# REPORT OF THE COMMITTEE ON EXPERIENCE UNDER INDIVIDUAL ACCIDENT AND SICKNESS INSURANCE

## EXPERIENCE UNDER INDIVIDUAL ACCIDENT AND SICKNESS POLICIES 1955-57

THIS report presents the results to date of the Committee's studies of morbidity experience during the years 1955 to 1957, inclusive, under individual accident and sickness policies.

The Committee was formed in 1954 to develop and conduct intercompany studies of such experience. At about the same time, individual accident and sickness insurance was added to the syllabus of the Part 8 Fellowship examination and was accepted as a topic for papers and discussion at Society meetings. All of these steps reflected the growing importance of this line of business to the insurance industry and an increase in its interest to actuaries.

An early decision of the Committee was to restrict its attention initially to the total disability benefit in individual loss-of-time policies rather than to attempt studies of all forms of accidental sickness coverage written on an individual basis. There are some important and immediate needs for morbidity data in the area of loss-of-time coverages. The Committee felt that if initial studies were attempted on too broad a basis, their success might be jeopardized. However, the Committee plans future extensions of the investigations to other classes of insurance written on an individual basis, such as basic hospital and surgical expense insurance and major medical expense insurance.

The first step in the current study was taken in December 1954 when a questionnaire was sent to about 200 companies writing individual accident and sickness insurance. The purpose of this initial inquiry was to determine the degree of interest in the Society's proposed study. The results of this initial questionnaire were very encouraging with approximately 80 companies responding favorably. In 1956 the Committee distributed instructions for reporting morbidity data and requested data for the experience of 1955. Only 11 companies submitted their 1955 experience, but the number of contributing companies increased to 13 for the study of the 1956 experience and to 18 for the 1957 experience.

In designing this initial study of loss-of-time coverages the Committee

realized that it was faced with certain practical problems. In the first place systems for maintenance of actuarial records of individual accident and sickness insurance, particularly of the "commercial" type, have not been developed within the industry to the same extent as records of life insurance coverages. Active life reserves, in addition to unearned premium reserves, have not been required for many classes of business so that there has not been the same need for valuation in-force records of these policies as in the case of noncancelable disability insurance or life insurance. It is difficult for a company to assemble the "exposed to risk" data required for a morbidity study unless summaries of business are readily available or easily and economically obtainable. The relative complexity of the claim records required to participate in the Society's study may be a further reason that some companies, which have not been compiling such records for their own studies, have experienced some difficulty in participating in the study. It is to be hoped that the increasing use of large-scale electronic computers and recording devices will eventually make it possible for many more companies to participate in the study.

More important practical difficulties in an intercompany study of individual accident and sickness insurance stem from the many variations in the insurance operations of companies. For instance, a company's morbidity experience may depend to a large extent on the type of organization used in its agency operations. In fact, the relationship between claim experience and agency operations is probably closer in the case of accident and sickness insurance than in other lines, since the initial selection of risks by agents in the field is so important to the success of an accident and sickness program. In addition to the nature of the field organization, there are other aspects of marketing operations that may be expected to have important effects on a company's morbidity experience. The geographical area in which the company operates, the company's system for training agents, the degree of management control on field operations, all of these factors affect morbidity experience in varying degrees.

Underwriting practices have a very important influence on claim experience. This is true of all forms of insurance, but variations in underwriting practices are especially important in a study of experience with individual accident and sickness insurance. For instance, the addition of a partial disability benefit to total disability coverage may reduce the average period of compensable total disability on claims. On the other hand, the addition of supplementary coverage for medical expenses could lead to adverse selection and to an increased claim frequency. Variations in many of the other aspects of underwriting practices, such as the nonmedical rules and other rules for selection of risks, the definition of "dis-

ability," exclusions and limitations on coverage, also result in variations in morbidity experience with ostensibly similar classes of coverage.

The many variations in company practices may well have a more pronounced effect on results than does the type of renewal provision or other characteristic of the policies under investigation. These differences in practices are found in any intercompany investigation of mortality or morbidity, but are probably more pronounced in individual accident and sickness than in other lines. In spite of this lack of homogeneity, the Committee feels that certain characteristics of morbidity experience are common to all companies and that an intercompany investigation can develop useful information about variations in the cost of this form of insurance.

The Committee's study of individual accident and sickness experience is the first of its kind undertaken by the Society. It is not, however, the first such study on an intercompany basis. Studies of individual policies were conducted by the Bureau of Accident and Health Underwriters prior to the merger of the Bureau with the Accident and Health Underwriters Conference to form the Health Insurance Association of America.

There is general actuarial interest in the experience with any major line of business. However, in the case of total disability coverages in individual accident and sickness policies, there is a specific need for a comprehensive study of the level and incidence of disability among insured lives. The Conference Modification of the Class III Table, which is currently the accepted valuation standard for the disability benefit in noncancelable accident and sickness policies, has been in use for many years. The experience on which this table is based is now almost 40 years old and the modifications of the original Class III Table, including the extensions above age 60 and to the first day of disability, were made about 20 years ago. Consequently, it is essential to review the table in the light of current experience to determine whether the table represents current experience and is still an adequate standard for minimum reserves.

The many questions involved in the introduction or revision of minimum reserve requirements have become somewhat more important in recent years than heretofore, in view of the increasing demand for guaranteed renewable types of insurance and the interest in minimum standards for active life reserves as a result of the adoption of the Task Force 4 Report by the National Association of Insurance Commissioners in 1956. The data that are being compiled by the Committee should ultimately be a guide as to the need for a new table and would form the statistical basis for such a table. The Committee feels that the volume of data that has been assembled to date is not sufficient, nor is the experience

sufficiently mature, to draw any firm conclusions with respect to the need for a new table or the form that such a table should take. It should be noted, however, that the Committee's study is a continuing one, with data for each calendar year's experience collected annually. Consequently, it is anticipated that, with the collection of data on an increasing volume of mature experience, many of the current questions on the incidence of morbidity will be answered.

The Committee expects to develop, as an important by-product of its studies, information on morbidity that will be useful for underwriting purposes generally. There are several questions on the variation in benefit costs with respect to age, sex and occupation class that are still unanswered and which may be answered when additional morbidity data become available. However, it must be remembered that in the accident and sickness field the merger of the experience of a number of companies constitutes very broad averaging and that it cannot be assumed that the intercompany results necessarily apply to the insurance program of any one company. Consequently caution is essential in applying the results of an intercompany study to practical underwriting problems.

*Reporting System*

The instructions to contributing companies for the study of 1956 and 1957 experience are reproduced in the Appendix. It will be noted from these instructions that each company's data are contributed on two punch card files: (i) an exposure summary card file and (ii) a detail claim card file.

(i) *Exposure summary card*

The exposure summary cards show the volume of business exposed and corresponding claims during the calendar year of experience, and their distribution with respect to the policy characteristics that are important in a study of morbidity. Details of the classification system are given in the Appendix. Exposures are measured both in units of number of policies and in units of amount of monthly indemnity. In order to develop claim rates, the number of approved claims incurred during the year of experience, and the aggregate monthly income on such claims, are summarized on the exposure summary card. In addition, for calculation of net annual claim costs the amount of benefits paid or incurred during the first year of the benefit is reported on the summary card. The aggregate periods of disability for which benefits are approved are also reported on the exposure summary card in order that the amount of disability may be developed without weighting each policy by the amount of monthly indemnity. This latter field was

added to the exposure summary card beginning with the study of 1956 experience in order that annual claim costs, as well as claim rates, might be developed on the basis of both number of policies and amount of monthly indemnity.

In the typical accident and sickness insurance program, total disability benefits for sickness are generally different from benefits for accident disability. For instance, policies covering both accident and sickness are frequently written with different elimination periods or maximum benefit periods applicable to the two elements of coverage. This practice stems largely from the caution that has characterized the underwriting of sickness disability. Total disability benefits for sickness do not extend beyond the insured's normal working lifetime and an elimination period of at least 7 days is generally required, although a few companies continue to offer "first day" benefits for sickness disability. On the other hand, lifetime accident benefits from the first day of disability are freely offered, at least among the less hazardous occupations. In view of the many different combinations of coverage for sickness disability and accident disability, it would be impractical to consider a policy covering both accident disability and sickness disability as a single exposure unit. To do so would create a very large number of experience groups. In order to avoid this result, two sets of exposure summary cards are prepared for policy forms that cover both accident disability and sickness disability, with separate exposure summaries for each element of the coverage. As a result, the data do not lead directly to morbidity rates for total disability. Instead, morbidity rates for accident disability are developed entirely separately from rates for sickness disability. In general, the separate accident and sickness rates for corresponding benefits are based on entirely different groups of policies, so that claim rates and annual benefit costs for total disability are obtained only as the sum of the two component rates rather than from a direct analysis of policies covering both accident and sickness.

(ii) *Detail claim card*

A detail punch card is submitted for each claim included in the claim data reported on the exposure summary card. The form of the detail claim card is described in the Appendix.

The instructions for reporting data on 1955 experience required that experience during the first two years of the benefit period be reported on the exposure summary cards. This procedure required a valuation of claims still open when summarizing data to be reported for the study, since the experience of each year is reported in the calendar year follow-

ing the year of experience. In order to minimize this special valuation of open claims and because the amount of disability during the second year of the benefit period is relatively unimportant compared with the first year, the instructions were changed so that beginning with the study of 1956 experience the claim data on the exposure summary cards represent the experience during the first year of the benefit period only. This change in the instructions has simplified the preparation of data in the contributing companies without sacrificing important information, since claim experience during the first year of the benefit period constitutes the most important part of the experience.

*Volume of Data*

During the three calendar years for which the Committee has compiled morbidity experience, a considerable volume of data has been assembled. The present report is based on an aggregate exposure of 2,300,000 policy years under which 182,000 claims were incurred.

The companies that contributed to the study during the 3-year period of the investigation are shown in Table 1, with the volume of each com-

TABLE 1

CONTRIBUTING COMPANIES AND VOLUME OF DATA
NUMBER OF CLAIMS AS REPORTED ON EXPOSURE SUMMARY CARDS

| COMPANY | YEAR OF EXPERIENCE | | | ALL YEARS COMBINED |
|---|---|---|---|---|
| | 1955 | 1956 | 1957 | |
| Metropolitan | 19,733 | 32,906 | 33,721 | 86,360 |
| Monarch | 6,550 | 8,966 | 10,466 | 25,982 |
| Prudential | 4,084 | 7,156 | 8,778 | 20,018 |
| Loyal Protective | 3,363 | 4,396 | 4,961 | 12,720 |
| Benefit Assoc. of R.R. Employees* | ..... | ..... | 12,168 | 12,168 |
| Travelers | ..... | ..... | 6,219 | 6,219 |
| Business Men's Assurance | ..... | ..... | 4,692 | 4,692 |
| New York Life | 1,191 | 1,376 | 1,574 | 4,141 |
| Mutual, New York | ..... | 1,454 | 1,754 | 3,208 |
| Union Mutual | 494 | 925 | 1,173 | 2,592 |
| Guardian | 275 | 315 | 360 | 950 |
| State Mutual | 91 | 263 | 347 | 701 |
| Beneficial Standard | ..... | 310 | 287 | 597 |
| Continental Assurance | 190 | ..... | 354 | 544 |
| Wisconsin National | ..... | 301 | ..... | 301 |
| Provident Mutual | ..... | 95 | 108 | 203 |
| Connecticut General | ..... | ..... | 131 | 131 |
| Group Health | 90 | ..... | ..... | 90 |
| Standard of Oregon | 19 | 29 | 11 | 59 |
| Total | 36,080 | 58,492 | 87,104 | 181,676 |

* Exposure and Claim data consist of number of policies only, excluding benefit amounts.

pany's data measured by the number of claims reported on the exposure summary cards.

Contributing companies were invited to contribute data on all loss-of-time policies that have a benefit period for total disability of at least one year. The data submitted for the study show that most of the business has been written with "1st day" and "8th day" benefits. This is indicated by Table 2, which shows the distribution of number of claims reported on

TABLE 2

AGGREGATE VOLUME OF DATA IN 1955–1957 INTERCOMPANY DISABILITY EXPERIENCE*

NUMBER OF CLAIMS BY TYPE OF COVERAGE, SEX AND OCCUPATION GROUP

| ELIM. PERIOD (DAYS) | ACCIDENT | | | | SICKNESS | | | |
|---|---|---|---|---|---|---|---|---|
| | Men | | Women | | Men | | Women | |
| | Occup'n Group I | Occup'n Group II | Occup'n Group I | Occup'n Group II | Occup'n Group I | Occup'n Group II | Occup'n Group I | Occup'n Group II |
| 0..... | 31,332 | 26,992 | 1,453 | 121 | 27,088 | 2,229 | 339 | 189 |
| 3..... | 225 | 611 | 129 | 69 | 1,627 | 4,339 | 761 | 422 |
| 7..... | 2,752 | 6,212 | 502 | 0 | 21,156 | 32,525 | 4,279 | 60 |
| 14..... | 315 | 144 | 2 | 0 | 1,965 | 383 | 45 | 1 |
| 21..... | 0 | 0 | 0 | 0 | 29 | 1 | 0 | 0 |
| 30..... | 53 | 39 | 1 | 0 | 724 | 227 | 33 | 1 |
| 60..... | 1 | 1 | 0 | 0 | 13 | 6 | 1 | 0 |
| 90..... | 10 | 6 | 0 | 0 | 65 | 26 | 4 | 0 |
| Total | 34,688 | 34,005 | 2,087 | 190 | 52,667 | 39,736 | 5,462 | 673 |

* Excluding the data of one contributor for which claim data consisted of number of claims only.

the exposure summary cards, by type of coverage, sex and "occupation group." The specialized meaning of "occupation group" is explained in a later section of this report. Number of claims has been used as the basis for measuring volume of data since it is the best measure of the reliability of statistical results. While a fairly substantial volume of data has been submitted for policies with a 3-day elimination period, this type of coverage has been written by very few companies.

*Claim Frequencies and Incidence of Disability*

In order that homogeneous groups may be obtained when the exposure summary records of all participating companies are merged for the calculation of basic morbidity rates, it is essential that each contributing company's exposures and claims be grouped on a consistent basis with respect to coverage, sex, age and the other policy characteristics. In general, con-

sistency is assured by the use of a single coding system by all contributing companies. However, grouping of exposures and claims of each company with respect to occupation class is based on the classification system used by the company for rating purposes. Since several different occupation classification systems have been used for the data reported on the exposure summary cards, it is necessary to regroup each company's data with respect to occupation class in order to attain consistency in this regard.

Seven of the 18 companies that contributed 1957 data have used two or more occupation classification systems, with the result that the 1957 data involve 26 separate classification systems, of which five are apparently not used for current issues. Of course, several of the classifica-

TABLE 3

OCCUPATIONAL CLASSIFICATION SYSTEMS

DISTRIBUTION BY NUMBER OF CLASSES

| Number of Classes | Number of Manuals |
|---|---|
| 2 | 1 |
| 3 | 2 |
| 4 | 5 |
| 5 | 7 |
| 6 | 1 |
| 7 | 1 |
| 8 | 1 |
| 9 | 2 |
| 10 | 1 |
| Total | 21 |

tion systems in current use are either identical with or similar to the classification systems developed by the Bureau of A & H Underwriters or the A & H Underwriters Conference, but many modifications in the original Conference and Bureau systems have been made. In order to illustrate the wide variations in current practice in this regard, the foregoing table shows the distribution, with respect to the number of occupation classes, of the 21 classification systems in use for current issues by the 18 companies that contributed 1957 data.

In order to obtain reasonably homogeneous data when the exposure records are grouped with respect to occupation class, it was decided to regroup each company's data into two occupation groups. A small number of groups for classification of data with respect to occupation necessarily produces very broad groups and so tends to reduce the homogeneity of the groups. However, as noted above, when accident and sickness data of two

or more companies are merged, results are inherently heterogeneous to some extent. Consequently, there is a practical limit to the degree of precision that can be attained with respect to any one policy characteristic such as occupation class. Furthermore, and more importantly, morbidity data in the individual accident and sickness line must be classified with respect to a rather large number of variates in order to obtain homogeneous groups, so that the system for classifying data with respect to each variate must produce reasonably large groups if results are to be meaningful and statistically reliable.

The two occupation classes that have been established for the purpose of this study have been designated Occupation Group I and Occupation Group II. Occupation Group I covers occupations that generally involve little exposure to an accident hazard. Thus, clerical employees who work full time in an office, and executives, even if they have regular travel assignments, would be included in Occupation Group I. Group I would not be restricted to this class of occupations; for instance, Group I would include most salesmen and persons superintending various manufacturing and construction operations.

The Group II occupations consist of those occupations that involve a greater degree of exposure to accident hazards or duties where sickness or injury generally results in a longer period of disability than for Group I occupations. For instance, persons who operate vehicles or construction equipment would be in Group II. Persons whose work requires perfect, or near-perfect, physical condition would also be in Group II, since such persons may be disabled by a relatively minor injury.

In the case of companies using the Bureau classification system, Occupation Group I consists of the first 4 classes (Classes A to D* inclusive) and Occupation Group II consists of the "higher" classes, Classes D to H. In the typical Conference-type system, in which the entire range of insurable occupations is classified in 4 or 5 groups, the first 2 classes (typically, but not always, identified as Classes 3A and 2A) are generally grouped with Occupation Group I, and the higher classes in Group II. The few specialized systems in use by contributing companies, which in many cases could not readily be associated with either the Bureau or Conference systems, required special analysis in order to reclassify the occupation classes as Occupation Group I or II.

The exposure summary cards representing the experience with male risks were classified with respect to occupation group, elimination period and attained age to produce the basic crude morbidity rates: frequency of disability and amount of disability experienced among a group of lives observed over a period of one year. The results of this procedure are shown in Tables 4 and 5, together with corresponding values from the

# TABLE 4

## FREQUENCY OF DISABILITY PER 100,000 LIVES EXPOSED FOR ONE YEAR
## ANALYSIS BY TYPE OF COVERAGE, OCCUPATION GROUP, ELIMINATION PERIOD AND AGE
## MALE EXPERIENCE

| ATTAINED AGE $x$ | ACCIDENT | | | SICKNESS | | | TOTAL DISABILITY | | | CONFERENCE TABLE |
|---|---|---|---|---|---|---|---|---|---|---|
| | $r_x^e$ | | | $r_x^e$ | | | $r_x^e$ | | | |
| | Occupation Group I (1) | Occupation Group II (2) | Ratio (2)÷(1) (3) | Occupation Group I (4) | Occupation Group II (5) | Ratio (5)÷(4) (6) | Occupation Group I (1)+(4) (7) | Occupation Group II (2)+(5) (8) | Ratio (8)÷(7) (9) | (10) |
| | First Day Policies ($e=1$) | | | | | | | | | |
| 20–29 | 4,849 | 10,789 | 222.5% | 24,128 | 27,274 | 113.0% | 28,977 | 38,063 | 131.4% | 33,450 |
| 30–39 | 4,723 | 9,970 | 211.1 | 26,983 | 23,760 | 88.1 | 31,706 | 33,730 | 106.4 | 32,900 |
| 40–49 | 5,016 | 8,950 | 178.4 | 24,278 | 21,723 | 89.5 | 29,294 | 30,673 | 104.7 | 32,810 |
| 50–59 | 4,557 | 8,139 | 178.6 | 24,879 | 20,740 | 83.4 | 29,436 | 28,879 | 98.1 | 33,110 |
| 60–69 | 3,927 | 6,495 | 165.4 | 28,630 | 23,685 | 82.7 | 32,557 | 30,180 | 92.7 | 34,190 |
| | Fourth Day Policies ($e=4$) | | | | | | | | | |
| 20–29 | * | 8,252 | 310.9% | 13,280 | 12,454 | 93.8% | 15,934 | 20,706 | 129.9% | 27,690 |
| 30–39 | 4,173 | 6,955 | 166.7 | 13,248 | 11,751 | 88.7 | 17,421 | 18,706 | 107.4 | 27,490 |
| 40–49 | 3,905 | 5,675 | 145.3 | 14,068 | 12,005 | 85.3 | 17,973 | 17,680 | 98.4 | 27,770 |
| 50–59 | 4,069 | 5,766 | 141.7 | 16,018 | 13,584 | 84.8 | 20,087 | 19,350 | 96.3 | 28,630 |
| 60–69 | (4,048) | 5,890 | 145.5 | 18,455 | 19,917 | 107.9 | 22,503 | 25,807 | 114.7 | 30,600 |
| | Eighth Day Policies ($e=8$) | | | | | | | | | |
| 20–29 | 2,844 | 5,156 | 181.3% | 6,407 | 6,940 | 108.3% | 9,251 | 12,096 | 130.8% | 20,120 |
| 30–39 | 3,393 | 5,271 | 155.3 | 7,381 | 8,251 | 111.8 | 10,774 | 13,522 | 125.5 | 19,980 |
| 40–49 | 3,897 | 5,866 | 150.5 | 9,475 | 10,317 | 108.9 | 13,372 | 16,183 | 121.0 | 20,410 |
| 50–59 | 3,575 | 5,864 | 164.0 | 12,440 | 13,728 | 110.4 | 16,015 | 19,592 | 122.3 | 21,750 |
| 60–69 | 3,720 | (4,904) | 131.8 | 12,292 | 18,566 | 151.0 | 16,012 | 23,470 | 146.6 | 24,990 |
| | Fifteenth Day Policies ($e=15$) | | | | | | | | | |
| 20–29 | (1,033) | (4,778) | 462.5% | 2,987 | 3,999 | 133.9% | 4,020 | 8,777 | 218.3% | 13,110 |
| 30–39 | 1,231 | 3,716 | 301.9 | 3,313 | 4,612 | 139.2 | 4,544 | 8,328 | 183.3 | 12,850 |
| 40–49 | 1,582 | 2,808 | 177.5 | 5,258 | 4,041 | 76.9 | 6,840 | 6,849 | 100.1 | 13,210 |
| 50–59 | 1,887 | 3,705 | 196.3 | 7,314 | 8,069 | 110.3 | 9,201 | 11,774 | 128.0 | 14,610 |
| 60–69 | * | * | ..... | 14,035 | (14,201) | 101.2 | 17,404 | (14,201) | 81.6 | 18,670 |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

# TABLE 5

## AMOUNT OF DISABILITY IN MONTHS PER 100,000 LIVES EXPOSED FOR ONE YEAR
## ANALYSIS BY TYPE OF COVERAGE, OCCUPATION GROUP, ELIMINATION PERIOD AND AGE

MALE EXPERIENCE — MAXIMUM BENEFIT PERIOD: ONE YEAR

| ATTAINED AGE $x$ | ACCIDENT $s_x^e$ Occupation Group I (1) | ACCIDENT $s_x^e$ Occupation Group II (2) | ACCIDENT Ratio (2) ÷ (1) (3) | SICKNESS $s_x^e$ Occupation Group I (4) | SICKNESS $s_x^e$ Occupation Group II (5) | SICKNESS Ratio (5) ÷ (4) (6) | TOTAL DISABILITY $s_x^e$ Occupation Group I (7) | TOTAL DISABILITY $s_x^e$ Occupation Group II (8) | TOTAL DISABILITY Ratio (8) ÷ (7) (9) | CONFERENCE TABLE (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| | First Day Policies ($e=1$) | | | | | | | | | |
| 20–29 | 3,262 | 8,428 | 258.4% | 12,932 | 13,058 | 101.0% | 16,194 | 21,486 | 132.7% | 22,289 |
| 30–39 | 3,167 | 9,020 | 284.8 | 16,267 | 14,119 | 86.8 | 19,434 | 23,139 | 119.1 | 22,924 |
| 40–49 | 3,994 | 8,735 | 218.7 | 20,014 | 17,830 | 89.1 | 24,008 | 26,565 | 110.7 | 26,586 |
| 50–59 | 4,092 | 9,124 | 223.0 | 30,826 | 30,321 | 98.4 | 34,918 | 39,445 | 113.0 | 34,586 |
| 60–69 | 4,538 | 9,383 | 206.8 | 45,234 | 53,844 | 119.0 | 49,772 | 63,227 | 127.0 | 54,664 |
| | Fourth Day Policies ($e=4$) | | | | | | | | | |
| 20–29 | * | 8,349 | 401.4% | 6,986 | 8,804 | 126.0% | 9,066 | 17,153 | 189.2% | 19,184 |
| 30–39 | 2,726 | 6,313 | 231.6 | 10,868 | 10,893 | 100.2 | 13,594 | 17,206 | 126.6 | 19,859 |
| 40–49 | 3,458 | 5,399 | 156.1 | 15,430 | 13,438 | 87.1 | 18,888 | 18,837 | 99.7 | 23,524 |
| 50–59 | 5,883 | 6,359 | 108.1 | 20,750 | 22,345 | 107.7 | 26,633 | 28,704 | 107.8 | 31,500 |
| 60–69 | (4,109) | 5,214 | 126.9 | 30,726 | 43,435 | 141.4 | 34,835 | 48,649 | 139.7 | 51,505 |
| | Eighth Day Policies ($e=8$) | | | | | | | | | |
| 20–29 | 2,529 | 5,782 | 228.6% | 5,776 | 6,932 | 120.0% | 8,305 | 12,714 | 153.1% | 15,951 |
| 30–39 | 3,567 | 6,213 | 174.2 | 7,052 | 9,077 | 128.7 | 10,619 | 15,290 | 144.0 | 16,656 |
| 40–49 | 3,844 | 6,961 | 181.1 | 11,775 | 14,616 | 124.1 | 15,619 | 21,577 | 138.1 | 20,284 |
| 50–59 | 4,131 | 8,709 | 210.8 | 21,863 | 24,827 | 113.6 | 25,994 | 33,536 | 129.0 | 28,148 |
| 60–69 | 5,137 | (10,243) | 199.4 | 28,394 | 33,747 | 118.9 | 33,531 | 43,990 | 131.2 | 47,906 |
| | Fifteenth Day Policies ($e=15$) | | | | | | | | | |
| 20–29 | (1,536) | (5,202) | 338.7% | 3,156 | 3,546 | 112.4% | 4,692 | 8,748 | 186.4% | 12,141 |
| 30–39 | 1,163 | 4,456 | 383.1 | 3,703 | 4,478 | 120.9 | 4,866 | 8,934 | 183.6 | 12,887 |
| 40–49 | 1,696 | 4,464 | 263.2 | 7,597 | 6,210 | 81.7 | 9,293 | 10,674 | 114.9 | 16,428 |
| 50–59 | 1,607 | 3,917 | 243.7 | 14,254 | 18,237 | 127.9 | 15,861 | 22,154 | 139.7 | 24,044 |
| 60–69 | * | * | ..... | 26,503 | (27,093) | 102.2 | 27,839 | (27,093) | 97.3 | 43,099 |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

Conference Table, for those elimination periods for which an adequate volume of data was available. In these and later tables we show the frequencies of disability ($r_x$) and amounts of disability ($s_x$) defined as follows:[1]

$r_x^e$ represents the number of lives that become disabled and survive $e$ days of disability among 100,000 active lives exposed for a period of one year beginning at age $x$. $r_x^e$ has been calculated as the ratio of the amount of monthly indemnity on approved claims, as reported on the exposure summary cards for policies with an elimination period of $e$ days, to the corresponding exposure.

$s_x^e$ represents the aggregate amount of disability in months experienced among 100,000 lives exposed for a period of one year beginning at age $x$, under a policy with elimination period $e$ and maximum benefit period of one year. $s_x^e$ has been calculated as the ratio of the aggregate benefits incurred on claims, as reported on the exposure summary cards, to the corresponding exposure.

All maximum benefit periods have been combined in Tables 4 and 5 and in later tables in this report. Since policies with maximum benefit periods of less than one year are excluded from the study and benefits for periods of disability after the first year of the benefit period are excluded from the claim data reported on the exposure summary cards, the results in Table 5 and the $s_x$ values in other tables in this report apply to coverage subject to a maximum benefit period of one year.

The Conference Table provides values applicable to total disability only, without any standard separation of tabular values into their accident and sickness components. Accordingly, for comparison of crude rates with the Conference Table it is necessary to develop crude rates applicable to total disability. As noted above, total disability rates can be obtained only by combining comparable rates for accident disability and sickness disability. This has been done in columns (7) and (8) of Tables 4 and 5.

The Conference Table is normally considered to apply to men in generally nonhazardous occupations, so that values according to the Conference Table should be compared to the basic rates for Occupation Group I. This comparison according to Tables 4 and 5 indicates that values according to the Conference Table are somewhat high at the lower ages. However, at the older ages the Conference Table appears to contain little, if any, margins.

The tabular values according to the Conference Table have been taken at the central age of each age group. The crude rates in columns (7) and (8) of Tables 4 and 5 probably apply at central ages of each 10-year age group, for ages under 60. However, the age group 60–69 presents a special problem. All types of renewal provisions have been combined in

[1] See *Accident and Sickness Insurance*, by J. H. Miller (pp. 125 ff.), for a full discussion of the generalized form of these functions.

Tables 4 and 5, so that policies that expire automatically at age 65, which is a typical age at expiry under noncancelable insurance, have been combined with policies that are renewed at the option of the insurer beyond that age. Consequently, the average age for the age group 60–69 is probably in the neighborhood of age 63 rather than age 65, so that the comparable Conference value would be somewhat below the value shown in column (10) for age group 60–69.

Tables 4 and 5 indicate that both the frequency of accident disability and the amount of disability resulting from accident are considerably higher for Occupation Group II than for Occupation Group I. The higher morbidity among lives in Occupation Group II appears at all ages but is especially important at the lower ages. The relationship between occupation and disability resulting from sickness, as expected, is considerably less important than in the case of accident disability.

In comparing the crude rates from the 1955 to 1957 experience with the corresponding values in the Conference Table, it is important to note that the Conference Table was intended to be a standard for minimum reserves. Consequently, the Conference Table must be expected to provide for certain margins in active life reserves, in view of the "cyclical" nature of disability experience, if it is to be an adequate standard for all companies. Furthermore, the actual experience in Tables 4 and 5 has been based on a period of rather favorable experience, insofar as loss-of-time coverages are concerned, so that it is not surprising to find that actual experience of recent years, based on the combined data of 18 companies, is somewhat below the Conference Table. A more important reason that Tables 4 and 5 should not be viewed as a "test" of the Conference Table is that the experience of all policy years has been combined in the 1955–57 experience. The data compiled by the Committee have been heavily concentrated in the early policy years, so that the morbidity rates based on the aggregate experience do not reflect to any great extent the deterioration in health that necessarily occurs at the longer policy durations.

In order to indicate the effect of increasing duration on the frequencies and amounts of disability, the combined experience of three companies that have been writing noncancelable insurance over a long period has been taken out separately. Variations in the frequencies and amounts of disability with respect to policy duration, on the basis of the experience of these three companies, are illustrated in Table 6, which shows morbidity rates for (*a*) all policy years combined, (*b*) all years excluding the first five policy years and (*c*) all years excluding the first 15 policy years.

Comparison of the morbidity rates in Table 6 for policy years 6 and over with corresponding rates for all policy years combined suggests that

## TABLE 6

ANALYSIS OF NONCANCELABLE INSURANCE BY POLICY DURATION
EXPERIENCE OF THREE COMPANIES

MALE EXPERIENCE — OCCUPATION GROUP I

MAXIMUM BENEFIT PERIOD: ONE YEAR

| Attained Age $x$ | $r_x^e$: Frequency of Disability per 100,000 Lives | | | $s_x^e$: Amount of Disability in Months per 100,000 Lives | | |
|---|---|---|---|---|---|---|
| | All Policy Years (1) | Policy Years 6 and over (2) | Policy Years 16 and over (3) | All Policy Years (4) | Policy Years 6 and over (5) | Policy Years 16 and over (6) |
| | Accident Disability—First Day Policies ($e=1$) | | | | | |
| 20–29 | 5,828 | * | | 3,867 | * | |
| 30–39 | 5,289 | 3,334 | * | 3,215 | 2,528 | * |
| 40–49 | 5,169 | 3,157 | * | 4,544 | 2,877 | * |
| 50–59 | 4,545 | 3,332 | 3,328 | 4,748 | 3,586 | 3,736 |
| 60–69 | 3,419 | 3,107 | 2,811 | 5,148 | 5,058 | 6,700 |
| All Ages | 5,031 | 3,239 | 3,014 | 4,152 | 3,428 | 5,267 |
| | Sickness Disability—First Day Policies ($e=1$) | | | | | |
| 20–29 | (26,119) | * | | (15,918) | * | |
| 30–39 | 33,789 | 24,719 | * | 17,633 | 18,283 | * |
| 40–49 | 21,469 | 18,473 | (12,206) | 20,709 | 17,043 | (18,224) |
| 50–59 | 21,674 | 18,862 | 18,756 | 31,208 | 28,112 | 29,432 |
| 60–69 | 24,836 | 25,034 | 25,498 | 49,256 | 49,649 | 50,843 |
| All Ages | 24,154 | 21,327 | 22,636 | 30,768 | 33,899 | 42,015 |
| | Sickness Disability—Eighth Day Policies ($e=8$) | | | | | |
| 20–29 | 7,956 | * | | 6,290 | * | |
| 30–39 | 6,870 | 4,881 | * | 6,300 | 5,069 | * |
| 40–49 | 8,113 | 7,446 | * | 9,466 | 10,898 | * |
| 50–59 | 11,228 | 10,163 | 10,026 | 17,862 | 18,168 | 14,043 |
| 60–69 | 12,171 | 12,131 | (12,510) | 28,366 | 29,544 | (39,273) |
| All Ages | 8,367 | 8,889 | 10,521 | 10,311 | 15,576 | 23,837 |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

there is a considerable amount of adverse selection under accident insurance. This adverse selection has been reflected in high frequencies of disability during the early policy years and, to a lesser extent, in higher amounts of disability during the early years. The variation in sickness rates with respect to policy year suggests that this class of coverage has also been subject to some degree of adverse selection, at least in the case of first day coverage, but this effect does not appear to be as pronounced as in the case of accident coverage.

In spite of the high initial morbidity rates an increase in the amount of disability at the longer durations is evident at the older ages, an effect which can be attributed to the deterioration of risks under noncancelable insurance. Any valuation standard for loss-of-time coverages should, of course, make appropriate provision for the increased morbidity rates in the later policy years.

An interesting question in this connection is the effect on morbidity rates of the right to refuse renewal. Since the experience data reported to the Committee have been classified with respect to renewal provision, a study of "commercial" policies (*i.e.*, policies subject to reunderwriting after issue) separately from noncancelable insurance can be made. However, a classification of the data with respect to renewal provision is essentially equivalent to a grouping of the data on the basis of insurer: only 6 of the contributing companies write both commercial and noncancelable forms and in practically all of these companies one form of renewal provision predominates. Since, as we have noted, the experience of two separate groups of companies will probably differ markedly, a direct comparison of the morbidity levels under commercial and noncancelable insurance would be impracticable on a basis that would produce meaningful results. The many differences, other than renewal guarantees, in the insurance operations of the contributing companies tend to obscure the effect of renewability on morbidity rates.

While a direct comparison of commercial and noncancelable insurance is impracticable, study of the variations in morbidity rates with respect to policy duration throws some light on comparative emerging costs under the two forms of insurance. In order to compare morbidity trends under commercial insurance with the results for noncancelable insurance in Table 6, we have taken out the experience of one contributing company that has written commercial insurance for many years and has a considerable volume of business in force. This company's experience during 1956 and 1957 with first day sickness benefits under two of its commercial policy forms, designated Policy Forms 1 and 2 in this table, is shown in Table 7. The frequencies and amounts of disability for Policy Form 1 are

shown for (*a*) all policy years combined and (*b*) all policy years, excluding the first 10 policy years; morbidity rates for Policy Form 2, which was introduced in 1942, are shown for policy years 6 and over as well as for all years combined. Policy Forms 1 and 2 provide essentially the same coverage for sickness disability. Policy Form 2, however, provides coverage for medical expenses, while Policy Form 1 does not.

The results in Table 7, which are based on a substantial volume of data, indicate that morbidity rates in this experience have increased slightly with increasing duration, except that the frequencies of disability under Policy Form 1 are actually lower for policy years 11 and over than

TABLE 7

ANALYSIS OF COMMERCIAL SICKNESS INSURANCE
BY POLICY DURATION
EXPERIENCE OF ONE COMPANY

MALE EXPERIENCE — OCCUPATION GROUP I
NO ELIMINATION PERIOD — MAXIMUM BENEFIT PERIOD: ONE YEAR

| Attained Age $x$ | $r_x$: Frequency of Disability per 100,000 Lives | | $s_x$: Amount of Disability in Months per 100,000 Lives | |
|---|---|---|---|---|
| | Policy Form 1 | | | |
| | All Policy Years (1) | Policy Years 11 and over (2) | All Policy Years (3) | Policy Years 11 and over (4) |
| 29 and under | 20,778 | ..... | 13,038 | ..... |
| 30–39 | 23,657 | 17,904 | 14,263 | 14,978 |
| 40–49 | 19,448 | 16,973 | 18,094 | 18,229 |
| 50–59 | 19,846 | 17,803 | 29,329 | 29,699 |
| 60 and over | 25,929 | 24,046 | 42,515 | 41,631 |
| All Ages | 20,558 | 18,235 | 22,823 | 27,332 |
| | Policy Form 2 | | | |
| | All Policy Years (1) | Policy Years 6 and over (2) | All Policy Years (3) | Policy Years 6 and over (4) |
| 29 and under | 19,481 | 17,778 | 14,497 | 15,016 |
| 30–39 | 21,786 | 23,212 | 16,470 | 16,970 |
| 40–49 | 22,365 | 22,829 | 21,042 | 22,071 |
| 50–59 | 24,772 | 25,334 | 33,125 | 34,831 |
| 60 and over | 26,867 | 27,282 | 41,275 | 42,505 |
| All Ages | 23,337 | 24,144 | 25,562 | 27,791 |

for all policy years combined. A more interesting aspect of the results in Table 7, however, is the increase in the amounts of disability (*i.e.*, the $s_x$ values) with respect to age. While these values increase with increasing age, the rate of increase at the advanced ages is considerably less than the corresponding rate of increase for noncancelable insurance, as shown in Table 6.

It is interesting to note from Table 7 that identical sickness disability coverages under Policy Forms 1 and 2, which differ only as to supplementary benefits, can produce markedly different morbidity results in spite of the fact that the two forms were issued by the same insurer under the same underwriting standards. This illustrates the differences in morbidity experience that can be found in two separate blocks of business that might be expected, a priori, to produce similar results.

*Comparison of Female with Male Experience*

Until fairly recently insurance practices generally restricted the loss-of-time coverage available to women. However, within the past few years broader coverages and increased benefits have become available to women. Consequently, there is naturally considerable interest in the disability experience with female risks and the comparison with the male experience. Table 2 shows that most of the data in the current study are based on policies issued to men. There are, however, enough data with respect to female risks to develop crude rates for certain selected elimination periods.

In order to compare the experience on female risks with corresponding experience for male risks we have developed the frequencies of disability and amounts of disability under first day, fourth day and eighth day policies issued to women in Occupation Group I. The results are shown in Tables 8 and 9 together with a comparison of the crude morbidity rates for women with corresponding rates for men. It may be noted that some of the male data submitted by one or two companies may include a small proportion of female lives. However, it is believed that this does not have any material effect on results.

It will be observed from the results in Tables 8 and 9 that the amounts of accident disability under policies issued to women are only slightly higher than for men, while frequencies are actually somewhat less. In the case of sickness coverage with a 7-day elimination period, the frequencies and amounts of disability for women are considerably higher than corresponding rates for men. However, in the case of sickness coverage with no elimination period the frequencies and amounts of disability for female risks are generally only slightly higher than for men.

## TABLE 8

### ANALYSIS OF FREQUENCIES OF DISABILITY BY SEX
### OCCUPATION GROUP I

| ATTAINED AGE $x$ | FEMALE EXPERIENCE $r_x^e$: FREQUENCY OF DISABILITY PER 100,000 LIVES | | | RATIOS OF FEMALE TO MALE RATES | | |
|---|---|---|---|---|---|---|
| | Accident (1) | Sickness (2) | Total Disability (1)+(2) (3) | Accident (4) | Sickness (5) | Total Disability (6) |
| | First Day Policies ($e=1$) | | | | | |
| 20–29 | 3,340 | 22,500 | 25,840 | 68.9% | 93.3% | 89.2% |
| 30–39 | 3,827 | 26,627 | 30,454 | 81.0 | 98.7 | 96.1 |
| 40–49 | 4,257 | 26,316 | 30,573 | 84.9 | 108.4 | 104.4 |
| 50–59 | 5,355 | 32,364 | 37,719 | 117.5 | 130.1 | 128.1 |
| 60–69 | 5,528 | 28,701 | 34,229 | 140.8 | 100.2 | 105.1 |
| All Ages | 4,531 | 27,587 | 32,118 | 97.1% | 109.8% | 107.8% |
| | Fourth Day Policies ($e=4$) | | | | | |
| 20–29 | * | 24,236 | 25,268 | 38.9% | 182.5% | 158.6% |
| 30–39 | (3,267) | 26,106 | 29,373 | 78.3 | 197.1 | 168.6 |
| 40–49 | 3,842 | 21,626 | 25,468 | 98.4 | 153.7 | 141.7 |
| 50–59 | 3,697 | 19,991 | 23,688 | 90.9 | 124.8 | 117.9 |
| 60–69 | 4,386 | 19,671 | 24,057 | 108.3 | 106.6 | 106.9 |
| All Ages | 3,547 | 20,988 | 24,535 | 90.9% | 143.8% | 132.7% |
| | Eighth Day Policies ($e=8$) | | | | | |
| 20–29 | (1,421) | 11,903 | 13,324 | 50.0% | 185.8% | 144.0% |
| 30–39 | 1,996 | 12,858 | 14,854 | 58.8 | 174.2 | 137.9 |
| 40–49 | 3,149 | 15,544 | 18,693 | 80.8 | 164.1 | 139.8 |
| 50–59 | 4,440 | 17,046 | 21,486 | 124.2 | 137.0 | 134.2 |
| 60–69 | * | * | * | ..... | ..... | ..... |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

TABLE 9

ANALYSIS OF AMOUNTS OF DISABILITY BY SEX

OCCUPATION GROUP I — MAXIMUM BENEFIT PERIOD: ONE YEAR

| Attained Age $x$ | Female Experience $s^{f}_{x}$: Amount of Disability in Months per 100,000 Lives | | | Ratios of Female to Male Rates | | |
|---|---|---|---|---|---|---|
| | Accident (1) | Sickness (2) | Total Disability (1)+(2) (3) | Accident (4) | Sickness (5) | Total Disability (6) |
| | First Day Policies ($e=1$) | | | | | |
| 20–29 | 3,016 | 17,754 | 20,770 | 92.5% | 137.3% | 128.3% |
| 30–39 | 3,681 | 16,054 | 19,735 | 116.2 | 98.7 | 101.5 |
| 40–49 | 4,063 | 22,464 | 26,527 | 101.7 | 112.2 | 110.5 |
| 50–59 | 5,215 | 26,676 | 31,891 | 127.4 | 86.5 | 91.3 |
| 60–69 | 6,762 | 47,381 | 54,143 | 149.0 | 104.7 | 108.8 |
| | Fourth Day Policies ($e=4$) | | | | | |
| 20–29 | * | 19,205 | 19,597 | 18.8% | 274.9% | 216.2% |
| 30–39 | (3,561) | 28,109 | 31,670 | 130.6 | 258.6 | 233.0 |
| 40–49 | 5,028 | 27,122 | 32,150 | 145.4 | 175.8 | 170.2 |
| 50–59 | 4,710 | 25,745 | 30,455 | 80.1 | 124.1 | 114.4 |
| 60–69 | 7,645 | 37,973 | 45,618 | 186.1 | 123.6 | 131.0 |
| | Eighth Day Policies ($e=8$) | | | | | |
| 20–29 | (1,825) | 14,051 | 15,876 | 72.2% | 243.3% | 191.2% |
| 30–39 | 2,504 | 15,908 | 18,412 | 70.2 | 225.6 | 173.4 |
| 40–49 | 3,908 | 19,646 | 23,554 | 101.7 | 166.8 | 150.8 |
| 50–59 | 6,023 | 22,500 | 28,523 | 145.8 | 102.9 | 109.7 |
| 60–69 | * | * | * | ..... | ..... | ..... |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

The rather favorable results in Tables 8 and 9 for first day policies issued to women are not in accord with the generally accepted concept that sickness rates for women are higher than corresponding rates for men. However, in interpreting the comparative results for men and women in Tables 8 and 9 it must be borne in mind that there is considerable variation among the contributing companies as to the proportion of business written on women. Consequently, when the experience of all contributing companies is combined, the difference between male and female rates may reflect important differences in insurance operations among the contributing companies as well as basic differences in the morbidity experience of the two classes of risk.

*Claim Termination Experience*

In the study of morbidity experience under individual loss-of-time policies our principal interest is in the amounts of disability (*i.e.*, the $s_x$ values) that have been developed in the preceding sections, since these are the values, when supplemented with experience beyond the first year of the benefit period, that would ultimately set the level of net premiums and active life reserves. We are, however, importantly concerned with the rate of termination of claims. Claim termination rates are also required for valuation of future benefits under admitted claims while they are in course of settlement. Furthermore, claim persistency must be considered when a disability table in a form that provides for all combinations of elimination and maximum benefit periods is developed.

The $s_x$ values developed in the preceding section can be regarded as the product of frequencies and average durations of disability, so that comparison of the $s_x$ values with corresponding $r_x$ values indicates relative average durations. For instance, comparing the values of $s_x$ for first day sickness coverage in Table 5 with corresponding values of $r_x$ in Table 4, we find that the $s_x$ values increase markedly with age while the $r_x$ values are relatively flat. From this comparison we may conclude that, for this class of business, the average period of compensable disability during the first year of the benefit period increases with increasing age. The relative persistency of disability claims can, however, be illustrated much more clearly by the average period of disability per claim. This has been done in Tables 10 and 11.

From Table 10 we may draw certain conclusions with respect to the variations in the average duration of total disability claims:

(i) The average periods of disability generally increase with increasing age. This characteristic, which occurs for all elimination periods and both occupation groups, appears to be more pronounced for sickness disability than for accident disability.

## TABLE 10

AVERAGE PERIODS OF COMPENSABLE DISABILITY PER CLAIM IN MONTHS
MALE EXPERIENCE — MAXIMUM BENEFIT PERIOD: ONE YEAR

| ATTAINED AGE | ACCIDENT | | SICKNESS | | TOTAL DISABILITY | | CONFERENCE TABLE |
|---|---|---|---|---|---|---|---|
| | Occup'n Group I | Occup'n Group II | Occup'n Group I | Occup'n Group II | Occup'n Group I | Occup'n Group II | |
| | First Day Policies ($e=1$) | | | | | | |
| 20–29 | .67 | .78 | .54 | .48 | .56 | .56 | .67 |
| 30–39 | .67 | .90 | .60 | .59 | .61 | .69 | .70 |
| 40–49 | .80 | .98 | .82 | .82 | .82 | .87 | .81 |
| 50–59 | .90 | 1.12 | 1.24 | 1.46 | 1.19 | 1.37 | 1.04 |
| 60–69 | 1.16 | 1.44 | 1.58 | 2.27 | 1.53 | 2.10 | 1.60 |
| All Ages | .83 | .95 | .96 | 1.15 | .94 | 1.09 | |
| | Fourth Day Policies ($e=4$) | | | | | | |
| 20–29 | * | 1.01 | .53 | .71 | .57 | .83 | .69 |
| 30–39 | .65 | .91 | .82 | .93 | .78 | .92 | .72 |
| 40–49 | .89 | .95 | 1.10 | 1.12 | 1.05 | 1.07 | .85 |
| 50–59 | 1.45 | 1.10 | 1.30 | 1.64 | 1.33 | 1.48 | 1.10 |
| 60–69 | (1.02) | .89 | 1.66 | 2.18 | 1.55 | 1.89 | 1.68 |
| All Ages | 1.05 | .98 | 1.15 | 1.24 | 1.13 | 1.15 | |
| | Eighth Day Policies ($e=8$) | | | | | | |
| 20–29 | .89 | 1.12 | .90 | 1.00 | .90 | 1.05 | .79 |
| 30–39 | 1.05 | 1.18 | .96 | 1.10 | .99 | 1.13 | .83 |
| 40–49 | .99 | 1.19 | 1.24 | 1.42 | 1.17 | 1.33 | .99 |
| 50–59 | 1.16 | 1.49 | 1.76 | 1.81 | 1.62 | 1.71 | 1.29 |
| 60–69 | 1.38 | (2.09) | 2.31 | 1.82 | 2.09 | 1.87 | 1.92 |
| All Ages | 1.04 | 1.23 | 1.30 | 1.37 | 1.23 | 1.32 | |
| | Fifteenth Day Policies ($e=15$) | | | | | | |
| 20–29 | (1.49) | (1.09) | 1.06 | .89 | 1.17 | 1.00 | .93 |
| 30–39 | .94 | 1.20 | 1.12 | .97 | 1.07 | 1.07 | 1.00 |
| 40–49 | 1.07 | 1.59 | 1.44 | 1.54 | 1.36 | 1.56 | 1.24 |
| 50–59 | .85 | 1.06 | 1.95 | 2.26 | 1.72 | 1.88 | 1.65 |
| 60–69 | * | * | 1.89 | (1.91) | 1.60 | (1.91) | 2.31 |
| All Ages | .98 | 1.27 | 1.52 | 1.47 | 1.39 | 1.39 | |

* Less than 10 claims.

NOTE.—Averages in parentheses based on 10 to 24 claims, inclusive.

## TABLE 11

AVERAGE PERIODS OF COMPENSABLE DISABILITY
PER CLAIM IN MONTHS
FEMALE EXPERIENCE MAXIMUM BENEFIT PERIOD: ONE YEAR
OCCUPATION GROUP I

| Attained Age | Accident | Sickness | Total Disability | Conference Table |
|---|---|---|---|---|
| | First Day Policies ($e=1$) | | | |
| 20–29 | .90 | .79 | .80 | .67 |
| 30–39 | .96 | .60 | .65 | .70 |
| 40–49 | .95 | .85 | .87 | .81 |
| 50–59 | .97 | .82 | .85 | 1.04 |
| 60–69 | 1.22 | 1.05 | 1.58 | 1.60 |
| All Ages | .99 | .90 | .91 | |
| | Fourth Day Policies ($e=4$) | | | |
| 20–29 | * | .79 | .78 | .69 |
| 30–39 | (1.09) | 1.08 | 1.08 | .72 |
| 40–49 | 1.31 | 1.25 | 1.26 | .85 |
| 50–59 | 1.27 | 1.29 | 1.29 | 1.10 |
| 60–69 | 1.74 | 1.93 | 1.90 | 1.68 |
| All Ages | 1.33 | 1.30 | 1.30 | |
| | Eighth Day Policies ($e=8$) | | | |
| 20–29 | (1.28) | 1.18 | 1.19 | .79 |
| 30–39 | 1.25 | 1.24 | 1.24 | .83 |
| 40–49 | 1.24 | 1.26 | 1.26 | .99 |
| 50–59 | 1.36 | 1.32 | 1.33 | 1.29 |
| 60–69 | * | * | * | 1.92 |
| All Ages | 1.27 | 1.26 | 1.26 | |

* Less than 10 claims.

NOTE.—Averages in parentheses based on 10 to 24 claims, inclusive.

(ii) Disability claims appear to be somewhat more persistent in the case of women than for men.
(iii) Claims under policies issued to persons in Occupation Group II appear to be more persistent than claims under corresponding policies in Occupation Group I.
(iv) Sickness claims on men at the higher ages appear to be somewhat more persistent than accident claims at the same age.

The results in Tables 10 and 11, and the conclusions from them, have been based on the aggregate termination experience of claims during the first year of the benefit period. Consequently, these results do not provide any information with respect to the relative claim termination rates during shorter periods within the first year of disability.

In order to examine the termination experience within the first year of the benefit period and to study the effect of an elimination period on claim persistency, a special analysis was made on the basis of the detail records of claims included in the three-year experience.

The detail claim records were first classified by type of coverage, occupation group, elimination period and age group at disability. As in the case of the frequencies and amounts of disability in Tables 4 and 5, claims were merged for the persistency study without regard to the type of renewal provision in the policies under which the claims were incurred. In order to obtain information with respect to claim termination rates within the first year of the benefit period the detail claim records were further classified with respect to duration of disability at the time of discontinuance of benefits. This duration was calculated for each claim as the sum of (*a*) the elimination period and (*b*) the number of days of compensable disability. The detail claim records were then classified with respect to this duration of disability in the following groups:

*a*) first 7 days of disability,
*b*) the 8th to the 14th days of disability, inclusive,
*c*) the 15th to the 30th days of disability, inclusive, and
*d*) the 31st and later days of disability.

The tabulation of benefits on claims grouped in this way made it possible to determine, from the experience with coverage subject to elimination period $e$, the frequencies and amounts of disability for coverage with elimination period $e'$, provided $e' \geqq e$.

The frequencies of disability shown in Table 12 are obtained merely by determining the proportion of claims that persist to duration of disability $e'$. In order to derive the amounts of disability applicable to elimination period $e'$, it is first necessary to allocate the amounts of disability

under elimination period $e$ to the above periods. From this allocation of the amounts of disability for elimination period $e$, the amounts of disability applicable to elimination period $e'$ and a one-year maximum benefit period were developed without approximation except for the assumption that claims completing the first year of the original benefit period also complete the one-year maximum benefit period measured from the end of the elimination period $e'$. The error introduced by this assumption is probably very small in view of the short duration and small proportion of claims for which the assumption is made. The results of this calculation are shown in Table 13 for men in Occupation Group I.

The results in this table indicate that the termination experience under policies subject to an elimination period is quite different from the termination experience during the same period of disability under policies providing first-day benefits. In fact, Tables 12 and 13 indicate that the higher benefit costs under first-day policies as compared to policies subject to an elimination period consist not only of benefits during the first 7 days of disability but also higher benefit costs extending beyond the 7th day of disability. This characteristic appears much more noticeable in the case of sickness disability than for accident disability. In this respect experience under individual accident and sickness policies seems to be analogous to experience under group weekly indemnity coverage.[2]

The distinctly different experience under coverages with different elimination periods may be due to adverse selection at issue of policies providing first-day benefits or with a short elimination period. On the other hand, the differences in claim persistency may result from a tendency for certain claimants to continue on disability once benefits have been approved.

*Conclusion*

In this report the Committee has not attempted to present a comprehensive study of experience with individual loss-of-time coverages. The data that have been assembled to date are still inadequate for many of the investigations that the Committee hopes eventually to make. In addition to studies of disability lasting beyond twelve months, morbidity rates on the basis of number of policies as compared to rates based on amount of monthly income, the comparison of experience with various types of renewal provisions, and further information on the variation in morbidity rates with respect to policy duration will be important areas for further study as the morbidity data become available.

[2] See *TSA* III, 31 ff.

## TABLE 12

DERIVED FREQUENCIES OF DISABILITY PER 100,000 ACTIVE LIVES FOR ELIMINATION PERIOD $e$
MALE EXPERIENCE — OCCUPATION GROUP I

| ATTAINED AGE | ACCIDENT | | | SICKNESS | | | TOTAL DISABILITY | | |
|---|---|---|---|---|---|---|---|---|---|
| | Elimination Period of Policies on Which Experience Based | | | Elimination Period of Policies on Which Experience Based | | | Elimination Period of Policies on Which Experience Based | | |
| | None | 7 Days | 14 Days | None | 7 Days | 14 Days | None | 7 Days | 14 Days |
| | $e=7$ Days | | | | | | | | |
| 20–29 | 3,105 | 2,844 | ..... | 15,765 | 6,407 | ..... | 18,870 | 9,251 | ..... |
| 30–39 | 3,070 | 3,393 | ..... | 19,606 | 7,378 | ..... | 22,676 | 10,771 | ..... |
| 40–49 | 3,633 | 3,897 | ..... | 18,698 | 9,475 | ..... | 22,331 | 13,372 | ..... |
| 50–59 | 3,456 | 3,575 | ..... | 20,895 | 12,440 | ..... | 24,351 | 16,015 | ..... |
| 60–69 | 3,061 | 3,720 | ..... | 24,288 | 12,292 | ..... | 27,349 | 16,012 | ..... |
| | $e=14$ Days | | | | | | | | |
| 20–29 | 1,872 | 2,332 | 1,033 | 6,819 | 4,926 | 2,987 | 8,691 | 7,258 | 4,020 |
| 30–39 | 1,860 | 2,724 | 1,231 | 9,791 | 5,957 | 3,313 | 11,651 | 8,681 | 4,544 |
| 40–49 | 2,351 | 3,226 | 1,582 | 11,057 | 8,063 | 5,258 | 13,408 | 11,289 | 6,840 |
| 50–59 | 2,259 | 3,036 | 1,887 | 13,750 | 10,873 | 7,314 | 16,009 | 13,909 | 9,201 |
| 60–69 | 2,137 | 3,302 | 3,369 | 17,899 | 10,685 | 14,035 | 20,036 | 13,987 | 17,404 |
| | $e=30$ Days | | | | | | | | |
| 20–29 | 852 | 1,181 | 625 | 2,341 | 2,200 | 2,084 | 3,193 | 3,381 | 2,709 |
| 30–39 | 825 | 1,315 | 648 | 3,373 | 2,934 | 1,850 | 4,198 | 4,249 | 2,498 |
| 40–49 | 1,167 | 1,623 | 964 | 4,731 | 4,595 | 3,615 | 5,898 | 6,218 | 4,579 |
| 50–59 | 1,089 | 1,402 | 842 | 7,685 | 6,911 | 5,553 | 8,774 | 8,313 | 6,395 |
| 60–69 | 1,164 | 1,799 | 615 | 11,352 | 7,522 | 12,006 | 12,516 | 9,321 | 12,621 |

## TABLE 13

DERIVED AMOUNTS OF DISABILITY PER 100,000 ACTIVE LIVES FOR ELIMINATION PERIOD $e$
MALE EXPERIENCE — OCCUPATION GROUP I

| ATTAINED AGE | ACCIDENT | | | SICKNESS | | | TOTAL DISABILITY | | |
|---|---|---|---|---|---|---|---|---|---|
| | Elimination Period of Policies on Which Experience Based | | | Elimination Period of Policies on Which Experience Based | | | Elimination Period of Policies on Which Experience Based | | |
| | None | 7 Days | 14 Days | None | 7 Days | 14 Days | None | 7 Days | 14 Days |
| | $e$=7 Days | | | | | | | | |
| 20–29 | 2,510 | 2,529 | ..... | 9,420 | 5,776 | ..... | 11,930 | 8,305 | ..... |
| 30–39 | 2,400 | 3,567 | ..... | 12,720 | 7,052 | ..... | 15,120 | 10,619 | ..... |
| 40–49 | 3,230 | 3,844 | ..... | 16,740 | 11,775 | ..... | 19,970 | 15,619 | ..... |
| 50–59 | 3,390 | 4,131 | ..... | 27,660 | 21,863 | ..... | 31,050 | 25,994 | ..... |
| 60–69 | 3,890 | 5,137 | ..... | 41,540 | 28,394 | ..... | 45,430 | 33,531 | ..... |
| | $e$=14 Days | | | | | | | | |
| 20–29 | 1,960 | 2,220 | (1,536) | 6,250 | 4,750 | 3,156 | 8,210 | 6,970 | 4,692 |
| 30–39 | 1,830 | 3,120 | 1,163 | 9,030 | 5,920 | 3,703 | 10,860 | 9,040 | 4,866 |
| 40–49 | 2,580 | 3,370 | 1,696 | 13,440 | 10,310 | 7,597 | 16,020 | 13,680 | 9,293 |
| 50–59 | 2,760 | 3,530 | 1,607 | 24,180 | 19,850 | 14,254 | 26,940 | 23,380 | 15,861 |
| 60–69 | 3,350 | (4,260) | * | 38,150 | 26,100 | 26,503 | 41,500 | 30,360 | 27,839 |
| | $e$=30 Days | | | | | | | | |
| 20–29 | 1,350 | 1,560 | (990) | 3,460 | 3,180 | 2,860 | 4,810 | 4,740 | 3,850 |
| 30–39 | 1,190 | 2,330 | 890 | 4,980 | 4,150 | 2,750 | 6,170 | 6,480 | 3,640 |
| 40–49 | 1,800 | 2,480 | 1,190 | 9,380 | 7,780 | 5,860 | 11,180 | 10,260 | 7,050 |
| 50–59 | 1,970 | 2,300 | 1,180 | 19,610 | 16,250 | 11,750 | 21,580 | 18,550 | 12,930 |
| 60–69 | 2,570 | (2,670) | * | 33,350 | 22,520 | 20,600 | 35,920 | 25,190 | 20,900 |

* Less than 10 claims.

NOTE.—Rates in parentheses based on 10 to 24 claims, inclusive.

# APPENDIX

*Instructions for Companies Contributing to the 1956 Study*

The study of 1956 experience, like the 1955 study, will cover total disability benefits provided by individual policies. Accordingly, the instructions for the 1955 study, distributed to interested companies with Mr. Roy Anderson's letter of July 13, 1956, will, in general, apply to the 1956 study. However, on the basis of the Committee's experience with the contributions to the 1955 study, it has been decided to make the following minor modifications in the procedures for preparation of contributions to the study:

1. *Period of disability studied*

   In compiling data for the study of 1955 experience, claims were traced throughout the first two years of the benefit period. This required a special valuation of claims open on the "inventory date" in order to report complete data with respect to benefits incurred. Benefit data reported on both the individual claim cards and the exposure summary cards related to the first two years of the benefit period so that the claim data reported on the exposure summary card represented a summarization of the corresponding fields of the individual claim cards.

   In order to simplify the treatment of claims open on the "inventory date" without sacrificing valuable information, we have made two changes in this procedure for the study of 1956 experience. For the purpose of claim data to be reported on the exposure summary card claims will be traced only throughout the first full year of the benefit period. Accordingly, in compiling the data it will be necessary to make a special valuation only of claims that are open and in the first year of the benefit period on the "inventory date." The estimated future period of disability to be allowed, and the corresponding future benefits to be paid under them, will be based on the assumption that such claims provide a maximum benefit period of one year. However, in order that the Committee may develop complete data on claims, the total benefits allowed on closed claims, and the corresponding period of disability, will be reported on the individual claim cards. Thus, under the revised procedure, the claim data reported on the exposure summary cards will not represent a summarization of the individual claim cards since the latter would include benefit periods in excess of one year.

2. *Grouping data by age for the exposure summary card*

   The instructions for the 1955 study gave contributing companies the option of grouping exposures and claims on the exposure summary cards either in 5 year or 10 year attained age groups. Practically all companies contributing to the 1955 study grouped their data in 5 year attained age groups. Accordingly, in order to simplify the development of experience for all companies combined, the Committee has decided to make that system

the standard procedure for the 1956 and future studies. Under this revised procedure field 16 (column 27) of the exposure summary card will be left blank and the attained age group will be identified in field 17 (columns 28–29). The coding and punching instructions for the exposure summary card describe the type of attained age grouping that is desired.

3. *Year of observation*

   The instructions for the study of 1955 experience gave contributing companies the option of reporting either their experience during the calendar year 1955 or during the policy year ending on 1955 anniversaries. All but one of the companies contributing to the 1955 study reported their experience during the calendar year. Accordingly, the Committee has decided to make the report of experience during the calendar year the standard procedure so that field 14 (column 24) of the exposure summary card may be left blank.

4. *Report of total duration of disability on exposure summary cards*

   The revised instructions for the study of 1956 and future experience call for reporting the total number of days of disability for which payments are made, in columns 67–72 of the exposure summary card. As noted above, this total period of indemnity will exclude any period of disability under individual claims after the first full year of the benefit period.

   This reporting of total periods of compensable disability will greatly assist the Committee in developing net annual claim costs on the basis of number of policies (i.e., without weighting policies and claims by the monthly rate of benefit) as well as on the basis of benefits incurred.

5. *Amounts of indemnity in units of monthly rate*

   In order to simplify the work involved in producing the consolidated data, contributing companies that write policies in units of weekly benefit are requested to convert such amounts to the corresponding monthly rate of benefit for fields 19 and 22 of the exposure summary card and field 19 of the claim card.

The scope of the Society's study of 1956 experience will be as follows:

*Types of Policies and Benefits to Be Studied*

A. *Renewal Provisions*—The study includes the traditional types of commercial and non-cancellable policies, as well as policies issued with some of the newer forms of renewal provisions. The experience under policies with these various types of renewal provisions will be studied separately. Column 10 of the exposure and claim cards will be used to identify the type of renewal provision in each class.

B. *Benefits*—The study covers the experience under the total disability benefit. The experience will be studied separately for (a) accident total disability and (b) sickness total disability. For this reason, separate exposure summary cards are needed for accident benefits and the sickness benefits. Thus, *two* exposure summary cards are required for a policy providing combined acci-

dent and sickness total disability benefits—one for accident data and one for sickness.

C. *Benefit Periods*—Policies providing total disability benefits of one year duration or more will be studied.

D. *House Confinement Policies Not Studied*—Policies which do not pay full benefits for sickness regardless of house confinement should be excluded from the sickness portion of the study.

E. *Partial Disability*—Policies providing partial disability benefits for accident and sickness will be included in the study. However, the claim data for such policies will include only the payments and durations applicable to the total disability benefit; the payments and durations applicable to the partial disability benefit will *not* be included in the claim data.

F. *Aggregate Indemnity Policies*—Policies providing total disability benefits subject to an aggregate limit *will* be included in the study. However, the contributing company should advise the Committee of the policy forms which are subject to this provision and should identify the experience under such policies by using field 5 (columns 7–9) (i.e., the columns which have been reserved for policy form identification on the exposure and claim cards).

G. *Experience on Old Business Wanted*—Data for calendar years 1956 and later are desired not only on recently issued business, but also on those policies of longer durations which may have been issued under policy forms no longer being used.

*Preparation and Submission of Contributions*

Data will be submitted annually on October 31 for the experience of the preceding calendar year. The experience will be reported on two punch card files: (a) exposure summary cards, a file of "total" or summary cards representing the aggregate experience in each category of policy, or "cell," under observation during the year, and (b) claim cards, a file of detail cards, with one card for each claim incurred during the year of experience.

A. *Exposure Cards*—As noted above, separate exposure cards will not be submitted for each policy exposed during the calendar year of study. Instead, exposure summary cards will be prepared for each combination of the following items:

| Field | Columns | Item |
|---|---|---|
| 4 | 6 | Type of Coverage |
| 5* | 7–9 | Policy Form Code |
| 6 | 10 | Type of Renewal Provision |
| 7 | 11–12 | Age at Expiration of Coverage |
| 8 | 13 | Sex |
| 9 | 14 | Occupational Manual |
| 10 | 15–16 | Occupational Class |
| 11 | 17–18 | Elimination Period |
| 12 | 19–21 | Maximum Duration of Total Disability Benefits |
| 13 | 22–23 | Year of Issue |
| 17 | 28–29 | Attained Age |

* Applicable only to companies using this field to identify specific classes of business (see Section G).

The number of policy years exposed (field 20) and the amount of monthly indemnity exposed (field 19) may be obtained by taking the mean of the number of policies, and corresponding amount, in force at the beginning and end of the calendar year. Alternatively, a classification of policies in force June 30 could be used as the basis for the exposure, or some other method could be used to obtain the aggregate exposure in each "cell."

No data should be submitted for policies dated in the calendar year for which experience is submitted (i.e., "0" duration data would be omitted). Thus, in reporting the 1956 experience, the experience under policies dated 1956 would be excluded.

The claim data reported in fields 21, 22, 23 and 24 of the exposure summary card would represent a summarization of the appropriate fields on the claim card file for claims incurred during the calendar year of experience, but excluding periods of disability and benefits allowed after the first year of the benefit period.

B. *Claim Card*—A detail card will be prepared for each claim (a) incurred during the year of experience or (b) incurred during a prior year for which your company's experience was reported and closed prior to the inventory date but after the next prior inventory date.

In order that claim data may be as complete as possible, it is suggested that claims be traced to the latest "inventory date" possible prior to the reporting date of October 31. If possible, benefits reported on the exposure summary and claim cards should include payments actually made to September 30 following the year of experience. An earlier "inventory date" may be used, if such earlier date would be more practical for the individual company's operations. However, utilizing a date earlier than June 30 as the "inventory date" may result in an undue number of "open claims" and thus be undesirable.

In the case of claims closed prior to the inventory date, the amount of indemnity incurred and duration of disability reported in fields 22 and 23 would represent the total benefits allowed under the claim. For claims open and in the first year of the benefit period on the inventory date, it is necessary to make a valuation of the prospective period of disability and benefits expected to be incurred during the balance of the first year of the benefit period. The amount of indemnity and duration of disability for fields 22 and 23 of the claim card for such claims would then represent the sum of (a) the benefits incurred prior to the inventory date and (b) the prospective benefits during the balance of the first year of the benefit period. It should be noted that the amount of indemnity incurred prior to the inventory date would be the sum of (a) benefits paid and (b) any unpaid benefits accrued prior to that date. Similarly, the duration of disability incurred prior to the inventory date for field 23 would be the entire period from the first day of the benefit period to the inventory date rather than simply the period for which benefits had actually been paid.

In order that the Committee may compile complete claim data on which

to base persistency tables, it is necessary to provide for the reporting of total benefits and corresponding periods of disability when claims that are open on the inventory date are ultimately closed. Special status codes for column 39 of the claim card have been established to identify claims incurred prior to the calendar year for which experience is reported. Code 3 in this column is used for the final report of the closing of such a claim.

Code 4 in column 39 has been established to provide for the reporting of complete data on closed claims, previously reported as closed but since reopened for further benefits. When a claim is finally reported as closed under status code 4, a "reversal" card should also be submitted in order to reverse the prior report of the claim. This reversal card would be identical to the previously reported claim card except that it would be coded 4 and "x" punched in column 39 to identify it as a reversal card. The Committee's record of the claim would then represent the total experience under the claim.

When the detail record of claims is applied to develop claim persistency tables for periods of disability after the first year, it will be necessary to supplement the record of closed claims with a record of claims open at durations of disability beyond the first year. The Committee anticipates that data on open claims will be requested from contributing companies periodically (for instance, every 3 years) in order that claim termination studies may be made. The reporting of detail data on closed claims incurred prior to the year of experience is being requested in order to simplify the compilation of data required for claim persistency studies by limiting the special data for such studies to open claims.

In view of the different bases for reporting claim data on the exposure summary and claim cards and the change in this respect in the instructions, the treatment of each type of claim has been outlined in the table [on page 154] to summarize these instructions.

*Successive Periods of Disability*—If, following a period of disability for which benefits are allowed, a second period of disability is incurred under the same policy, the second period would be considered a reopening of the original claim only if the two periods combined are treated as one continuous period of disability for the purpose of applying waiting period and maximum periods of indemnity. If the second period of disability is treated as a separate claim in the determination of benefits, it would not be reported as a reopening of the original claim but would be reported as a completely separate claim. In this case the date of incurral of the second claim would be taken as the first day of disability in the second period of disability.

C. *Substandard*—If practicable, policies issued at extra premiums to persons who are substandard for medical reasons should be excluded from the study. (For most companies, such policies will probably constitute only a minor proportion of the total business, and this refinement could be ignored.) Policies issued at standard premiums with a medical impairment rider should be included in the study.

D. *Non-occupational*—Policies issued on a non-occupational basis should be included in the study for the occupational class for which the premium charge is applicable (for most companies, the most favorable occupational class).

E. *Deviations from Plan*—Each contributing company should conform to the instructions, unless special permission to deviate from them is received from the Committee. The Committee may not have anticipated all of the problems which may arise in individual companies and would welcome the opportunity to discuss any special problems with contributing companies.

F. *Contributions on Sample Basis*—Some companies may find it impracticable to submit all of their data under existing policies (e.g., certain data may not be available on the valuation cards of some blocks of business). However,

SUMMARY OF INSTRUCTIONS
CLAIM DATA TO BE REPORTED ON EXPOSURE SUMMARY CARD AND ON CLAIM CARD

| Status of Claim on Inventory Date | Period for Which Benefits Are Paid or Payable* | Data To Be Included on Exposure Summary Card (1) | Data To Be Reported on Claim Card (2) |
|---|---|---|---|
| | Claims Incurred in Calendar Year of Experience | | |
| 1. Closed | Not more than 12 months | Total period of disability and corresponding benefit amount | Same as col. (1) |
| 2. Closed | More than 12 months | 365 days of disability and corresponding benefit amount | Total period of disability and total benefits paid |
| 3. Open | Not more than 12 months | Total period of disability* and corresponding benefit amount† | Same as col. (1) |
| 4. Open | More than 12 months | Same as line (2) | Same as col. (1) |
| | Claims Incurred Prior to the Year of Experience | | |
| 5. Closed | All periods | Not included | Total period of disability and corresponding benefit amount |
| 6. Open | All periods | Not included | Not reported until closed or requested for persistency study |

* Including period of estimated future disability in the case of claims open on inventory date.

† Including the sum of benefits accrued and unpaid on the inventory date and estimated future benefits

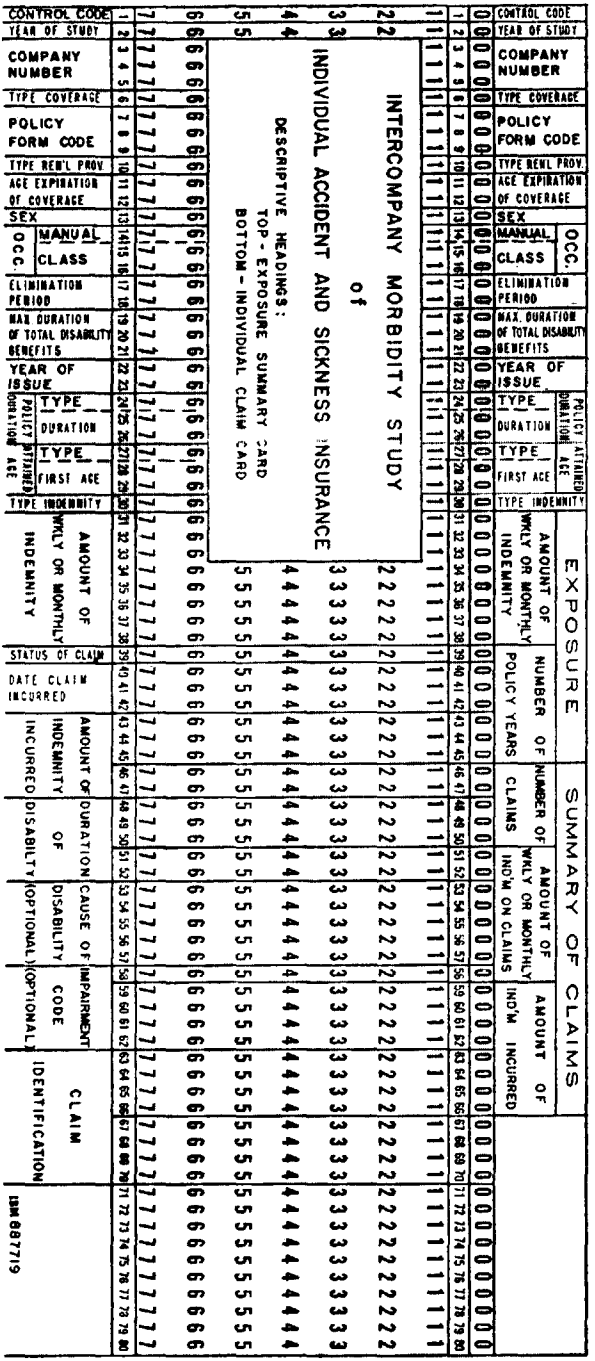
where data are submitted on given blocks of business, all of such data should be submitted where possible. That is, the contributing company should not submit data on a sample basis, except for companies which have a large volume of experience and which have reached agreement with the Committee as to the method of obtaining data on a sample basis.

G. *Identification of Blocks of Business* (Optional)—Each company may, at its option, separate the data for given blocks of its business where the benefits are the same, but where morbidity experience is expected to be different because of different underwriting techniques or for other reasons. For instance, a company may issue the same benefits on two bases: (1) as a separate policy and (2) as a policy issued in conjunction with life insurance. Where data for given blocks of business are separated and identified in field 5 (columns 7–9), the Committee should be advised of the reason for the separation. Some companies with a large volume of business in force may wish to limit their contributions to the experience under certain of their policy forms. (Strictly speaking, these would not be "samples" because all of the data for such policy forms would be contributed to the Committee.) Such blocks of business could be identified by use of field 5.

H. *Retain Duplicate File*—Each company should keep a duplicate file of the exposure and claim cards that are submitted to the Committee. Cards could be lost in transit. Also, a company may be asked to use their file of duplicate cards to reconcile inconsistencies found by the Committee.

# EXPOSURE SUMMARY CARD AND CLAIM CARD
FORM IBM 887 719

*Coding Procedure*



| Field | Columns | Item |
|---|---|---|
| | | *Exposure Summary Card* |
| 1 | 1 | Type of Card |
| 2 | 2 | Year of Experience |
| 3 | 3–5 | Company Code Number |
| 4 | 6 | Type of Coverage |
| 5 | 7–9 | Policy Form Code |
| 6 | 10 | Type of Renewal Provision |
| 7 | 11–12 | Age at Expiration of Coverage |
| 8 | 13 | Sex |
| 9 | 14 | Occupational Manual |
| 10 | 15–16 | Occupational Class |
| 11 | 17–18 | Elimination Period |
| 12 | 19–21 | Maximum Duration of Total Disability Benefits |
| 13 | 22–23 | Year of Issue |
| 14 | 24 | Skip this field |
| 15 | 25–26 | Policy Duration |
| 16 | 27 | Skip this field |
| 17 | 28–29 | Attained Age |
| 18 | 30 | Skip this field |
| 19 | 31–38 | Amount of Monthly Indemnity Exposed |
| 20 | 39–45 | Number of Policy Years Exposed |
| 21 | 46–50 | Number of Claims |
| 22 | 51–58 | Amount of Monthly Indemnity on Claims |
| 23 | 59–66 | Amount of Indemnity Incurred |
| 24 | 67–72 | Total Period of Indemnity on Claims |
| | | *Claim Card* |
| 1 | 1 | Type of Card |
| | | Fields 2 to 18, inclusive, same as Exposure Summary Card |
| 19 | 31–38 | Amount of Monthly Indemnity |
| 20 | 39 | Status of Claim |
| 21 | 40–42 | Date Claim Incurred |
| 21a | 40 | Month of Incurral |
| 21b | 41–42 | Year of Incurral |
| 22 | 43–47 | Amount of Indemnity Incurred |
| 23 | 48–52 | Duration of Disability |
| 24 | 53–57 | Cause of Disability (Optional) |
| 25 | 58–62 | Impairment Code (Optional) |
| 26 | 63–70 | Claim Identification |

## EXPOSURE SUMMARY CARD

### *Coding Procedure*

| Field | Columns | Description of Field |
|---|---|---|
| 1 | 1 | *Type of Card*<br>This field will be punched "1" to identify the card as an Exposure Summary Card. |
| 2 | 2 | *Year of Experience*<br>Last digit of calendar year for which experience is reported. Thus, contributions submitted in 1957 for the year 1956 would be coded "6." |
| 3 | 3–5 | *Company Code Number*<br>Company code numbers assigned in connection with other Society studies will apply to the Intercompany individual accident and sickness study. Companies that have not participated in such studies will be assigned code numbers. |
| 4 | 6 | *Type of Coverage*<br>Code<br>1 Accident coverage where policy provides for accident only total disability benefits.<br>2 Sickness coverage where policy provides for sickness only total disability benefits.<br>3 Accident coverage where policy provides both accident and sickness total disability benefits.<br>4 Sickness coverage where policy provides both accident and sickness total disability benefits.<br>Where both accident and sickness benefits are included under one policy, separate Exposure Summary cards will be prepared for (a) the accident coverage and (b) the sickness coverage. |
| 5 | 7–9 | *Policy Form Code*<br>These columns may be used at the option of the company to identify the exposures and claims of specific policy forms (e.g., to be consistent with the Policy Form Exhibit). Companies issuing the same types of benefits under different policy forms and with different underwriting techniques are encouraged to separate the exposures for these different policies. If this is done, the Committee should be advised of the reasons for such separations and the policy form codes which are involved. |

| Field | Columns | Description of Field |
|---|---|---|
| 6 | 10 | *Type of Renewal Provision* |

Code

1 Policies which are guaranteed renewable to a specified age, such as 60 or 65, and for which the company does *not* reserve the right to change the scale of premiums (that is, the traditional type of non-cancellable policy).

2 Policies which are guaranteed renewable to a specified age, such as 60 or 65, and for which the company *does* reserve the right to change the scale of premiums.

3 Policies in which the insurer has reserved the right to cancel or refuse renewal for one or more reasons, but has agreed implicitly or explicitly that, prior to a specified age, such as 60 or 65, it will not cancel or decline renewal solely because of deterioration of health occurring after issue.

4 Franchise policies or certificates issued under or subject to an agreement that, except for stated reasons, the insurer will not cancel or refuse to renew the coverage of individual insureds prior to a specified age, not less than 60, unless all coverage under the same group is terminated.

5 Level premium commercial policies not falling within classes 1 to 4 on which premiums are graded by age or age group at issue, but do not normally increase during the continuance of the policy.

6 Step-rate commercial policies not falling within classes 1 to 4, on which renewal premiums are increased at the same age or ages at which premiums are increased for new issues.

7 Other policies issued with renewal provisions which do not fall within classes 1 to 6 (e.g., a policy which becomes non-cancellable after two policy years would warrant special classification). The Committee should be advised of the type of renewal provision.

7 11–12 *Age at Expiration of Coverage*

Record the limiting age of coverage specified in the policy, even though the policy may be continued by company policy, to some more advanced age. If there is no expiry age specified in the policy, punch 99.

8 13 *Sex*

| Code | Sex |
|---|---|
| 1 | Male |
| 2 | Female |
| 5 | Male and Female combined |

9 14 *Occupational Manual*

Each contributing company that has not already done so will supply the Committee with two copies of its occupational manual or manuals. The face of the manual should be identified with a number corresponding to the code used in this column. In the event that a company has used more than one manual, the earliest manual should be coded "1" and later manuals numbered consecutively. Companies which have used essentially only one manual should code this column "1."

| Field | Columns | Description of Field |
|---|---|---|
| 10 | 15–16 | *Occupational Class*<br>Each company should code according to its own manual, with the most favorable class being coded "1." (e.g., companies using the Bureau Manual would code classes C, D* and D as 3, 4 and 5, respectively.) The Committee expects to develop tables reflecting the experience for major occupational classes. |
| 11 | 17–18 | *Elimination Period*<br>Record the number of days in the elimination period (e.g., 07 for one week and 15 for 15 day elimination periods). Code first day coverage as 00. A policy with an elimination period greater than 90 days (or 3 months) should not be included in the study. Care should be taken not to duplicate the code number on both the accident and sickness exposure cards for the same policy form if the elimination period for accident differs from that for sickness. |
| 12 | 19–21 | *Maximum Duration of Total Disability Benefits*<br>Code maximum number of *months* for total disability benefits. Code 999 for lifetime benefits. Here again, the accident exposure card should be coded separately from the sickness card.<br>Where the maximum duration of benefits telescopes as the age of termination is approached (e.g., as is often the case at age 65 under non-can policies providing benefits of more than two years), the longer duration applicable at the younger ages should be coded at the higher ages, even though the maximum duration has actually decreased. The Committee should be advised of the policy forms under which such telescoping benefits are in effect.<br>In the case of policies that provide benefits to a fixed age, or to a specific policy anniversary identified by the insured's attained age, punch "8" in column 19 and the age at expiry of the benefit period in columns 20 and 21. Thus "865" in this field would identify a benefit payable during disability but not beyond insured's age 65 (or not beyond policy anniversary on which insured's age, nearest birthday, is 65). |
| 13 | 22–23 | *Year of Issue*<br>Last two digits of the year of issue. |
| 14 | 24 | Skip this field |
| 15 | 25–26 | *Policy Duration*<br>Record the mean policy duration in 1956 (i.e., 56 less field 13). |
| 16 | 27 | Skip this field |

| Field | Columns | Description of Field |
|---|---|---|
| 17 | 28–29 | *Attained Age*<br><br>It is requested that exposures during 1956 be classified in the following 5 year attained age groups: 15–19, 20–24, 25–29, etc. The age group will be identified by recording in this field the lowest age in the group. Thus "15" punched in this field would identify age group 15–19.<br>Exposures will be classified in the above groups on the basis of the attained age on 1956 anniversary. |
| 18 | 30 | Skip this field |
| 19 | 31–38 | *Amount of Monthly Indemnity Exposed*<br><br>Record the total amount of monthly indemnity exposed, to the nearest dollar. In the case of policies under which the "face amount" of benefit is expressed as a weekly rate of benefit, rather than a monthly rate, please convert to a monthly rate by multiplying the weekly benefit by 4.35. |
| 20 | 39–45 | *Number of Policy Years Exposed*<br><br>The number of policies exposed during the year should be obtained in a manner consistent with the method used to obtain the total amount of indemnity exposed. Code to the nearest integral number of policy years exposed. |
| 21 | 46–50 | *Number of Claims*<br><br>This is a card count of the claims incurred during the year of experience. |
| 22 | 51–58 | *Amount of Monthly Indemnity on Claims*<br><br>Total of columns 31–38 from the individual claim cards included in field 21. |
| 23 | 59–66 | *Amount of Indemnity Incurred*<br><br>Total of columns 43–47 from the claim cards included in field 21, excluding benefits paid for periods of disability after the first year of the benefit period. |
| 24 | 67–72 | *Total Period of Indemnity on Claims*<br><br>Total of columns 48–52 on claims included in field 21, excluding periods of disability after the first year of the benefit period. |

## CLAIM CARD

*Coding Procedure*

| Field | Columns | Description of Field |
|---|---|---|
| 1 | 1 | *Type of Card*<br>This field will be punched "2" to identify the card as a Claim Card. |

* * *

The coding and punching instructions described for fields 2 to 18, inclusive, of the Exposure Summary Card apply to the corresponding fields of the Claim Card, except that in field 17 the attained age on the 1956 anniversary (nearest birthday) would be recorded, instead of simply identifying the age group as in the case of exposure cards.

* * *

| | | |
|---|---|---|
| 19 | 31–38 | *Amount of Monthly Indemnity*<br>Record the monthly rate of indemnity on the policy under which claim is approved. In the case of policies under which the "face amount" of benefit is expressed as a weekly rate of benefit rather than a monthly rate, please convert to a monthly rate by multiplying the weekly benefit by 4.35. |
| 20 | 39 | *Status of Claim*<br>Code — Status<br>*Claims incurred in year of experience (field 2)*<br>1 Closed prior to inventory date<br>2 Open on inventory date<br>*Claims incurred prior to year of experience*<br>3 Closed, not previously reported closed<br>4* Closed, previously reported closed |
| 21 | 40–42 | *Date Claim Incurred*<br>Use date of commencement of disablement (i.e., beginning of the elimination period) as date of incurral. |
| 21a | 40 | *Month of Incurral*<br>Record calendar month of incurral (e.g., code January as "1," etc.). Identify October, November and December by "0," "x" and "y," respectively. |
| 21b | 41–42 | *Year of Incurral*<br>Record the last two years of the calendar year of incurral. |

* This code would apply to reopened claims when closed. Claim cards for status code 4 should be accompanied by a second card (coded 4 and "x" in col. 39) for reversal of status of claim as originally reported closed (see instructions for preparation of contributions).

| Field | Columns | Description of Field |
|---|---|---|
| 22 | 43–47 | *Amount of Indemnity Incurred*<br><br>Show total amount incurred for total disability benefits to the nearest dollar. Any amount paid under other benefits, such as the partial disability benefit, should be excluded. On "open" claims, the amount should represent the estimated total amount that will be incurred under the claim during the first year of the benefit period. |
| 23 | 48–52 | *Duration of Disability*<br><br>Show the duration, expressed in days, for which total disability payments were incurred (i.e., measured from the end of the elimination period). On "open" claims, the duration should include the estimated future period of disability for which payments will be made during the first year of the benefit period. |
| 24 | 53–57 | *Cause of Disability* (Optional)<br><br>The Committee hopes to be able to study claim experience by cause of disability. However, some companies are currently making such studies and are recording cause of disability on claim cards in accordance with their own code. Such companies are requested to code cause of disability in columns 53–57, and to supply the Committee with copies of their code. |
| 25 | 58–62 | *Impairment Code* (Optional)<br><br>Companies that maintain records as to the types of impairment riders added to policies are encouraged to furnish this information on the Claim Card. Companies coding this information would supply a copy of their code to the Committee. |
| 26 | 63–70 | *Claim Identification*<br><br>Each claim should be identified by a suitable identification number, such as claim number or policy number. This identification would be required in reconciling inconsistencies or in making a follow-up of open claims. |