

Figure 17

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Officers
Survival from Start of Tour

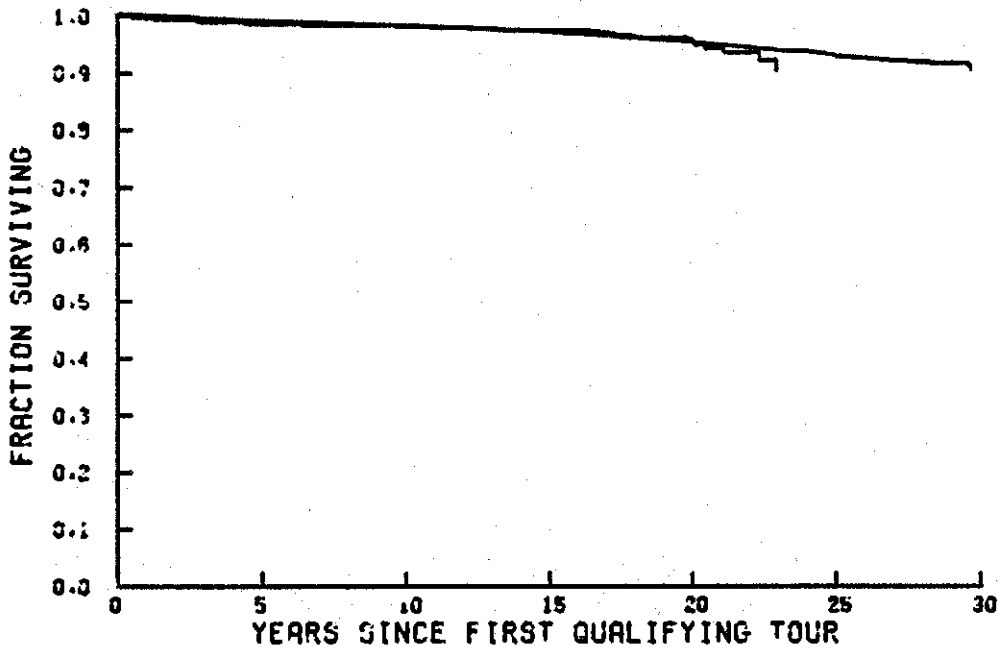


Figure 18

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Enlisted Personnel
Survival from Start of Tour

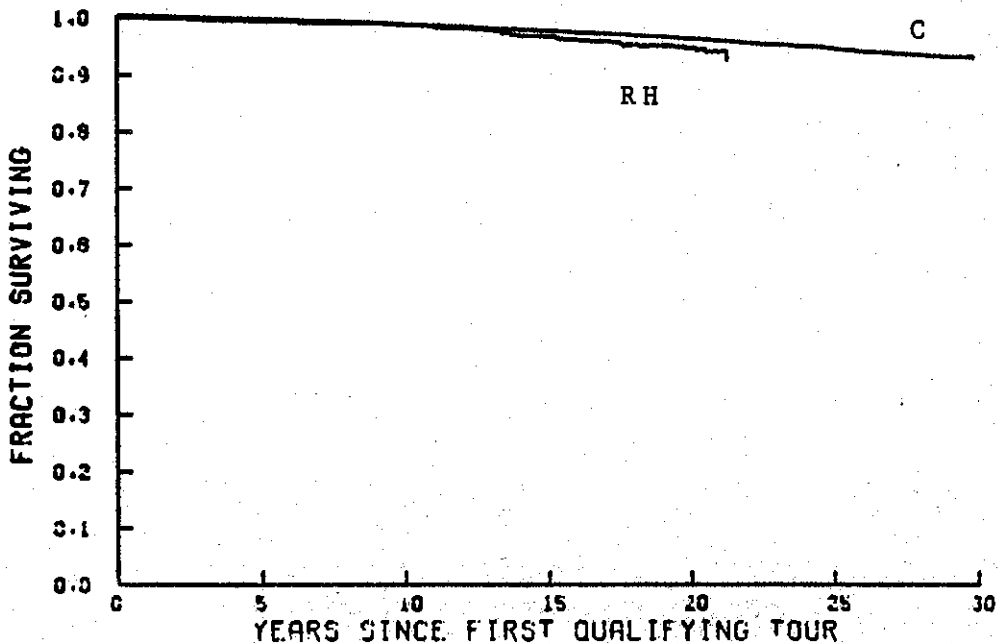


Figure 19

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Flying Personnel
Survival from Start of Tour

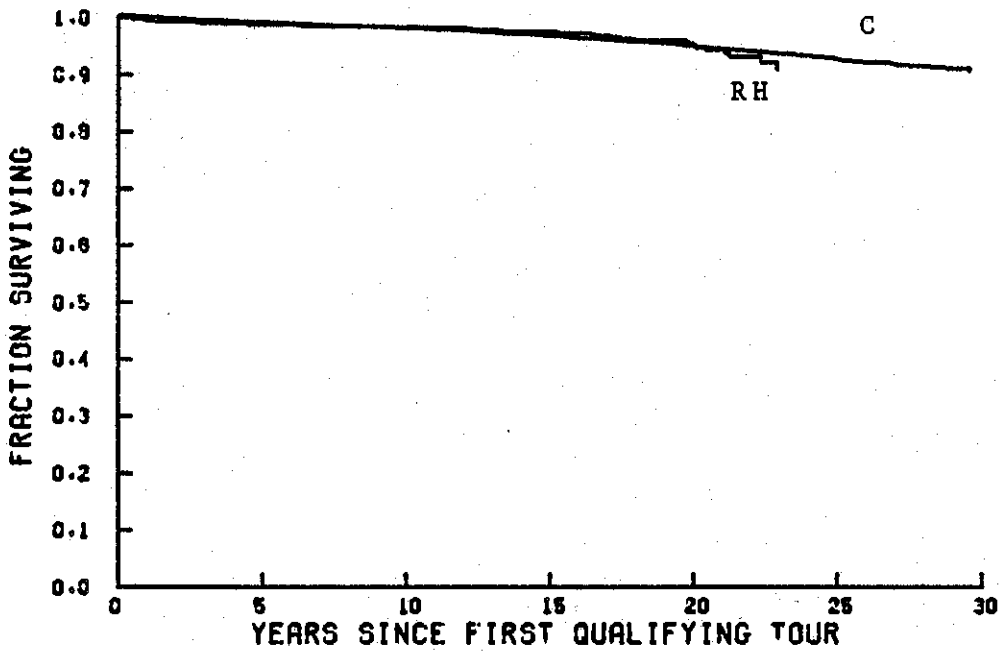


Figure 20

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Nonflying Personnel
Survival from Start of Tour

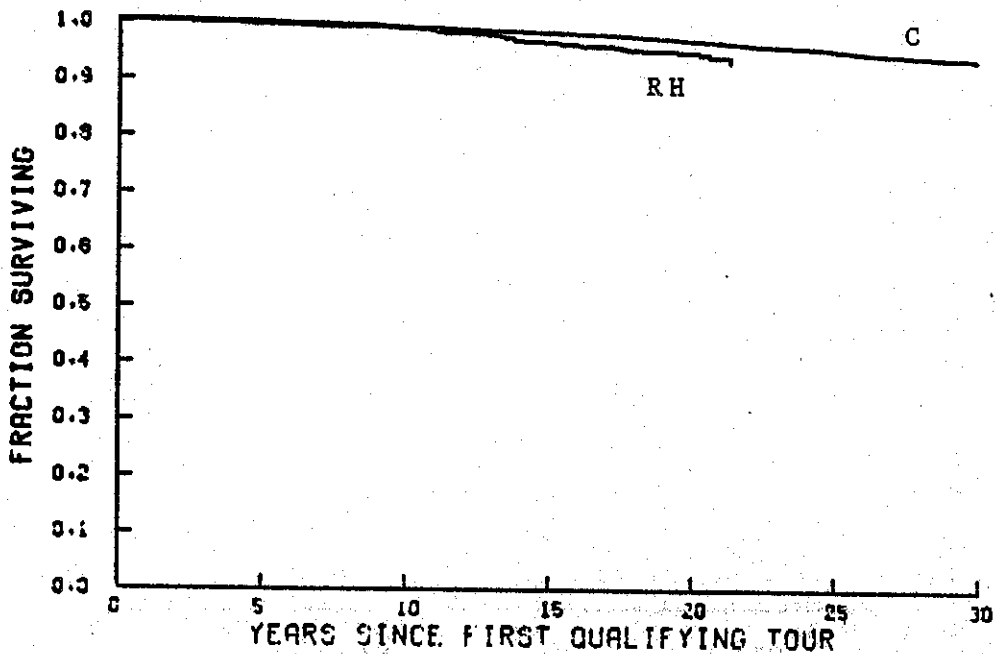


Figure 21

Nonparametric Survival Curve Estimates
All Ranch Hands and C1-C5 Comparisons
Survival from Birth

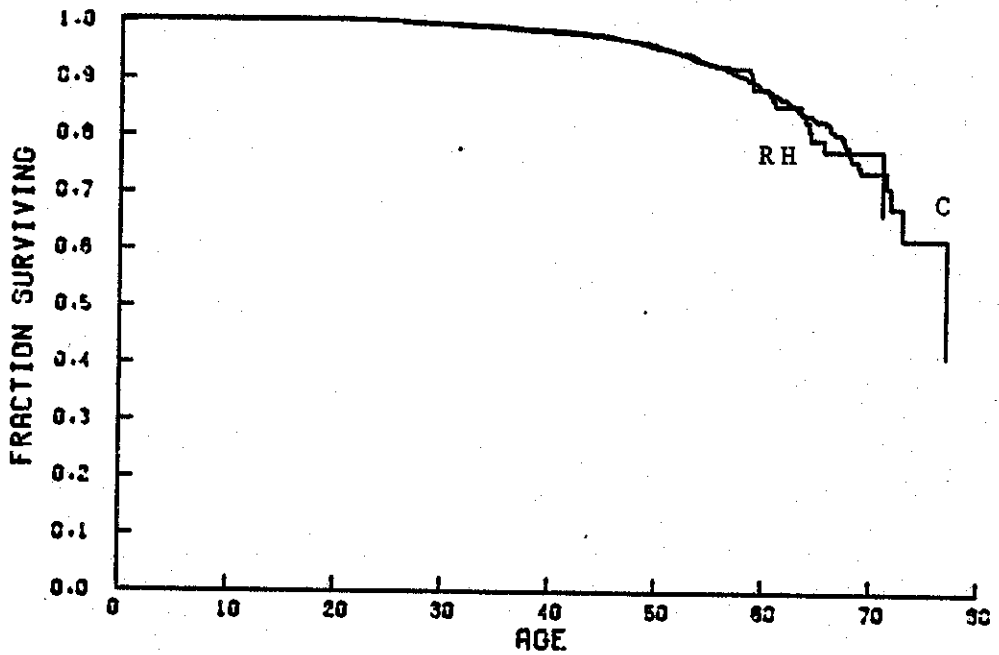


Figure 22

Nonparametric Survival Curve Estimates
Ranch Hand and C1-C5 Comparison Officers
Survival from Birth

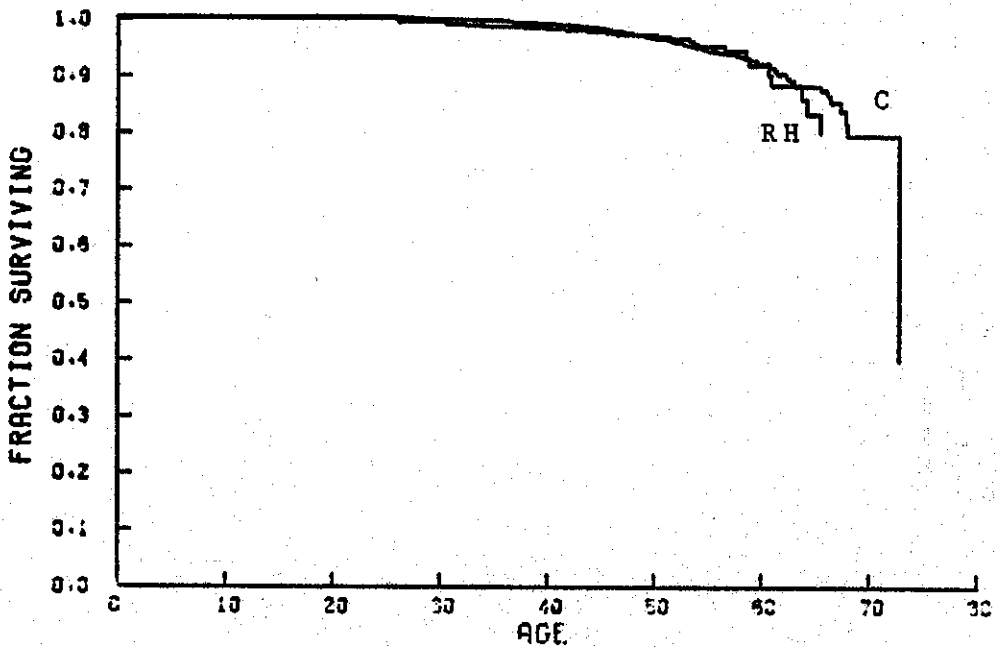


Figure 23

Nonparametric Survival Curve Estimates
Ranch Hand and C1-C5 Comparison Enlisted Personnel
Survival from Birth

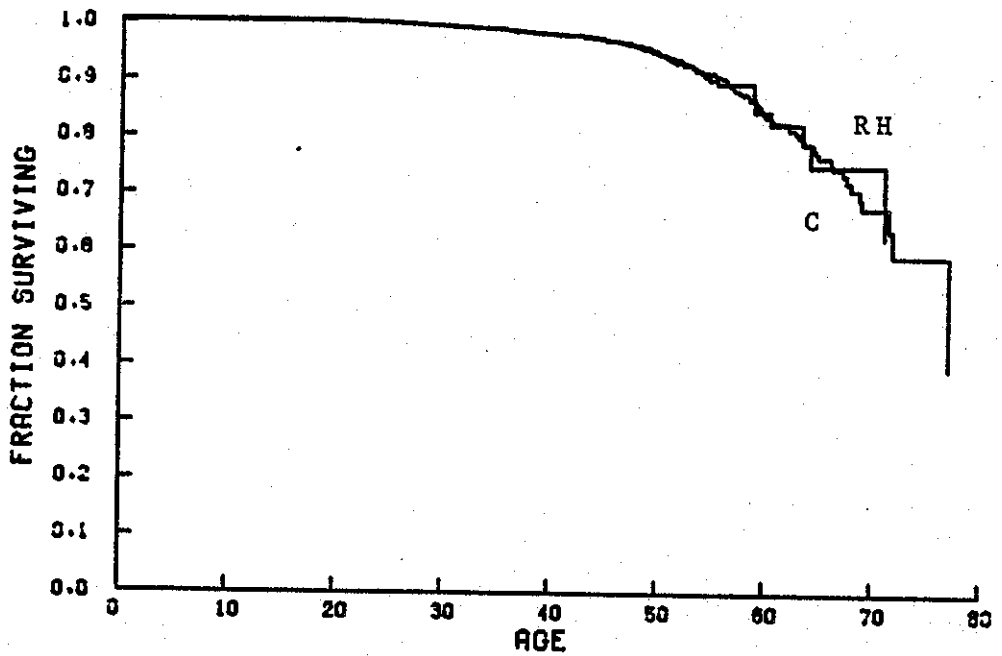


Figure 24

Nonparametric Survival Curve Estimates
Ranch Hand and C1-C5 Comparison Flying Personnel
Survival from Birth

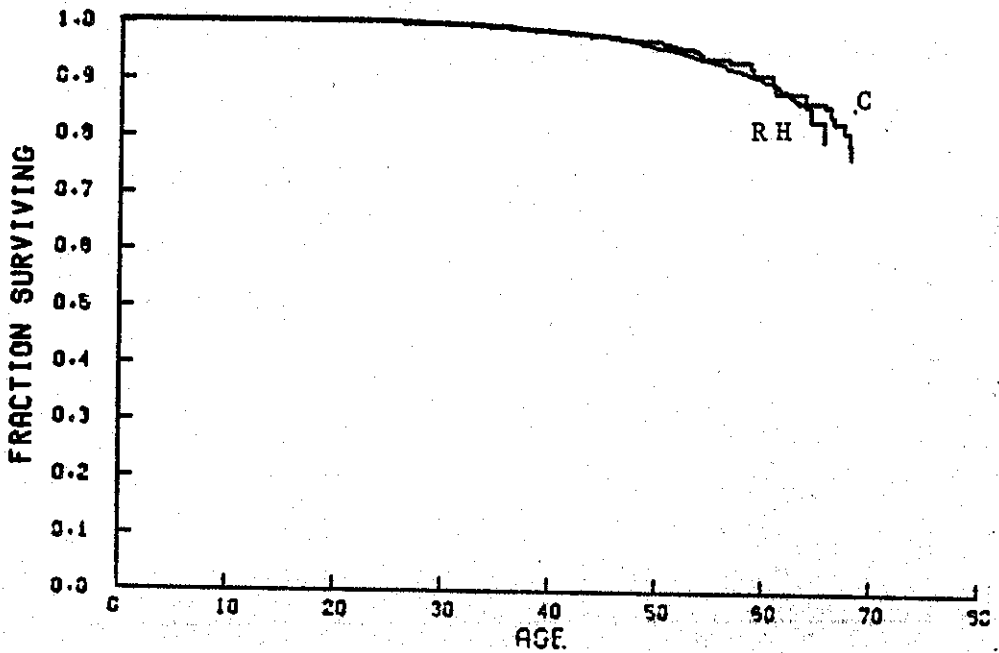


Figure 25

Nonparametric Survival Curve Estimates
Ranch Hand and C1-C5 Comparison Nonflying Personnel
Survival from Birth

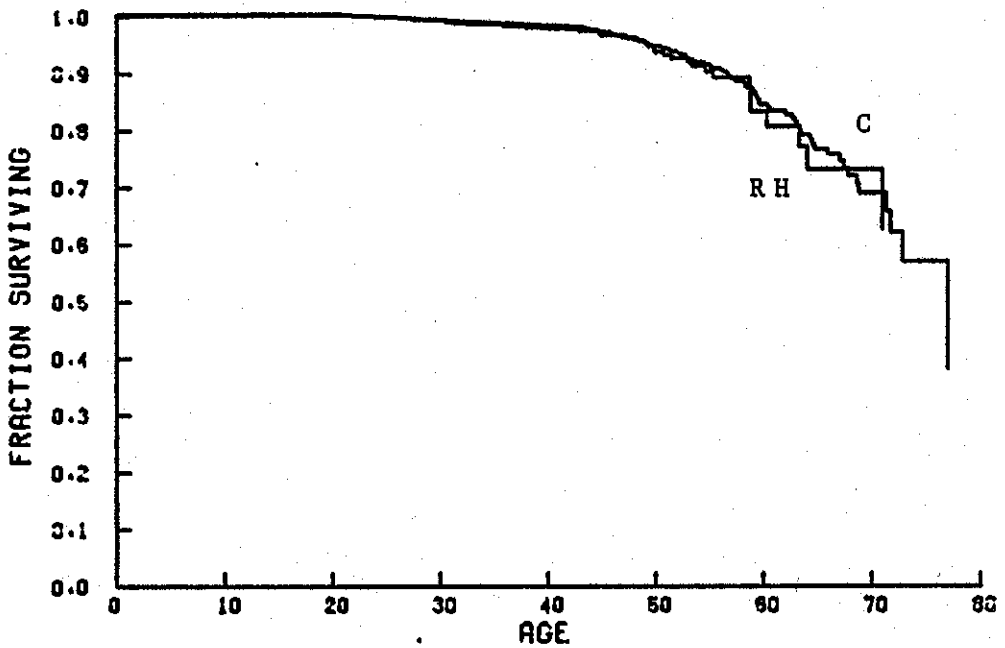


Figure 26

Nonparametric Survival Curve Estimates
All Ranch Hands and All Comparisons
Survival from Birth

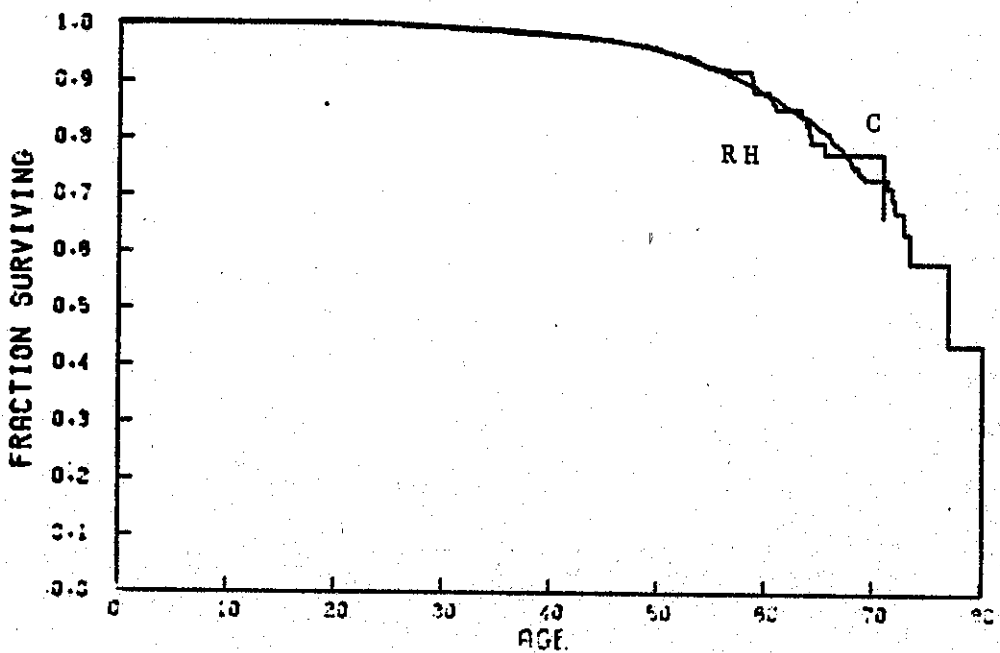


Figure 27

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Officers
Survival from Birth

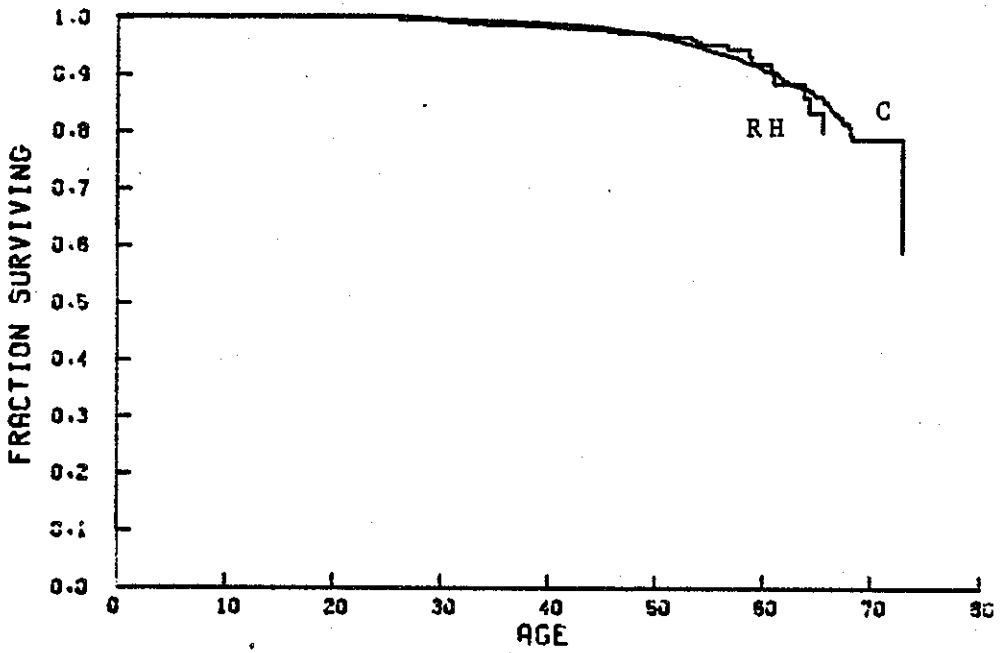


Figure 28

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Enlisted Personnel
Survival from Birth

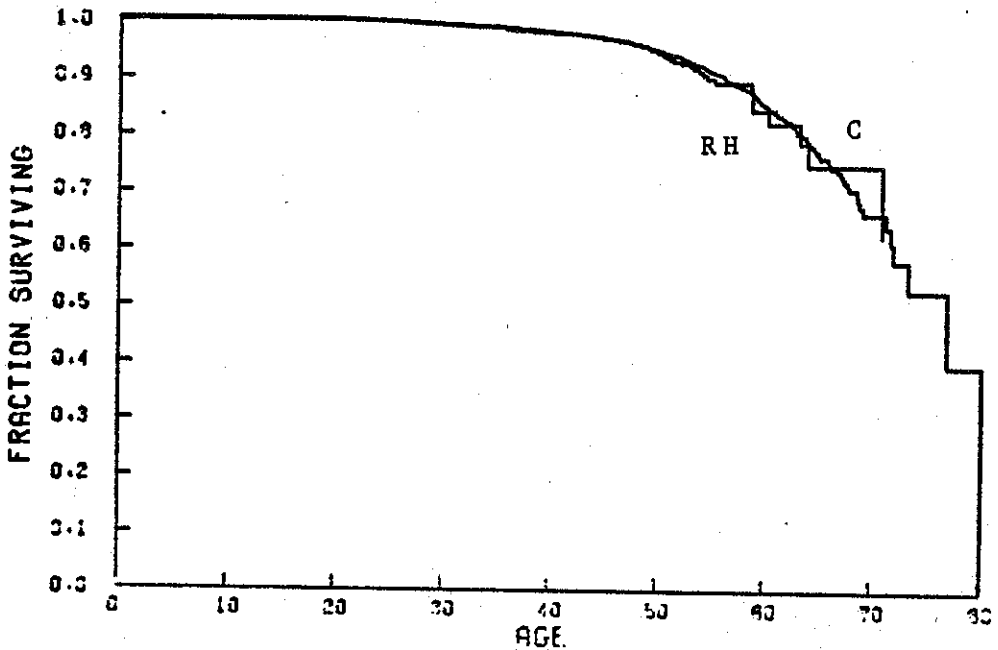


Figure 29

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Flying Personnel
Survival from Birth

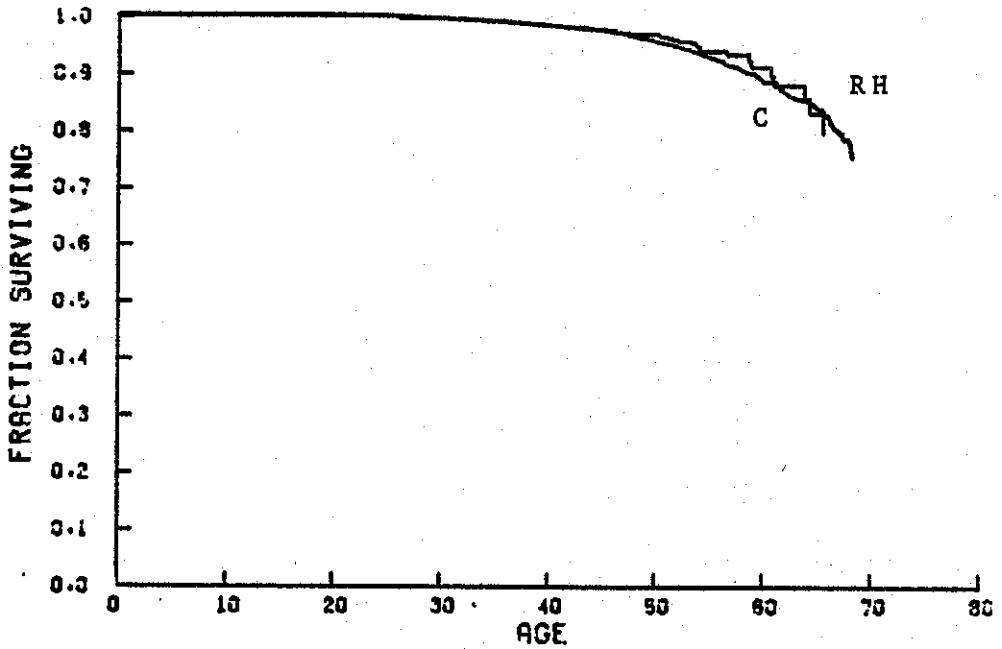


Figure 30

Nonparametric Survival Curve Estimates
Ranch Hand and All Comparison Nonflying Personnel
Survival from Birth

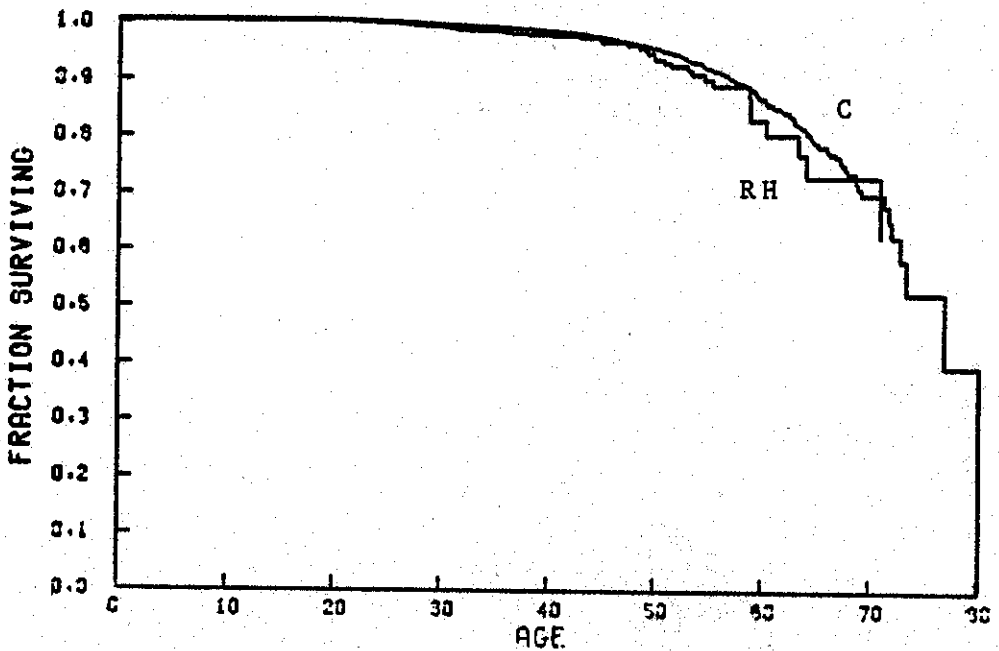
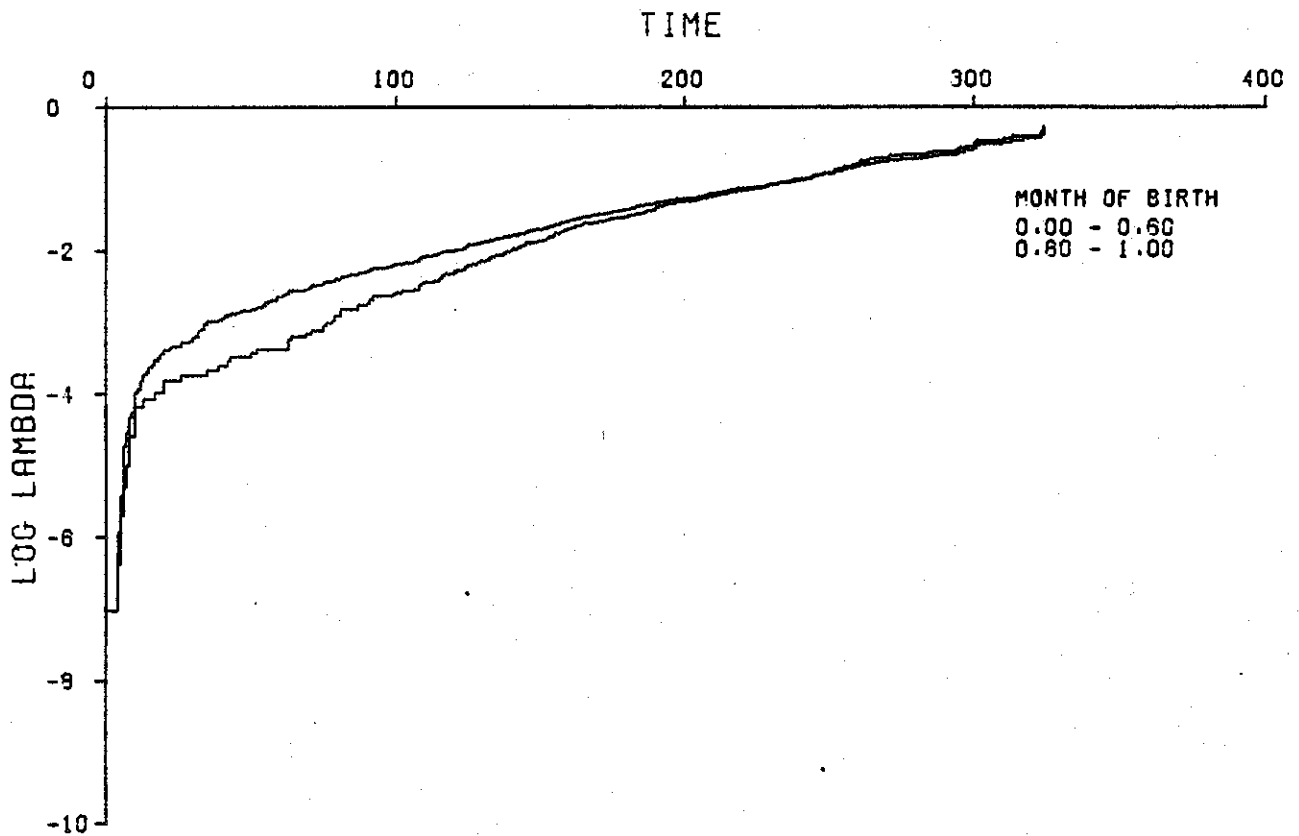


Figure 31

Log[-Log(Survival)] versus Time
All Ranch Hands and C1-C5 Comparisons
Date of Birth Before and After 1 January 1935



In Figure 31, TIME labels time since start of tour, measured in months. The lower curve is $\log[-\log(\text{survival})]$ for participants born before 1935; the upper curve is the corresponding plot for participants born after 1935. On the vertical axis, LAMBDA labels cumulative hazard, equal to $-\log(\text{survival})$.

TABLE 1

Deaths During 1983

Summary Counts by Rank and Group

Flying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	427	0	0.00	427	0.00
C1-C5	2089	3	0.14	2088	1.44
All Comp	5033	22	0.44	5021	4.38

Enlisted Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	199	1	0.50	199	5.03
C1-C5	979	6	0.61	976	6.15
All Comp	2697	14	0.52	2689	5.21

All Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	626	1	0.16	626	1.60
C1-C5	3068	9	0.29	3064	2.94
All Comp	7730	36	0.47	7710	4.67

Nonflying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	25	0	0.00	25	0.00
C1-C5	121	0	0.00	121	0.00
All Comp	279	0	0.00	279	0.00

TABLE 1 (Cont'd)

Deaths During 1983

Summary Counts by Rank and Group

Nonflying Enlisted

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	559	2	0.36	558	3.58
C1-C5	2805	6	0.21	2802	2.14
All Comp	10405	23	0.22	10394	2.21

All Nonflyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	584	2	0.34	583	3.43
C1-C5	2926	6	0.21	2923	2.05
All Comp	10684	23	0.22	10673	2.16

All Personnel

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	1210	3	0.25	1209	2.48
C1-C5	5994	15	0.25	5987	2.51
All Comp	18414	59	0.32	18382	3.21

TABLE 2

Deaths During 1984

Summary Counts by Rank and Group

Flying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	427	1	0.23	426	2.35
C1-C5	2086	7	0.34	2083	3.36
All Comp	5011	20	0.40	5002	4.00

TABLE 2 (Cont'd)
Deaths During 1984

Enlisted Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	198	0	0.00	198	0.00
C1-C5	973	6	0.62	971	6.18
All Comp	2683	12	0.45	2679	4.48

All Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	625	1	0.16	624	1.60
C1-C5	3059	13	0.42	3054	4.26
All Comp	7694	32	0.42	7681	4.17

Nonflying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	25	0	0.00	25	0.00
C1-C5	121	0	0.00	121	0.00
All Comp	279	1	0.36	278	3.59

Nonflying Enlisted

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	557	0	0.00	557	0.00
C1-C5	2799	9	0.32	2796	3.22
All Comp	10382	35	0.34	10365	3.38

TABLE 2 (Cont'd)
Deaths During 1984

All Nonflyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	582	0	0.00	582	0.00
C1-C5	2920	9	0.31	2917	3.09
All Comp	10661	36	0.34	10644	3.38

All Personnel

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	1207	1	0.08	1206	0.83
C1-C5	5979	22	0.37	5970	3.68
All Comp	18355	68	0.37	18325	3.71

TABLE 3
Deaths During 1985

Summary Counts by Rank and Group

Flying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	426	1	0.23	425	2.35
C1-C5	2079	10	0.48	2076	4.82
All Comp	4991	17	0.34	4986	3.41

Enlisted Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	198	1	0.51	197	5.07
C1-C5	967	4	0.41	965	4.14
All Comp	2671	12	0.45	2665	4.50

TABLE 3 (Cont'd)
Deaths During 1985

All Flyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	624	2	0.32	623	3.21
C1-C5	3046	14	0.46	3041	4.60
All Comp	7662	29	0.38	7651	3.79

Nonflying Officers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	25	0	0.00	25	0.00
C1-C5	121	0	0.00	121	0.00
All Comp	278	1	0.36	277	3.61

Nonflying Enlisted

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	557	2	0.36	557	3.59
C1-C5	2790	14	0.50	2783	5.03
All Comp	10347	41	0.40	10327	3.97

All Nonflyers

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	582	2	0.34	582	3.44
C1-C5	2911	14	0.48	2904	4.82
All Comp	10625	42	0.40	10604	3.96

All Personnel

Group	Number At Risk	Number Deaths	Rate (%)	Person- years	Rate Per 1000 Person-years
Ranch Hand	1206	4	0.33	1204	3.32
C1-C5	5957	28	0.47	5945	4.71
All Comp	18287	71	0.39	18255	3.89

TABLE 4

Deaths and Death Rates by Cause and Group for 1983

	Flying Officers				All	
	Ranch Hand No.	Rate	C1-C5 No.	Rate	Comparison No.	Rate
Accidental	0	0.00	0	0.00	3	0.60
Suicide	0	0.00	1	0.48	2	0.40
Infections, Parasitic	0	0.00	1	0.48	1	0.20
Neoplasm, Malignant	0	0.00	1	0.48	8	1.59
Nervous System	0	0.00	0	0.00	1	0.20
Circulatory System	0	0.00	0	0.00	7	1.39
Total	0		3		22	

	Enlisted Flyers				All	
	Ranch Hand No.	Rate	C1-C5 No.	Rate	Comparison No.	Rate
Accidental	0	0.00	0	0.00	2	0.74
Suicide	0	0.00	1	1.02	2	0.74
Neoplasm, Malignant	0	0.00	2	2.05	3	1.12
Circulatory System	0	0.00	1	1.02	5	1.86
Respiratory System	0	0.00	1	1.02	1	0.37
Digestive	0	0.00	1	1.02	1	0.37
Ill-Defined	1	5.03	0	0.00	0	0.00
Total	1		6		14	

	All Flyers				All	
	Ranch Hand No.	Rate	C1-C5 No.	Rate	Comparison No.	Rate
Accidental	0	0.00	0	0.00	5	0.65
Suicide	0	0.00	2	0.65	4	0.52
Infections, Parasitic	0	0.00	1	0.33	1	0.13
Neoplasm, Malignant	0	0.00	3	0.98	11	1.43
Nervous System	0	0.00	0	0.00	1	0.13
Circulatory System	0	0.00	1	0.33	12	1.56
Respiratory System	0	0.00	1	0.33	1	0.13
Digestive	0	0.00	1	0.33	1	0.13
Ill-Defined	1	1.60	0	0.00	0	0.00
Total	1		9		36	

TABLE 4 (Cont'd)

Deaths and Death Rates by Cause and Group for 1983

Nonflying Officers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Total	0		0		0	

Nonflying Enlisted

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	4	0.38
Suicide	0	0.00	0	0.00	1	0.10
Homicide	0	0.00	1	0.36	1	0.10
Infections, Parasitic	0	0.00	0	0.00	1	0.10
Neoplasm, Malignant	2	3.58	1	0.36	2	0.19
Nervous System	0	0.00	0	0.00	1	0.10
Circulatory System	0	0.00	3	1.07	11	1.06
Digestive	0	0.00	1	0.36	2	0.19
Total	2		6		23	

All Nonflyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	4	0.37
Suicide	0	0.00	0	0.00	1	0.09
Homicide	0	0.00	1	0.34	1	0.09
Infections, Parasitic	0	0.00	0	0.00	1	0.09
Neoplasm, Malignant	2	3.43	1	0.34	2	0.19
Nervous System	0	0.00	0	0.00	1	0.09
Circulatory System	0	0.00	3	1.03	11	1.03
Digestive	0	0.00	1	0.34	2	0.19
Total	2		6		23	

TABLE 4 (Cont'd)

Deaths and Death Rates by Cause and Group for 1983

All Personnel

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	9	0.49
Suicide	0	0.00	2	0.33	5	0.27
Homicide	0	0.00	1	0.17	1	0.05
Infections, Parasitic	0	0.00	1	0.17	2	0.11
Neoplasm, Malignant	2	1.65	4	0.67	13	0.71
Nervous System	0	0.00	0	0.00	2	0.11
Circulatory System	0	0.00	4	0.67	23	1.25
Respiratory System	0	0.00	1	0.17	1	0.05
Digestive	0	0.00	2	0.33	3	0.16
Ill-Defined	1	0.83	0	0.00	0	0.00
Total	3		15		59	

TABLE 5

Deaths and Death Rates by Cause and Group for 1984

Flying Officers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	1	0.48	3	0.60
Suicide	0	0.00	2	0.96	2	0.40
Neoplasm, Malignant	0	0.00	2	0.96	7	1.40
Circulatory System	1	2.35	1	0.48	5	1.00
Respiratory System	0	0.00	1	0.48	1	0.20
Digestive	0	0.00	0	0.00	1	0.20
Ill-Defined	0	0.00	0	0.00	1	0.20
Total	1		7		20	

TABLE 5 (Cont'd)

Deaths and Death Rates by Cause and Group for 1984

Enlisted Flyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	1	1.03	1	0.37
Suicide	0	0.00	0	0.00	1	0.37
Homicide	0	0.00	1	1.03	1	0.37
Neoplasm, Malignant	0	0.00	3	3.09	4	1.49
Circulatory System	0	0.00	0	0.00	2	0.75
Respiratory System	0	0.00	1	1.03	1	0.37
Digestive	0	0.00	0	0.00	1	0.37
Unknown	0	0.00	0	0.00	1	0.37
Total	0		6		12	

All Flyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	2	0.65	4	0.52
Suicide	0	0.00	2	0.65	3	0.39
Homicide	0	0.00	1	0.33	1	0.13
Neoplasm, Malignant	0	0.00	5	1.64	11	1.43
Circulatory System	1	1.60	1	0.33	7	0.91
Respiratory System	0	0.00	2	0.65	2	0.26
Digestive	0	0.00	0	0.00	2	0.26
Ill-Defined	0	0.00	0	0.00	1	0.13
Unknown	0	0.00	0	0.00	1	0.13
Total	1		13		32	

Nonflying Officers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Suicide	0	0.00	0	0.00	1	3.59
Total	0		0		1	

TABLE 5 (Cont'd)

Deaths and Death Rates by Cause and Group for 1984

Nonflying Enlisted

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	6	0.58
Suicide	0	0.00	1	0.36	4	0.39
Neoplasm, Malignant	0	0.00	3	1.07	9	0.87
Nervous System	0	0.00	0	0.00	1	0.10
Circulatory System	0	0.00	5	1.79	15	1.45
Total	0		9		35	

All Nonflyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	6	0.56
Suicide	0	0.00	1	0.34	5	0.47
Neoplasm, Malignant	0	0.00	3	1.03	9	0.85
Nervous System	0	0.00	0	0.00	1	0.09
Circulatory System	0	0.00	5	1.71	15	1.41
Total	0		9		36	

All Personnel

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	2	0.33	10	0.55
Suicide	0	0.00	3	0.50	8	0.44
Homicide	0	0.00	1	0.17	1	0.05
Neoplasm, Malignant	0	0.00	8	1.34	20	1.09
Nervous System	0	0.00	0	0.00	1	0.05
Circulatory System	1	0.83	6	1.00	22	1.20
Respiratory System	0	0.00	2	0.33	2	0.11
Digestive	0	0.00	0	0.00	2	0.11
Ill-Defined	0	0.00	0	0.00	1	0.05
Unknown	0	0.00	0	0.00	1	0.05
Total	1		22		68	

TABLE 6

Deaths and Death Rates by Cause and Group for 1985

Flying Officers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	2	0.96	3	0.60
Neoplasm, Malignant	1	2.35	3	1.45	5	1.00
Circulatory System	0	0.00	4	1.93	8	1.60
Digestive	0	0.00	1	0.48	1	0.20
Total	1		10		17	

Enlisted Flyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	0	0.00	3	1.13
Neoplasm, Malignant	0	0.00	0	0.00	4	1.50
Endocrine	0	0.00	1	1.04	1	0.38
Circulatory System	0	0.00	1	1.04	1	0.38
Digestive	1	5.07	1	1.04	2	0.75
Congenital Anomalies	0	0.00	1	1.04	1	0.38
Total	1		4		12	

All Flyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	0	0.00	2	0.66	6	0.78
Neoplasm, Malignant	1	1.61	3	0.99	9	1.18
Endocrine	0	0.00	1	0.33	1	0.13
Circulatory System	0	0.00	5	1.64	9	1.18
Digestive	1	1.61	2	0.66	3	0.39
Congenital Anomalies	0	0.00	1	0.33	1	0.13
Total	2		14		29	

TABLE 6 (Cont'd)

Deaths and Death Rates by Cause and Group for 1985

Nonflying Officers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Neoplasm, Malignant	0	0.00	0	0.00	1	3.61
Total	0		0		1	

Nonflying Enlisted

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	1	1.80	2	0.72	7	0.68
Suicide	0	0.00	0	0.00	1	0.10
Homicide	0	0.00	0	0.00	1	0.10
Infections, Parasitic	0	0.00	0	0.00	1	0.10
Neoplasm, Malignant	0	0.00	4	1.44	8	0.77
Mental Disorders	0	0.00	0	0.00	1	0.10
Circulatory System	1	1.80	8	2.87	16	1.55
Respiratory System	0	0.00	0	0.00	2	0.19
Digestive	0	0.00	0	0.00	2	0.19
Genitourinary System	0	0.00	0	0.00	1	0.10
Ill-Defined	0	0.00	0	0.00	1	0.10
Total	2		14		41	

All Nonflyers

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	1	1.72	2	0.69	7	0.66
Suicide	0	0.00	0	0.00	1	0.09
Homicide	0	0.00	0	0.00	1	0.09
Infections, Parasitic	0	0.00	0	0.00	1	0.09
Neoplasm, Malignant	0	0.00	4	1.38	9	0.85
Mental Disorders	0	0.00	0	0.00	1	0.09
Circulatory System	1	1.72	8	2.76	16	1.51
Respiratory System	0	0.00	0	0.00	2	0.19
Digestive	0	0.00	0	0.00	2	0.19
Genitourinary System	0	0.00	0	0.00	1	0.09
Ill-Defined	0	0.00	0	0.00	1	0.09
Total	2		14		42	

TABLE 6 (Cont'd)

Deaths and Death Rates by Cause and Group for 1985

All Personnel

	Ranch Hand		C1-C5		All Comparison	
	No.	Rate	No.	Rate	No.	Rate
Accidental	1	0.83	4	0.67	13	0.71
Suicide	0	0.00	0	0.00	1	0.05
Homicide	0	0.00	0	0.00	1	0.05
Infections, Parasitic	0	0.00	0	0.00	1	0.05
Neoplasm, Malignant	1	0.83	7	1.18	18	0.99
Endocrine	0	0.00	1	0.17	1	0.05
Mental Disorders	0	0.00	0	0.00	1	0.05
Circulatory System	1	0.83	13	2.19	25	1.37
Respiratory System	0	0.00	0	0.00	2	0.11
Digestive	1	0.83	2	0.34	5	0.27
Genitourinary System	0	0.00	0	0.00	1	0.05
Congenital Anomalies	0	0.00	1	0.17	1	0.05
Ill-Defined	0	0.00	0	0.00	1	0.05
Total	4		28		71	

TABLE 7

Group Site-Specific Neoplasm Mortality for 1983

Category	Number of Deaths		
	Ranch Hand	C1-C5	All Comp
150-159 Digestive Organs and Peritoneum			
150.9 Oesophagus, Unspecified	0	0	1
151.9 Stomach, Unspecified	1	0	0
153.4 Colon, Caecum	0	0	1
153.9 Colon, Unspecified	0	0	1
157.4 Islets of Langerhans	0	1	1
160-165 Respiratory and Intrathoracic Organs			
162.9 Bronchus and Lung, Unspecified	1	2	4
170-175 Bone, Connective Tissue, Skin and Breast			
172.5 Skin, Trunk	0	0	1
190-199 Other and Unspecified Sites			
199.1 Other, Unspecified	0	0	2
200-208 Lymphatic and Haematopoietic Tissue			
200.1 Lymphosarcoma	0	1	1
202.8 Other Lymphomas	0	0	1
Total	2	4	13

TABLE 8

Group Site-Specific Neoplasm Mortality for 1984

		Number of Deaths		
Category		Ranch Hand	C1-C5	All Comp
140-149	Lip, Oral Cavity and Pharynx			
141.9	Tongue, Unspecified	0	0	1
150-159	Digestive Organs and Peritoneum			
150.5	Oesophagus, Lower Third	0	0	1
153.9	Colon, Unspecified	0	1	3
154.1	Rectum	0	1	1
157.9	Pancreas, Unspecified	0	1	1
160-165	Respiratory and Intrathoracic Organs			
161.9	Larynx, Unspecified	0	0	1
162.3	Upper Lobe, Bronchus or Lung	0	1	1
162.9	Bronchus and Lung, Unspecified	0	3	7
179-189	Genitourinary Organs			
188.9	Bladder, Unspecified	0	0	1
190-199	Other and Unspecified Sites			
195.0	Head, Face and Neck	0	1	1
199.1	Other, Unspecified	0	0	2
Total		0	8	20

TABLE 9

Group Site-Specific Neoplasm Mortality for 1985

		Number of Deaths		
Category		Ranch Hand	C1-C5	All Comp
150-159	Digestive Organs and Peritoneum			
150.9	Oesophagus, Unspecified	0	1	1
153.9	Colon, Unspecified	0	0	1
157.9	Pancreas, Unspecified	0	0	1
160-165	Respiratory and Intrathoracic Organs			
162.3	Upper Lobe, Bronchus or Lung	0	0	1
162.9	Bronchus and Lung, Unspecified	1	5	8
190-199	Other and Unspecified Sites			
191.9	Brain, Unspecified	0	0	1
195.0	Head, Face and Neck	0	1	2
199.1	Other, Unspecified	0	0	3
Total		1	7	18

TABLE 10

Morphology of Malignant Neoplasms Deaths by Group for 1983

Category		Number of Deaths		
		Ranch Hand	C1-C5	All Comp
M800	Neoplasms NOS			
150-159	Digestive Organs and Peritoneum	0	1	2
160-165	Respiratory and Intrathoracic Organs	1	2	2
190-199	Other and Unspecified Sites	0	0	2
M801-M804	Epithelial Neoplasms NOS			
150-159	Digestive Organs and Peritoneum	1	0	0
M805-M808	Papillary and squamous cell neoplasms			
160-165	Respiratory and Intrathoracic Organs	0	0	1
M814-M838	Adenomas and adenocarcinomas			
150-159	Digestive Organs and Peritoneum	0	0	2
160-165	Respiratory and Intrathoracic Organs	0	0	1
M872-M879	Naevi and melanomas			
170-175	Bone, Connective Tissue, Skin and Breast	0	0	1
M959-M963	Lymphomas NOS or diffuse			
200-208	Lymphatic and Haematopoietic Tissue	0	0	1
M964	Reticulosarcomas			
200-208	Lymphatic and Haematopoietic Tissue	0	1	1
Total		2	4	13

TABLE 11

Morphology of Malignant Neoplasms Deaths by Group for 1984

Category		Number of Deaths		
		Ranch Hand	C1-C5	All Comp
M800	Neoplasms NOS			
150-159	Digestive Organs and Peritoneum	0	2	2
160-165	Respiratory and Intrathoracic Organs	0	1	4
179-189	Genitourinary Organs	0	0	1
190-199	Other and Unspecified Sites	0	1	2
M801-M804	Epithelial Neoplasms NOS			
150-159	Digestive Organs and Peritoneum	0	0	2
160-165	Respiratory and Intrathoracic Organs	0	2	4
M805-M808	Papillary and squamous cell neoplasms			
140-149	Lip, Oral Cavity and Pharynx	0	0	1
160-165	Respiratory and Intrathoracic Organs	0	1	1
M814-M838	Adenomas and adenocarcinomas			
150-159	Digestive Organs and Peritoneum	0	1	2
M856-M858	Complex epithelial neoplasms			
190-199	Other and Unspecified Sites	0	0	1
Total		0	8	20

TABLE 12

Morphology of Malignant Neoplasms Deaths by Group for 1985

Category		Number of Deaths		
		Ranch Hand	C1-C5	All Comp
M800	Neoplasms NOS			
150-159	Digestive Organs and Peritoneum	0	0	1
160-165	Respiratory and Intrathoracic Organs	0	3	5
190-199	Other and Unspecified Sites	0	0	2
M801-M804	Epithelial Neoplasms NOS			
160-165	Respiratory and Intrathoracic Organs	1	1	3
M805-M808	Papillary and squamous cell neoplasms			
190-199	Other and Unspecified Sites	0	1	2
M814-M838	Adenomas and adenocarcinomas			
150-159	Digestive Organs and Peritoneum	0	1	2
160-165	Respiratory and Intrathoracic Organs	0	1	1
M906-M909	Germ cell neoplasms			
190-199	Other and Unspecified Sites	0	0	1
M938-M948	Gliomas			
190-199	Other and Unspecified Sites	0	0	1
Total		1	7	18

TABLE 13

Group Site-Specific Nonmalignant Digestive System Mortality for 1983

Category		Number of Deaths		
		Ranch Hand	C1-C5	All Comp
570-579	Digestive System, Other			
571.2	Alcoholic Cirrhosis of Liver	0	1	1
571.5	Cirrhosis of Liver, Nonalcoholic	0	0	1
572.9	Other Sequelae of Chronic Liver Disease	0	1	1
Total		0	2	3

TABLE 14

Group Site-Specific Nonmalignant Digestive System Mortality for 1984

Category	Number of Deaths		
	Ranch Hand	C1-C5	All Comp
530-537 Oesophagus, Stomach and Duodenum			
532.4 Duodenal Ulcer with Haemorrhage	0	0	1
570-579 Digestive System, Other			
571.3 Alcoholic Liver Damage, Unspecified	0	0	1
Total	0	0	2

TABLE 15

Group Site-Specific Nonmalignant Digestive System Mortality for 1985

Category	Number of Deaths		
	Ranch Hand	C1-C5	All Comp
540-543 Appendicitis			
540.0 Acute Appendicitis, Peritonitis	0	0	1
570-579 Digestive System, Other			
571.2 Alcoholic Cirrhosis of Liver	0	1	1
571.3 Alcoholic Liver Damage, Unspecified	0	0	1
571.5 Cirrhosis of Liver, Nonalcoholic	0	1	1
572.3 Portal Hypertension	0	0	1
572.9 Other Sequelae of Chronic Liver Disease	1	0	0
Total	1	2	5

Principal Investigators

William H. Wolfe, MD, MPH, FACPM
Colonel, USAF, MC
Chief, Epidemiology Division

Joel E. Michalek, PhD, GM-14
Chief, Biometrics Branch
Epidemiology Division

Judson C. Miner, DVM, MPH, ACVPM
Colonel, USAF, BSC
Chief, Special Projects Branch
Epidemiology Division

Coinvestigator

Mr Vincent Elequin
Medical Records Administrator
Special Projects Branch
Epidemiology Division

Contributor

Mr Thomas White
Senior Subject Matter Specialist
Biometrics Branch
Epidemiology Division

Advisory Committee on Special Studies
Relating to the Possible Long-term Health Effects
of Phenoxy Herbicides and Contaminants

Committee Members

Robert W. Miller, M.D., M.P.H., Dr. P.H.
Chairman
Chief, Clinical Epidemiology Branch
Executive Plaza North, Room 400
National Cancer Institute
National Institutes of Health
Bethesda, Maryland 20205
Tel: (301) 496-5785

Julianne Byrne, Ph.D.
Clinical Epidemiology Branch
Executive Plaza North, Room 400
National Cancer Institute
National Institutes of Health
Bethesda, Maryland 20205
Tel: (301) 496-5785

Kathleen Kreiss, M.D.
Director, Occupational Medicine
Program
National Jewish Center for
Immunology and Respiratory Medicine
3800 E. Colfax Ave
Denver, Colorado 80206
Tel: (303) 398-1525

George W. Comstock, M.D., M.P.H.,
Dr. P.H., F.A.C.E.
Alumni Centennial Professor
of Epidemiology
The Johns Hopkins University
School of Hygiene and Public Health
Training Center for Public Health
Research
Box 2067
Hagerstown, Maryland 21742-2067
Tel: (301) 791-3230

Leonard T. Kurland, M.D., Dr. P.H.
Senior Consultant and Professor
of Epidemiology
Department of Health Sciences
Research
Mayo Clinic
200 First Street, S.W.
Rochester, Minnesota 55905
Tel: (507) 284-5540

Jack Friedman, M.D., Ph.D.
Grace Hospital
4490 Oak Street
Vancouver, British Columbia
V6H-3V5
CANADA
Tel: (604) 228-2749

Richard R. Monson, M.D., Sc.D.
Department of Epidemiology
Harvard School of Public Health
677 Huntington Avenue
Boston, Massachusetts 02115
Tel: (617) 732-1050

Norton Nelson, Ph.D.
Department of Environmental Medicine
New York University School of Medicine
New York, New York 10016
Tel: (914) 351-2566

Craig T. Ramey, Ph.D.
Director of Research
Frank Porter Graham Child
Development Center
University of North Carolina
54 Bypass
Chapel Hill, North Carolina 27514
Tel: (919) 966-4121

Peter O'Brien, Ph.D.
Department of Health Sciences Research
Section of Biostatistics
Mayo Clinic
200 First Street, S.W.
Rochester, Minnesota 55905
Tel: (507) 284-2511