

# Actuarial Notes

U.S. Railroad Retirement Board

Bureau of the Actuary

No. 1 - 15

November 2015

## 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-Sixth Actuarial Valuation of the railroad retirement system, which was made as of December 31, 2013. These studies have been conducted for male and female age annuitants, disability annuitants, spouses and widows. Comparisons with studies done for the twenty-fourth and the twenty-fifth valuations show a general improvement in life expectancies. 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 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 indicated in table 1, a male railroad worker retiring at age 65 may expect, on the average, to receive his annuity for 18.2 years or approximately 218 months; while one retiring at age 62 may expect to receive his annuity for 20.7 years or approximately 248 months. At age 65, female railroad retirement age annuitants have a life expectancy of 21.1 years, which is 2.9 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 average than males. While a female age annuitant or spouse at age 65 may expect to live about 21.1 and 21.2 years, respectively, a widow at the same age is expected to live 19.0 years. One reason for the difference in longevity may be that a widow's life expectancy is affected by a change in financial and social position and the intangible effect of bereavement brought on by the employee'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>	26.4	28.6
50	24.7	24.7
55	20.6	21.2
60	17.2	17.8
65		14.5
70		11.6
75		8.9
80		6.6

<sup>a</sup> Based on experience between 2009 and 2012 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 21.2 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, 930 will survive at least 5 years, 820 at least 10 years, 655 at least 15 years, and 445 at least 20 years. Of female age annuitants at age 65, 590 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 25 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>	<u>Railroad Retirement<sup>a</sup></u>					<u>U.S. Population<sup>b</sup></u>	
	<u>Age annuitants</u>		<u>Disability</u>			<u>Males</u>	<u>Females</u>
	<u>Males</u>	<u>Females</u>	<u>Annuitants</u>	<u>Spouses<sup>d</sup></u>	<u>Widows<sup>e</sup></u>		
60	22.4	25.6	17.7	25.5	23.2	21.5	24.4
61	21.5	24.7	17.1	24.6	22.3	20.7	23.6
62	20.7	23.7	16.4	23.7	21.4	19.9	22.8
63	19.8	22.9	15.8	22.9	20.6	19.2	22.0
64	19.0	22.0	15.1	22.0	19.8	18.4	21.1
65	18.2	21.1	14.5	21.2	19.0	17.7	20.3
66	17.4	20.2	14.0	20.4	18.2	17.0	19.5
67	16.6	19.4	13.4	19.6	17.5	16.3	18.7
68	15.9	18.5	12.8	18.8	16.8	15.6	18.0
69	15.1	17.7	12.1	18.0	16.1	14.9	17.2
70	14.3	17.0	11.6	17.2	15.4	14.2	16.5
71	13.6	16.2	11.0	16.5	14.7	13.5	15.7
72	12.9	15.5	10.5	15.7	14.0	12.9	15.0
73	12.2	14.7	9.9	15.0	13.4	12.2	14.3
74	11.6	14.0	9.4	14.3	12.8	11.6	13.6
75	10.9	13.3	8.9	13.6	12.2	11.0	12.9
76	10.3	12.7	8.4	12.9	11.5	10.4	12.2
77	9.7	11.9	8.0	12.2	10.9	9.8	11.5
78	9.1	11.2	7.5	11.5	10.3	9.3	10.9
79	8.6	10.5	7.0	10.9	9.8	8.7	10.3
80	8.0	9.8	6.6	10.3	9.2	8.2	9.7
81	7.4	9.2	6.2	9.7	8.6	7.7	9.1
82	6.9	8.5	5.8	9.1	8.1	7.2	8.5
83	6.5	7.9	5.4	8.5	7.6	6.7	8.0
84	6.0	7.4	5.1	8.0	7.1	6.3	7.4
85	5.6	6.9	4.8	7.5	6.7	5.8	6.9

<sup>a</sup> Based on experience between anniversaries of retirement in 2009 and 2012 for all annuitants.

<sup>b</sup> U.S. Life Tables for 2010 from Tables 2 and 3, National Vital Statistics Reports, Vol. 63, No. 7, Nov. 6, 2014, United States Public Health Service, U.S. Department of Health and Human Services.

<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 95 percent of spouses are female.

<sup>e</sup> Includes widowers. About 99 percent of 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	961	895	788	630	979	934	854	748
65	930	820	655	445	955	873	764	590
70	881	704	478	233	914	800	618	377
75	799	543	265	78	875	676	413	158
	<u>Spouses</u>				<u>Widows</u>			
60	971	919	841	727	961	885	777	640
65	947	866	749	583	921	808	666	484
70	915	791	616	392	877	723	526	305
75	864	673	429	193	824	600	348	139
	<u>All disability annuitants</u>							
60	893	764	604	426				
65	856	676	477	268				
70	790	557	313	128				
75	706	396	162	39				
	<u>Disability annuitants at retirement</u>				<u>Disabled annuitants disabled 5 or more years</u>			
45	878	821	756	681	958	896	826	743
50	934	860	774	663	935	862	775	664
55	890	801	686	542	921	829	710	560
60	862	738	583	411	900	771	608	429
65	b	b	b	b	856	676	477	268
70	b	b	b	b	790	557	313	128
75	b	b	b	b	706	396	162	39

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

<sup>b</sup> Not applicable. Disability annuities not awarded on or after 65th birthday.