

Actuarial Notes

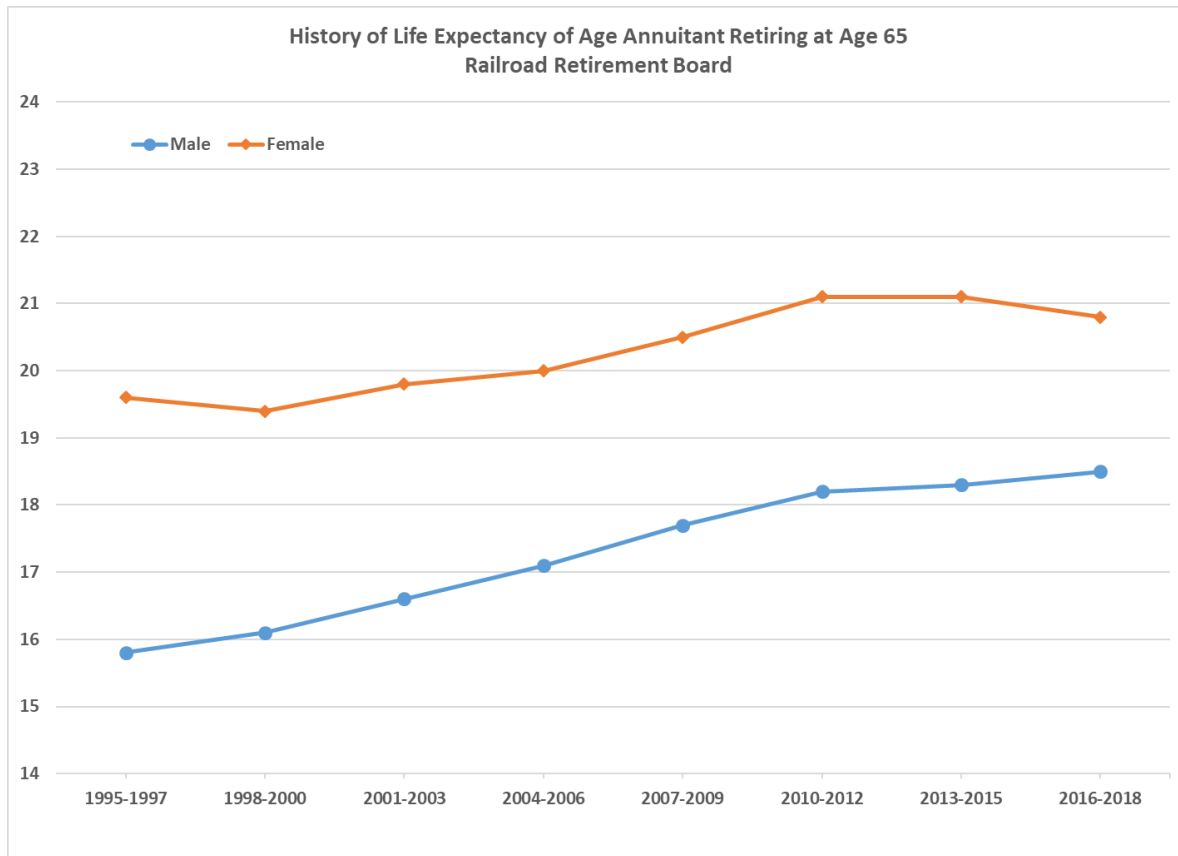
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Longevity of Railroad Retirement Beneficiaries

Based on studies of experience data compiled from the Twenty-Eighth Actuarial Valuation of the railroad retirement system, which was made as of December 31, 2019, the Bureau of the Actuary and Research has calculated the life expectancies of railroad retirement beneficiaries. These studies have been conducted for male and female age annuitants, disability annuitants, spouses and widows. Results of the studies are contained in the following discussion and the two attached tables.

Comparisons with studies done for the twenty-seventh valuation show a general improvement in life expectancies for all but female age annuitants. As shown in the chart below, life expectancy for railroad retirement age annuitants has generally improved in our studies over the last 20 years, but the rate of improvement has slowed more recently.



Life expectancies may help provide an indication of the amount that will be paid out in benefits for individual situations, since a benefit is generally payable until the individual beneficiary dies. In the case of spouses and widows, another event, such as death of the employee or remarriage of the widow, may terminate all or a portion of the benefit.

Table 1 illustrates the differences in longevity among the categories of railroad retirement beneficiaries and also shows life expectancy figures for the total U.S. population. The figures for railroad retirement beneficiaries show age and disability retirements separately, while those for the U.S. population do not segregate disabled lives.

As indicates in table 1, a male railroad worker retiring at age 65 may expect, on the average, to receive his annuity for 18.5 years or approximately 222 months; while one retiring at age 62 may expect to receive his annuity for 21.0 years or approximately 252 months. (This difference partially explains why the benefit may be reduced for early commencement.) At age 65, female railroad retirement age annuitants have a life expectancy of 20.8 years, which is 2.3 years longer than males at the same age.

Females at age 65 in the U.S. population as a whole live 2.6 years longer on the average than males. While a female annuitant at age 65 may expect to live about 20.8 years and a female spouse at age 65 may expect to live about 21.3 years, a female widow may only expect to live 19.1 years or almost 2 years less than a female annuitant or spouse. One reason for the difference in longevity may be that a widow's life expectancy is affected by a change in financial position, less beneficial activity, and the intangible effect of bereavement brought on by the husband's death.

Life expectancies for disability beneficiaries are shown below. Both those disabled from performing their regular occupation and those totally disabled from performing any occupation are included. Total disabilities are those which meet the more restrictive disability standards of social security.

Life expectancies^a at selected ages for railroad disability annuitants at retirement and 5 or more years after retirement

<u>Age^b</u>	<u>At retirement</u>	<u>5 or more years after retirement</u>
45 ^c	27.5	28.2
50	24.4	24.3
55	21.3	21.6
60	17.7	18.3
65		15.1
70		12.1
75		9.3
80		6.9

^a Based on experience between 2015 and 2018 anniversaries of retirement.

^b Age nearest birthday.

^c Data not statistically significant.

This table indicates that the life expectancy of a person newly disabled is generally lower than that of a person disabled a number of years earlier. At age 55, for example a recently disabled person may expect to live 21.3 years on average, while one disabled 5 or more years ago has a life expectancy of 21.6 years.

The data used to calculate life expectancy figures also provide a basis for estimating what proportion of the retired population may be expected to remain alive at the end of a particular number of years in the future. The chances of survival for 5, 10, 15 and 20 years of retired individuals are given in table 2. According to these figures, from a group of 1,000 male age annuitants at age 65:

- 936 will survive at least 5 years,
- 828 at least 10 years,
- 664 at least 15 years, and
- 457 at least 20 years.

From a group of 1,000 female age annuitants at age 65, 560 will be alive 20 years later.

Life expectancy figures are averages for large groups. The future lifetime of a particular individual may be longer or shorter than the life expectancy for their age group. Under the railroad retirement system, there have been many who have received benefits for 30 years or more.

Impact of COVID-19 Pandemic

Note that the experience studies on which this report is based do not cover the pandemic years. Preliminary experience for the pandemic years indicates that mortality rates were higher than expected, particularly at older ages and for those with disabilities, which would result in slightly lower life expectancies. However, the unfavorable impact has been greatly reduced during 2021 with the introduction of effective vaccines. It is unclear how much lasting, longer-term impact the virus will have on future life expectancies.

Table 1

Life expectancies at ages 60-85 for railroad
retirement beneficiaries and for the general population

<u>Age^c</u>	Railroad Retirement ^a					U.S. Population ^b	
	<u>Age annuitants</u> <u>Males</u>	<u>Females</u>	<u>Disability</u> <u>Annuitants</u>	<u>Spouses^d</u>	<u>Aged</u> <u>Widows^e</u>	<u>Males</u>	<u>Females</u>
60	22.7	25.3	18.2	25.6	23.3	21.8	24.8
61	21.8	24.4	17.6	24.7	22.3	21.0	24.0
62	21.0	23.5	17.0	23.9	21.5	20.3	23.1
63	20.1	22.6	16.4	23.0	20.7	19.5	22.3
64	19.3	21.7	15.7	22.2	19.9	18.8	21.5
65	18.5	20.8	15.1	21.3	19.1	18.1	20.7
66	17.7	19.9	14.5	20.5	18.3	17.4	19.9
67	16.9	19.1	13.9	19.6	17.5	16.7	19.1
68	16.1	18.3	13.3	18.8	16.8	16.0	18.3
69	15.3	17.4	12.7	18.0	16.1	15.3	17.5
70	14.6	16.6	12.1	17.2	15.4	14.6	16.8
71	13.8	15.8	11.5	16.4	14.7	13.9	16.0
72	13.1	15.1	10.9	15.6	14.1	13.3	15.2
73	12.4	14.3	10.4	14.9	13.4	12.6	14.5
74	11.7	13.6	9.8	14.2	12.8	12.0	13.8
75	11.1	12.9	9.3	13.5	12.1	11.3	13.1
76	10.5	12.2	8.8	12.8	11.5	10.7	12.4
77	9.9	11.6	8.3	12.1	11.0	10.1	11.7
78	9.3	10.9	7.8	11.4	10.4	9.6	11.1
79	8.7	10.2	7.3	10.8	9.8	9.0	10.4
80	8.2	9.6	6.9	10.1	9.2	8.4	9.8
81	7.7	9.0	6.5	9.6	8.7	7.9	9.2
82	7.1	8.4	6.1	8.9	8.1	7.4	8.6
83	6.6	8.0	5.7	8.4	7.6	6.9	8.1
84	6.2	7.5	5.4	7.8	7.1	6.4	7.5
85	5.7	7.0	5.1	7.3	6.7	6.0	7.0

^a Based on experience between anniversaries of retirement in 2015 and 2018 for all annuitants. Age annuitants are retired former railroad employees receiving age and service based annuities. Disability annuitants are disabled former railroad employees who are receiving disability retirement under either occupational disability provisions or total and permanent disability provisions. Disability annuitants under occupational disability provisions may not have as high mortality as those with total and permanent disability.

^b Tables 2 and 3, United States Life Tables, 2018, National Vital Statistics Reports, Vol. 69, No. 12, November 17, 2020.

^c For railroad retirement data, age basis is age nearest birthday at beginning of policy year; for U.S. population data, age basis is exact age.

^d About 94 percent of spouses are female.

Table 2

Chances of survival for specified periods,
by age and category of railroad retirement beneficiary

<u>Age^a</u>	<u>Number alive per 1,000 after</u>				<u>Number alive per 1,000 after</u>			
	<u>5 years</u>	<u>10 years</u>	<u>15 years</u>	<u>20 years</u>	<u>5 years</u>	<u>10 years</u>	<u>15 years</u>	<u>20 years</u>
	<u>Male age annuitants</u>				<u>Female age annuitants</u>			
60	961	900	796	638	979	939	858	737
65	936	828	664	457	958	876	753	560
70	885	709	489	249	914	785	584	366
75	802	552	281	87	859	639	400	155
	<u>Spouses</u>				<u>Widows</u>			
60	970	926	851	737	962	892	785	644
65	955	877	759	589	927	816	669	486
70	919	796	617	388	881	722	524	308
75	866	672	423	181	820	596	350	135
	<u>All disability annuitants</u>							
60	891	773	625	448				
65	868	702	503	296				
70	809	580	341	149				
75	717	421	185	46				
	<u>Disability annuitants at retirement</u>				<u>Disabled annuitants disabled 5 or more years</u>			
45	935	846	776	696	956	865	794	712
50	911	836	750	651	904	830	744	646
55	901	808	702	567	918	823	714	578
60	863	749	606	434	896	778	629	451
65	b	b	b	b	868	702	503	296
70	c	c	c	c	809	580	341	149
75	c	c	c	c	717	421	185	46

^a Age nearest birthday approximates exact age.

^b Insufficient data.

^c Not applicable. Disability annuities are not awarded after normal retirement age.