Here, the Society's committee was dealing with a group representing the Institute which was able to speak officially for its organization. Again, the Society's representatives could only express their views as individuals.

These were clearly matters of sufficient public interest to have warranted a public expression of opinion by, or on behalf of, the Society. The questions were also within the special competence of actuaries. In these instances, the views of the Society's committees, if expressed after authorization in accordance with the proposed amendment, would not only have been of more significance but the Society would have shown itself to be more responsive to its obligations as a professional organization.

MORTON D. MILLER

* * *

Raises Questions

Sir:

The constitutional amendment now before the Fellows of the Society leaves a number of important questions for interpretation by future generations.

The draft amendment does not make clear whether it is intended that the Society take a position on the major political and social questions connected with social welfare or, merely, that the Society make available impartial professional assistance to determine the potential financial impact of proposals affecting the public interest. If the public statements are to be confined to matters that fall clearly within the professional competence of the Society's members, the language of the amendment should be changed to leave no doubt of this intent and should define the bounds of competence.

Our first purpose as professionals is to foster sound actuarial practice. We do this now by maintaining high academic standards for admission to Fellowship, and by requiring that those who practice the profession under the sponsorship of the Society adhere to high ethical standards in their affairs.

We have traditionally maintained that membership ought to be open to all, regardless of their views on non-professional matters, provided that they subscribe to the standards of the Society. We must guard that the language of the proposed amendment not be so vague as to subvert this tradition.

Desire for haste should not lead the Society into a course it would not otherwise follow. Timing for the adoption of the amendment is secondary to full and careful consideration of its significance and the changes which it may bring in the character of our Society.

JOHN B. CUMMING

LETTERS:

Favors Amendment

Sir:

After reading the discussions in New York and New Orleans (and having heard those in Toronto), I wrote down the basic premises of the opponents. After studying them, I remain convinced that the amendment to allow public expression of professional opinion is sound. Here are my reasons:

1. I believe in the open communication of ideas. As between the voicing of an honest knowledgeable opinion that may sometimes be wrong, and always remaining silent, I vote for the former. I believe it contributes to a more adequately informed public.
2. I believe that an organization which keeps silent invites others to speak for it, with every risk of detriment to itself as well as to others.
3. I believe that an organization may properly state as its opinion the views of its majority, or of its governing body, or of a committee designated for that purpose. My only reservation is that it refrain from discouraging the expression of dissent by any minority.
4. I believe that an organization which is unable to speak wisely does not deserve to be thought wise merely because of its silence. It is wise to know when to speak, as well as when to keep silent.
5. I believe anyone who seeks diligently may find an imperfection in the amendment. Nevertheless it is adequate to accomplish its purpose. Any suggestions for improvement will surely be thoroughly considered for subsequent enactment.
6. I believe the actuarial profession should not confine itself to the purely technical aspects of its specialty. There is a difference between a profession and a technical specialty. We become truly professional only when we translate our insight and understanding into applications where judgment is called into play.
7. I believe we have come a long way in society, as well as in our Society, from the days when juniors were constrained to support the opinions of their office seniors. Any significant views held by newer members would surely not lack for vocal expression.
8. I believe the argument to be weak which contends that an organization's expression of opinion is to be avoided because protest by resignation is unavailable (since professional standing must be maintained). Protest by resignation may well be appropriate when the organization's internal affairs are concerned. The organization's opinions, however, are on public view where the member can attack them without his attitude being faulted for his continued membership.
9. I believe that legislating for the future is most unwise. In five or ten or more years it may be essential to speak out promptly without waiting for constitutional amendment. Are we wise enough to make that decision now and to deny ourselves and our successors the right to decide it at that time when the facts for reaching a conclusion are at hand?

RALPH E. EDWARDS

* * *

Comments on Amendment

Sir:

While the expression of opinion by the Society may be debatable, I, like many others, assume that some form of constitutional amendment will be passed (probably over the objections of a small but vocal minority). So I will refrain from any discussion of the basic issue of expression of opinion.

What bothers me most about the proposed amendment is that actuaries, who are supposed to be reasonably intelligent, can accept the blatantly false assumption that a committee or the Board of Governors can express any opinion without such opinion being accepted as an opinion of the Society. Regardless of the number of disclaimers, or the clarity of the disclaimers, I think we should accept the fact that an opinion expressed by the Board of Governors or a Committee will be accepted by the public (or by the governmental or legislative parties involved) as an opinion of the Society. If this were not so, there would be little use in having such bodies express opinions.

It seems absurd for us, as members of the Society, to give our consent to the expression of opinion by the Board and Committees, and to assume that the requirement for a disclaimer relieves the Society of responsibility for the opinions expressed. We are behaving like a bunch of ostriches with our heads in the sand.

I personally do not feel either the Board or a Committee should have the right to express opinions, but if the Board and Committees are to express opinions, let's give them authority to express opinions on behalf of the Society. To do otherwise is, I submit, being less than honest with ourselves; and if we can't be 100% honest with ourselves, I don't see how anyone could accept an opinion of the Society as being worth very much. I certainly couldn't.

HENRY K. KNOWLTON

* * *

New IRS Position Statement

Sir:

The undersigned is the author of a paper appearing in *TSA* XV entitled "Unfunded Present Value Family of Pension Funding Methods." In this paper, and especially in its discussion, there is comment on the necessity for recognition by the Internal Revenue Service if the pension funding methods developed by the paper are to have practical application.

This letter is intended to acquaint pension actuaries with the outcome of discussions with the actuarial branch of the IRS. The IRS position is stated in the form of a technical advice dated May 26, 1967 issued to a District Director in connection with a request from an Iowa corporate taxpayer. This ruling is not likely to be widely published, but the undersigned can furnish a copy to anyone interested.

In his presentation to the IRS the undersigned attempted to establish for the family of methods (1) a standard for the maximum deductible contribution consistent with present IRS rules, and (2) a standard for minimum contributions necessary to avoid a ruling of partial termination or an invocation of benefit restrictions as provided for in Regulation 1.401-4(c).

As to the maximum deductible contribution, there was no difficulty in showing that the unfunded present value family can be viewed as a modification of the aggregate funding method already described as a Subparagraph B method in IRS regulations; and that contributions called for by the unfunded present value or "modified aggregate" calculation are fully deductible under 404 (a)

(*Continued on page 5*)

VARIABLE ANNUITIES

(Continued from page 1)

managers elected by the participants (employees). The insurance company still has some control over the investments made by such a board, since the board would choose the insurance company as investment manager — at least initially. Mr. Antliff mentioned that one company has a "captive" mutual fund registered with the SEC; its variable annuities are based on a separate account invested wholly in the mutual fund. Another company issues one-year temporary *fixed-dollar* annuities. This apparently avoids all restrictions on variable annuities, even though the annual amount of annuity varies according to the investment results of a custodian account held by a bank, and this fund may be invested heavily in common stocks. Another company has purchased a subsidiary which issues equity annuities that have been registered with the SEC as securities.

Meanwhile, banks have an unfair advantage over insurance companies in setting up variable annuity funds in that they can use employee contributions to provide variable annuities and need not be concerned about SEC restrictions on advertising.

Mr. Antliff gave some figures on the growth of separate accounts for 18 large companies. During 1966 this business doubled in assets from $251 million to $501 million and more than doubled in number of contractholders from 244 to 548. All 18 companies offered equity funding, but only 3 had variable annuities in force.

Most of the plans, said Mr. Antliff, available on a fixed-dollar basis can also be made available on a variable basis. If, when switching from fixed to variable, annuity credits are converted to the variable basis before retirement, the company may find itself with unfunded *variable* liabilities, which may be an undesirable situation.

He explained the significance of the assumed investment result (the interest rate assumed in the insurance company's purchase rates, with any excess interest or capital gains actually earned providing an increase in the pensions — or decrease, if negative) and said that under pension plans most employers are choosing an assumption of about 4%. Under profit sharing plans, on the other hand, employers seem more likely to elect 5½%, since group annuity contracts for profit sharing plans are on a terminal funding "money purchase" basis and the employees like maximum initial annuity payments comparable to fixed-dollar annuity rates on a non-par basis. An assumption higher than 5½% might give too great a likelihood of dissatisfaction with later variable annuity payments.

Mr. Antliff showed slides summarizing theoretical case histories going as far back as 1900. In general, variable annuities would have compared very favorably with fixed-dollar annuities and quite well with the consumer price index. They would not usually have kept up with the wage index (a rough measure of trends in the real standard of living). He pointed out that if the study had gone back only as far as 1918, instead of to 1900, the variable annuity would have shown up still better — much better, in fact.

CREF reports virtually no complaints from its participants in any of the stock market downturns (1957, 1962 and 1966). Possibly it was lucky in choosing March 31 as the annual revaluation date for variable annuity unit value. Some companies prefer more frequent revaluation, such as monthly, to avoid getting stuck with a low valuation for a whole year (and also for other reasons).

(Continued from page 4)

IRS Statement

(1), provided that the portion of the unfunded present value claimed is no larger than under aggregate funding. In the context of the paper, C_t is fully deductible if $k + d \geq 1/a_t$, where a_t is the average temporary annuity to retirement age at time t.

With respect to minimum contributions, the author had hoped to establish $c = k + d$ for the initial year to reproduce minimum funding under the Subparagraph C entry-age normal method; and to get IRS acceptance of the concept that a plan would be considered adequately funded for IRS purposes in years after the first (or at least until a plan revision) if, in the aggregate, contributions based on C had been made. Such an approach would have had the practical advantage of eliminating the Subparagraph C calculation and the need for an accrued liability concept after the first year. The IRS did not accept this principle, feeling that the approximations involved might be too significant in extreme cases. Accordingly, it is held that a determination of minimum funding requirements for a plan utilizing the modified aggregate method shall be made by Subparagraph C methods.

The summary paragraph of the technical advice reads as follows: "In summary, contributions determined in accordance with the modified aggregate method would be within the limits under sections 404(c)(1)(A) and (B) of the Code, and accordingly would be deductible under those sections. However, a determination of whether the minimum funding requirement of section 1.401-6 (c)(2)(ii) of the regulations has been met should be directly determined by a method appropriate as a basis of limitations under section 404(c)(1)(C) of the Code."

CHARLES L. TROWBRIDGE

CANADA

(Continued from page 1)

The receipt of lump sums to be taxed at the progressive rates of income tax could cause real hardship. Three methods of relief are proposed:

(1) If the recipient is not over age 70, and is not already covered by Registered Retirement Income of the equivalent of $12,000 per annum at age 65, he may pay a lump sum into such a plan and pay income tax only as the payments arise.

(2) If the recipient is not over age 60, he may deposit the money with the government in a non-interest Income Adjustment Account and pay income tax only as money is withdrawn. It must all be out by age 60.

(3) He may recalculate his income tax averaging his income over two to five years, except that this cannot be done over any years involved in a previous averaging process, unless it is death or emigration which causes the second averaging. This presents no advantage to the man in the maximum tax bracket ($100,000 income).

These articles are over-simplified summaries of the Commission's proposal. The interested reader is referred to the 2,695 pages of the Report itself.

BOOK REVIEW

by Robert L. Whitney

National Center for Health Statistics, *Cigarette Smoking and Health Characteristics*, United States, July 1964 — June 1965, pp. 64, Series 10, No. 34, Washington, May 1967.

This report, derived from household interview data, emphasizes that the findings do not establish a causal relationship between cigarette smoking and health. The most it does is demonstrate the existence of a relationship, or its lack, between cigarette smoking and various health characteristics. It may be recalled that the Smoking and Health report of the Advisory Committee to the Surgeon General of the Public Health Service (reviewed in *TSA* XVI, 113) did claim a causal relationship between smoking and mortality in certain instances, such as cancer of the lung among men.

The proportion of persons for whom chronic or acute conditions were reported in this survey was usually higher among former smokers than among present smokers. This suggests that many of the former smokers stopped because of such a condition. In general, persons who had ever smoked cigarettes reported higher rates of heart conditions, bronchitis and/or emphysema, sinusitis and peptic ulcers, more acute conditions and more days of disability than persons who had never smoked cigarettes. Where a relationship was found between a condition and cigarette smoking, its incidence or prevalence tended to rise as cigarette consumption increased. However, for most of the acute conditions reported, this pattern was not statistically significant.

Among those who had ever smoked, the loss of normal working days was about 30% to 40% higher than among those who had never smoked. According to the Surgeon General's report, the death rate of cigarette smokers was 70% higher than for non-smokers.

In addition to sampling errors (which are generally of relatively low magnitude), there are other factors to keep in mind when interpreting this report. For example, respondents are more likely to report *themselves* as former smokers than to report other family members as former smokers. On the whole, it appears unlikely that this and other reporting biases affect the general conclusions of this study.

It is possible to give some weight to smoking hazards in the selection of risks in health insurance just as it is possible to do so in life insurance. However, there are obviously practical difficulties in introducing effective selection procedures for such purposes.

ACTUARIAL CLUB MEETINGS

Sept. 19 and Nov. 21, Actuaries Club of Philadelphia

Oct. 18 and Nov. 15, Seattle Actuarial Club, Washington Athletic Club

Oct. 26-27, Actuarial Club of The Pacific States, Pebble Beach, California

Nov. 16-17, Southeastern Actuarial Club, Charlotte, North Carolina

Nov. 16-17, Actuaries Club of the Southwest, Dallas, Texas

NATIONAL CONFERENCE

(*Continued from page* 1)

has rather marked shortcomings. But there is not yet any agreement as to what a more perfect system would look like. It seems likely that we will go through a period of experimentation and in true American fashion may end up with several variations in different parts of the country, suiting local preferences and conditions."

The insurance participants in the meeting agreed that:

". . . it is evident that in the immediate future private health insurers will be looked upon to fulfill an important social and public obligation. They will be called upon to adjust their sights, re-evaluate their goals, and give consideration to the development of fresh approaches and techniques, in addition to refining present processes; . . ."

The first of two additional national conferences is scheduled at Washington, September 28 and 29, to study the benefits and coverage of private health insurance. The second meeting, October 19 and 20, will examine the possibilities inherent in group medical practice.

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