

CONTINUOUS INVESTIGATION INTO THE MORTALITY OF PENSIONERS UNDER LIFE OFFICE PENSION SCHEMES

REPORT ON THE EXPERIENCE FOR THE PERIOD 1955-58

The last report on the experience of the pensioners' section of the Continuous Mortality Investigation was based on the years 1952-55, and was published in *T.F.A.*, Vol. 25, p. 322, and *J.I.A.*, Vol. 84, p. 77. In order to make the pensioners' experience more directly comparable with the experience under single-life immediate annuities, it has been decided to synchronise this report with the one currently being published in respect of the annuitants, by basing it on the years 1955-58.

Broadly speaking, for the males and also for the females who retired at or after normal retiring age, the experience of 1955 was similar to the combined experience of the three years 1956-58. In the case of the females who retired before the normal age, the mortality experienced in 1955 was higher at all ages than in 1956-58 but was similar to the combined experience of 1952-54. It follows that the inclusion of the year 1955 in this report as well as the previous one will not affect the direction of the trends, although they will be less marked than if two completely independent quadrennia were compared.

As this report is being synchronised with the report on the mortality of annuitants, the bases of comparison are also being changed to make the two reports similar. The annuitants' experience was first compared with the expected deaths according to the generation tables published with the *a*(55) Table, and a similar comparison for pensioners who retired at or after the normal age is shown in Table 1 for the two periods 1951-54 and 1955-58. For males, it will be seen that the divergence between pensioner mortality and the projected annuitants' generation tables is greatest at the youngest ages and tends to decrease with age, the relationship being much the same for the two periods. For females, if there is any similar feature in the experience it is difficult to discern, although it may be significant that the percentage ratios of actual to expected

deaths were higher for the later than the earlier period at the three youngest age-groups and lower at the other four ; if this tendency continues then the picture for females may shortly be similar to that for males.

In Table 2, the ratios are shown for the three periods 1948-51, 1952-55 and 1955-58, between the actual deaths amongst pensioners who retired at or after the normal age and the expected deaths according to the English Life Tables No. 11, and to the 1947 Table of annuitant mortality experienced at durations 5 and over, published on p. xviii of " *The a(55) Tables for Annuitants* " (see Table 3). The ratios are given in age-groups and also, as in previous reports, for individual ages 66-80 for males only, the data for females being too scanty to justify an age by age tabulation. For males, generally it was only in the youngest age-group (65 and under) that pensioner mortality exceeded population mortality, although there was a tendency throughout the eleven years for mortality in the other age-groups to approach the population mortality, the feature that the ratios of actual to expected deaths decrease with advancing age again being shown. For females too, it is only in the youngest age-group (60 and under) that pensioner mortality generally exceeded population mortality, but the tendency for the ratios to decrease with age was not so clear until 1955-58—possibly owing to paucity of data in the earlier periods. There was no tendency for mortality of female pensioners at the higher ages to approach population mortality.

The comparisons with the 1947 Table of annuitant mortality show that male pensioner mortality has been well above this table, while by 1955-58 female pensioner mortality had fallen below this table at all the higher age-groups. If the percentages are compared with Table 2 of the note concurrently being published on the mortality of annuitants it will be seen that, whereas male pensioners have throughout experienced heavier mortality than male annuitants at durations 5 and over, in the corresponding female sections there is now less difference between pensioners and annuitants.

Generally, although there has been little over-all change in the levels of male mortality from period to period, it has tended to rise at the younger ages and to fall at the older ; and a similar feature seems to be developing for female mortality combined with an over-all reduction between 1952-55 and 1955-58.

Offices will recognise that the need for allowing for future mortality improvement is as important for pensioners as for annuitants. New entrants to pension schemes at the present time will not become

pensioners for some decades to come, during which time there may be marked improvements in the mortality of older lives, and careful consideration should be given to the choice of a suitable mortality table.

Originally the experience of pensioners related predominantly to retired clerical employees, but retired manual workers may have come increasingly into the experience in recent years, and will continue to do so in future. Some light on the effect on the mortality shown by mixing the experience might be thrown by the information obtained from the data now being collected for studying the mortality experience by amounts. Although many of the contributing offices did not begin to submit data for amounts until the year 1959, twenty-four offices submitted information for the year 1958, and the experience of these offices by lives and amounts is shown in Table 3. In spite of the comparative smallness of the data, it is clear that at all ages male mortality is lower when weighted with the size of the pension ; in other words the mortality of those in receipt of larger pensions is lighter. This does not appear to be so for females, possibly because there is greater class homogeneity in the female experience ; but by reason of paucity of data this result should not be regarded as conclusive, the number of deaths at all ages being only 153.

Table 4 shows the experience of pensioners who retired before the normal age, actual deaths again being compared with the E.L.T. No. 11 and the 1947 Table of annuitant mortality. The percentages decrease with age, this tendency being more marked than in the case of the normal retirements. In Table 5, the percentages of actual to expected deaths according to E.L.T. No. 11 are compared with the corresponding percentages for the normal retirements ; it will be seen that for both sexes the over-all mortality for those who retired early is of the order of 80% higher than that experienced by those who retired at or after the normal age, the disparity being above this average in the lowest age-group (up to 65 for males and up to 60 for females) and tending in the case of males (but not necessarily for females) to diminish throughout life.

TABLE 1

Pensioners who Retired at or after the Normal Age. Comparison of Actual Deaths with Deaths Expected according to the Generation Tables published with the a(55) Table

Ages nearest	1951-54			1955-58		
	Actual Deaths	Expected Deaths	100 A/E	Actual Deaths	Expected Deaths	100 A/E
Males						
60 and under	11	7	157	21	14	150
61-65	294	177	166	443	231	192
66-70	2,976	2,247	132	4,477	3,220	139
71-75	1,788	1,574	114	4,094	3,337	123
76-80	778	690	113	1,704	1,534	111
81-85	154	138	112	500	479	104
86-90	29	29	100	72	66	109
91 and over	4	3	133	9	8	112
All ages	6,034	4,865	124	11,320	8,889	127
Females						
60 and under	18	14	129	29	19	153
61-65	98	86	114	218	185	118
66-70	67	72	93	168	172	98
71-75	60	46	130	99	99	100
76-80	23	19	121	50	50	100
81-85	10	9	111	19	17	112
86 and over	4	3	133	5	8	62
All ages	280	249	112	588	550	107

TABLE 2

Pensioners who Retired at or after the Normal Age. Experience 1948-51, 1952-55 and 1955-58

Ages nearest	1948-51				1952-55				1955-58				100 A/E (E.L.T. No. 11)		100 A/E (1947 table of annuitant mortality)	
	Exposed to Risk	Actual Deaths	Expected Deaths		Exposed to Risk	Actual Deaths	Expected Deaths		Exposed to Risk	Actual Deaths	Expected Deaths		1948-1951	1952-1955	1948-1951	1952-1955
			E.L.T. No. 11	1947 table of annuitant mortality			E.L.T. No. 11	1947 table of annuitant mortality			E.L.T. No. 11	1947 table of annuitant mortality				
Males																
66	10,369	420	399	300	14,324	588	552	415	18,460	727	712	534	105	107	140	142
67	9,990	360	419	319	15,713	658	660	502	20,202	849	848	945	86	100	113	131
68	8,535	350	390	301	15,707	687	718	553	20,466	904	935	721	90	96	116	124
69	6,791	323	338	263	14,872	682	740	577	19,881	978	989	772	96	92	123	127
70	5,446	269	295	233	13,424	713	727	574	18,917	978	1,025	809	91	98	113	124
71	4,622	245	273	217	11,475	615	678	540	17,533	970	1,035	825	90	91	113	114
72	3,876	247	249	200	9,076	483	584	470	15,404	912	991	797	99	83	124	103
73	3,180	200	223	181	6,980	416	490	397	13,026	880	915	741	90	85	110	105
74	2,543	170	195	159	5,371	363	411	335	10,484	749	803	655	87	88	107	108
75	1,938	143	162	133	4,235	287	354	290	8,141	583	681	558	88	81	108	104
76	1,428	119	131	107	3,066	267	308	253	6,089	473	557	457	91	87	111	106
77	972	111	97	80	2,627	234	262	216	4,597	415	460	378	114	89	104	104
78	620	56	68	56	1,959	182	214	176	3,473	324	379	313	82	85	100	103
79	368	32	47	39	1,421	125	170	140	2,691	262	321	265	68	74	82	89
80	265	34	35	29	1,005	113	131	108	2,015	230	263	216	97	86	117	105
65 and under	6,802	280	219	161	8,552	335	275	202	11,391	464	363	267	105	122	143	166
66-70	41,131	1,722	1,841	1,416	74,040	3,328	3,397	2,621	97,926	4,477	4,509	3,451	94	98	128	127
71-75	16,159	1,005	1,102	890	37,137	2,164	2,517	2,032	64,588	4,094	4,425	3,576	91	86	113	106
76-80	3,683	352	378	311	10,378	921	1,085	893	13,865	1,704	1,980	1,652	93	85	103	105
81 and over	576	75	100	82	1,725	253	289	237	4,262	581	709	582	75	88	91	107
All ages	68,351	3,384	3,640	2,860	131,892	7,001	7,563	5,985	197,032	11,320	11,986	9,535	93	93	118	117
Females																
60 and under	1,139	8	12	11	1,803	25	19	17	2,313	29	24	21	67	132	121	147
61-65	3,255	41	52	44	8,346	123	134	114	14,663	218	239	202	79	92	91	83
66-70	1,834	32	48	38	4,504	83	118	94	8,970	168	235	187	67	70	71	88
71-75	1,791	44	33	25	3,163	66	79	58	3,163	99	142	106	133	84	70	114
76 and over	239	17	24	17	1,611	42	55	40	1,207	74	109	78	73	76	68	105
All ages	7,198	142	169	135	17,012	339	405	323	30,316	568	749	594	84	84	79	105

TABLE 3

*Pensioners who Retired at or after the Normal Age, 24 Offices only, 1958.
Comparison by both Lives and Amounts between Actual Deaths and
Deaths Expected according to the 1947 Table of Annuitant Mortality*

Ages nearest	Lives			Amounts		
	Actual Deaths	Expected Deaths	100 A/E	Actual Deaths	Expected Deaths	100 A/E
Males						
65 and under	120	67	179	13,618	9,044	151
66-70	1,082	844	128	106,649	85,323	125
71-75	1,068	886	121	78,972	78,420	101
76-80	462	416	111	34,055	35,419	96
81 and over	152	151	101	9,905	12,039	82
All ages	2,884	2,364	122	243,199	220,245	110
Females						
60 and under	5	5	100	334	303	110
61-65	51	54	94	2,634	2,549	103
66-70	50	54	93	1,979	2,355	84
71-75	29	30	97	943	1,313	72
76 and over	18	19	95	941	853	110
All ages	153	162	94	6,831	7,373	93

TABLE 4

Pensioners who Retired before the Normal Age. Experience 1948-51, 1952-55 and 1955-58

Ages nearest	1948-51				1952-55				1955-58				100 A/E (E.L.T. No. 11)				100 A/E (1947 table of annuitant mortality)			
	Exposed to Risk	Actual Deaths	Expected Deaths		Exposed to Risk	Actual Deaths	Expected Deaths		Exposed to Risk	Actual Deaths	Expected Deaths		1948-1951	1952-1955	1955-1958	1955-1958	1948-1951	1952-1955	1955-1958	1955-1958
			E.L.T. No. 11	1947 table of annuitant mortality			E.L.T. No. 11	1947 table of annuitant mortality			E.L.T. No. 11	1947 table of annuitant mortality								
Males																				
65 and under	5,652	387	151	109	8,843	581	239	173	11,513	811	312	226	256	243	260	355	336	359	359	359
66-70	2,780	148	123	95	5,731	346	257	197	8,038	528	362	278	120	135	146	156	176	190	190	190
71 and over	1,046	82	78	63	2,294	181	176	143	4,181	347	325	264	105	103	107	130	127	131	131	131
All ages	9,478	617	352	267	16,868	1,108	672	513	23,732	1,686	999	768	175	165	169	231	216	220	220	220
Females																				
60 and under	737	14	7	6	1,438	41	13	12	2,044	54	19	17	200	315	284	233	342	318	318	318
61-65	704	18	11	10	1,333	27	22	18	2,174	41	35	30	164	123	117	180	150	137	137	137
66 and over	285	8	9	7	891	30	28	22	1,586	58	53	41	89	107	109	114	136	141	141	141
All ages	1,726	40	27	23	3,662	98	63	52	5,804	153	107	88	148	156	143	174	188	174	174	174

TABLE 5

Comparison between Experience of Pensioners who Retired before the Normal Age with that of Pensioners who Retired at or after the Normal Age
(Expected Deaths according to the English Life Tables No. 11)

Ages nearest	Before normal age 100 A/E			At or after normal age 100 A/E			100 A/E (Early retirements) 100 A/E (Normal or late retirements)		
	1948- 1951	1952- 1955	1955- 1958	1948- 1951	1952- 1955	1955- 1958	1948- 1951	1952- 1955	1955- 1958
Males									
65 & under	256	243	260	105	122	128	2.44	1.99	2.03
66-70	120	135	146	94	98	99	1.28	1.38	1.47
71 & over	105	103	107	91	86	90	1.15	1.20	1.19
All ages	175	165	169	93	93	94	1.88	1.77	1.80
Females									
60 & under	200	315	284	67	132	121	2.99	2.39	2.35
61-65	164	123	117	79	92	91	2.08	1.37	1.29
66 & over	89	107	109	89	76	70	1.00	1.41	1.56
All ages	148	156	143	84	84	79	1.76	1.86	1.81