

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1956 REPORTS**

**ERRATA IN 1954 REPORT OF MORTALITY UNDER
INDIVIDUAL IMMEDIATE ANNUITIES**

ONE company contributing to the study of Mortality under Individual Immediate Annuities between 1948 and 1953 Anniversaries recently discovered the omission of over 200 deaths from its contribution. All of these extra deaths occurred in the sixth and later contract years on nonrefund annuities.

Following are the corrected tables which include the deaths omitted from the study as published in *TSA 1954 Reports of Mortality and Morbidity Experience*, pages 36-61. The corrections resulting from the inclusion of the extra deaths omitted do not in any way affect the conclusions expressed in the report. The corrected summarization of the main features on page 45 shows that from 1941-46 to 1948-53 the adjusted mortality ratio on male nonrefund annuities for all ages combined decreased 11 (instead of 12) percentage points by number of contracts, and the adjusted mortality ratios on female nonrefund annuities for all ages combined decreased 8 percentage points by number of contracts and 7 percentage points by amounts of annual income (instead of 9 percentage points both by number of contracts and by amounts of annual income).

TABLE, 1954 REPORTS, PAGE 37—Corrected

| | NONREFUND ANNUITIES | | REFUND ANNUITIES | |
|--------------|------------------------|-----------------------------|------------------------|-----------------------------|
| | By Number of Contracts | By Amounts of Annual Income | By Number of Contracts | By Amounts of Annual Income |
| Males..... | 94% | 100% | 105% | 111% |
| Females..... | 100 | 103 | 106 | 108 |

TABLE 1, 1954 REPORTS, PAGE 38—Corrected
 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
 ISSUES OF 1931 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 MORTALITY RATIOS ON 1937 STANDARD ANNUITY TABLE

| ATTAINED AGES | BY NUMBER OF CONTRACTS | | | | BY AMOUNTS OF ANNUAL INCOME | | | |
|------------------|------------------------|-----|------------|--------------------|-----------------------------|------|------------|--------------------|
| | Contract Years | | | All Contract Years | Contract Years | | | All Contract Years |
| | 1-2 | 3-5 | 6 and Over | | 1-2 | 3-5 | 6 and Over | |
| MALE | | | | | | | | |
| Under 50..... | * | * | * | * | * | * | * | * |
| 50-59..... | * | 85% | 79% | 76% | * | 126% | 73% | 82% |
| 60-69..... | 71% | 78 | 72 | 73 | 91% | 105 | 82 | 88 |
| 70-79..... | 68 | 85 | 103 | 99 | 46 | 91 | 117 | 107 |
| 80 and over..... | 68 | 67 | 100 | 97 | 75 | 81 | 101 | 98 |
| All Ages.... | 68% | 78% | 98% | 94% | 62% | 90% | 105% | 100% |
| FEMALE | | | | | | | | |
| Under 50..... | * | * | * | * | * | * | * | * |
| 50-59..... | * | 53% | 61% | 57% | * | 34% | 61% | 56% |
| 60-69..... | 41% | 59 | 71 | 66 | 57% | 61 | 71 | 68 |
| 70-79..... | 55 | 67 | 94 | 91 | 50 | 69 | 98 | 92 |
| 80 and over..... | 44 | 78 | 121 | 119 | 47 | 82 | 124 | 120 |
| All Ages.... | 48% | 67% | 105% | 100% | 52% | 70% | 109% | 103% |

* Less than 10 contracts terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 contracts terminated by death.

TABLE, 1954 REPORTS, PAGE 40—Corrected

| | NONREFUND ANNUITIES | | REFUND ANNUITIES | |
|--------------|------------------------|-----------------------------|------------------------|-----------------------------|
| | By Number of Contracts | By Amounts of Annual Income | By Number of Contracts | By Amounts of Annual Income |
| Males..... | 97% | 102% | 111% | 117% |
| Females..... | 101 | 101 | 111 | 112 |

TABLE 3, 1954 REPORTS, PAGE 41—Corrected
 INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
 ISSUES OF 1931 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949

| ATTAINED AGES | BY NUMBER OF CONTRACTS | | | | BY AMOUNTS OF ANNUAL INCOME | | | |
|------------------|------------------------|------|------------|--------------------|-----------------------------|------|------------|--------------------|
| | Contract Years | | | All Contract Years | Contract Years | | | All Contract Years |
| | 1-2 | 3-5 | 6 and Over | | 1-2 | 3-5 | 6 and Over | |
| MALE | | | | | | | | |
| Under 50..... | * | * | * | * | * | * | * | * |
| 50-59..... | * | 110% | 101% | 98% | * | 161% | 94% | 105% |
| 60-69..... | 87% | 96 | 89 | 90 | 112% | 130 | 101 | 108 |
| 70-79..... | 76 | 94 | 113 | 109 | 51 | 101 | 128 | 118 |
| 80 and over..... | 64 | 63 | 93 | 90 | 72 | 77 | 93 | 91 |
| All Ages..... | 74% | 83% | 101% | 97% | 68% | 96% | 105% | 102% |
| FEMALE | | | | | | | | |
| Under 50..... | * | * | * | * | * | * | * | * |
| 50-59..... | * | 104% | 117% | 110% | * | 66% | 118% | 108% |
| 60-69..... | 64% | 92 | 109 | 102 | 90% | 95 | 109 | 104 |
| 70-79..... | 65 | 79 | 109 | 105 | 59 | 81 | 112 | 106 |
| 80 and over..... | 39 | 68 | 101 | 99 | 41 | 70 | 101 | 98 |
| All Ages..... | 59% | 78% | 104% | 101% | 61% | 79% | 105% | 101% |

* Less than 10 contracts terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 contracts terminated by death.

TABLE 5 (NONREFUND), 1954 REPORTS, PAGE 44—*Corrected*
 INDIVIDUAL IMMEDIATE ANNUITIES AT ATTAINED AGES 80 AND OVER
 ISSUES OF 1931 TO 1952
 EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES
 MORTALITY RATIOS ON ANNUITY TABLE FOR 1949

| ATTAINED AGES | BY NUMBER OF CONTRACTS | | | | BY AMOUNTS OF ANNUAL INCOME | | | |
|------------------|------------------------|------------|-------------|--------------------|-----------------------------|------------|-------------|--------------------|
| | Contract Years | | | All Contract Years | Contract Years | | | All Contract Years |
| | 1-2 | 3-5 | 6 and Over | | 1-2 | 3-5 | 6 and Over | |
| MALE NONREFUND | | | | | | | | |
| 80-84..... | <i>78%</i> | <i>69%</i> | <i>92%</i> | <i>89%</i> | <i>78%</i> | <i>70%</i> | <i>79%</i> | <i>78%</i> |
| 85-89..... | <i>50</i> | <i>63</i> | <i>96</i> | <i>92</i> | <i>64</i> | <i>93</i> | <i>102</i> | <i>100</i> |
| 90 and over..... | * | * | 94 | 90 | * | * | 111 | 109 |
| 80 and over..... | <i>64%</i> | <i>63%</i> | <i>93%</i> | <i>90%</i> | <i>72%</i> | <i>77%</i> | <i>93%</i> | <i>91%</i> |
| FEMALE NONREFUND | | | | | | | | |
| 80-84..... | <i>41%</i> | <i>70%</i> | <i>103%</i> | <i>100%</i> | <i>45%</i> | <i>82%</i> | <i>107%</i> | <i>103%</i> |
| 85-89..... | * | <i>59</i> | <i>100</i> | <i>98</i> | * | <i>62</i> | <i>104</i> | <i>100</i> |
| 90 and over..... | * | <i>85</i> | <i>97</i> | <i>97</i> | * | <i>33</i> | <i>85</i> | <i>84</i> |
| 80 and over..... | <i>39%</i> | <i>68%</i> | <i>101%</i> | <i>99%</i> | <i>41%</i> | <i>70%</i> | <i>101%</i> | <i>98%</i> |

* Less than 10 contracts terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 contracts terminated by death.

TABLE 6 (1948-53 ANNIVERSARIES), 1954 REPORTS, PAGE 46—*Corrected*
MORTALITY RATIOS ON INDIVIDUAL IMMEDIATE NONREFUND ANNUITIES
EXPERIENCE BETWEEN 1948-53 ANNIVERSARIES
Expected Deaths Based on 1937 Standard Annuity Table

| ATTAINED AGES | BY NUMBER OF CONTRACTS | | | BY AMOUNTS OF ANNUAL INCOME | | |
|-----------------------|------------------------|---------------------------|--------------------|-----------------------------|---------------------------|--------------------|
| | Contract Years 1-5 | Contract Years 6 and Over | All Contract Years | Contract Years 1-5 | Contract Years 6 and Over | All Contract Years |
| MALES | | | | | | |
| Under 60 | <i>66%</i> | <i>78%</i> | <i>74%</i> | <i>97%</i> | <i>73%</i> | <i>81%</i> |
| 60-69 | 75 | 72 | 73 | 99 | 82 | 88 |
| 70-79 | 79 | 103 | 99 | 75 | 117 | 107 |
| 80 and over | 67 | 100 | 97 | 80 | 101 | 98 |
| All Ages | <i>74%</i> | <i>98%</i> | <i>94%</i> | <i>81%</i> | <i>105%</i> | <i>100%</i> |
| All Ages Adjusted | <i>74%</i> | <i>98%</i> | <i>94%</i> | <i>81%</i> | <i>105%</i> | <i>100%</i> |
| FEMALES | | | | | | |
| Under 60 | <i>49%</i> | <i>62%</i> | <i>58%</i> | <i>49%</i> | <i>58%</i> | <i>54%</i> |
| 60-69 | 53 | 71 | 66 | 60 | 71 | 68 |
| 70-79 | 64 | 94 | 91 | 64 | 98 | 92 |
| 80 and over | 70 | 121 | 119 | 73 | 124 | 120 |
| All Ages | <i>62%</i> | <i>105%</i> | <i>100%</i> | <i>65%</i> | <i>109%</i> | <i>103%</i> |
| All Ages Adjusted | <i>62%</i> | <i>105%</i> | <i>100%</i> | <i>65%</i> | <i>109%</i> | <i>103%</i> |

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 contracts terminated by death.

TABLE B (DEATHS), 1954 REPORTS, PAGE 49—*Corrected*
DEATHS UNDER INDIVIDUAL IMMEDIATE ANNUITIES
ISSUES OF 1931 TO 1952
EXPERIENCE BETWEEN 1948 AND 1953 ANNIVERSARIES

| CONTRACT YEARS | NONREFUND ANNUITIES | | REFUND ANNUITIES | |
|-------------------------|---------------------|--------------------------|---------------------|--------------------------|
| | Number of Contracts | Amounts of Annual Income | Number of Contracts | Amounts of Annual Income |
| | Deaths | | | |
| <i>Males:</i> | | | | |
| 1-5..... | 627 | \$ 375,806 | 1,565 | \$ 661,513 |
| 6 and over..... | 4,149 | 2,149,598 | 8,332 | 2,926,772 |
| All Contract Years..... | 4,776 | \$2,525,404 | 9,897 | \$3,588,285 |
| <i>Females:</i> | | | | |
| 1-5..... | 795 | \$ 318,035 | 1,994 | \$ 577,795 |
| 6 and over..... | 10,764 | 3,361,651 | 18,795 | 4,758,125 |
| All Contract Years..... | 11,559 | \$3,679,686 | 20,789 | \$5,335,920 |

TABLE C, 1954 REPORTS, PAGE 52—Corrected

NONREFUND—MALE LIVES

| ATTAINED AGES BY CONTRACT YEAR | EXPOSURES | | ACTUAL DEATHS | | BASED ON 1937 STANDARD ANNUITY TABLE | | | | BASED ON <i>a</i> -1949 TABLE | | | |
|---|------------------------|--------------------------------|-----------------------------|--------------------------------|--------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------------|--------------------------------|----------------------------------|-------------------------------------|
| | | | | | EXPECTED DEATHS | | MORTALITY RATIO | | EXPECTED DEATHS | | MORTALITY RATIO | |
| | Number of Contracts | Amounts of Annual Income | Number of Con- tracts | Amounts of Annual Income | Number of Contracts | Amounts of Annual Income | Num- ber of Con- tracts | Amounts of An- nual Income | Number of Contracts | Amounts of Annual Income | Num- ber of Con- tracts | Amounts of An- nual Income |
| <i>Years 6 and over</i> | | | | | | | | | | | | |
| Under 50..... | 1,197 | 273,779 | 5 | 1,120 | 7.31 | 1,623 | * | * | 4.21 | 949 | * | * |
| 50-59..... | 4,440 | 1,304,121 | 50 | 14,030 | 63.41 | 19,138 | 79% | 73% | 49.33 | 14,929 | 101% | 94% |
| 60-69..... | 13,186 | 5,018,308 | 289 | 124,615 | 400.52 | 152,081 | 72 | 82 | 325.21 | 123,404 | 89 | 101 |
| 70-79..... | 27,917 | 12,568,379 | 1,737 | 904,368 | 1,685.77 | 775,436 | 103 | 117 | 1,531.04 | 707,333 | 113 | 128 |
| 80 and over... | 17,331 | 9,038,678 | 2,068 | 1,105,465 | 2,060.52 | 1,099,915 | 100 | 101 | 2,213.75 | 1,190,952 | 93 | 93 |
| All Ages... | 64,071 | 28,203,265 | 4,149 | 2,149,598 | 4,217.53 | 2,048,193 | 98% | 105% | 4,123.54 | 2,037,567 | 101% | 105% |
| <i>All Years</i> | | | | | | | | | | | | |
| Under 50..... | 1,629 | 396,686 | 6 | 1,665 | 10.32 | 2,414 | * | * | 5.73 | 1,409 | * | * |
| 50-59..... | 6,219 | 1,919,451 | 68 | 23,269 | 89.01 | 28,395 | 76% | 82% | 69.21 | 22,172 | 98% | 105% |
| 60-69..... | 18,771 | 7,406,365 | 415 | 196,278 | 568.46 | 224,188 | 73 | 88 | 461.70 | 181,897 | 90 | 108 |
| 70-79..... | 34,706 | 16,550,795 | 2,044 | 1,079,161 | 2,072.48 | 1,008,320 | 99 | 107 | 1,878.52 | 917,462 | 109 | 118 |
| 80 and over... | 19,610 | 10,389,818 | 2,243 | 1,225,031 | 2,320.15 | 1,250,296 | 97 | 98 | 2,488.92 | 1,349,220 | 90 | 91 |
| All Ages... | 80,935 | 36,663,115 | 4,776 | 2,525,404 | 5,060.42 | 2,513,613 | 94% | 100% | 4,904.08 | 2,472,160 | 97% | 102% |

* Less than 10 contracts terminated by death.

NOTE.—Mortality ratio in italics where less than 50 but not less than 10 contracts terminated by death.

TABLE C, 1954 REPORTS, PAGE 55—Corrected

NONREFUND—FEMALE LIVES

| ATTAINED AGES BY CONTRACT YEAR | EXPOSURES | | ACTUAL DEATHS | | BASED ON 1937 STANDARD ANNUITY TABLE | | | | BASED ON <i>a</i> -1949 TABLE | | | |
|---|------------------------|--------------------------------|-----------------------------|--------------------------------|--------------------------------------|--------------------------------|----------------------------------|-------------------------------------|-------------------------------|--------------------------------|----------------------------------|-------------------------------------|
| | | | | | EXPECTED DEATHS | | MORTALITY RATIO | | EXPECTED DEATHS | | MORTALITY RATIO | |
| | Number of Contracts | Amounts of Annual Income | Number of Con- tracts | Amounts of Annual Income | Number of Contracts | Amounts of Annual Income | Num- ber of Con- tracts | Amounts of An- nual Income | Number of Contracts | Amounts of Annual Income | Num- ber of Con- tracts | Amounts of An- nual Income |
| <i>Years 6 and over</i> | | | | | | | | | | | | |
| Under 50 . . . | 1,928 | 598,416 | 6 | 458 | 7.70 | 2,416 | * | * | 3.19 | 1,122 | * | * |
| 50-59 | 8,805 | 2,538,858 | 54 | 15,774 | 89.21 | 25,658 | 61% | 61% | 46.26 | 13,349 | 117% | 118% |
| 60-69 | 46,237 | 12,030,444 | 694 | 178,545 | 975.52 | 251,780 | 71 | 71 | 636.13 | 163,698 | 109 | 109 |
| 70-79 | 102,677 | 27,016,137 | 4,045 | 1,109,387 | 4,283.90 | 1,136,055 | 94 | 98 | 3,727.61 | 991,847 | 109 | 112 |
| 80 and over | 59,418 | 19,248,652 | 5,965 | 2,057,487 | 4,912.28 | 1,663,909 | 121 | 124 | 5,898.31 | 2,044,538 | 101 | 101 |
| All Ages. | 219,065 | 61,432,507 | 10,764 | 3,361,651 | 10,268.61 | 3,079,818 | 105% | 109% | 10,311.50 | 3,214,554 | 104% | 105% |
| <i>All Years</i> | | | | | | | | | | | | |
| Under 50 . . . | 2,503 | 809,424 | 7 | 1,058 | 10.06 | 3,361 | * | * | 3.79 | 1,551 | * | * |
| 50-59 | 13,300 | 3,988,989 | 77 | 22,807 | 135.65 | 40,430 | 57% | 56% | 70.12 | 21,031 | 110% | 108% |
| 60-69 | 63,900 | 17,329,784 | 883 | 242,297 | 1,328.89 | 358,620 | 66 | 68 | 862.72 | 232,246 | 102 | 104 |
| 70-79 | 117,909 | 32,791,974 | 4,425 | 1,254,639 | 4,879.49 | 1,364,630 | 91 | 92 | 4,232.14 | 1,186,289 | 105 | 106 |
| 80 and over | 63,210 | 21,020,380 | 6,167 | 2,158,885 | 5,199.99 | 1,802,832 | 119 | 120 | 6,227.61 | 2,206,255 | 99 | 98 |
| All Ages. | 260,822 | 75,940,551 | 11,559 | 3,679,686 | 11,554.08 | 3,569,873 | 100% | 103% | 11,396.38 | 3,647,372 | 101% | 101% |