

# Actuarial Notes

U.S. Railroad Retirement Board

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## Longevity of Railroad Retirement Beneficiaries

Calculations of the life expectancies of railroad retirement beneficiaries have recently been made from studies of data compiled for the Twenty-Seventh Actuarial Valuation of the railroad retirement system, which was made as of December 31, 2016. These studies have been conducted for male and female age annuitants, disability annuitants, spouses and aged widows. Comparisons with studies done for the twenty-fifth and twenty-sixth valuations show a general improvement in life expectancies for age and disability annuitants. Other major results of the studies are contained in the following discussion and the two attached tables.

Life expectancies may help provide an indication of the amount that will be paid out in benefits in individual situations, since a benefit is generally payable until the individual beneficiary dies. In the case of spouses and aged widows, another event, such as death of the employee or remarriage of the the aged 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 indicated in table 1, a male railroad worker retiring at age 65 may expect, on the average, to receive his annuity for 18.3 years or approximately 220 months; while one retiring at age 62 may expect to receive his annuity for 20.8 years or approximately 250 months. At age 65, female railroad retirement age annuitants have a life expectancy of 21.1 years, which is 2.8 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 age annuitant or spouse at age 65 may expect to live about 21.1 and 21.0 years, respectively, an aged widow at the same age is expected to live 19.0 years. One reason for the difference in longevity may be that an aged widow's life expectancy is affected by a change in financial and social position 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<sup>a</sup> at selected ages for railroad disability annuitants at retirement and 5 or more years after retirement

<u>Age<sup>b</sup></u>	<u>At retirement</u>	<u>5 or more years after retirement</u>
45 <sup>c</sup>	28.1	28.4
50	24.4	25.2
55	20.6	21.5
60	17.3	18.1
65		14.9
70		11.8
75		9.2
80		6.9

<sup>a</sup> Based on experience between 2012 and 2015 anniversaries of retirement.

<sup>b</sup> Age nearest birthday.

<sup>c</sup> Data not statistically significant.

This table indicates that the life expectancy of a person newly disabled is somewhat 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 20.6 years on average, while one disabled 5 or more years ago has a life expectancy of 21.5 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 for retired individuals are given in table 2. According to these figures, from a group of 1,000 retired male employees at age 65, 933 will survive at least 5 years, 822 at least 10 years, 658 at least 15 years, and 448 at least 20 years. Of female age annuitants at age 65, 578 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 his age group. Under the railroad retirement system, there have been many who have received benefits for 30 years or more.

Table 1

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

<u>Age<sup>c</sup></u>	Railroad Retirement <sup>a</sup>					U.S. Population <sup>b</sup>	
	<u>Age annuitants</u> <u>Males</u>	<u>Females</u>	<u>Disability</u> <u>Annuitants</u>	<u>Spouses<sup>d</sup></u>	<u>Aged</u> <u>Widows<sup>e</sup></u>	<u>Males</u>	<u>Females</u>
60	22.5	25.6	18.0	25.4	23.0	21.7	24.6
61	21.6	24.7	17.4	24.5	22.2	20.9	23.8
62	20.8	23.7	16.8	23.6	21.3	20.1	22.9
63	19.9	22.8	16.1	22.7	20.5	19.4	22.1
64	19.1	22.0	15.5	21.9	19.7	18.7	21.3
65	18.3	21.1	14.9	21.0	19.0	17.9	20.5
66	17.5	20.3	14.3	20.2	18.2	17.2	19.7
67	16.7	19.5	13.6	19.4	17.5	16.5	18.9
68	15.9	18.6	13.0	18.6	16.7	15.8	18.1
69	15.1	17.8	12.4	17.8	16.0	15.1	17.3
70	14.4	16.9	11.8	17.0	15.3	14.4	16.6
71	13.7	16.1	11.3	16.3	14.6	13.7	15.8
72	13.0	15.3	10.7	15.5	14.0	13.1	15.1
73	12.3	14.5	10.2	14.8	13.3	12.4	14.4
74	11.6	13.8	9.7	14.1	12.6	11.8	13.6
75	11.0	13.0	9.2	13.3	12.0	11.2	12.9
76	10.4	12.3	8.7	12.6	11.4	10.5	12.3
77	9.8	11.6	8.2	12.0	10.8	10.0	11.6
78	9.2	11.0	7.7	11.3	10.2	9.4	10.9
79	8.6	10.4	7.3	10.7	9.6	8.8	10.3
80	8.1	9.9	6.9	10.1	9.1	8.3	9.7
81	7.5	9.3	6.6	9.5	8.6	7.8	9.1
82	7.0	8.7	6.1	8.9	8.1	7.3	8.5
83	6.5	8.1	5.7	8.3	7.6	6.8	8.0
84	6.1	7.6	5.3	7.8	7.1	6.3	7.5
85	5.6	7.1	5.0	7.3	6.7	5.9	7.0

<sup>a</sup> Based on experience between anniversaries of retirement in 2012 and 2015 for all annuitants.

<sup>b</sup> Tables 2 and 3, United States Life Tables, 2013, National Vital Statistics Reports, Vol. 66, No. 3, April 11, 2017.

<sup>c</sup> 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.

<sup>d</sup> About 94 percent of spouses are female.

<sup>e</sup> Includes widowers. About 99 percent of aged widows and widowers are female.

Table 2

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

<u>Age<sup>a</sup></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	965	900	793	635	977	938	868	737
65	933	822	658	448	960	889	755	578
70	881	705	480	237	926	786	602	380
75	801	545	269	82	849	650	411	165
	<u>Spouses</u>				<u>Aged Widows</u>			
60	972	922	845	727	956	882	778	634
65	949	869	747	577	923	815	664	480
70	916	788	608	386	883	719	520	305
75	860	663	421	182	815	589	345	133
	<u>All disability annuitants</u>							
60	888	769	611	434				
65	866	688	489	288				
70	794	564	333	142				
75	710	419	179	47				
	<u>Disability annuitants at retirement</u>				<u>Disabled annuitants disabled 5 or more years</u>			
45	923	872	804	718	937	885	816	729
50	912	841	751	651	944	871	778	674
55	881	787	682	541	922	824	714	567
60	848	735	584	414	893	774	615	436
65	b	b	b	b	867	688	489	288
70	c	c	c	c	794	564	333	142
75	c	c	c	c	710	419	179	47

<sup>a</sup> Age nearest birthday approximates exact age.

<sup>b</sup> Insufficient data.

<sup>c</sup> Not applicable. Disability annuities are not awarded after normal retirement age.