

ABSTRACT OF THE DISCUSSION OF PAPERS BY MESSRS.
CAMMACK AND LAIRD.

PREMIUMS AND RESERVES FOR NON-CANCELLABLE ACCIDENT AND
HEALTH POLICIES—E. E. CAMMACK.

NON-CANCELLABLE ACCIDENT AND HEALTH INSURANCE UNDERWRIT-
ING PROBLEMS—J. M. LAIRD.

Editor's Note.—By arrangement with the Bureau of Personal Accident and Health Underwriters the discussion of these papers was made a special order of business for the morning session on May 25, 1921. Members of both the Bureau and the Society participated in the discussions. The discussions appear in the order in which the authors spoke.

COL. S. H. WOLFE (CONSULTING ACTUARY):

Mr. Chairman and members, Mr. Cammack has stated the object of his paper in the following language: "The object of this paper has been primarily to call attention to the necessity of grading premiums for this class of insurance according to age at entry and of setting aside reserves in addition to the one-half a year's premium (customarily accepted as a correct reserve for a health policy) so as to provide for the increasing claims that will surely come after the effects of medical selection have worn off and as the age of the insured advances." I think I may say at the outset that in that statement we all are in accord. I think that expresses the necessity for the consideration of this in a way in which we can all agree.

Mr. Cammack has also referred to the fact that the Bureau of Personal Accident and Health Underwriters appointed a committee of actuaries to consider the subject, of which he was a member, and that they prepared a report. That report, as a great many of you know, differs very materially from the report which Mr. Cammack as a member of this Society, as an individual, has submitted, and I want to congratulate him upon his change of mind. It seems to me it is a manifestation of liberality and broad-mindedness on his part to feel that when he has made an error he wishes to correct it. In fact, I rather envy him the satisfaction which must come from that feeling. I say "envy" because I have never been placed in the position of making a mistake, and therefore have not been able to correct it.

Now, of course, we are navigating in an uncharted sea, as it were, and there is a necessity for cautious progress, but caution to

my mind doesn't mean the adoption of regulations or standards which are going to stifle a project which all are agreed meets a need in the insurance world. The main difference of opinion, as Mr. Cammack has pointed out, between those who have discussed the matter in the Bureau was in the selection of an experience table. Some actuaries believe the rates and reserves should be based upon the Manchester Unity Table. Mr. Cammack used that table, although he has frankly stated that it is not suggested that sickness rates in this country are likely to follow very closely the Manchester Unity. However, he points out that in the absence of any better standard he has used it.

He also points out that there is one point—and this is a caution we must all observe—to which attention should be drawn, viz.: that “the Manchester Unity Tables of sickness are aggregate tables, and even if they do fairly well represent the sickness rates likely to be experienced in this country, gross premiums based upon the net premium that I have deduced will be likely to be somewhat too high at the older ages.” Mr. Cammack's figures, which he feels may be too high, are considerably lower than those mentioned in the report of the Bureau.

Now, for a great many years in this country companies have been issuing total and permanent disability policies or riders or endorsements in connection with their life policies. The introduction of this new form, as you know, met with a great deal of opposition on the part of the actuaries, and it is rather interesting to read some of the discussions at that time in regard to the great danger resulting from a form of insurance which now is accepted, almost universally accepted, and which apparently is being operated on a safe basis. Non-cancellable coverage is becoming an important factor in the business, and of course the more business a company writes the more vital it is to have proper rates charged and proper reserves maintained, because if those safeguards are not observed, the failure spells ruin for the organization in the long run.

I may say that the New York Life—I don't know if Mr. Hunter is present or not—has issued total and permanent disability contracts for over ten years, and now apparently feels the need of a non-cancellable indemnity benefit to round out its coverage. They analyzed their experience and as a result adopted certain rates for non-cancellable insurance with a three-months' waiting period. These rates differ from those contained in the report of the four actuaries made to the Bureau and those used by Mr. Cammack in the paper he has now presented. The rates charged by the New York Life for this benefit issued with its ordinary life policies for each unit of \$10 a month are as follows: Age 25: \$1.45; 30: \$1.71; 35: \$2.03; 40: \$2.49; 45: \$3.09; 50: \$3.99; 55: \$5.45.

If you will refer to the report which was submitted to the Bureau, it will be noted that a loading of 37½ percent on the gross premiums

is required, although in another place it is suggested that this may be reduced by certain savings. Mr. Cammack in his paper uses only net premiums, but I have loaded his net premiums in accordance with the recommendation of the Bureau $37\frac{1}{2}$ percent and find the following: For instance, at age 35 his gross premium is \$2.90 for a disability benefit of \$10 per month. For the same payment at that age the New York Life will give a monthly benefit of over \$14, and in addition to that the New York Life will waive the premiums on the policy in case of total permanent disability. Now, the value of that waiver of premium I have calculated, and I find it to be \$3.45 a month, so that for the same premium the New York Life apparently at age 35 will give \$17.68 as against the \$10 which apparently will be provided by the premiums suggested in the table. These figures which I have used for the New York Life I may say are not confidential inasmuch as they are published, and I shall not refer to any net premiums which the New York Life has used, because I should prefer that that phase of the discussion come from a representative of the company.

Following the same principle, I find that at the age of 50 for the premium recommended by Mr. Cammack loaded $37\frac{1}{2}$ percent for \$10 a month, the New York Life, giving due weight to the waiver of premium factor, will give \$18.33. In other words, there is an increased benefit given at age 35 of over 76 percent and age 50 of over 83 percent. If we accept the reserves in this paper which has been presented, it seems to me to be impossible that the New York Life could maintain those reserves without infringing upon the surplus. Furthermore, I may say that the New York Life pays the same commission on this disability premium as it does on the insurance portion of the premium, and that commission, I think, is higher than the one which is now very generally used for disability income insurance.

The importance of Mr. Cammack's paper, it seems to me, rests in the fact that there are two principal considerations which must not be allowed to merge, because we may agree with one and yet differ with the other. It seems to me that there is not a great deal of difference as to the value of net premiums for the no-elimination period. They seem to me to be reasonable, but when we come to the periods of elimination it seems to me that due weight has not been given to the value of the elimination. I am not at this moment prepared to give any of the results of the elimination periods from any of the American companies. There is a gentleman in the room upon whom I hope the chairman will call, Mr. Maverick of the Continental Casualty, who is, I think, able to shed some light on the value of the periods of elimination; but it is quite evident that the periods of elimination in Mr. Cammack's paper have resulted not only from the employment of the Manchester Unity Table, but from certain modifications which have been made by him of the Manchester Unity.

In the first place, the Manchester Unity figures give no details of disabilities less than three months. The period between zero and three months has been derived by the employment of a formula devised by English Actuaries in connection with the National Insurance Act in 1912 and 1913, I think, and whether that is applicable to the American experience is something that I do not know. There has been another modification made in connection with the original Manchester Unity Table, which considered, as Mr. Cammack points out, disabilities which occurred during the same twelve months as one illness. In other words, a man might have been sick during the first month and then not sick for eight months and then ill again, and that has been considered as one illness. Now, that will have a decided bearing upon the elimination values. That has been corrected by the employment of a formula which Mr. Watson has pointed out is an approximation. Whether that approximation is applicable to our experience or not I am not prepared to say, but it is quite evident that we have employed a number of approximate curative factors to the original Manchester Unity Table, and it seems quite possible to me that has resulted in a failure to give due weight to the elimination periods, a very important factor, because the most of the business now is written on periods of long elimination with very little zero elimination whatever.

May I say that I was fully aware that the New York Life is willing to pay immediate benefits in those cases where it finds that there is no question as to the total and permanent disability? I purposely omitted that, preferring to err on the side of conservatism and feeling that it would be an offset to a point which I am very much surprised that neither Mr. Craig or Mr. Henderson has raised, and that is that the New York Life will not issue this policy in excess of \$250 a month benefit; that, of course, is another conservative factor. I assumed that would, as it were, overcome this fact which has been mentioned here. I also feel that perhaps a reading of the Bureau committee's report on the proposed commissions will indicate that the cost of the accident business will not be very much more than the life business as it is administered.

MR. R. HENDERSON (THE EQUITABLE LIFE ASSURANCE SOCIETY):

I do not feel that I can suitably discuss Mr. Cammack's paper without expressing my appreciation of the very valuable service which the author has performed both to the Society and to the business of Personal Accident and Health Insurance by the amount of work which he has evidently done in preparing this paper and by the very lucid exposition which he has given of his subject.

The first point which I desire to take up is the propriety of the basis which he has adopted for his tables. I think that he was well advised in finally settling upon the Manchester Unity Experience with as little modification as possible. The adjustment which he

has made, following the indications of Mr. Watson's article in Volume 35 of the *Journal of the Institute*, is probably justified, but in that connection we should bear in mind that off periods are not likely to be presented in exactly the same way where they are liable to mean the material postponement and possible entire loss of the benefit, as they would have a sufficient off period which would entitle the claimant to commence again on full benefit instead of receiving half benefit.

We should not, however, feel that the Manchester Unity Experience can be regarded as a very conservative assumption. We must remember that it represents the experience of a friendly society working on the lodge system under which each lodge was to a certain extent responsible for its own sickness claims, so that the members, particularly in the small lodges, had a direct financial interest in exercising a doubtless friendly but nevertheless strict supervision over the sickness for which benefits were being paid. The effect of this is clearly shown in a table given by Mr. Watson in the paper already referred to where he shows the results of an analysis of the various lodges of the order during the years 1891 to 1895, the sickness in each being compared with the previous Manchester Unity Experience and the lodges classified according to the number of members and each group subdivided into lodges showing a high sickness cost, those showing a normal and those showing a low cost. The percentage of lodges showing a high sickness cost increases regularly with the size of the lodge, only 41 percent of those having a membership of less than 80 showed a high cost, whereas 82 percent of those with a membership of 500 and over showed a high cost. Similarly 28 percent of those with a membership under 80 showed a low cost as compared with only 9 percent of those with a membership of 500 and over. The business of Health Insurance by incorporated companies is likely to be more like that of the large lodges than it is to be like that of the small, so that for this reason there is a possibility that our experience may be somewhat higher than that of the Manchester Unity.

There is one point brought out in this paper and its accompanying tables which in view of prevailing conditions will apparently bear further emphasis. This point is that the rate of sickness increases with the attained age of the insured, and that consequently the net premiums for that benefit either over a fixed period or up to a fixed age limit will necessarily also increase with the age. So far as the fact itself is concerned, it is probably unnecessary to reassert it. What I wish to do is to point out that it is not a fact which any of us can afford to merely assent to as an interesting academic theory, but is one which has a very vital relation to the welfare of every company transacting Non-Cancellable Accident and Health Insurance. To illustrate what I mean, I will ask you to refer to the comparative premium rates quoted in Mr. Cammack's

paper for the benefit of \$10 a month, payable as long as disability lasts, provided it commences before age 65, with no payment for the first two weeks of disability. We will suppose there are two companies transacting this class of business of equal strength and reputation. One company charges the rates of Company "A" and the other those of Company B, C and D. Further suppose that every case is a case of competition, with the facts clearly presented to the prospect. The natural result would be that Company "A" would secure all of the business up to about age 35, the other company would secure the balance. So far the process does not appear to be materially different from the ordinary results of business competition, but if the premium rates charged by Company "A" are the proper premium rates for the benefit at each individual age and those of the other company are merely the average premium rate which would be sufficient if a normal distribution of ages was secured, then Company "A" will not be seriously hurt by the selection exercised, as it will be receiving the proper premium for the particular section of the business which it insures, whereas the other company will be receiving a premium at the rate of \$6 per annum for business requiring a premium ranging from \$6 up to \$11 and over, and with no business requiring a premium of less than \$6 to balance it, and is necessarily suffering a loss. Of course, if Company "A" is wrong and the other companies are right, the situation would be reversed, and if the truth is somewhere in between they are both injured to a smaller extent by the counterselection for which they have given an opportunity. Where some of the companies transacting this business are using a graded scale of premiums and others a flat scale, each party would do well to examine carefully the propriety of the scale which it has used.

The author refers to the benefit of selection as negligible at the younger ages, but as producing an effect as much as 5 percent at the older ages, and suggested that this might be taken into account in the loading. Where an attempt is made to do so the high first-year expense cost and the shorter premium-paying period at the old ages should also be taken into account. It should not be assumed that any materially smaller percentage of loading could be used at the older ages than is used at the younger. This factor of expense would also affect the loading of premiums for policies with a longer period of exclusion. It is to be expected that the average premium required on such policies, if careful practices are followed in determining the amount of indemnity to be granted, will be materially less than where the exclusion periods are shorter, and consequently these policies with a longer period of exclusion would appear to require a higher percentage of loading.

The question of reserves is one which requires very careful consideration. The company with which I am connected has, in order to avoid undue optimism with regard to the results of its business, charged itself with reserves on the full net level premium mean

reserve basis wherever that basis exceeded the gross unearned premiums, using the gross unearned premiums up to that point. The consideration, however, with regard to the high initial cost is more important in connection with Non-Cancellable Accident and Health Insurance than in connection with Life Insurance, and it is possible that some form of preliminary term valuation will be found most appropriate for this business.

MR. J. D. CRAIG (METROPOLITAN LIFE INSURANCE COMPANY):

Mr. Cammack's paper presents a very interesting study of premiums and reserves for non-cancellable health policies and is of great practical value at the present time. The subdivision of the sickness rates as well as the number sick for different periods are very useful, while the claim reserves are the first published that have been based on any definite standard. The larger proportion of sicknesses for longer durations at the older ages has attracted considerable attention, but it would seem that the divergence in this respect between Mr. Cammack's figures and those reported by the Committee on Statistics of the Bureau of Personal Accident and Health Underwriters, as given by Mr. Cammack on the first page of his paper, is readily explainable. The committee's figures show that for claims running not more than one year 50 percent represented sicknesses for the first two weeks, 70 percent represented sicknesses for the first four weeks and 90 percent represented sicknesses for the first thirteen weeks. Compared with these, Mr. Cammack's figures show:

Age.	Percent of Year's Sicknesses Occurring.		
	Within the First 2 Weeks.	Within the First 4 Weeks.	Within the First 13 Weeks.
20.....	51	69	92
30.....	46	63	87
40.....	40	57	82
50.....	31	49	76

Where a policy has a cancellation clause the effect of its application would naturally be to reduce claims at the older ages, as the contracts expected to produce high morbidity rates would likely be cancelled, while under non-cancellable policies it would seem reasonable to expect that as the duration of the policies increased there would be a continually larger proportion of long-time claims.

As an underwriting proposition we have been interested in another aspect. The Manchester Unity Table shows the experience from 1893 to 1897. Mr. Laird in his paper compares these ratios with some earlier tables, but referring back to the British experience every table prepared shows a higher rate of sickness than its prede-

cessor. The Manchester Unity experience of 1866 to 1870 showed a sickness rate of 1.06 weeks for ages 35 to 39; the next experience covering the years 1871 to 1875 showed 1.15; the next covering the years 1876 to 1880 showed 1.24, while the last covering the years 1893 to 1897 showed 1.27. This last is an increase of 21 points, or practically 20 percent, over the first. What is the sickness rate going to be twenty or thirty or forty years from now? If a non-cancellable policy be written on a man age 20, under which, if he becomes sick prior to age 60, he is to receive compensation, provision must be made for the rate of sickness when he attains age 60, which will be forty years from now. Will his rate of sickness at age 60 be the same as the rate of sickness now experienced at age 60?

The trend of experience as well as common sense seem to indicate an increasing rate of sickness for the future, and we have prepared some rates in our office based upon the Manchester Table with a 13 weeks' elimination period, but assuming that the rate of sickness would increase one percent a year. An interesting fact is that the increase in the premium so derived is nearly a constant at the different ages.

At age 20 Mr. Cammack for \$10 a month with a 13-weeks' elimination period quotes \$1.04 and we computed \$1.35, which is an increase of 31 cents or 30 percent. At age 30 the effect of this one percent increase in the sickness rate raises Mr. Cammack's rate from \$1.51 to \$1.88—an increase of 37 cents. At age 40 it raises the rate from \$2.16 to \$2.54—an increase of 38 cents. At age 50 it raises the rate from \$3.24 to \$3.67—an increase of 43 cents. As the age advances the percentage decreases, but the increase itself is not far from a constant. As an act of conservatism in preparing premium rates it might be wise to provide for an increasing rate of sickness and, in addition, to use the most stringent mortality table available.

MR. MANTON MAVERICK (CONTINENTAL CASUALTY COMPANY):

I desire to express my appreciation of your courtesy in inviting me to discuss this subject, and at the same time I must say that I feel rather embarrassed so to do. I want to make a frank avowal at the start and ask for your most kindly consideration; I am not a mathematical actuary and I make no pretense of being one. I do not even speak the same language as the mathematical actuaries, nor am I capable of following all their intricate mathematical processes. That which I know—or rather that which I think I know—relative to accident and health policies has been learned in the hard school of experience. It has been learned by many attempts to create correct rates during the last twenty years—sometimes meeting with success, sometimes with failure. I, therefore, particularly wish you to bear in mind that I speak only from the standpoint of the practical working accident and health rate-maker.

The company with which I am associated is one of those which has been selling non-cancellable accident and health at a level premium irrespective of the age. It entered the field on that basis for reasons which seemed at that time to be sufficient. Expressing my own personal view and not intending at all to declare the policy of the company—although I think it will probably follow the view I am about to express—non-cancellable accident and health policies should be sold for a premium graded according to initial age. I am quite in sympathy with the views expressed to that effect. In fact, the Continental has already put out one policy upon a premium graded according to age. That policy is being sold only in two forms: a coverage with no excepted period and a coverage with one week excepted.

I was appointed one of the members of the subcommittee of the Bureau of Personal Accident and Health Underwriters to help devise a set of rates and reserves graded according to age, and I want to say I have the very highest appreciation of the work done by Mr. Cammack and the rest of the committee. I mention Mr. Cammack particularly, because I believe that the mathematical work is largely his. His paper which was presented this morning, and which I have had the opportunity of reviewing, differs very materially from the previous report of the committee. I believe the difference is a step in the right direction. I do not believe that it has gone far enough.

For my own satisfaction—and that is the test to which a thinking man must conform—I wanted to determine by the best means at the disposal of either the company or myself a table of proper term premiums for non-cancellable policies without an excepted initial period. I had nothing to guide me except the experience of the company, which was not distributed by ages and which was upon cancellable policies, together with such modifications as good judgment would suggest. I am about to tell you what I evolved from that, and again crave your indulgence that I do not present it as scientific work, but as practical work. Please do not hold me to this formula or that formula, because I do not know anything about them.

From my viewpoint in considering this question, there were two questions to determine: first, what I may call the relativity of the premiums by age; and, second, the absolute premium. The relativity was obtained from our own experience in the following manner: We subdivided into five-year age groups some \$6,000,000 of weekly indemnity, together with the correlative claims, which amounted in number to something over 100,000, so as to determine the relation between exposure and claims by ages. The results were plotted, the curves smoothed and interpolations made for intervening ages. Thus was produced a set of index numbers expressed in percentages of average claim cost which, while it correctly repre-

sented the relative value of ages, did not represent the actual value, but, on the contrary, needed the application of the factor representing the absolute average value. This factor was applied, and I am frank to say it was one of judgment, with most liberal, ultra-liberal, allowances for the difference between non-cancellable business and cancellable business. That gave a set of term premiums for a policy of no excepted period. I may say that the work was completed before Mr. Cammack's paper was available. The result of the work, when compared with Mr. Cammack's figures, shows a similarity which is very, very striking. I will give to you some of the figures at intervals of five years that you may see the comparison.

At age 20 Mr. Cammack gives a term premium of \$1.91; my figures were \$1.76. Then my figures rise rather rapidly, while Mr. Cammack's figures rise slowly, so that at age 25 his figures are \$1.99 and mine are \$2.32. At age 30 his are \$2.21 and mine are \$2.66. Mine continue somewhat higher than his, not a great deal, until age 45 is reached, at which point they cross. Mine do not increase as rapidly after age 45 as do most of Mr. Cammack's. For instance, at age 45 he has \$3.68 and I have \$3.70. At 50 he has \$4.76 and I have \$4.48. At 55 he has \$6.40 and I have \$5.94. At 60 he has \$9.92 and I have \$8.62. Personally, I think it is quite remarkable that those two sets of figures determined in absolutely different ways, each without reference to the other, should be in such close correspondence as is shown by this comparison. It is my personal view, speaking from the practical standpoint, that Mr. Cammack's term premiums for the ages, say, from 23, 24 or 25 up to 40 are too low. As I compare them with the rates at which we would be willing to sell a cancellable policy, and make due allowance for what I think is the extra cost for the non-cancellable, I am obliged to say that any company proceeding under my advice would not sell them for that rate even when given the usual loading, say 40 percent of the gross. But I do desire to make the point that by these two methods of calculation, one scientific and the other non-scientific—if you so wish to term it—or practical, premiums have been evolved in which there is no great variation.

The other factor that I wanted to determine was the value of the excepted periods, expressed in percentages of full coverage, and as I had no way of deducing it, as Mr. Cammack did, I went at it in this way. The Bureau some six or seven months ago through its actuarial committee made a tabulation of, I think, nearly 200,000 claims—something in that neighborhood—100,000 accident and 100,000 sickness, by periods of duration, and from those calculated the percentage value of an initial excepted period. That table was faulty to be used for purposes of this work for two reasons: first, it was not subdivided by age—and I think that age has a great effect upon it; and, second, it carried none of its claims beyond one year.

In my humble attempt to cure those deficiencies I made the arbi-

trary assumption that under non-cancellable policies there would be twice as many claims at the expiration of one year as there would be under the cancellable ones. I may say that that assumption, I have since learned, is borne out very nearly by a deduction made by Mr. Laird, although I have not had an opportunity to read his paper, as I did not get it until ten minutes ago; but I understand, nevertheless, that Mr. Laird has made some calculations as to the effect of the removal of the cancellable privilege policy on the number of claims that might be expected afterwards, and that his work supports my assumption. I also note that in Mr. Cammack's paper he shows that the claims of one-year duration upon the average may be expected to continue for about four years more.

Without having either of those pieces of information before me, I simply arbitrarily supposed the number of one-year claims under a non-cancellable policy to be double those under a cancellable policy and to continue for an average of four years each, and I applied that corrective factor to the table as prepared by the Bureau and got a new set of values correct so far as that these features were concerned, but not distributed by age. The Continental then made a special investigation and distributed a trifle over 80,000 claims by ages, half of them being sickness claims and half of them accident claims. I then applied the distributive factor as gained from that experience to the result of the Bureau table, and the result was what I then and now believe to be a fairly correct basis for determining the value of the various initial excepted periods.

I think this is a good time for me to say again: Please bear in mind that I am not advancing this as absolutely scientific. It was a practical way of answering my own inquiries.

The results of that tabulation are quite different—in fact, are very markedly different from the value of excepted periods as determined by Mr. Cammack. I will point out some of the variations. I have that table worked out here for periods of one week, two weeks, four weeks, eight weeks and thirteen weeks. Mr. Cammack only made it for two weeks, four weeks and thirteen weeks. He expresses his in absolute figures, but I have them reduced to percentages. At age 20 Mr. Cammack deducts 48 percent—I will ignore the fractions—as the value of two weeks' elimination. I advise the deduction of 39 percent. At 25 Mr. Cammack deducts 43 percent; I advise 38 percent. I will read by ten-year periods. At 35 Mr. Cammack deducts 34 percent; I advise 37 percent. At 45 Mr. Cammack deducts 26 percent; I advise 35 percent. At age 50 Mr. Cammack deducts 21 percent; I advise 33 percent. At age 60 Mr. Cammack deducts 13 percent; I advise the deduction of 29 percent. That is upon the two weeks' elimination period.

As I worked these figures out on the one, two, four, eight and thirteen weeks' deduction, this law was observable: that as the length of the period of elimination increases the difference between

the value at the younger ages and the value at the older ages became less. I think that is sound, because I think I can see a point that would be reached by lengthening the period of elimination until the result would be identical with either the young or the old.

In applying this same method to the thirteen weeks' elimination there is a much more marked difference. The figures prepared as I have stated show that upon the thirteen weeks' elimination there is not very much difference between its value at the young ages and the value at the old ages. I think that is reasonable. Remember, I am speaking of the relative value, the value as related to the term premium of no excepted period. I think it has been demonstrated that the young men either get well or drag along a long life. In the case of a young man who becomes blind or incurs any of the more common types of life disability, such as insanity, blindness, the loss of two limbs, the value of the three months' elimination is not great. On the other hand, in the case of a man of sixty years of age who becomes blind, insane or disabled for any other reason, the value of the elimination is pretty nearly as much as it was upon the younger man, because, although the frequency of occurrence is greater, the older man does not have as long to live. Remember, again, that I am speaking not of the absolute value of the elimination, but of the relative value between old ages and young.

Proceeding along those lines, I have found that the value of the elimination by age at three months' elimination period varied at the different ages from sixty-seven and a fraction percent to sixty-three and a fraction percent. Mr. Cammack's variation is from 86 percent to 30 percent. You see there is an enormous difference in our figures. Mr. Cammack is of the opinion that the three months' period of elimination is only worth 30 percent of full coverage at age 64 and 86 percent at age 20. I do not agree with him. The result of it all is that if you take this table of term premiums from Mr. Cammack's report, which is Table 4, and will start and draw a line about across there (indicating) up that way, roughly, it is a diagonal line, I think those rates from there up are too low. Over in this corner (upper right-hand corner), which I shall refer to more particularly in a few moments, I think it is absurdly low. I think it is so low that a company selling a cancellable policy at that rate would be committing suicide. In this other part of it I think it is too high. Perhaps it is right, but this part up here is certainly too low.

The extreme case comes at the value of the term insurance with 13 weeks' exception for age 20. The net premium is given as 26 cents. That means—being usually sold in units of \$100—that it would be \$2.60 for \$100, and if loaded 100 percent of the net, 50 percent of the gross, it would make a rate of \$5.20. I would ask any of the practical underwriters in this room—any of those who are making rates for accident and health policies—whether he

would sell to a man 20 years old a policy agreeing to pay him indemnity for life in the event of his total disability extending beyond three months for a premium of \$5.20, which includes 100 percent loading of the net? It can not be done, gentlemen. It is suicide.

Mr. Cammack, in conversation with me when we were discussing this feature—and you will pardon me if I anticipate what you may say, as I do not care to speak again—points out that that is cured when level premiums are made from these term premiums; that the level premium for the younger ages increases—and comes up to about what I would advocate as a level premium—because as you go down the line to the older ages the term rate increases very materially. That is quite true, and if the level premium were only to be considered, I would not quarrel as violently with his table as I do now; but although the level premium approaches the proper figure, the result upon the table of reserves is to create a reserve requirement in the early years which in my humble opinion can not be met when added to the claims that will occur without a drain upon surplus.

I think, gentlemen, that that is all I care to present. I hope you will pardon the many references to the "I," "my judgment," etc., because, as I told you at the start, I am unable to speak upon the subject from any other standpoint.

MR. B. D. FLYNN (THE TRAVELERS' INSURANCE COMPANY):

I believe Mr. Maverick is altogether too modest in his statement that he is not an actuary. His studies and work have been along the line of good actuarial work. He has taken the position that before accepting any experience which we might call foreign experience he should first be convinced as to the correctness of the statistics, so far as possible, by studies of American experience. I have great sympathy with his idea of using American experience wherever possible. In the early stages of workmen's compensation rate making in this country work along the line Mr. Maverick has followed was of real value in correcting erroneous ideas developed by the use of foreign statistics, the make-up of which was not fully understood in this country. The American experience modified the foreign statistics so that a safe working basis for rate making was obtained.

In studying this problem in committee, we have endeavored to utilize American experience which was available. In spite of the interesting and useful points which Mr. Maverick has brought out, my firm conviction is that American experience under cancellable policies can be of but little value in this problem, and that we must adopt the Manchester Unity table as the best available basis for rates.

The two important weaknesses of American experience under cancellable contracts which have been referred to so often, but which

I would like to emphasize here, must, in my opinion, throw such statistics out of consideration in working out this problem. The first weakness is the right of the company under American cancellable contracts to cancel or to decline to renew the policy. The rate of cancellation may be small, but, as Mr. Laird has pointed out, the effect upon the rate of disability may be great. There is no reliable way by which we can obtain even a rough approximation of the effect which this privilege of the company has had upon the disability rate.

The other important weakness lies in the fact that the American cancellable policies have had as a rule a limit of indemnity of 52 weeks, or a limit slightly greater than that term. Claims of probable long duration have therefore passed out of observation at the end of this comparatively short period. To place an estimated average duration of claims against the number of cases which have reached the limit of indemnity in an effort to approximate the complete period of disability is unsatisfactory, because many of the probable long-term claims were settled by lump-sum payment before the limit of period of disability had been reached. Further, as Mr. Cammack has pointed out, long-term disabilities have undoubtedly been avoided by the cancellation of policies of persons who have had repeated short-term claims before they have started on their permanent disability claims. To attempt to build up reliable statistics which will reflect the experience of an unlimited period of disability policy from the experience under a limited period of disability contract with a cancellation clause is, in my opinion, a hopeless task.

As stated before, the Manchester Unity experience seems to be our best guide, although in some respects it will probably not prove a reliable index of American experience under present non-cancellable insurance conditions. The benefit provided by the Manchester Unity was a small and decreasing one. It appeals to me that experience under the American contracts where very large benefits are provided will show much poorer results, particularly in the long-term contracts, where the deterioration of the risk due to change in habits or in moral or financial condition is possible.

This factor of over-insurance taken with deterioration of risk should be provided for by increasing the rates over those required by the Manchester Unity experience. I was much interested in Mr. Craig's rates resulting from an increase of 1 percent in the rate by age. The extra premium obtained is practically a constant addition by age. The companies should make provision for the cost of this factor in preparing their rates for non-cancellable accident and sickness insurance.

There is one other point with regard to Mr. Cammack's paper—bearing upon claim reserves—which I would like to speak of. Mr. Cammack presents a table of reserves for the valuation of individual claims based upon the same modifications of the Manchester

Unity table as were made in the preparation of the premium rates. Too much importance should not be attached to the usefulness of this table. It is presented simply as a rough guide to the reserve liability needed in average cases. Most companies will have but few long-term disabilities, however, under non-cancellable forms for several years and, clearly, not enough cases to permit the use of average values. It will be best to allow the companies to continue for some time to make individual estimates of the future cost of long-term claims. Certainly for an insurance department to adopt immediately such a table as a required basis of valuation of the longer term claims would be most unfortunate, in view of our present lack of American experience. The table should be an excellent guide to the claim adjuster in estimating individual cases; but no attempt should be made to *require* that long-term claims be valued upon it.

MR. E. B. MORRIS (THE TRAVELERS' INSURANCE COMPANY) :

As the writer did not have the opportunity of reviewing these papers until a day or two ago, he trusts that the members will pardon him if his remarks follow a rather rambling course.

Both of these papers are most welcome contributions to the subject of health insurance, a subject upon which very little constructive work has been done on this continent.

Several years ago The Actuarial Society of America appointed a committee to investigate and edit a textbook on the subject of health insurance for actuarial students. That textbook has not yet been written, for the committee appointed soon found this peculiar situation, namely, that the only health business done in this country at that time was written upon the cancellable form, and practically all without due consideration for age at issue; consequently, as far as this country was concerned, there was practically no real data on which to formulate a textbook, and all that the committee really could have done was to point out this fact and then describe more fully health insurance as practiced abroad. In other words, the mathematics of the subject related mainly to the practices in Great Britain. The papers of Messrs. Cammack and Laird are, therefore, most welcome as a real contribution in this country to the subject of health insurance.

My intent in the few remarks which I will make is to point out some of the similarities of the non-cancellable health contract to the life contracts of the old line companies.

There is, perhaps, one point in the development of accident and health insurance in this country which may be emphasized. The tendency until recently because of the cancellable form has been a development of the business from a strictly select point of view. In life insurance risks are selected through the medium of medical examination, but once an insurance is issued the continuance of the

contract is entirely in the hands of the insured, consequently under life insurances the group insured tend toward an ultimate mortality. In the casualty lines, however, there is a possibility of keeping the groups select through the exercise of the cancellation feature. Then again, as Mr. Laird has pointed out, the heavy lapse rate found in casualty lines tends in the same direction. The tendency has been in the casualty lines toward the quotation of relatively low premiums and broad coverages with the single exception of the cancellable feature. Undoubtedly had the development in this country of casualty lines been in an opposite direction, the development through the issuance of non-cancellable forms, premium rates would have been considerably higher, although necessarily the development of the business would have been much closer to the development of the life business.

The accident or health contract, therefore, offers a broad coverage at an exceedingly low premium, and, consequently, immediately introduces the greater problem of the moral or financial hazard much more emphasized than in life insurance. In life insurance, once a contract is issued, the rate can not be changed, even though the insured may change his occupation or his residence or become physically impaired. As far as life insurance is concerned, such changes may, however, tend to neutralize themselves and, as a matter of fact, are not of great moment, for even if the companies were able to increase the rates for life insurance with an increase in hazard, the percentage of the increase in premium would be relatively small. In casualty lines, however, because of the low premium charge, an increase in hazard because of, for example, a change in occupation, may materially affect the percentage of change in premium—a fact which the casualty contracts have recognized, and which practice is furthermore corrected through the yearly reissuance of the business. The point which needs special emphasis is this moral or financial hazard to which the casualty companies are exposed—that is, the possibility of a considerable risk by the payment of a relatively small premium—for there must necessarily ever exist the possibility of selection on the part of the insured.

For a number of years the life companies have been issuing a so-called permanent total disability provision which in a sense is an additional coverage along the lines of the non-cancellable health contract, but it should not be forgotten that this disability provision is issued in connection with and not independent of the life insurance coverage. Under a life contract an insured who is attracted by the disability coverage must necessarily pay the premiums for the life insurance as well as the extra premiums required for the disability provision, consequently there is not the probability of the financial hazard in life insurance that will be found in a separate non-cancellable health contract. Furthermore, the life companies have arbitrarily limited the amounts which any one company will

write for this disability coverage, namely, \$25,000 of life insurance, which corresponds to a monthly sum of \$250. The possibility of selection on the part of the insured is very much greater in the independent health contract which necessitates a considerably higher premium for the independent health insurance contract than would be necessary for a disability clause issued in connection with a life contract even when the benefits of the two contracts for disability are practically the same.

The disability benefits now issued by certain companies in connection with life contracts are practically the same, as a matter of fact, as the benefits contained in the non-cancellable health form and where the waiting period is at least three months. It is obvious, however, for reasons above stated, that an insured purchasing insurance from a speculative point of view would be attracted toward the non-cancellable contract rather than the life insurance contract with similar benefits.

In 1904 The Travelers' Insurance Company, when considering the adoption of its first disability clause which provided for waiver of premium in event of permanent total disability, considered the issuance of such insurance from two points of view—first, the plan adopted of issuing the coverage as a part of the life insurance contract, providing for the waiver of premiums in event of permanent total disability, and second, the issuance of an independent coverage on a non-cancellable form which could be so assigned as to provide for the protection of any life insurance contract in event of permanent total disability—that is to say, that if an insured in a certain company were totally and permanently disabled, The Travelers' Insurance Company by assignment would pay the premium thereon to the insurance company as long as the insured continued to be totally and permanently disabled. Had the company's decision at that time been for the issuance of such an independent contract, it is clear, I think, that the history of non-cancellable health insurance in this country would have been very different from what it is today. The issuance of the disability clause in connection with life insurance contracts has undoubtedly avoided some of the difficulties which would be found in the issuance of an independent health contract as well as certain of the restrictions necessary in the separate contract.

The non-cancellable health contract which is proposed provides for the payment of level premiums to a certain age—age 60—at which age the coverage ceases, although any benefits incurred prior to age 60 will, of course, be carried to completion. The premiums are payable as stated on a level basis each year, but cease at death, and in the compilation of premiums the mortality table must be used. We have here, therefore, the analogy to a level premium term contract found in life insurance. In other words, where the health contract is issued at age 20 we have a comparison with a

level premium 40 Year Term contract; where the age of issue is 50 with a level premium 10 Year Term contract. It is obvious, I think, that health insurance coverage could not well be extended for life, for, of course, such a contract would carry the insurance into the advanced ages where deteriorating diseases are more prevalent and where insurance protection is not so essential for the reason that the earning capacity of the individual is greatly lessened, or is nil.

The analogy between the non-cancellable health insurance form and term insurance, however, is interesting. As far as life insurance is concerned, the laws of certain States provide for surrender values where the term of the insurance is more than twenty years. The majority of life companies, however, write term insurances generally for a period of five or ten years, whether on the non-renewable or the renewable term plan, and thus avoid the question of surrender values altogether. It is quite possible that the question of surrender values on long-term non-cancellable health forms must sooner or later be considered, although it is evident from Mr. Laird's remarks that the accident underwriters do not feel that the time has yet arrived for the serious consideration of this topic.

The casualty underwriters, with the history of cancellable forms before them, have little data on which to estimate the probable lapse rate on the non-cancellation forms. It is interesting to note, however, that the cancellation rate, especially if surrender values are not provided, will in time have more or less effect upon the necessary premium rate itself. Life insurance companies have followed the practice, which is now required by law in certain States, of paying a heavy initial commission the first year with comparatively low renewals. For instance, life renewals are limited by law to 5 percent or $7\frac{1}{2}$ percent, and for a period of nine years.

On the cancellable casualty forms it is customary to pay the same rate of commission upon each renewal. On such casualty forms we find a motive for the rewriting or twisting of contracts not found in connection with life insurance contracts. It is evident that the shifting of a life contract after issuance to another contract in another company is generally to the distinct disadvantage of the insured and is a practice which is frowned upon by all companies, and, in fact, is guarded against by the laws of various States.

With the adopting of the non-cancellable health contract, however, with premiums properly graded as to age, the matter of twisting at once becomes a real question to the casualty companies. It is clear that if the adoption of a non-cancellable health contract means in turn the elimination to a considerable degree of the twisting problem, then it may be expected that there will be a tendency for the experience of casualty companies to follow more closely the experience of life companies as to renewal and in general the same tendency to pay higher first-year commissions with lower renewals.

However, the situation is much more involved than in connection with life companies. In the casualty business there are certain companies which issue casualty insurance only. There will be found life companies which also issue independent casualty contracts. Certain of the latter companies issue casualty business for agents or brokers who do no life business, whereas certain life companies issue business only for agents whose contracts cover life business. It will be seen that the problem confronting these two classes of companies as to rates may differ considerably. It is very evident that a company which intends to pay a high rate of commission on renewals is at a certain disadvantage as to rate as against a company that pays renewal commissions more along the lines of a purely life insurance company and where the total commissions paid for such business will aggregate much less.

I have simply called attention to this analogy in order to point out the possibilities which are involved, for necessarily, as suggested, the lapse rate of the future on the non-cancellable health forms which is a part of this problem will have much to do with the ultimate rate which must be charged.

As heretofore stated, my object in these few remarks has been to point out more particularly analogies in this problem to those in life insurance for the reason that the non-cancellable health contract has much more in common with life insurance than has hitherto been the case in connection with health insurance as heretofore issued.

MR. W. M. JOHNSON (THE MASONIC PROTECTIVE ASSOCIATION):

This discussion, gentlemen, has to do with premiums and reserves, and therefore with contracts. You can not determine reserves without knowing the terms of your contract. The suggestions of Mr. Laird, and I imagine the report of the committee to Mr. Thompson's organization,* is to the effect that the non-cancellable feature be limited to policies providing a monthly income only, and not providing death or dismemberment or other benefits. I presume the subject of non-cancellable insurance has come up because of public dissatisfaction with cancellable policies. The suggested form of contract, it seems to me, is one which is supplemental to commercial accident and health insurance, rather than one to take the place of it. I think the company which has issued the largest amount of this non-cancellable insurance under policies calling for a waiting period of three months uses it as supplemental to regular commercial insurance, rather than as a substitute for it; as a contract providing men who may become *permanently* disabled with an annuity throughout the period of disability, rather than as a form of accident and health insurance, which is sufficient as and of itself.

* Bureau of Personal Accident and Health Underwriters.

It seems to me that there is a public need for a non-cancellable policy, not merely for the permanent disabilities which lay a man up for years, as does insanity or the loss of sight of both eyes, but to cover temporary disabilities. The difficulties I have found as a practical underwriter in dealing with the public have been largely of the nature which have arisen when a man who has paid to a given company ten or twelve years' premiums at \$60 or \$65 per annum, has an attack of appendicitis lasting ten days without operation, and then has his policy cancelled because the company foresees the possibility of a further attack and the necessity of an operation. That type of man is dissatisfied, not because he did not have a contract that would pay him an annuity provided he lost the sight of both eyes, but because the ordinary commercial contract was one which was so used—or the cancellation clause in which was so used—as to deprive him of coverage, not for permanent disability, but for temporary disability, or the disabilities of a comparatively brief nature.

You, of course, are all aware that a company which is issuing a large amount of non-cancellable insurance—The Equitable Life, of which Mr. Henderson is Actuary and with which I was formerly connected—is issuing that insurance on commercial forms rather than in the form of a monthly income without death or other benefit. It may not be without interest to you to know that some ten or twelve years ago I ran across the experience of an English company in issuing a five-year term non-cancellable policy. I procured their rates and policy forms, and considered at the time the use of such a contract in this country, but found that the standard provision laws as they then stood did not permit, according to the rulings of the Insurance Department, the issuance of a form omitting the cancellation clause. All that has since been changed, and within the past three years, in connection with a company which does business in a very limited field and which does not have, therefore, many of the problems which you have, we have introduced a non-cancellable policy not at all in the line of the one under discussion here, but one for which clearly there is a demand, and which seems to me to meet a legitimate need. You will recall that the commercial policy as used in the past, and as many of you now use it, provides for 52 weeks' indemnity for sickness. Simply leaving the limitations of the policy as they were (they differ slightly from that, but are approximately the same), we have made the policy non-cancellable to that extent. It can not be terminated until the insured has received weekly benefits for the full period stated. When that period is up—when the 52 weeks have expired (to apply it to your contracts), the policy continues at a reduced premium for death and dismemberment benefits. It is a non-cancellable contract within the limitations which have been customary to commercial insurance as to the duration of the period during

which weekly benefits will be paid for permanent or temporary disability. As an organization we deal in very small amounts of death indemnity. Our maximum death benefit is \$5,000, and our average death benefit last year was only \$3,000. We issued last year policies calling for upwards of a million and one-half in premiums on that form, and we will collect this year three million dollars in premiums on non-cancellable policies of that type, which are clearly not the type which are under discussion in Mr. Laird's paper or which have been suggested as the form in which the commercial companies should issue non-cancellable policies.

I call attention to it, for it seems to me non-cancellable insurance is being discussed today, because there has been a public demand for a policy which should not be subject to cancellation at will. That demand has reference not merely to the question of providing life annuities to permanently disabled patrons of the insurance companies, but to giving them a contract under which they will have—as they would express it in the language of the street—"a run for their money." You take a man who has paid twelve years under a given contract, paid a \$60 premium—\$720 in premiums altogether—and he puts in a claim for four weeks, gets a \$100 check back and a cancellation notice without explanation; he doesn't like it.

As for the use of the cancellation clause, we all understand about it, and I am not criticizing the clause. It has been a necessary clause in the development of the business as far as it has gone, but it seems to me one tendency of the business in the past has been to magnify death benefits and the double or triple indemnities which would be paid for death incurred in this fashion or that or some other, and thus put some considerable cost on the companies for the benefit of a comparatively few of their patrons, while ignoring what is in reality the true need of the public—that is, the need for weekly indemnity coverage. The man who at 30 or 35 in good health takes a policy and pays a premium year after year is neither an actuary nor an underwriter. He says: "I need health insurance; I am going to take this protection, and if I ever get typhoid fever or any other disease, I will have something to depend upon to help pay the doctor and the nurse." He goes along 15 years; he has perhaps a little claim of three weeks, and in your blank you ask the doctor if the man's health is impaired. He says "Yes" and cites the impairment, and the man gets a cancellation notice. Then arises what Mr. Laird calls "dissatisfaction with the health insurance idea." I think, therefore, we should consider this question of non-cancellable insurance from the standpoint of giving the broadest possible service to the public, not merely in connection with a certain type of disabilities which bring great loss through their being permanent and lasting over a long period of years, but in connection with those losses which arise from temporary disabilities against

which men wish to be protected, and the protection which they don't wish to have withdrawn just prior to their coming down with the sickness in question, as can be done on the ordinary commercial form through refusing to renew, or the use of the cancellation clause. Are we to develop non-cancellable insurance to cover the frequent needs of the great majority of our patrons, or merely the occasional (greater) need of a minority?

Just one more word—I presume, undoubtedly, when you discuss premiums and reserves, the minds of all of you are tending toward some statutory rules for the calculation of reserves on policies which are non-cancellable. That becomes perhaps of added importance, the reserves which should be maintained for the protection of the companies and their policyholders, in connection with taxation questions. I just want to leave with those who are responsible for the development of that subject the thought that there must necessarily be elasticity in the establishment of statutory reserves, whether you are dealing with your problems or the problems of such a company as the one I represent. Otherwise, you put yourself in a position where if you establish a given reserve for a given type of contract you can not alter your contract without altering your reserves, so if you have a fixed reserve, you can not change the general type of your contract.

If we had adopted in the accident and health business, or in the life insurance business, fifteen or twenty years ago, a standard form of policy, as has been here suggested—standard benefits in every respect—we might have thought at that time that we had learned all there was for us to know about insurance, and we could perfect a policy which would be ideal and establish it by law as a standard. To have done so would have been to put a stop to initiative and to the development of lines of service which have been most valuable to the public, as, for instance, in connection with this very permanent disability provision which we are indirectly discussing, as it has been embodied in contracts of life insurance.

We can not approach the question of proper reserves, or the establishment of the statutory reserves for a type of insurance different from that which has been issued in the past (because non-cancellable), without bearing in mind, of course, that if you get a rigid reserve, you will limit initiative when it comes to dealing with the development of non-cancellable business in the future.

It has been emphasized here that you are entering on an experimental field, with no past experience to guide you, and must surely play safe. That very situation points the need of flexibility of standards so that the business can be shaped to the public needs, as those needs are disclosed and experience justifies.

MR. A. P. WOODWARD (CONNECTICUT GENERAL LIFE INSURANCE COMPANY):

In listening to the gentlemen who have discussed these papers this morning it seems to me that they may be roughly divided into two groups, those who believe that the Manchester Unity experience should be adopted as the basis for premium tables for non-cancellable policies and those who think that the experience of the American companies under cancellable forms of policies should be the basis adopted.

In that discussion I have heard a great many references made to the cancellation factor. I believe the late Mr. Messenger in the paper prepared some years ago stated that the Travelers' experience indicated that the cancellation amounted to about 2 percent of the risks. Both Messrs. Laird and Cammack referred to that statement, and I think a moment or two ago Mr. Maverick said that while he had adopted Mr. Laird's suggestion, the experience of his company indicated that cancellations were materially lower.

With the exception of a reference made by Mr. Flynn, and which he did not develop, no one has touched upon another condition of commercial business which, it seems to me, has a material bearing upon the question—that is, that cancellations and those non-renewals which are equivalent to cancellations should be grouped together. Owing to the form of reports of commercial accident and health business no distinction is made between the policies that are discontinued at their expiration through some action of the insured and those policies that are discontinued because the underwriter does not wish to continue on the risk. The policy is written for a term of twelve months, terminating on the 25th of May, and some weeks before the 25th of May the underwriter reviews his experience on that risk; he reexamines the application; he may have an investigation or a medical examination made of the risk, and if for any cause he finds it impaired or undesirable, he does not continue. The company does not cancel it; the policy does not lapse. It simply terminates by expiry of its term. Again, many policies are neither cancelled nor terminated, but are modified at the insistence of the underwriter to restrict liability because of some physical impairment that has developed. That constant exercise of selection each year on the business I believe has a material effect in weeding out impaired risks, and especially the ones which might otherwise develop into serious claims running for long periods later on. From my experience I feel very certain that they amount in the aggregate to more than 2 percent of the risks. That factor is one I think that should be studied carefully if any attempt is made to modify the Manchester Unity experience by the experience of the American companies under their commercial policies.

I don't feel that I can add anything to the information which the industry of Mr. Laird and Mr. Cammack has marshaled for your

consideration, nor can I add anything to the conclusions which they have drawn from those facts. Mr. Laird says that this non-cancellable policy is a contract under which the payments for accident claims will represent 15 percent to 20 percent of the losses, and that the balance of the losses will be for sickness. I think this is an extremely conservative estimate of it. It is certainly 80 percent and probably more sickness insurance. I am reminded of a conversation I had several weeks ago with a prominent underwriter touching on this form of contract. He said: "You know, to have a claim under a life policy the Insured must die; under an accident policy he has to meet with an injury, but for a sickness claim all he needs is a policy." That is the crux of the situation. Sickness in a very large percentage of cases is a subjective condition. I say to you, "I feel so badly this morning I can not work," and, therefore, I stay home. You may think I am faking. You may believe that I am perfectly able to work if I only would, but that belief is very far from the measure by which facts are tested in a court of law. You can not prove that I am not sick, and being a subjective condition and not susceptible of tangible proof, it seems to me necessary for sound insurance practice that through some device the Insured be made either a co-insurer or that the carrier of the insurance must be able to exact some penalty if the Insured takes advantage of the situation. Under the commercial contract the penalty that has been exacted is the termination of the insurance if the underwriter believes that he has been taken advantage of.

When you deal with a form of policy that can not be terminated, that is to run for a long term of years, I feel that the only way that the policyholder can be made a co-insurer is to provide for some waiting period—that is, there must be some period of time where he must bear the full loss before the benefits under the policy shall be payable—and this, it seems to me, is necessary to eliminate the constantly occurring trivial claims which I think we are bound to expect under the non-cancellable contract providing full coverage from one day up.

It seems to me that we should keep constantly in mind that the first and highest duty of the underwriter is to guard the solvency of this institution of insurance, so that twenty or thirty years from now we can fulfill broadly and liberally the promises we are making today. I don't share all of the fears of that group of accident and health underwriters to whom Mr. Laird referred as looking upon this as a dangerous innovation, but I do feel that it is fraught with grave danger unless it is approached in a spirit of cooperation and study, and from a conservative point of view until we know more about it.

MR. ARTHUR WATT (SOUTHERN LIFE AND TRUST COMPANY):

I was asked to say something on these two papers. Unfortunately the papers were not received in time to permit me to prepare

any written discussion, but a few thoughts have occurred to me in listening to the previous discussions. I would like to make this general remark in regard to the papers—and I think it is true equally of both papers—that they give us for the first time something tangible, something definite regarding non-cancellable disability insurance to go on in looking to the future. I have read Mr. Cammack's paper with a good deal of interest, and I think that it is an exceedingly fine paper. I should say that it is entitled to be called a "classic," and in the future will probably be ranked as such. Mr. Laird's paper contains some very valuable underwriting hints. The practical side of the business appeals to me at least as much as the theoretical, and in my own work I try to have an understanding both of the actuarial and the underwriting problems involved. Mr. Maverick may draw a distinction in his mind between the skilled and the unskilled actuary, but I venture to say that in a large measure so far all that has been done is imperfect and of necessity at a later date will be susceptible of considerable revision.

The two most important questions we have to determine are: (1) What is an adequate gross premium rate to charge, and (2) What reserves should we hold? It is well to bear in mind that the coverage has been agreed upon. The policy contracts that are practically agreed upon by all the companies are broad in their terms and the underwriting practice is to be liberal. I feel that it is a safe principle under the circumstances to be conservative, in the beginning to take the benefit of the doubt, because, of a certainty, later on under those contracts we will have to be liberal in paying claims. I have had, perhaps, more experience with disability claims under life insurance policies than under accident and health policies, and I recall that when the disability coverage in the life insurance contract was largely the waiver of premium and instalment option the claims were few. When we changed that and added the annuity option, there was an appreciable increase in the number of claims. One thing that has struck me, especially in connection with disability under life insurance contracts, is the number of unreported cases brought to my attention for the first time when the policy became a claim through death. In a number of these cases the insured had been totally and permanently disabled for a considerable length of time, perhaps one or two years. He had the disability privilege in his policy granting waiver of premium and an annuity option and did not avail himself of it, chiefly because he had forgotten or was unaware of the fact that his policy contained a disability provision.

Now, after considering that and after considering our own experience on disability claims, I very much doubt if the disability premiums that we are charging to life insurance policyholders are adequate. It has been well said that there is a vast difference be-

tween disability coverage under a life insurance contract and the non-cancellable accident and health disability coverage. One is the main contract and the other is just a feature of a contract, and it is my opinion that the premium rates which may be deduced on the basis of the net premiums contained in Mr. Cammack's paper are really about the lowest that it is safe to charge. I am glad that Mr. Cammack did not recommend a table of gross premiums, because I am frank to say that I believe the rates of premium should be perhaps larger than we would think absolutely necessary. I am influenced by the consideration that the contracts are going to run for a good many years, and it is well in the beginning to play safe. The actuarial committee appointed by the Bureau of Personal Accident and Health Underwriters, after examining carefully all available American data, reached the conclusion that it was not sufficient to follow experience in this country in computing premium rates, because that experience was based on cancellable insurance with benefits limited to fifty-two weeks. The best experience available was found to be that of the Manchester Unity of Odd Fellows. Most, if not all, of the British companies writing non-cancellable insurance base their rates on that experience. The experience is very complete, and, while it may not suit conditions in this country exactly, it is probably as close to actual sickness experience in the United States as the American Experience table is to actual mortality experience among insured lives. If the Manchester Unity sickness experience is higher than is likely to be shown in practice under non-cancellable insurance in this country, the margin is not any greater than ordinary business prudence demands. We don't know what the future of this business is going to be. It may be something vastly different to any accident and health experience up to this time, and I think it would be well for us to err on the side of safety in the beginning. If it should ever be possible to reduce premiums, I think that would be all right, but it would be unfortunate if we should later on have to increase premiums. And so I am for a premium rate just as large as the "traffic will bear," and I don't think the premium rates that would be based on Mr. Cammack's net premiums would be too high in practice, particularly at the older ages. On that point I appear to differ somewhat from Mr. Cammack, who drew attention to the fact that the premiums might be too large at the older ages. I can not feel that way from my own limited experience both with disability under life insurance contracts and accident and health contracts. I feel that the premium rates ought to be full at the older ages. If there is any error, I would like to see the premiums err on the side of being smaller at the younger ages and larger at the older ages.

There are a good many points in Mr. Laird's paper which I believe we should study very carefully. Mr. Laird has "boiled down" some very wise ideas in regard to underwriting practice, and I feel

that it is sound in principle and a paper that I can personally study minutely and use to advantage in office work.

Now, as regards reserves, I do not pretend to know what is an adequate basis, but it seems to me from all that has been said that the only basis that we ought to consider for a minute is the Manchester Unity Experience. Whether that is going to be at all parallel to our own experience none of us, of course, know, but I do believe from practical considerations that the reserves are not too great, and that in all probability not more than enough to enable us to get by safely. I think it is important to bear in mind that as the business is rigidly selected in the beginning we will appear to make a profit, but that that profit should be scrupulously reserved as far as possible for future contingencies.

MR. MERVYN DAVIS (THE EQUITABLE LIFE ASSURANCE SOCIETY) :

As a member of the committee that collaborated with Mr. Cammack in preparing data for non-cancellable accident and health insurance, I find myself in full accord with those sections of the paper which refer to the determination of the premiums and reserves, and I find only one section which appears to me as calling for comment or criticism, and that is the section on page 11, entitled "Claim Reserves." It is perhaps a little unfortunate that Mr. Cammack has not given the same lucid exposition of the methods used in compiling this table of claim reserves as he used in the remainder of his paper, and it perhaps might be well to say a word on the possible way in which these tables were compiled.

The curve of sickness described by Mr. Cammack on page 6 is made up for each age, the ordinates of that curve representing the probability that a man of the age under consideration will get sick, and that he will be sick for the given duration, which is measured by the abscissa, the areas of that curve therefore representing the amount of sickness experienced in the time cut off by the two ordinates; and the ratio of the total area to the ordinate at any point will represent the expected length of the duration of the sickness which has already lasted for a certain given duration, and by that means the claim reserves can be constructed. When we come to take an actual case and try to construct that curve, we find that it slopes very rapidly at the beginning where the ordinates are large, and that with the increase of duration the ordinates are comparatively small. In other words, after durations of, say, two years the ordinates of that curve which furnish the fundamental facts for the construction of this table of claim reserves are very small.

Now, any small errors in that curve at these latter durations will have a very small effect on the premiums calculated for the contract, but they will have a very considerable effect on the claim reserves deduced for those durations, and this claim reserve table has, I believe, been criticized quite severely for showing too high reserves for

the longer durations. To my mind they show entirely too small reserves for those long durations. I think it can be pretty safely stated that any man who has been sick for more than two years is totally, permanently disabled, and I think that the claim reserves for claims of duration of more than two years should very closely approximate the reserves that have been put up by life insurance companies for total, permanent disability.

Mr. Cammack states that the table of reserves has been adjusted so as to merge in it an ultimate table for disabilities existing more than seven years, and that at the age of 35 this table departs but little from Hunter's Table. Now, I personally am of the opinion that Hunter's Table is not a safe basis for the calculation of the reserve under a totally disabled life, that has been totally disabled for two or more years. The rate of mortality among disabled lives depends a great deal more on how long the disability has run than on the age of the disabled life. It is very high in the first year, considerably less in the second, less in the third, etc., so that for the strict, correct calculation of disability benefits it is, strictly speaking, necessary to use a select table of mortality among disabled lives. That would mean that the calculation would become almost unworkable. Mr. Hunter found—as he stated in his paper—that substantially the same premiums for disability benefits can be obtained by using an aggregate table omitting the experience during the first year of disability, since that gives practically the same results. That means that Hunter's Table as used furnishes the correct reserve for a claim on a disabled life, at the time that claim arises, but at later durations, owing to the fact that the mortality among the disabled lives decreases with the duration, that reserve is not big enough. So my criticism of this table of claim reserve is that it is, as regards the reserves on the longer durations, based on figures which a small error would throw completely out, and that higher reserves should be maintained for these long durations.

It has been rather interesting to follow the development of the work done in connection with the calculation of non-cancellable disability rates. The first table as prepared by the committee met with a very strenuous objection as being practically worthless. The claim was made that the rate of disability among industrial workers in Great Britain under contracts paying 10 shillings a week would be entirely different to the rate of sickness that would be experienced under the contracts issued in this country, and the objection was raised to all the sets of rates prepared as being entirely too high. Now, apparently the attack is shifted, and it is admitted that for the no-exception policies these rates are practically all right, and if anything they are a little bit low, but that the amount allowed for the different exclusion periods is not enough, and that the present rates proposed for the two, four and thirteen weeks' exclusion period, particularly the thirteen weeks' exclusion period, are entirely too high.

Mr. Maverick has based the calculation as to the amount that should be allowed on the experience under a 52-week contract with an arbitrary addition to those claims which lasted 52 weeks, and I can not see where his figures can be taken as refuting the A. H. J. Table as adjusted by Mr. Cammack, particularly in view of the fact that, as pointed out by Mr. Craig, the value of the exclusions as shown in Mr. Cammack's Table II agree very closely in the younger ages with the experience actually developed under the commercial contracts.

MR. J. M. PARKER (AETNA LIFE INSURANCE COMPANY):

Mr. President, I appreciate your courtesy in asking me to write a discussion on Mr. Laird's paper, but I have been away on an extended trip and I did not receive that until yesterday. I have had no opportunity of studying it, and I am afraid I can offer no constructive criticism; so, also, in regard to Mr. Cammack's paper. Col. Wolfe has given Mr. Cammack the credit of the courage of his convictions in changing his mind and expressing some thoughts quite different from many of those embodied in the report of the Actuarial Committee on Non-cancellable Insurance. I have not had an opportunity of comparing Mr. Cammack's paper with the previous report.

There is one point, though, which impresses me and which I hope you gentlemen have not lost sight of: the point raised by Mr. Craig in regard to the increasing rate of sickness and what we may anticipate in the future. In the last three or four years we have all had a certain amount of experience in the payment of health claims. It may be well said that that experience is too narrow, and that it does not amount to much, but from the practical underwriter's point of view the money has been going out pretty rapidly, no matter what theory there may be as to the ultimate swinging of the pendulum back to normal. It seems to me that the underwriters and the actuaries should give most careful consideration to what may be expected in the rate of sickness in the future, no matter whether they have used the Manchester Unity experience as a basis or the American experience.

MR. JAMES F. LITTLE (THE PRUDENTIAL INSURANCE COMPANY OF AMERICA):

I don't know, gentlemen, whether after I have spoken you will think of the old adage, "Fools rush in where angels fear to tread," but while I can not claim the experience in accident underwriting that many of you gentlemen have had, I have had a little of it from time to time, and the discussion this morning has interested me and made me think of one or two little matters that I have come across which might perhaps throw a little sidelight on the matter under discussion.

The chief point seems to be the question as to what deduction from a coverage for the whole period of sickness should be made for paying no benefit for the first 13 weeks, and that gets us into the difficulty that we find where the item we want is the difference between two relatively large and not very unequal amounts. The result is that if we estimate correctly, say, the total sickness and make a 10 percent error in our estimate of the first 13 weeks, we will, at the younger ages, have perhaps nearly a 100 percent error in our estimate of the sickness that we propose to cover. That, in part, is why the differences in the suggested premiums are so radical.

Mr. Cammack, in speaking of the Manchester Unity experience, suggests that, although it was based on experience on industrial classes mainly, it would not prove inapplicable to commercial classes. I don't know that that is altogether justified. I had what might be described, from the point of view of an accident underwriter today, rather an alarming experience in England. I was associated with the late Mr. R. P. Hardy in valuing a number of Friendly Societies in England, and he never used for his actual final valuation anything but rates of sickness that were based substantially on the concern's own experience, for the reason that none of them was found to approximate closely enough to a standard table to render the standard table applicable. For the machinery of valuation he had developed an exceedingly skilful method. I remember one case that gave me considerable cause for thought. It was an experience of an association of law clerks, who would represent a high-class clerical force. This association's experience was taken out for a valuation that I made with Mr. Hardy, the experience being divided into the "first six months" at what was called full pay—not the full salary, but the full allowance; they call it full pay there—"second six months" at a reduced pay, and "remainder" at a still further reduced allowance.

Now, the law clerks in the first six months of sickness had an experience—I am sorry I haven't got the actual figures—but it was tremendously below the Manchester Unity. It was quite a low percentage. Possibly it was as low as 25 percent, but I can not be sure of the exact figure. I do know that it was exceedingly low as compared with the standard table, but when we came to the experience for the "remainder" after twelve months, it proved greatly in excess of the Manchester Unity. Now, then, if we assume that some weight should be given to this peculiar experience, you can see how enormously it would reduce the proportion of the total experience that was applicable to the first 13 weeks; and when I say that I doubted whether Mr. Cammack was entirely justified in claiming that the experience of the Manchester Unity, which is mostly an industrial experience, would be applicable to our commercial classes here, my feeling was that it might not be applicable

because it *overstated* the proportion of sickness that would be found in the first thirteen weeks. I am not expressing an opinion; I am merely offering as a suggestion the possibility that the proper adjustment of the Manchester Unity figures might be not in the direction that some of us have supposed.

Mr. Cammack has suggested that the Manchester Unity is a little too high at the old ages; firstly, because of some virtual superannuation being included; and, secondly, because an aggregate table had been used. We must remember, however, that while some excess sickness, on account of using an aggregate table, should be deducted at the older entry ages, an equal amount must be added at the younger *entry* ages for the older *attained* ages for the same reason. If we are to lower the rates for the older entry ages, we must increase the older attained age rates for the younger entry ages. In other words, a single rate of disability for any attained age, irrespective of entry age, will not suffice. As to "virtual superannuation" being covered by the Manchester Unity figures, I fear it is only too certain that the same condition will obtain under the non-cancellable policy.

I have had recently a suggestion that caused me to look up some disability material—the suggestion being that we should offer annuity bonds in convenient amounts so that they could be used for pension-fund purposes, it being obvious in such cases that there should be attached to the usual deferred annuity contract a proviso that the annuity would vest upon total disability. Now, when it comes to issuing total disability benefits on life insurance contracts just as a small incidental benefit, I have always been quite content to use Hunter's Tables, after studying carefully the manner in which they were made up; and after checking up with the experience of our own company, which is now quite large, I have no hesitation in saying Hunter's rates are quite sufficient. But when I was faced with the question of what we would charge for deferred annuity, I felt that it was a different thing; the amount of the deferred annuity will generally be greatly in excess of the average amount that could be derived from one percent per month (which is the usual disability income benefit) of the amount of a life insurance policy. Before fixing rates for disability under deferred annuities we decided to see what it would cost supposing these people retired, owing to disability, at the same rates as teachers. It developed that teachers' disability rates under these circumstances were, at the important ages, much in excess of Hunter's disability rates. This I regard as a perfectly natural result.

Take the case of my own company—the Prudential. Our average ordinary policy, the business being written mostly by industrial agents, is decidedly below that of a company writing only ordinary life insurance. We consequently expect to have a decidedly lower experience on this disability income than the purely ordinary com-

pany, because the great majority of these policies are for a thousand dollars with \$10 a month disability income. The lower the compensation, the lower the disability rate is likely to prove. A man can't retire on \$10 a month, but can on a hundred dollars a month. Now, to get a hundred dollars a month on a life insurance policy, he has to take out a \$10,000 policy at a premium seldom much less than \$300 a year, and it is not every man that can finance that. But if he takes a non-cancellable accident and health policy for \$100 a month, at the younger ages, the cost runs as low as \$20 per annum.

I will repeat, if those who were at the Actuarial Society's meeting last week will permit me to, some facts from the Prudential's experience that bear on the question of selection. We issued during the years 1913, 1914 and 1915 policies with a waiver of premium disability benefit, if applied for, and for which an extra premium was charged. Following the mutualization of the company, we decided during 1915 that from the commencement of 1916 these additional premiums would not be charged, and not only those policies that applied for the benefit, but all other policies, with few exceptions, would be put on the same footing. The disability benefits were also enlarged to include the payment of the sum insured in instalment upon disability. We have since investigated the experience on policies issued in those years, comparing the experience on policies on those who applied for the waiver of premium (which is a very small benefit) with those who hadn't applied, and the startling result was found that the experience on those who applied for the benefit is running close to three times as great as the experience on those who didn't apply for it.

Now, we have recently, like other companies, added in the disability income feature, for which we charge an extra premium representing the excess cost of this feature over the cost of the regular disability, as we call it, included in the policies generally. As we expected, we are having a higher rate of disability on policies with the disability income included. These facts are very pertinent to the question of selling a non-cancellable accident and health insurance policy, and the fact that we have a disability rate amongst teachers, who are a fairly high-grade class, higher than Hunter's disability, ought to be at least a danger signal when we are considering what may develop.

Some gentleman referred to the fact that in the Manchester Unity malingering was greatly reduced by reason of the fact that the individual members of the different lodges realize that the malingering costs them money personally, the English workmen's budget being a very closely figured affair. He often hasn't more than a penny a week margin, sometimes not that much, and he does look very carefully after the cases of malingering. But if you read up some of the cases under the Employers' Liability Act—the

Workmen's Compensation—you will read of many cases where the companies' doctors would decide there was no disability, but the man would claim some such trouble as a sore back—his back refused to stand the strain of the attempt at work—and it was almost impossible to get the courts to turn down the case. Ultimately it was often evident that the claim was fraudulent, but meantime the claim had been paid. The condition, you see, is very different where the payment is to be made by a company, and that is the condition that will be faced here on the policies we are discussing.

I think you will see where I am aiming. My own feeling in the matter is that the Manchester Unity rates can not be accepted as being quite sufficient to cover the risk. They might do for tentative rates, but I am strongly of the opinion that it is just as likely that they will prove far too low as that they will prove far too high, and in that I concur very cordially with Col. Wolfe when he said we are setting out on an uncharted sea. By the way, I might mention that in England it is assumed as a matter of course that where a stock company is selling this sort of insurance a higher rate of disability will be experienced than in the case of Friendly Societies.

Another feature that is very important is the fact that the Manchester Unity experience is one on reduced pay, usually after six months, with a further reduction to what is known as quarter pay, though not always exactly a quarter, after twelve months, and there is a very curious thing to be observed in this connection. If the reduction to so-called quarter pay leaves really substantially more than a quarter of the full allowance, the disability experience from long-continued sickness is apt to be relatively heavy. If it is made small—sometimes it is made arbitrarily small so as to offer no inducement to malingering—the experience on long-continued sickness will be light. With this in mind, we must remember that the policy we are talking about is a policy on which the compensation remains fixed for the entire period of illness.

Regarding Mr. Maverick's analysis of his experience, I certainly agree with Mr. Flynn, who said that not all the actuarial ability is included in the so-called actuaries. I wish I had been able a little better to follow Mr. Maverick, but I am not an expert accident and health man. It struck me that he had done a remarkably skillful piece of work. One thing, however, puzzled me a little, and that was in reading Mr. Laird's paper, which I saw only this morning, I noticed he stated that originally these cancellable policies were issued with a 52 weeks' maximum payment—I presume that was on account of any one sickness—later on that was extended to 200 weeks, and some have since been written without a limit. In making up an experience on cancellable policies it seems to me we should exclude anything with a limited period, because the amount of excluded sickness must be wholly unknown. It should be ob-

served that it is not merely when we cancel a policy we get rid of a bad risk. If a man knows his policy may be cancelled, and that by claiming the maximum he will probably have his policy cancelled where the claim is regarded as doubtful, there is a strong disposition to hold off from claims that are not absolutely justified; but if the insured knows that any claim, however preposterous, that he makes will not affect his right to make future claims, there will naturally be a considerable addition to claims, not merely under policies that would normally be cancelled, but on policies where with the cancellable provision the policyholders are careful not to claim too viciously in order that their policies will not be terminated. Of course, the extent of such additional claims is something we can not estimate. I think it was a very excellent thing that Mr. Maverick did to try and figure something from the available experience, because I have always in my own work tried to get the best data I could to work with, no matter how poor and insufficient it might be. The Manchester Unity is not, a priori, a table we should expect to fit conditions exactly, and any further light on the subject is very desirable.

Mr. Johnson drew attention to one point that is of consequence. He said that the cancellable accident policy has produced a great deal of dissatisfaction. And the reason is that there wasn't room enough in it for sufficient claims, a clear indication of the uninviting possibilities of the new form of contract. In conclusion, may I hope that the accident and health companies taking up this business have plenty of surplus funds on hand—they may need them.

MR. S. MILLIGAN (METROPOLITAN LIFE INSURANCE COMPANY) :

This Society is to be congratulated on having had presented for the guidance and education of its members such a paper as the one now under discussion. Mr. Laird has so completely and conservatively covered the subject that any remarks one may make can only be of a supplementary nature.

While the development of non-cancellable accident and health insurance has been comparatively recent in this country, it is interesting to find that this form of insurance, issued in conjunction with life policies, was in operation prior to 1870. None of the companies which granted such a combination seem to have made a very great success of the experiment, and they are mostly all now a matter of history.

The growth of the total and permanent disability feature in life policies has had as much to do with the revival of interest in non-cancellable accident and health insurance as any other cause. A few years ago waiver of premium was the only disability benefit in a life contract. The next benefit was one which provided for the payment of the face of the policy in installments in case of disability. This was followed by a provision for the waiver of premium

plus a disability annuity of a certain amount per month per \$1,000 of insurance. The first payment under this disability annuity being deferred until the end of six months, or longer, after receipt of due proof. Recently a further amendment has been made, where, in at least one company, a disability annuity of \$10 per month for each \$1,000 of insurance is payable at the end of the first month following receipt of due proof. It is further provided that if the insured is totally disabled for three months such a fact will be construed as evidence that the insured, as far as the policy is concerned, is totally and permanently disabled and the disability benefit payable. This latter benefit is practically a non-cancellable health and accident contract, with a three months' elimination period, the only difference being that under this contract, if total and permanent disability is proven before the expiration of the three months, payments commence as of that date.

It seems now as though the issuance of non-cancellable health and accident policies would become practically universal among the more substantial companies conducting health and accident business. If this is so, is it not possible that certain reserve valuation requirements will be made necessary by the various State Superintendents of Insurance, and that such a disability feature as outlined above will, even when incorporated in a life policy, be looked upon as a non-cancellable health and accident contract, which must be valued as such and reported through the miscellaneous blank? If it is argued successfully that it is not an individual health and accident contract within the meaning of the law, but that it is a part of the life policy, this would mean that it might be necessary to consider the reserve on such a feature in calculating the surrender value allowed under the life policy. Again, if the latter interpretation were adopted and a company issuing such a contract in connection with life policies also desired to issue a three months' elimination non-cancellable health and accident policy, it would be rather difficult to make the two premiums for two such similar contracts comparable, as the one issued with the life policy could be issued with very little expense, and would, therefore, require a much lower loading than the policy issued individually.

There is a tendency to assume that disability premiums for benefits issued in connection with life policies do not require to be as high as the premiums for similar benefits under health and accident policies. It is contended that if a loss is incurred there is sufficient margin in the life premium to make good the deficiency; also that the experience will be more favorable under the benefit issued as an incident of a life policy than under an individual health and accident policy. It does not seem correct to depend upon profit from one class of business to offset a loss under another, considering, also, that as the disability benefit under the life policy is extended, thus necessitating an increased premium, the insured must be canvassed

and sold on the disability benefit just as he is on the life coverage, the result may be that the insured, having a full knowledge of his rights under the disability clause, will not hesitate to make claim, and that the more favorable experience will not be realized.

It seems to me that the waiver of premium is the only disability benefit which it is logical to include in a life contract. The common disability annuity of \$10 a month per \$1,000 of insurance necessitates the carrying of such a large amount of insurance in order to give any sort of adequate insurance that its effectiveness in relieving financial distress in case of total and permanent disability is more academic than real. It would seem to me, therefore, that the best solution for a company writing both life and non-cancellable health and accident insurance is to confine its total permanent disability benefit in the life policy to the waiver of premium clause, and to issue in conjunction with the life policy a separate non-cancellable health and accident policy with a three months' elimination period, and confine the issuance of individual health policies without the requirement of a concurrent issuance of a life policy to those with a two weeks' or one month's elimination period. Another reason for this suggestion is that the premium for the three months' elimination policy is necessarily low and can not very readily stand a high acquisition cost. Also I am not yet convinced that the proposed rates for this form of coverage are sufficient, if policies are written separately with the attendant risk of adverse selection. Under policies with a two weeks' and a month's elimination the proposed premiums are higher, and theoretically, the writer thinks, contain a much larger margin of safety.

It was very interesting to hear of the experience of the clerical group in England, of which Mr. Little has just told us. This experience was very similar to that of the Metropolitan Life on a non-cancellable group policy issued on the lives of its own employees. This policy was issued in 1914. For the four years 1915 to 1918, inclusive, our actual male claims were about 71 percent of the expected by the Manchester Unity A. H. J. Table during the first three months of sickness; for the other periods, second three months, second six months, etc., the actual claims were considerably over 100 percent, running in some instances over 200 percent. The probability that the experience under the three months' elimination policy will not be as favorable as some of the speakers here today seem to expect was discussed by Mr. Little. In this connection the speaker agrees with practically everything that Mr. Little has to say on the subject, and in addition would like to repeat an observation made by Mr. Page, Vice-President of the Travelers, at a previous discussion of the subject, where he pointed out that under a three months' non-cancellable health and accident policy it would appeal particularly to those people who for some reason or other anticipated at some time in their life a very long duration of sick-

ness. He also drew attention to the fact that under the three months' elimination policy, if a man were sick for two months or two months and a half, and drew no benefit, he would be rather dissatisfied with the policy, and if he fully recovered from such attack would very likely cancel that policy and take a policy with a shorter elimination period. The man, however, whose physical condition was impaired by the sickness could not take a shorter elimination policy on account of the fact that he could not pass the medical examination, but would continue under the three months' elimination; thus after a few years the experience would likely be bad on account of the adverse selection against the company.

The present-day commercial accident and health contracts, while containing many good features, have many objectional characteristics which seem to be inherent in this form of business. The expense rate connected with them is very high. The cancellation clause is necessary if the cost is to be kept low, and competition has been so keen that one frill after another has been added until today there is very little profit in conducting this business. Just as term life contracts are unsatisfactory, so must also be cancellable health and accident contracts.

The insuring public are becoming better educated in insurance matters and it is only natural that they should demand a health and accident insurance contract which is non-cancellable except for failure to pay premiums. Such a contract can be made quite feasible and profitable (although it is admitted to be a most dangerous business) provided the companies that intend to issue such a contract make haste slowly. The life companies with a knowledge of mortality, which it will be many years before the other companies can duplicate in their knowledge of morbidity, are still quite contented to calculate their premium rates on tables of mortality which call for claims at least 30 or 35 percent more than the companies expect, and it would seem to be best for the companies now breaking into the non-cancellable health and accident business to charge rates based upon morbidity tables at least 25 percent higher than what may reasonably be expected.

It will be many years before a company can tell definitely whether or not its rates are sufficient. The loss ratio for the early durations will be low, but this must necessarily increase, as the natural increase in the morbidity rate will eat up in later years a larger proportion of the annual premiums.

Before the issuance of non-cancellable health and accident policies becomes universal it might be wise to study the present standard provisions with the thought in mind of making them more applicable to non-cancellable policies. Under standard provision 7, for instance, affirmative proof of loss must be furnished to the company within 90 days after the termination of the period of disability for which the company is liable. Under a policy where you have not

the right to cancel in case of excessive claims it would seem as though this 90-day clause was too liberal. Supposing a person recovered and went back to work for a few days and then became sick again, affirmative proof of the first sickness not having been sent to the company, would the insured not be tempted to forget the few days that he was back to work and treat the second sickness as a continuation of the first? The only safe basis would be to have proof of loss submitted to the company on the first day the insured returned to work, or as near thereto as practicable.

Mr. Laird advocates that if an applicant with a history of hernia is accepted there should be a provision in his contract modifying it so that it will exclude disability due directly or indirectly to this hernia. For this particular impairment this does not seem to be a very satisfactory solution. It may be a good plan under certain conditions, but it would seem preferable, for the present at least, to either give full coverage or reject the applicant altogether. In an investigation made recently into the mortality experience among policyholders with a history of hernia, those who wore a truss at the time of application had a mortality about 20 percent greater than the expected, while those that did not wear a truss had a mortality of approximately 100 percent greater; but the peculiar feature brought out was the very small proportion of deaths which were directly due to hernia.

I can not quite agree with the author where he states that the non-cancellable disability policy is essentially a contract for the benefit of the man himself. It would seem to me as though it was as much for the benefit of his dependents in case he becomes totally and permanently disabled.

MR. E. E. CAMMACK (AETNA LIFE INSURANCE COMPANY):

My object in writing this paper was to invite a full discussion on the subject of "Premiums and Reserves for Non-Cancellable Disability Insurance." This object has been attained, and I want to express my gratification and appreciation to those who have participated in the discussion.

Both Col. Wolfe and Mr. Maverick raise objections to the use of the Manchester Unity tables, and I shall do nothing more than briefly to reply to the points they have raised, because practically all that I would have said has been said by others, and with greater authority.

They both claim that the tables in my paper depart very materially from the tables recommended by the committee recently appointed by the Bureau of Accident and Health Underwriters to report upon this subject. Now I feel that a false impression may have been given here. I find that if my net premiums are loaded 45 percent of the gross (and this does not seem an unreasonable loading, taking into account the necessarily high expenses in trans-

acting this class of business and making some allowance for possible unfavorable contingencies), there would result a scale of gross premiums almost identical with the gross premiums recommended by that committee. The reserves in my paper are, it is true, lower than the reserves recommended by the committee—very much lower for policies with a long waiting period. It would probably have been impossible for some years to put up the reserves recommended by the committee from gross premiums after deducting expenses and cost of insurance. In other words, reserve requirements would have resulted in a drain upon a company's surplus. The conservative may find no fault with this, and, indeed, some companies, in a class of business about which we know so little, may deem it advisable to lay aside reserves which experience may show to be more than necessary. In that way they are providing for unfavorable contingencies, while in the event of the experience turning out as well as expected at the outset the worst that has happened is that profits have been deferred. My own feeling was, however, that the reserves as recommended by the committee were rather too high as a minimum standard.

Col. Wolfe has laid great stress upon the New York Life premiums for the total and permanent disability benefit in their Life contracts. Several speakers have called attention to the fact that the experience under the total and permanent disability clauses of Life companies, where the benefit is limited to \$10 a month for each \$1,000 of insurance, is likely to depart very much from the experience under a Health policy issued independently of Life insurance and for a substantial amount. Col. Wolfe points out that at age 35 for a given premium some 75 percent more benefit will be granted by the New York Life than under my tables—he assumed a $37\frac{1}{2}$ percent loading for my net premiums in arriving at this. When you come to consider how much lower the rate of expense of a Life insurance company is than that of a Casualty company (and I am surprised that Col. Wolfe should think otherwise), and when you consider the much higher rate of disability that we may expect under straight non-cancellable Health policies than under the disability clauses of Life policies, the difference in rates deduced by Col. Wolfe seems to be not unreasonable.

The main objection raised by both Col. Wolfe and Mr. Maverick to the tables submitted is that they are based upon the Manchester Unity experience instead of upon an American experience. I concur with them in their claim that the American experience should not be ignored. I think that Col. Wolfe is laboring under the delusion that American experience was ignored in the preparation of my tables. The fact is, I have used the Manchester Unity experience and modified it in the light of the scanty data we have in this country. As regards disabilities lasting longer than two years (and such cases may surely be considered as cases of total and per-

manent disability), Hunter's table was used for the older ages, and Hunter's is an American experience. At the younger ages no modification was made, nor was it thought necessary, since for long-term disabilities there was little difference between Hunter's and the Manchester Unity.

After a careful analysis of his company's experience under cancellable forms, Mr. Maverick comes to the conclusion that the net premiums that I have deduced for policies with no waiting period are reasonable ones for use in this country, but that more of the total sickness at the older ages occurs in the first thirteen weeks, and, consequently, less of the total sickness occurs after the first thirteen weeks than in the Manchester Unity. Common sense would indicate that the result of the cancellation clause upon morbidity must be to avoid a number of cases of prolonged sickness. As Mr. Craig pointed out, it is only natural that if in an experience under cancellable policies the proportion of total sickness that occurs in the first thirteen weeks of sickness is, let us say, 35 percent at every age, then it is only natural to expect that an experience under non-cancellable policies will show, at the extreme younger ages, that just about the same proportion of total sickness belongs to the first thirteen weeks, but that this proportion will grow less and less with advancing age. If you consider a group of persons insured at age 20 carefully selected at that age, the morbidity experience in the first year would surely be about the same whether those persons had cancellable policies or non-cancellable policies. But the sickness experience among that same group in the tenth policy year, let us say, may be expected to be quite different if they are insured under non-cancellable policies from what it would have been if they had had cancellable contracts. This is evident because in the case of cancellable contracts the insurance company would, no doubt, have terminated a good many policies upon impaired risks. It is evident that the effect of the cancellation clause must be to avoid cases of prolonged sickness, and that that effect grows greater and greater as policyholders grow older.

Mr. Maverick considers my One-Year-Term premiums at the younger ages for policies with a waiting period inadequate. He appeals to the practical underwriters with the naïve question as to whether they would write a policy at age 20 for a benefit of \$100 a month for a net premium of \$2.60 or a gross premium of \$5.20. Neither the practical underwriter nor what he terms "a mathematical actuary" would do any such thing. It is an axiom in Accident insurance that it is dangerous to give by itself a very large benefit for a very small premium. It was not intended that the One-Year-Term premiums should be used for the actual quotation of gross rates for One-Year-Term policies, but that they should only be used in the construction of level premium rates for long-term policies. Mr. Maverick does not show that the actual cost in the

first year under a level premium policy at age 20 would be less than the cost reflected in the One-Year-Term rates shown in my paper.

Mr. Maverick in his modifications of his cancellable experience to make it suitable for basing rates for non-cancellable insurance doubled the number of cases of disability that lasted one year and assumed that each such case would continue for another four years. This seems to me to be a very arbitrary assumption. Perhaps the absence of the cancellation clause might treble these claims or even increase them fourfold. At any rate, I fail to see why they were doubled. Furthermore, the increase should evidently be entirely different at the older ages from what it should be at the younger ages.

I was much interested in the tests that Mr. Craig made in which he showed that an increasing rate of morbidity would require approximately a constant addition to the premium for all ages. I think it might be advisable in constructing scales of gross premiums to use a constant and a percentage loading. This would be a practical way of taking care of this contingency.

Mr. Flynn has called attention to the moral hazard likely to arise under this class of insurance by reason of over-insurance. While this question is an underwriting one, I want to say that in my opinion no premiums will prove adequate to meet the results of poor underwriting which has ignored the moral hazard arising from over-insurance.

With regard to Mr. Davis's remarks upon the claim reserve table (Table IX), an explanation of how this table was deduced is given in the paper. The table follows mathematically the rates of disability shown in Tables II and III. A check upon the table can be made with the help of Table VIII, which shows that out of a given number of persons insured for given ages the number of cases of disability occurring in a year and how long each case lasts. For example, at age 40, out of 892,240 persons, there will arise within a year 12,150 claims lasting thirteen weeks. The claim reserve for a claim that has lasted thirteen weeks and which started at age 40 is \$88.40. Multiplying this by 12,150 and dividing by 892,240, we obtain \$1.21, which, by reference to Table IV, is seen to be the One-Year-Term premium at age 40 for a policy paying \$10 a month during disability with a waiting period of thirteen weeks.

Mr. Morris has called our attention to the fact that the Casualty companies usually pay the same rate of commission each year, while the Life insurance companies are likely to pay a high rate of commission on this class of business in the first year and a low renewal limited to nine years. I think a very important point has been raised here. The cancellable Health contract was strictly a One-Year contract, and I think we would be speaking more properly if we said it was rewritten, not renewed, from year to year. With the cancellable contract the agent has to rewrite the policy every year

and demands a commission each year. If the policyholder moves to another part of the country, the policy can be rewritten by an agent in the territory to which he has moved and the agent who originally wrote the risk ceases to draw a commission. But a non-cancellable Health contract is a long-term contract written at an annual premium—it can not be lapsed and a new policy taken out in its place without loss to the policyholder. If a broker or agent secures a risk in New York and the policyholder moves to California, it does not seem fair that the New York broker or agent should continue to receive commissions for the next twenty or thirty years with regard to a policy in which he can give no service. It is not to be expected that there will be the same amount of work to be done in collecting a renewal under a non-cancellable Health policy as in rewriting a cancellable contract written at a premium the same for all ages. It seems desirable, therefore, that the renewal commissions under a non-cancellable Health policy should be less than the first commission and should be limited to a fixed number of years in line with the practice in Life insurance. The renewal commission would be looked upon as deferred remuneration for securing the risk and the agent would be given a vested interest in it.