

MODEL REGULATION PERMITTING SMOKER/NONSMOKER MORTALITY TABLES FOR USE IN DETERMINING MINIMUM RESERVE LIABILITIES AND NONFORFEITURE BENEFITS

Section 1. Authority

This Rule is promulgated by the Commissioner of Insurance pursuant to Section (insert applicable reference to the Standard Nonforfeiture Law for Life Insurance) of the (insert state) Insurance Laws.

Section 2. Purpose

The purpose of the Rule is to permit the use of mortality tables that reflect differences in mortality between smokers and nonsmokers in determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits for plans of insurance with separate premium rates for smokers and nonsmokers.

Section 3. Definition

A. As used in this Rule, "1980 CSO Table, with or without Ten-Year Select Mortality Factor" means that mortality table, consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Valuation Law and Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Standard Ordinary Mortality Table, with or without Ten-Year Select Mortality Factors. The same select factors will be used for both smokers and nonsmokers tables.

B. As used in this Rule, "1980 CET Table" means that mortality table consisting of separate rates of mortality for male and female lives, developed by the Society of Actuaries Committee to Recommend New Mortality Tables for Valuation of Standard Individual Ordinary Life Insurance, incorporated in the 1980 NAIC Amendments to the Model Standard Nonforfeiture Law for Life Insurance, and referred to in those models as the Commissioners 1980 Extended Term Insurance Table.

C. As used in this Rule, "1958 CSO Table" means that mortality table developed by the Society of Actuaries Special Committee on New Mortality Tables, incorporated in the NAIC Model Standard Nonforfeiture Law for Life Insurance, and referred to in that model as the Commissioners 1958 Standard Ordinary Mortality Table.

D. As used in this Rule, "1958 CET Table" means that mortality table developed by the Society of Actuaries Special Committee on New Mortality Tables, incorporated in the NAIC Model Standard Nonforfeiture Law for Life Insurance, and referred to in that model as the Commissioners 1958 Extended Term Insurance Table.

As used in this Rule, the phrase "smoker and nonsmoker mortality tables" refers to the mortality tables with separate rates of mortality for smokers and nonsmokers derived from the tables defined in A through D of this section which were developed by the Society of Actuaries Task Force on Smoker/Nonsmoker Mortality and the California Insurance Department staff and recommended by the NAIC Technical Staff Actuarial Group.

F. As used in this Rule, the phrase "composite mortality tables" refers to the mortality tables defined in A through D of this section as they were originally published with rates of mortality that do not distinguish between smokers and nonsmokers.

[See 1984 NAIC PROCEEDINGS, Vol. I, pages 402-413 for tables.]

Section 4. Alternate Tables

A. For any policy of insurance delivered or issued for delivery in this state after the operative date of section 428 of chapter 40, Kansas statutes annotated for that policy form and before January 1, 1989, at the option of the company and subject to the conditions stated in section 5 of this Rule,

(i) the 1958 CSO Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and

(ii) the 1958 CET Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CET Table for use in determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

Provided that for any category of insurance issued on female lives with minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits determined using the 1958 CSO or 1958 CET Smoker and Nonsmoker Mortality Tables, such minimum values may be calculated according to an age not more than six years younger than the actual age of the insured.

Provided further that the substitution of the 1958 CSO or 1958 CET Smoker and Nonsmoker Mortality Tables is available only if made for each policy of insurance on a policy form delivered or issued for delivery on or after the operative date for that policy form and before a date not later than January 1, 1989.

B. For any policy of insurance delivered or issued for delivery in this state after the operative date of section (insert applicable reference corresponding to paragraph 5-c (11) of the NAIC Model Standard Nonforfeiture Law for Life Insurance) for that policy form, at the option of the company and subject to the conditions stated in section 5 of this Rule,

(i) the 1980 CSO Smoker and Nonsmoker Mortality Tables, with or without Ten-Year Select Mortality Factors, may be substituted for the 1980 CSO Table, with or without Ten-Year Select Mortality Factors, and

(ii) the 1980 CET Smoker and Nonsmoker Mortality Tables may be substituted for the 1980 CET Table for use in determining minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

Section 5. Conditions

For each plan of insurance with separate rates for smokers and nonsmokers an insurer may

(i) use composite mortality tables to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits,

(ii) use smoker and nonsmoker mortality tables to determine the valuation net premiums and additional minimum reserves, if any, required by section (insert applicable reference corresponding to section 7 of the NAIC Model Standard Valuation Law) and use composite mortality tables to determine the basic minimum reserves, minimum cash surrender values and amounts of paid-up nonforfeiture benefits, or

(iii) use smoker and nonsmoker mortality to determine minimum reserve liabilities and minimum cash surrender values and amounts of paid-up nonforfeiture benefits.

Section 6. Separability

If any provision of this Rule or the application thereof to any person or circumstance is for any reason held to be invalid, the remainder of the regulation and the application of such provision to other persons or circumstances shall not be affected thereby.

Section 7. Effective Date

The effective date of this Rule is January 1, 1984.

SMOKERS-NONSMOKERS MORTALITY TABLES

A model regulation is attached (Attachment Two A4) providing for 1958 CSO and CET and 1980 CSO and CET Smokers/Nonsmokers Mortality Tables for use in permitting minimum reserve liabilities and nonforfeiture benefits. The 1958 CSO and CET tables are based on the distribution of smokers/nonsmokers representative of the period used to obtain the basic mortality experience for those tables and were loaded with the loading factors used to derive those tables from the basic tables. The 1980 CSO and CET tables were based on the distribution of smokers vs. nonsmokers during the period of the experience underlying those tables and loaded using the loadings applicable in the construction of the 1980 tables from the basis tables.

Because of the shifts in the proportions of smokers vs. nonsmokers, use of the smokers/nonsmokers tables will not currently reproduce in the aggregate reserves or values calculated using tables not distinguishing by smokers vs. nonsmokers. Tables based on other experience may be used for premium rates and universal life mortality charges; but only the 1958 CSO and CET and 1980 CSO and CET tables provided here may be used for the calculation of minimum policy reserves and nonforfeiture values. The 1958 CSO Tables are make tables; female tables are to be obtained by the age setbacks defined by the Standard Valuation and Nonforfeiture Laws.

The tables attached which are values of 1000 q_x and where ANB is "Age Nearest Birthday" and where ALB is "Age Last Birthday":

1	1958 CSO	Male Nonsmokers and Smokers Mortality Table ANB
2	1958 CET	Male Nonsmokers and smokers Mortality Table ANB
3	1958 CSO	Male Nonsmokers and Smokers Mortality Tables ALB
4	1958 CET	Male Nonsmokers and Smokers Mortality Table ALB
5	1980 CSO	Female Nonsmokers and Smokers mortality Table ANB
6	1980 CSO	Male Nonsmokers and Smokers Mortality Table ANB
7	1980 CET	Female Nonsmokers and Smokers Mortality Table ANB
8	1980 CET	Male Nonsmokers and Smokers mortality Table ANB
9	1980 CSO	Female Nonsmokers and Smokers Mortality Table ALB
10	1980 CSO	Male Nonsmokers and Smokers Mortality Table ALB
11	1980 CET	Female Nonsmokers and Smokers Mortality Table ALB
12	1980 CET	Male Nonsmokers and Smokers Mortality Table ALB

The 1980 CSO Mortality Tables are recommended by the NAIC Technical Staff Actuarial group using those rates shown in the Report of the Society of Actuaries Task Force on Smoker/Nonsmoker Mortality Report Dated October 3, 1983. The 1958 CSO Mortality Tables were developed by the staff of the California Department of Insurance using the methodology of the Society of Actuaries Task Force and are also recommended by the NAIC Technical Staff Actuarial group. Since the California Department report is not available elsewhere it is also attached (Attachment Two-A5).

Although eventually some sex blended smokers/nonsmokers tables may be needed, the need it not yet evident.

The Task Force recommends the adoption of this model regulation and the use of the mortality tables mentioned therein for the purposes indicated.

TABLE 1
1958 CSO MALE ANB SMOKER AND NONSMOKER MORTALITY RATES

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.46	1.74	45	3.46	6.67	75	68.58	89.23
16	1.53	1.85	46	3.76	7.32	76	74.50	95.38
17	1.60	1.96	47	4.08	8.02	77	81.15	102.84
18	1.64	2.03	48	4.45	8.82	78	88.62	110.80

19	1.65	2.05	49	4.86	9.71	79	96.85	119.44
20	1.64	2.05	50	5.31	10.68	80	105.75	128.60
21	1.62	2.04	51	5.83	11.75	81	115.27	138.20
22	1.63	2.07	52	6.40	12.88	82	125.28	148.05
23	1.63	2.08	53	7.07	14.16	83	135.72	158.05
24	1.64	2.11	54	7.84	15.54	84	146.62	168.22
25	1.64	2.12	55	8.72	17.03	85	158.06	178.62
26	1.65	2.15	56	9.74	18.65	86	170.08	189.26
27	1.66	2.18	57	10.91	20.44	87	182.76	200.21
28	1.67	2.23	58	12.26	22.35	88	196.27	211.61
29	1.69	2.29	59	13.74	24.42	89	210.88	223.70
30	1.71	2.37	60	15.38	26.72	90	226.99	236.85
31	1.73	2.45	61	17.16	29.21	91	244.83	253.34
32	1.75	2.52	62	19.14	31.88	92	265.20	272.12
33	1.79	2.63	63	21.29	34.83	93	288.78	293.80
34	1.83	2.73	64	23.68	38.00	95	316.38	319.13
35	1.88	2.86	65	26.34	41.44	95	351.24	351.24
36	1.95	3.03	66	29.32	45.19	96	400.56	400.56
37	2.04	3.25	67	32.61	49.20	97	488.42	488.42
38	2.15	3.52	68	36.28	53.55	98	668.15	668.15
39	2.28	2.83	69	40.17	58.31	99	1000.00	1000.00
40	2.43	4.19	70	44.34	63.27			
41	2.60	4.62	71	48.74	68.33			
42	2.78	5.04	72	53.32	73.41			
43	2.99	5.55	73	58.07	78.50			
44	3.21	6.09	74	63.11	83.71			

TABLE 2
1958 CET MALE ANB SMOKER AND NONSMOKER MORTALITY RATES

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	2.21	2.49	45	4.50	8.67	75	89.15	116.00
16	2.28	2.60	46	4.89	9.52	76	96.85	124.38
17	2.35	2.71	47	5.30	10.43	77	105.50	133.69
18	2.39	2.78	48	5.79	11.47	78	115.21	144.04
19	2.40	2.80	49	6.32	12.62	79	125.91	155.27
20	2.39	2.80	50	6.90	13.88	80	137.48	167.18
21	2.37	2.79	51	7.58	15.28	81	149.85	179.66
22	2.38	2.82	52	8.32	16.74	82	162.86	192.47
23	2.38	2.83	53	9.19	18.41	83	176.44	205.47
24	2.39	2.86	54	10.19	20.20	84	190.61	218.69
25	2.39	2.87	55	11.34	22.14	85	205.48	232.21
26	2.40	2.90	56	12.66	24.25	86	221.10	246.04
27	2.41	2.93	57	14.18	26.57	87	237.59	260.27
28	2.42	2.98	58	15.94	29.06	88	255.15	275.09
29	2.44	3.04	59	17.86	31.75	89	274.14	290.81
30	2.46	3.12	60	19.99	34.74	90	295.09	307.91
31	2.48	3.20	61	22.31	37.97	91	318.28	329.34
32	2.50	3.28	62	24.88	41.44	92	344.76	353.76
33	2.54	3.42	63	27.68	45.28	93	375.41	381.94
34	2.58	3.55	64	30.78	49.40	95	411.29	414.87
35	2.63	3.72	65	34.24	53.87	95	456.61	456.61
36	2.70	3.94	66	38.12	58.75	96	520.73	520.73
37	2.79	4.23	67	42.39	63.96	97	634.95	634.95
38	2.90	4.58	68	47.16	69.62	98	868.60	868.60
39	3.03	4.98	69	52.22	75.80	99	1000.00	1000.00

40	3.18	5.45	70	57.64	82.25
41	3.36	6.01	71	63.36	88.83
42	3.61	6.55	72	69.32	95.43
43	3.89	7.22	73	75.49	102.05
44	4.17	7.92	74	82.04	108.82

TABLE 3
1958 CSO MALE ALB SMOKER AND NONSMOKER MORTALITY RATES

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.49	1.79	45	3.61	6.99	75	71.43	92.30
16	1.56	1.90	46	3.92	7.67	76	77.70	99.08
17	1.62	1.99	47	4.26	8.42	77	84.73	106.60
18	1.64	2.04	48	4.65	9.26	78	92.54	114.87
19	1.65	2.05	49	5.08	10.19	79	101.07	123.73
20	1.63	2.05	50	5.57	11.21	80	110.24	133.07
21	1.62	2.05	51	6.11	12.31	81	119.97	142.76
22	1.63	2.07	52	6.73	13.52	82	130.15	152.65
23	1.63	2.09	53	7.45	14.85	83	140.77	162.70
24	1.64	2.11	54	8.28	16.28	84	151.89	172.94
25	1.64	2.13	55	9.23	17.83	85	163.55	183.42
26	1.65	2.16	56	10.32	19.54	86	175.83	194.16
27	1.66	2.20	57	11.58	21.39	87	188.84	205.28
28	1.68	2.26	58	13.00	23.37	88	202.78	216.94
29	1.70	2.33	59	14.55	25.56	89	217.99	229.45
30	1.72	2.41	60	16.26	27.95	90	234.77	243.99
31	1.74	2.48	61	18.15	30.53	91	253.59	261.37
32	1.77	2.57	62	20.20	33.33	92	275.19	281.25
33	1.81	2.68	63	22.47	36.39	93	300.25	304.28
34	1.85	2.79	64	24.99	39.69	95	330.53	332.14
35	1.91	2.94	65	27.81	43.28	95	370.65	370.65
36	1.99	3.14	66	30.94	47.15	96	433.49	433.49
37	2.09	3.38	67	34.41	51.32	97	549.25	549.25
38	2.21	3.67	68	38.19	55.86	98	750.84	750.84
39	2.35	4.01	69	42.21	60.72	99	1000.00	1000.00
40	2.51	4.40	70	46.49	65.72			
41	2.69	4.83	71	50.97	70.78			
42	2.88	5.29	72	55.63	75.86			
43	3.10	5.82	73	60.51	81.00			
44	3.33	6.38	74	65.76	86.35			

TABLE 4
1958 CET MALE ALB SMOKER AND NONSMOKER MORTALITY RATES

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	2.24	2.54	45	4.69	9.09	75	92.82	119.93
16	2.31	2.65	46	5.09	9.97	76	100.95	128.73
17	2.37	2.74	47	5.54	10.95	77	110.08	138.49
18	2.39	2.79	48	6.05	12.04	78	120.23	149.22
19	2.40	2.80	49	6.61	13.25	79	131.31	160.72
20	2.38	2.80	50	7.24	14.58	80	143.21	172.85
21	2.37	2.80	51	7.95	16.00	81	155.83	185.43
22	2.38	2.82	52	8.75	17.57	82	169.05	198.28
23	2.38	2.84	53	9.69	19.30	83	182.84	211.32
24	2.39	2.86	54	10.76	21.16	84	197.26	224.62
25	2.39	2.88	55	12.00	23.18	85	212.40	238.22

26	2.40	2.91	56	13.42	25.40	86	228.32	252.16
27	2.41	2.95	57	15.05	27.80	87	245.19	266.57
28	2.43	3.01	58	16.89	30.39	88	263.26	281.70
29	2.45	3.08	59	18.92	33.22	89	282.95	297.91
30	2.47	3.16	60	21.14	36.33	90	304.68	316.68
31	2.49	3.24	61	23.58	39.67	91	329.01	339.14
32	2.52	3.35	62	26.26	43.32	92	356.89	364.82
33	2.56	3.48	63	29.21	47.29	93	389.20	394.52
34	2.60	3.63	64	32.48	51.58	95	428.08	430.28
35	2.66	3.88	65	36.15	56.24	95	479.19	479.19
36	2.74	4.08	66	40.21	61.28	96	557.74	557.74
37	2.84	4.40	67	44.72	66.70	97	697.43	697.43
38	2.96	4.78	68	49.63	72.60	98	883.86	883.86
39	3.10	5.21	69	54.86	78.90	99	1000.00	1000.00
40	3.28	5.73	70	60.42	85.40			
41	3.49	6.28	71	66.24	91.98			
42	3.75	6.88	72	72.29	98.57			
43	4.03	7.57	73	78.64	105.25			
44	4.33	8.29	74	85.44	112.20			

TABLE 5
1980 CSO FEMALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	0.84	0.94	45	2.99	4.61	75	37.32	46.64
16	0.88	0.99	46	3.19	4.95	76	42.04	51.92
17	0.92	1.04	47	3.41	5.31	77	47.11	57.46
18	0.95	1.09	48	3.65	5.68	78	52.53	63.23
19	0.98	1.13	49	3.90	6.08	79	58.45	69.41
20	1.01	1.16	50	4.19	6.54	80	65.12	76.26
21	1.02	1.18	51	4.50	7.00	81	72.76	84.00
22	1.04	1.21	52	4.85	7.52	82	81.59	92.84
23	1.05	1.23	53	5.26	8.13	83	91.76	102.87
24	1.08	1.27	54	5.68	8.75	84	103.03	114.65
25	1.09	1.29	55	6.13	9.40	85	115.38	126.42
26	1.12	1.34	56	6.59	10.05	86	128.58	139.79
27	1.14	1.38	57	7.05	10.67	87	142.71	152.67
28	1.17	1.42	58	7.49	11.25	88	157.61	167.23
29	1.20	1.48	59	7.96	11.85	89	173.51	181.07
30	1.24	1.55	60	8.51	12.51	90	190.39	197.01
31	1.27	1.61	61	9.16	13.36	91	205.58	214.00
32	1.31	1.68	62	9.98	14.39	92	228.60	232.54
33	1.35	1.75	63	11.01	15.78	93	251.40	253.55
34	1.42	1.86	64	12.23	17.33	95	279.31	279.31
35	1.47	1.94	65	13.55	19.07	95	317.32	317.32
36	1.56	2.09	66	14.97	20.79	96	375.74	375.74
37	1.67	2.28	67	16.41	22.58	97	474.97	474.97
38	1.79	2.49	68	17.86	24.20	98	655.85	655.85
39	1.93	2.73	69	19.41	26.02	99	1000.00	1000.00
40	2.08	3.00	70	21.20	27.95			
41	2.26	3.33	71	23.34	30.45			
42	2.44	3.64	72	25.99	33.55			
43	2.62	3.96	73	29.22	37.33			
44	2.80	4.28	74	33.02	41.74			

TABLE 6
1980 CSO MALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.29	1.65	45	3.32	6.27	75	58.80	83.77
16	1.43	1.87	46	3.59	6.83	76	65.06	91.10
17	1.54	2.05	47	3.88	7.44	77	71.64	98.52
18	1.60	2.16	48	4.19	8.08	78	78.47	105.91
19	1.66	2.26	49	4.54	8.80	79	85.72	113.49
20	1.68	2.31	50	4.91	9.56	80	93.67	121.59
21	1.67	2.33	51	5.35	10.44	81	102.52	130.41
22	1.64	2.30	52	5.86	11.42	82	112.52	140.20
23	1.61	2.26	53	6.43	12.54	83	123.79	151.03
24	1.57	2.21	54	7.09	13.80	84	136.11	162.49
25	1.52	2.14	55	7.82	15.14	85	149.20	174.20
26	1.48	2.08	56	8.63	16.59	86	162.80	185.78
27	1.46	2.06	57	9.49	18.09	87	176.79	197.06
28	1.44	2.04	58	10.42	19.69	88	190.89	209.37
29	1.44	2.06	59	11.47	21.35	89	205.29	221.52
30	1.44	2.10	60	12.64	23.19	90	220.19	233.69
31	1.47	2.17	61	13.94	25.26	91	235.84	246.12
32	1.50	2.24	62	15.42	27.59	92	252.75	259.33
33	1.55	2.35	63	17.11	30.23	93	271.63	276.30
34	1.61	2.48	64	19.02	33.14	95	295.65	298.15
35	1.69	2.63	65	21.13	36.29	95	329.96	329.96
36	1.77	2.81	66	23.40	39.57	96	384.55	384.55
37	1.88	3.04	67	25.86	43.01	97	480.20	480.20
38	2.00	3.30	68	28.50	46.55	98	657.98	657.98
39	2.14	3.60	69	31.38	50.32	99	1000.00	1000.00
40	2.29	3.94	70	34.63	54.48			
41	2.47	4.34	71	38.91	59.09			
42	2.65	4.75	72	42.56	64.33			
43	2.86	5.22	73	47.44	70.23			
44	3.07	5.71	74	52.92	76.66			

TABLE 7
1980 CET FEMALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.59	1.69	45	3.89	5.99	75	48.52	60.63
16	1.63	1.74	46	4.15	6.44	76	54.65	67.50
17	1.67	1.79	47	4.43	6.90	77	61.24	74.70
18	1.70	1.84	48	4.75	7.38	78	68.29	82.20
19	1.73	1.88	49	5.07	7.90	79	75.99	90.23
20	1.76	1.91	50	5.45	8.50	80	84.6	99.14
21	1.77	1.93	51	5.85	9.10	81	94.59	109.20
22	1.79	1.96	52	6.31	9.78	82	106.07	120.69
23	1.80	1.98	53	6.84	10.57	83	119.29	133.73
24	1.83	2.02	54	7.38	11.38	84	133.94	149.05
25	1.84	2.04	55	7.97	12.22	85	149.99	164.35
26	1.87	2.09	56	8.57	13.07	86	167.15	181.73
27	1.89	2.13	57	9.17	13.87	87	185.52	198.47
28	1.92	2.17	58	9.74	14.63	88	204.89	217.40
29	1.95	2.23	59	10.35	15.41	89	225.56	235.39

30	1.99	2.30	60	11.06	16.26	90	247.51	256.11
31	2.02	2.36	61	11.91	17.37	91	271.15	278.20
32	2.06	2.43	62	12.97	18.71	92	297.18	302.30
33	2.10	2.50	63	14.31	20.51	93	326.82	329.62
34	2.17	2.61	64	15.90	22.53	95	363.10	363.10
35	2.22	2.69	65	17.62	24.79	95	412.52	412.52
36	2.31	2.84	66	19.46	27.03	96	488.46	488.46
37	2.42	3.03	67	21.33	29.35	97	617.46	617.46
38	2.54	3.24	68	23.22	31.46	98	852.61	852.61
39	2.68	3.55	69	25.23	33.83	99	1000.00	1000.00
40	2.83	3.90	70	27.56	36.34			
41	3.01	4.33	71	30.34	39.59			
42	3.19	4.73	72	33.79	43.62			
43	3.41	5.15	73	37.99	48.53			
44	3.64	5.56	74	42.93	54.26			

TABLE 8
1980 CET MALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	2.04	2.40	45	4.32	8.15	75	76.44	108.90
16	2.18	2.62	46	4.67	8.88	76	84.58	118.43
17	2.29	2.80	47	5.04	9.67	77	93.13	128.08
18	2.35	2.91	48	5.45	10.50	78	102.01	137.68
19	2.41	3.01	49	5.90	11.44	79	111.44	147.54
20	2.43	3.06	50	6.38	12.43	80	121.77	158.07
21	2.42	3.08	51	6.96	13.57	81	133.28	169.53
22	2.39	3.05	52	7.62	14.85	82	146.28	182.26
23	2.36	3.01	53	8.36	16.30	83	160.93	196.34
24	2.32	2.96	54	9.22	17.94	84	176.94	221.24
25	2.27	2.89	55	10.17	19.68	85	193.96	226.46
26	2.23	2.83	56	11.22	21.57	86	211.64	241.51
27	2.21	2.81	57	12.34	23.52	87	229.83	256.18
28	2.19	2.79	58	13.55	25.60	88	248.16	272.19
29	2.19	2.81	59	14.91	27.76	89	266.88	287.98
30	2.19	2.85	60	16.43	30.15	90	286.25	303.80
31	2.22	2.92	61	18.12	32.84	91	306.59	319.96
32	2.25	2.99	62	20.05	35.87	92	328.58	337.13
33	2.30	3.10	63	22.24	39.30	93	353.12	359.19
34	2.36	3.23	64	24.73	43.08	95	384.35	387.60
35	2.44	3.42	65	27.47	47.18	95	428.95	428.95
36	2.52	3.65	66	30.42	51.44	96	499.92	499.92
37	2.63	3.95	67	33.62	55.91	97	624.26	624.26
38	2.75	4.29	68	37.05	60.52	98	855.37	855.37
39	2.89	4.68	69	40.79	65.42	99	1000.00	1000.00
40	3.04	5.12	70	45.02	70.82			
41	3.22	5.64	71	49.80	76.82			
42	3.45	6.18	72	55.33	83.63			
43	3.72	6.79	73	61.67	91.30			
44	3.99	7.42	74	68.80	99.60			

TABLE 9
1980 CSO FEMALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Non- Non- Non-

Age	Smoker	Smoker	Age	Smoker	Smoker	Age	Smoker	Smoker
15	0.86	0.96	45	3.09	4.78	75	39.64	49.22
16	0.90	1.01	46	3.30	5.13	76	44.52	54.62
17	0.93	1.06	47	3.53	5.49	77	49.75	60.26
18	0.96	1.11	48	3.77	5.88	78	55.41	66.22
19	0.99	1.14	49	4.04	6.31	79	61.68	72.71
20	1.01	1.17	50	4.34	6.77	80	68.81	79.98
21	1.03	1.19	51	4.67	7.26	81	77.01	88.23
22	1.04	1.22	52	5.05	7.82	82	86.46	97.61
23	1.06	1.25	53	5.47	8.44	83	97.12	108.44
24	1.08	1.28	54	5.90	9.07	84	108.87	120.18
25	1.10	1.31	55	6.36	9.72	85	121.58	132.65
26	1.13	1.36	56	6.82	10.36	86	135.16	145.75
27	1.15	1.40	57	7.27	10.96	87	149.59	159.35
28	1.18	1.45	58	7.72	11.55	88	164.88	173.52
29	1.22	1.51	59	8.23	12.18	89	181.15	188.25
30	1.25	1.58	60	8.83	12.93	90	198.53	204.58
31	1.29	1.64	61	9.57	13.87	91	217.42	222.16
32	1.33	1.71	62	10.49	15.08	92	238.53	241.66
33	1.38	1.80	63	11.62	16.55	93	263.35	264.56
34	1.44	1.90	64	12.89	18.19	95	295.23	295.23
35	1.51	2.01	65	14.26	19.92	95	341.02	341.02
36	1.61	2.18	66	15.68	21.68	96	413.88	413.88
37	1.73	2.38	67	17.13	23.38	97	537.24	537.24
38	1.86	2.61	68	18.63	25.10	98	743.96	743.96
39	2.00	2.86	69	20.30	26.97	99	1000.00	1000.00
40	2.17	3.16	70	22.26	29.18			
41	2.35	3.48	71	24.65	31.98			
42	2.53	3.80	72	27.58	35.41			
43	2.71	4.12	73	31.09	39.49			
44	2.89	4.44	74	35.13	44.14			

TABLE 10
1980 CSO MALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.36	1.76	45	3.45	6.55	75	61.84	87.27
16	1.48	1.96	46	3.73	7.13	76	68.24	94.63
17	1.57	2.10	47	4.03	7.76	77	74.93	102.02
18	1.63	2.21	48	4.36	8.44	78	81.95	109.49
19	1.67	2.28	49	4.72	9.18	79	89.52	117.30
20	1.68	2.32	50	5.13	10.00	80	97.88	125.71
21	1.66	2.32	51	5.60	10.93	81	107.25	134.96
22	1.63	2.28	52	6.14	11.98	82	117.82	145.21
23	1.59	2.24	53	6.76	13.17	83	129.54	156.29
24	1.55	2.18	54	7.45	14.47	84	142.18	167.83
25	1.50	2.11	55	8.22	15.86	85	155.45	179.44
26	1.47	2.07	56	9.06	17.33	86	169.18	190.84
27	1.45	2.05	57	9.95	18.88	87	183.16	202.54
28	1.44	2.05	58	10.94	20.51	88	197.33	214.73
29	1.44	2.08	59	12.05	22.26	89	211.89	226.85
30	1.45	2.13	60	13.29	24.21	90	227.05	239.08
31	1.48	2.20	61	14.67	26.41	91	243.16	251.80
32	1.52	2.29	62	16.26	28.89	92	260.82	266.55
33	1.58	2.41	63	18.06	31.66	93	281.75	285.47

34	1.65	2.55	64	20.06	34.69	95	309.83	311.27
35	1.73	2.72	65	22.25	37.90	95	351.86	351.86
36	1.82	2.92	66	24.62	41.26	96	420.99	420.99
37	1.94	3.17	67	27.16	44.74	97	541.00	541.00
38	2.07	3.45	68	29.92	48.39	98	745.15	745.15
39	2.21	3.77	69	32.98	52.35	99	1000.00	1000.00
40	2.38	4.14	70	36.44	56.72			
41	2.56	4.54	71	40.39	61.63			
42	2.75	4.98	72	44.95	67.18			
43	2.96	5.46	73	50.11	73.33			
44	3.19	5.99	74	55.78	80.07			

TABLE 11
1980 CET FEMALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	1.61	1.71	45	4.02	6.21	75	51.53	63.99
16	1.65	1.76	46	4.29	6.67	76	57.88	71.01
17	1.68	1.81	47	4.59	7.14	77	64.68	78.34
18	1.71	1.86	48	4.90	7.64	78	72.03	86.09
19	1.74	1.89	49	5.25	8.20	79	80.18	94.52
20	1.76	1.92	50	5.64	8.80	80	89.45	103.97
21	1.78	1.94	51	6.07	9.44	81	100.11	114.70
22	1.79	1.97	52	6.57	10.17	82	112.40	126.89
23	1.81	2.00	53	7.11	10.97	83	126.26	140.97
24	1.83	2.03	54	7.67	11.79	84	141.53	156.23
25	1.85	2.06	55	8.27	12.64	85	158.05	172.45
26	1.88	2.11	56	8.87	13.47	86	175.71	189.48
27	1.90	2.15	57	9.45	14.25	87	194.47	207.16
28	1.93	2.20	58	10.04	15.02	88	214.34	225.58
29	1.97	2.26	59	10.70	15.83	89	235.50	244.73
30	2.00	2.33	60	11.48	16.81	90	258.09	265.95
31	2.04	2.39	61	12.44	18.03	91	282.65	288.81
32	2.08	2.46	62	13.64	19.60	92	310.09	314.16
33	2.13	2.55	63	15.11	21.52	93	342.36	343.93
34	2.19	2.65	64	16.76	23.65	95	383.80	383.80
35	2.26	2.76	65	18.54	25.90	95	443.33	443.33
36	2.36	2.93	66	20.38	28.18	96	538.04	538.04
37	2.48	3.13	67	22.27	30.39	97	698.41	698.41
38	2.61	3.39	68	24.22	32.63	98	967.15	967.15
39	2.75	3.72	69	26.39	35.06	99	1000.00	1000.00
40	2.92	4.11	70	28.94	37.93			
41	3.10	4.52	71	32.05	41.57			
42	3.29	4.94	72	35.85	46.03			
43	3.52	5.36	73	40.42	51.34			
44	3.76	5.77	74	45.67	57.38			

TABLE 12
1980 CET MALE SMOKER AND NONSMOKER MORTALITY RATES
Age Nearest Birthday

Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker	Age	Non-Smoker	Smoker
15	2.11	2.51	45	4.49	8.52	75	80.39	113.45
16	2.23	2.71	46	4.85	9.27	76	88.71	123.02
17	2.32	2.85	47	5.24	10.09	77	97.41	132.63

18	2.38	2.96	48	5.67	10.97	78	106.54	142.34
19	2.42	3.03	49	6.14	11.93	79	116.38	152.49
20	2.43	3.07	50	6.67	13.00	80	127.24	163.42
21	2.41	3.07	51	7.28	14.21	81	139.43	175.45
22	2.38	3.03	52	7.98	15.57	82	153.17	188.77
23	2.34	2.99	53	8.79	17.12	83	168.40	203.18
24	2.30	2.93	54	9.69	18.81	84	184.83	218.18
25	2.25	2.86	55	10.69	20.62	85	202.09	233.27
26	2.22	2.82	56	11.78	22.53	86	219.93	248.09
27	2.20	2.80	57	12.94	24.54	87	238.11	263.30
28	2.19	2.80	58	14.22	26.66	88	256.53	279.15
29	2.19	2.83	59	15.67	28.94	89	275.46	294.91
30	2.20	2.88	60	17.28	31.47	90	295.17	310.80
31	2.23	2.95	61	19.07	34.33	91	316.11	327.34
32	2.27	3.04	62	21.14	37.56	92	339.07	346.52
33	2.33	3.16	63	23.48	41.16	93	366.28	371.11
34	2.40	3.32	64	26.08	45.10	95	402.78	404.65
35	2.48	3.54	65	28.93	49.27	95	457.42	457.42
36	2.57	3.80	66	32.01	53.64	96	547.29	547.29
37	2.69	4.12	67	35.31	58.16	97	703.30	703.30
38	2.82	4.49	68	38.90	62.91	98	968.70	968.70
39	2.96	4.90	69	42.87	68.06	99	1000.00	1000.00
40	3.13	5.38	70	47.37	73.74			
41	3.33	5.90	71	52.51	80.12			
42	3.58	6.47	72	58.44	87.33			
43	3.85	7.10	73	65.14	95.33			
44	4.15	7.79	74	72.51	104.09			