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SURVIVAL RATES OF PRIOR-SERVICE RECRUITS, 1978-1984

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This research memorandum examines the survival rates of prior-service Navy personnel from FY 1978 through FY 1984. Survival rates for this group of recruits (i.e., at what rate and for how long they remain in the Navy) depend primarily on the paygrade at enlistment. The analysis shows a sharp distinction between E1-to-E3 enlistees and E4-to-E7 enlistees, with the latter group having the higher rates. It also examines other factors influencing survival rates including age, education level, enlistment program, and previous military experience.

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1. Enclosure (1) is forwarded as a matter of possible interest.

2. This research memorandum reports on the construction of and findings from an interactive, historical data base for recruit survival rates. The FY 1978-1984 data base includes accession and monthly survival information for prior-service recruits by accession program, pay grade, age and length of service at entry, age, sex, educational category and year of entry. This memorandum complements the work reported in CNA Research Memorandum 86-45 on non-prior-service recruits.

Robert F. Lockman

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Director
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SURVIVAL RATES OF PRIOR-SERVICE RECRUITS, 1978-1984

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Naval Planning, Manpower, and Logistics Division

A Division of CNA *Hudson Institute*

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ABSTRACT

This research memorandum examines the survival rates of prior-service Navy personnel from FY 1978 through FY 1984. Survival rates for this group of recruits (i.e., at what rate and for how long they remain in the Navy) depend primarily on the paygrade at enlistment. The analysis shows a sharp distinction between E1-to-E3 enlistees and E4-to-E7 enlistees, with the latter group having the higher rates. It also examines other factors influencing survival rates including age, education level, enlistment program, and previous military experience.

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INTRODUCTION

The size of the pool of potential recruits available to the Navy will decline through 1993. The number of 17-to-21 year olds, which is currently 9.4 million, will decline to about 8.2 million by 1993 and then increase [1]. In addition, improvements in the private sector of the economy could lead to increased competition for young workers. At the same time, desired endstrength for the Navy is projected to increase. Given these trends, the Navy may have increased difficulty attracting enough recruits, and it may be forced to exploit more fully other sources of personnel. Among the potential alternatives are prior-service personnel.

Recruiting prior-service personnel has both its advantages and disadvantages. The advantages are their military experience and their training in military occupations, both of which are costly to provide for many new recruits. By recruiting prior-service personnel, the Navy may avoid some of these costs. The disadvantages are their small numbers[1] and their potential reluctance to reenter an occupation they once left.

Another factor, which could be an advantage or a disadvantage, is the retention record of prior-service personnel. Recruits are not worth much to the Navy if they quit shortly after enlisting. In considering the value of prior-service recruits, it is important to examine at what rate and for how long they remain in the Navy.

CNA has pioneered research on retention in the Navy with its work on survival rates of non-prior-service personnel. This work began with analyses of the 1973 and 1977 entry cohorts and the construction of tables showing Success Chances for Recruits Entering the Navy (SCREEN) [3 and 4]. A SCREEN table estimates the probability that a recruit with a specific set

[1] In 1985, there were about 1.3 million post-Vietnam era veterans from all services under age 30 [2], only a fraction of whom would even be eligible to enlist.

of characteristics remains in the Navy for at least 1 year.[1] The Navy Recruiting Command uses the SCREEN score as part of one of its eligibility standards. All non-prior-service males are assigned a SCREEN score, and only those with an estimated 1-year survival probability of 70 percent or more are permitted to enlist.[2] Male veterans from the Navy with previously attained paygrades of E1 to E3 and all male veterans from other services are also subject to the same SCREEN test.

This analysis continues some recent work done at CNA to reevaluate and update SCREEN methodology. In the initial phase of this project, CNA developed a capacity to examine the survival rates for both non-prior-service and prior-service individuals from 1978 through 1984 [5 and 6]. Using the newly developed data set, this analysis determines the survival rates of the prior-service recruits by various characteristics and compares them with those for non-prior-service recruits. The purpose of this work is to identify certain characteristics of prior-service recruits that appear to be associated with high chance of survival in the Navy. It may permit the Navy to refine recruiting standards for prior-service recruits that will help it meet and maintain its endstrength goals.

[1]The three personal characteristics are education, age, and mental group as determined by the score on the Armed Forces Qualification Test (AFQT).

[2]Unlike some other recruiting standards, there are no waivers to the SCREEN test.

THE PRIOR-SERVICE DATA BASE

The data for this study come from the longitudinal Enlisted Master Record (EMR) constructed at CNA. The longitudinal EMR was created by merging three data sources–the quarterly Enlisted Master Records, the Personalized Recruiting for Immediate and Delayed Entry (PRIDE), and the System Consolidation for Accession and Training (SCAT). These three data sets are combined to follow the career of personnel between 1978 and 1984.[1] The data base includes the 53,473 prior-service recruits who entered the Navy between 1978 and 1984. This number is about 10 percent of the number of non-prior-service recruits during the same period. With a longitudinal data set, an individual's career can be followed over time to see how long he remains in the Navy after accession. From this information for an entire cohort of recruits, the proportion of personnel who remain in the Navy for a specified period can be calculated; this proportion is called the survival rate. For example, if 1,000 recruits enter the Navy in October, 1978, and 50 leave by the beginning of October, 1979, the 12-month survival rate is 0.95.[2]

Prior-service recruits can be classified in a number of ways or enter through a variety of programs.[3] A recruit may be a Navy veteran (NAVET) or a veteran from another service (OSVET). Some OSVETs are required to go through the recruit training course (RTC),[4] but others are not. Recruits may have continuous service (CS), which means the separation from

[1]See [4] for a detailed description of the procedure used in merging these data sets.

[2]The survival rate is not a probability. It is looking backward into a certain past instead of forward into an uncertain future. In some cases, the terms "survival rates" and "survival probabilities" are used interchangeably. Strictly speaking, they are not interchangeable, but survival rates are often used as estimates for probabilities. When the number of observations is large enough, the survival rates may provide a reasonable estimate.

[3]The details of the definitions and rules governing enlistment of prior-service personnel are spelled out in [7, chapter 5.]

[4]This group includes recruits who have been seperated from the service for 4 years or more and recruits who enter into paygrades E3 or below.

the armed services is less than 90 days, [1] or broken service (BS), the separation is greater than 90 days. With continuous service, the recruit is given longevity credit from his previous service for paygrade and sea duty determinations. Upon reentering the service, the recruit may be guaranteed a stationing in a particular location under the PRISE I program or may be guaranteed schooling under the PRISE II program. In the RESCORE program, the recruit switches from an overmanned rating to an undermanned one. The prior-service data set contains ten different combinations of programs and experiences under which prior-service recruits may enter the Navy. Table 1 shows the percentage of recruits entering under each. The largest groups are the NAVETs, both continuous and broken service, and the PRISE I program. Among the OSVETs, the PRISE II program is the largest.[2]

Table 1 also shows the distribution of the prior-service recruits by paygrade at time of reentry, previous length of military service (LOS), age at time of reentry, sex, and education by high school degree category. Most recruits reenter at the E4 or E5 level and have 1 to 4 years of service, which indicates that they completed one term before initially leaving the service. Not surprisingly, these recruits are older than the typical non-prior-service recruit.

[1] In some crucial ratings, the separation must be less than 180 days.

[2] The trend over time has been to shift from OSVETs to NAVETs. In 1978, when only about 1,000 prior-service personnel were recruited, over five of every six recruits were OSVETs. In 1982, which was the peak of prior-service recruiting during this period (about 13,000), only one in four was an OSVET.

TABLE 1
DESCRIPTION OF PRIOR-SERVICE DATA 1978-1984

Variable	Percent	Variable	Percent
Enlistment Program		**Paygrades**	
NAVET CS	14.0	E1	2.3
NAVET BS	24.7	E2	5.7
NAV/OSVET PRISE I	27.7	E3	11.8
NAVET PRISE II	2.8	E4	30.4
RESCORE CS	.4	E5	31.8
RESCORE BS	3.6	E6	16.1
OSVET BS	5.9	E7+	1.9
OSVET PRISE II	16.1		
OSVET (No RTC)	3.6	**Age**	
Other	1.4	< 22	5.2
		22-25	48.1
Sex		26-30	28.0
Male	95.3	31+	18.6
Females	4.7		
		Previous LOS	
Education		1-4	65.7
HS degree	74.9	5-8	23.8
Non-HS degree	25.1	9-12	8.3
		13+	2.2

SCREEN TABLES

Established methodology is to characterize the survival rates of a group of recruits by means of a SCREEN table. An interactive program that calculates the elements of a SCREEN table from the prior-service data set has been written and is available at CNA. [1] The program allows the user to choose subgroups of the data set and calculate the survival rates for subgroups with different characteristics. Appendix A shows the operation of this program.

SUMMARY TABLES

Table 2 shows a SCREEN table that summarizes the results for the entire prior-service data set. This table shows the 6-month survival rate, which is the maximum length of time information is available for recruits entering in 1984. The 9-month survival rates for prior-service recruits is generally quite high. The survival rate for all recruits over the entire period is 97 percent. Within this aggregate figure, there is some variation across different groups. Most notable among these is the higher survival rate for recruits entering at paygrades E4 and above. Across the upper paygrades, there is little variation in the survival rates, but in the lower paygrades, there is some variation. The survival rate for E2 entrants is higher than that for either E1 or E3 entrants. Within the lower paygrades, neither age nor experience seems to have a consistent effect on survival rates. At E1, for example, younger recruits are more likely to drop out, but at E3, older recruits are more likely to drop out. Also, the small number of observations in some cells makes it difficult to draw a conclusion about trends.

The effect of various components of the SCREEN table can be examined in more detail. Tables 3 through 6 show the SCREEN tables for 12-, 24-, 36-, and 48- month survival rates, respectively. Because the data cover only the period through June of 1985, the longer survival rates cannot be

[1] A similar program using the non-prior-service data set is also available [6].

TABLE 2

SUMMARY TABLE:
ALL PRIOR-SERVICE RECRUITS, 1978-1984

		Total recruits and fraction who survive to 6 months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	389	0.71	0	0.00	0	0.00	0	0.00	389	0.71
	22-25	571	0.86	30	1.00	1	1.00	0	0.00	602	0.87
	26-30	145	0.90	28	1.00	3	1.00	0	0.00	176	0.91
	31+	47	0.94	15	1.00	9	0.89	3	1.00	74	0.95
	Total	1152	0.82	73	1.00	13	0.92	3	1.00	1241	0.83
PG 2	< 22	917	0.96	4	1.00	0	0.00	0	0.00	921	0.96
	22-25	1432	0.95	88	0.99	0	0.00	0	0.00	1520	0.96
	26-30	340	0.92	88	0.98	3	1.00	0	0.00	431	0.93
	31+	104	0.93	36	1.00	15	0.93	2	1.00	157	0.95
	Total	2793	0.95	216	0.99	18	0.94	2	1.00	3029	0.95
PG 3	< 22	744	0.95	2	1.00	0	0.00	0	0.00	746	0.95
	22-25	2882	0.90	320	0.91	1	1.00	0	0.00	3203	0.90
	26-30	1148	0.80	406	0.82	48	0.81	0	0.00	1602	0.80
	31+	512	0.71	154	0.70	83	0.64	18	0.56	767	0.70
	Total	5286	0.86	882	0.83	132	0.70	18	0.56	6318	0.86
PG 4	< 22	517	1.00	9	1.00	0	0.00	0	0.00	526	1.00
	22-25	7192	0.99	1154	0.99	4	1.00	1	1.00	8351	0.99
	26-30	3262	0.99	1387	0.99	229	0.99	1	1.00	4879	0.99
	31+	1474	0.99	605	0.99	302	0.99	94	0.98	2475	0.99
	Total	12445	0.99	3155	0.99	535	0.99	96	0.98	16231	0.99
PG 5	< 22	160	1.00	18	1.00	1	1.00	0	0.00	179	1.00
	22-25	7358	1.00	1968	0.99	12	0.92	3	1.00	9341	0.99
	26-30	2179	1.00	2054	0.99	394	0.98	4	1.00	4631	0.99
	31+	1371	0.99	889	0.99	475	0.99	140	0.98	2875	0.99
	Total	11068	1.00	4929	0.99	882	0.99	147	0.98	17026	0.99
PG 6	< 22	8	1.00	10	1.00	8	1.00	1	1.00	27	1.00
	22-25	1474	1.00	1100	1.00	52	0.98	8	0.88	2634	1.00
	26-30	413	1.00	1416	1.00	1060	0.99	10	1.00	2899	1.00
	31+	484	1.00	737	1.00	1228	1.00	602	0.98	3051	1.00
	Total	2379	1.00	3263	1.00	2348	0.99	621	0.98	8611	1.00
PG 7+	< 22	0	0.00	0	0.00	2	1.00	0	0.00	2	1.00
	22-25	0	0.00	44	1.00	28	1.00	4	1.00	76	1.00
	26-30	1	1.00	100	1.00	261	1.00	7	1.00	369	1.00
	31+	10	0.90	60	1.00	244	1.00	256	0.95	570	0.98
	Total	11	0.91	204	1.00	535	1.00	267	0.96	1017	0.99
Total	< 22	2735	0.93	43	1.00	11	1.00	1	1.00	2790	0.93
	22-25	20909	0.97	4704	0.99	98	0.98	16	0.94	25727	0.98
	26-30	7488	0.96	5479	0.98	1998	0.99	22	1.00	14987	0.97
	31+	4002	0.95	2496	0.98	2356	0.98	1115	0.97	9969	0.97
	Total	35134	0.96	12722	0.98	4463	0.98	1154	0.97	53473	0.97

TABLE 3

12-MONTH SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS ENTERING 1978-1983

		Total recruits and fraction who survive to 12 Months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	378	0.55	0	0.00	0	0.00	0	0.00	378	0.55
	22-25	548	0.78	27	1.00	1	1.00	0	0.00	576	0.79
	26-30	139	0.83	26	0.96	3	1.00	0	0.00	168	0.85
	31+	47	0.91	14	1.00	8	0.88	1	1.00	70	0.93
	Total	1112	0.71	67	0.99	12	0.92	1	1.00	1192	0.73
PG 2	< 22	897	0.92	4	1.00	0	0.00	0	0.00	901	0.92
	22-25	1394	0.89	85	0.93	0	0.00	0	0.00	1479	0.90
	26-30	328	0.84	86	0.94	3	1.00	0	0.00	417	0.86
	31+	104	0.86	36	0.89	15	0.80	2	1.00	157	0.86
	Total	2723	0.90	211	0.93	18	0.83	2	1.00	2954	0.90
PG 3	< 22	658	0.90	2	1.00	0	0.00	0	0.00	660	0.90
	22-25	2655	0.82	288	0.84	1	1.00	0	0.00	2944	0.83
	26-30	1036	0.69	360	0.69	47	0.72	0	0.00	1443	0.69
	31+	466	0.58	138	0.55	80	0.48	18	0.50	702	0.56
	Total	4815	0.78	788	0.72	128	0.57	18	0.50	5749	0.77
PG 4	< 22	482	0.99	7	1.00	0	0.00	0	0.00	489	0.99
	22-25	6399	0.97	991	0.97	4	1.00	1	1.00	7395	0.97
	26-30	2924	0.98	1213	0.98	221	0.97	1	1.00	4359	0.98
	31+	1396	0.98	548	0.97	284	0.97	91	0.99	2319	0.97
	Total	11201	0.98	2759	0.98	509	0.97	93	0.99	14562	0.98
PG 5	< 22	152	0.99	16	1.00	1	1.00	0	0.00	169	0.99
	22-25	6602	0.99	1675	0.99	11	0.91	3	1.00	8291	0.99
	26-30	1853	0.99	1656	0.98	333	0.96	3	1.00	3845	0.98
	31+	1304	0.99	769	0.99	413	0.97	115	0.96	2601	0.98
	Total	9911	0.99	4116	0.98	758	0.97	121	0.96	14906	0.99
PG 6	< 22	8	1.00	10	1.00	7	1.00	1	1.00	26	1.00
	22-25	1468	1.00	1062	1.00	51	0.98	8	0.88	2589	1.00
	26-30	406	1.00	1294	1.00	945	0.99	9	1.00	2654	0.99
	31+	474	0.99	686	1.00	1084	0.99	530	0.97	2774	0.99
	Total	2356	1.00	3052	1.00	2087	0.99	548	0.97	8043	0.99
PG 7+	< 22	0	0.00	0	0.00	2	1.00	0	0.00	2	1.00
	22-25	0	0.00	44	1.00	27	1.00	4	1.00	75	1.00
	26-30	1	1.00	99	1.00	255	1.00	6	1.00	361	1.00
	31+	9	1.00	59	1.00	235	0.99	236	0.94	539	0.97
	Total	10	1.00	202	1.00	519	0.99	246	0.94	977	0.98
Total	< 22	2575	0.88	39	1.00	10	1.00	1	1.00	2625	0.88
	22-25	19066	0.95	4172	0.98	95	0.98	16	0.94	23349	0.95
	26-30	6687	0.93	4734	0.96	1807	0.97	19	1.00	13247	0.95
	31+	3800	0.93	2250	0.96	2119	0.96	993	0.96	9162	0.95
	Total	32128	0.94	11195	0.97	4031	0.97	1029	0.96	48383	0.95

TABLE 4

24-MONTH SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS ENTERING 1978-1982

		Total recruits and fraction who survive to 24 Months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	357	0.33	0	0.00	0	0.00	0	0.00	357	0.33
	22-25	497	0.59	23	0.83	1	1.00	0	0.00	521	0.60
	26-30	132	0.63	22	0.91	3	1.00	0	0.00	157	0.68
	31+	46	0.78	13	0.92	8	0.88	1	1.00	68	0.82
	Total	1032	0.51	58	0.88	12	0.92	1	1.00	1103	0.54
PG 2	< 22	801	0.75	4	1.00	0	0.00	0	0.00	805	0.76
	22-25	1278	0.69	80	0.73	0	0.00	0	0.00	1358	0.69
	26-30	302	0.63	78	0.67	3	0.67	0	0.00	383	0.64
	31+	95	0.56	34	0.68	15	0.67	2	0.50	146	0.60
	Total	2476	0.70	196	0.70	18	0.67	2	0.50	2692	0.70
PG 3	< 22	588	0.79	2	1.00	0	0.00	0	0.00	590	0.79
	22-25	2298	0.65	234	0.65	1	0.00	0	0.00	2533	0.65
	26-30	908	0.48	298	0.51	35	0.49	0	0.00	1241	0.48
	31+	414	0.44	118	0.33	72	0.22	16	0.44	620	0.40
	Total	4208	0.61	652	0.53	108	0.31	16	0.44	4984	0.59
PG 4	< 22	423	0.95	7	1.00	0	0.00	0	0.00	430	0.95
	22-25	5437	0.93	804	0.93	4	1.00	1	1.00	6246	0.93
	26-30	2500	0.95	1027	0.95	194	0.92	1	1.00	3722	0.95
	31+	1237	0.92	481	0.94	257	0.95	84	0.99	2059	0.93
	Total	9597	0.93	2319	0.94	455	0.94	86	0.99	12457	0.94
PG 5	< 22	123	0.98	9	1.00	1	1.00	0	0.00	133	0.98
	22-25	4979	0.98	1209	0.96	10	0.80	3	1.00	6201	0.97
	26-30	1373	0.97	1141	0.94	251	0.93	2	1.00	2767	0.96
	31+	1218	0.96	662	0.94	324	0.94	91	0.86	2295	0.95
	Total	7693	0.97	3021	0.95	586	0.93	96	0.86	11396	0.96
PG 6	< 22	8	1.00	7	1.00	7	1.00	1	1.00	23	1.00
	22-25	1337	1.00	925	1.00	47	1.00	8	0.88	2317	1.00
	26-30	393	1.00	1083	0.99	784	0.97	8	1.00	2268	0.99
	31+	460	0.99	639	0.99	902	0.98	425	0.94	2426	0.98
	Total	2198	1.00	2654	0.99	1740	0.98	442	0.94	7034	0.99
PG 7+	< 22	0	0.00	0	0.00	2	1.00	0	0.00	2	1.00
	22-25	0	0.00	41	1.00	26	1.00	4	1.00	71	1.00
	26-30	1	1.00	98	1.00	245	0.99	6	0.83	350	0.99
	31+	9	1.00	59	1.00	221	1.00	210	0.88	499	0.95
	Total	10	1.00	198	1.00	494	0.99	220	0.88	922	0.97
Total	< 22	2300	0.75	29	1.00	10	1.00	1	1.00	2340	0.75
	22-25	15826	0.88	3316	0.94	89	0.97	16	0.94	19247	0.89
	26-30	5609	0.86	3747	0.92	1515	0.95	17	0.94	10888	0.89
	31+	3479	0.88	2006	0.92	1799	0.94	829	0.91	8113	0.90
	Total	27214	0.86	9098	0.93	3413	0.94	863	0.91	40588	0.88

TABLE 5

36-MONTH SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS ENTERING 1978-1981

		Total recruits and fraction who survive to 36 Months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	238	0.22	0	0.00	0	0.00	0	0.00	238	0.22
	22-25	380	0.36	13	0.54	1	1.00	0	0.00	394	0.37
	26-30	111	0.41	16	0.56	3	0.67	0	0.00	130	0.44
	31+	40	0.63	11	0.82	8	0.88	1	1.00	60	0.70
	Total	769	0.34	40	0.63	12	0.83	1	1.00	822	0.36
PG 2	< 22	439	0.54	4	1.00	0	0.00	0	0.00	443	0.54
	22-25	902	0.40	62	0.53	0	0.00	0	0.00	964	0.41
	26-30	232	0.34	59	0.36	2	0.50	0	0.00	293	0.35
	31+	70	0.33	28	0.54	9	0.67	1	0.00	108	0.41
	Total	1643	0.42	153	0.48	11	0.64	1	0.00	1808	0.43
PG 3	< 22	407	0.58	2	1.00	0	0.00	0	0.00	409	0.59
	22-25	1581	0.34	131	0.35	1	0.00	0	0.00	1713	0.34
	26-30	668	0.22	222	0.25	22	0.23	0	0.00	912	0.23
	31+	305	0.32	89	0.21	56	0.11	14	0.36	464	0.28
	Total	2961	0.34	444	0.27	79	0.14	14	0.36	3498	0.33
PG 4	< 22	284	0.83	6	0.83	0	0.00	0	0.00	290	0.83
	22-25	3912	0.80	547	0.80	4	0.75	1	0.00	4464	0.80
	26-30	1815	0.83	739	0.87	152	0.89	1	1.00	2707	0.84
	31+	901	0.82	348	0.83	207	0.92	66	0.94	1522	0.84
	Total	6912	0.81	1640	0.84	363	0.91	68	0.93	8983	0.82
PG 5	< 22	77	0.90	2	0.50	1	1.00	0	0.00	80	0.89
	22-25	2814	0.89	625	0.88	8	0.75	3	1.00	3450	0.89
	26-30	819	0.86	590	0.85	142	0.86	1	0.00	1552	0.85
	31+	1124	0.92	512	0.87	210	0.88	63	0.73	1909	0.89
	Total	4834	0.89	1729	0.86	361	0.87	67	0.73	6991	0.88
PG 6	< 22	7	1.00	7	1.00	4	1.00	1	1.00	19	1.00
	22-25	857	0.99	620	0.99	46	0.91	8	0.88	1531	0.99
	26-30	257	0.99	696	0.97	492	0.96	6	0.83	1451	0.97
	31+	423	0.99	557	0.98	602	0.97	284	0.89	1866	0.97
	Total	1544	0.99	1880	0.98	1144	0.96	299	0.89	4867	0.97
PG 7+	< 22	0	0.00	0	0.00	1	1.00	0	0.00	1	1.00
	22-25	0	0.00	32	1.00	25	0.96	4	1.00	61	0.98
	26-30	1	1.00	73	0.99	198	0.98	4	1.00	276	0.99
	31+	9	1.00	55	1.00	200	0.98	156	0.85	420	0.93
	Total	10	1.00	160	0.99	424	0.98	164	0.86	758	0.96
Total	< 22	1452	0.58	21	0.90	6	1.00	1	1.00	1480	0.58
	22-25	10446	0.72	2030	0.85	85	0.89	16	0.88	12577	0.74
	26-30	3903	0.70	2395	0.82	1011	0.92	12	0.83	7321	0.77
	31+	2872	0.82	1600	0.86	1292	0.91	585	0.86	6349	0.85
	Total	18673	0.72	6046	0.84	2394	0.91	614	0.86	27727	0.76

TABLE 6

48-MONTH SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS ENTERING 1978-1980

		Total recruits and fraction who survive to 48 Months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	125	0.13	0	0.00	0	0.00	0	0.00	125	0.13
	22-25	236	0.28	4	0.75	1	1.00	0	0.00	241	0.29
	26-30	69	0.35	9	0.56	3	0.33	0	0.00	81	0.37
	31+	31	0.35	5	0.80	7	0.57	1	1.00	44	0.45
	Total	461	0.25	18	0.67	11	0.55	1	1.00	491	0.27
PG 2	< 22	209	0.44	4	1.00	0	0.00	0	0.00	213	0.45
	22-25	519	0.27	34	0.24	0	0.00	0	0.00	553	0.27
	26-30	137	0.18	37	0.27	2	0.50	0	0.00	176	0.20
	31+	42	0.26	20	0.45	7	0.43	1	0.00	70	0.33
	Total	907	0.29	95	0.33	9	0.44	1	0.00	1012	0.30
PG 3	< 22	256	0.52	2	1.00	0	0.00	0	0.00	258	0.52
	22-25	985	0.26	73	0.25	1	0.00	0	0.00	1059	0.26
	26-30	415	0.13	136	0.15	14	0.14	0	0.00	565	0.13
	31+	204	0.30	62	0.18	38	0.05	11	0.09	315	0.24
	Total	1860	0.27	273	0.19	53	0.08	11	0.09	2197	0.26
PG 4	< 22	175	0.77	2	1.00	0	0.00	0	0.00	177	0.77
	22-25	2428	0.73	296	0.73	1	1.00	0	0.00	2725	0.73
	26-30	1083	0.79	457	0.84	97	0.85	1	1.00	1638	0.81
	31+	545	0.71	210	0.74	141	0.89	50	0.92	946	0.75
	Total	4231	0.75	965	0.78	239	0.87	51	0.92	5486	0.76
PG 5	< 22	36	0.83	0	0.00	0	0.00	0	0.00	36	0.83
	22-25	1233	0.81	280	0.81	7	0.71	3	1.00	1523	0.81
	26-30	377	0.77	272	0.76	58	0.78	0	0.00	707	0.76
	31+	1032	0.88	396	0.82	129	0.78	36	0.58	1593	0.85
	Total	2678	0.83	948	0.80	194	0.78	39	0.62	3859	0.82
PG 6	< 22	3	1.00	5	1.00	2	1.00	0	0.00	10	1.00
	22-25	334	0.97	305	0.94	39	0.87	8	0.75	686	0.95
	26-30	103	0.99	260	0.93	174	0.93	2	1.00	539	0.94
	31+	385	0.97	462	0.95	362	0.95	142	0.80	1351	0.94
	Total	825	0.97	1032	0.94	577	0.94	152	0.80	2586	0.94
PG 7+	< 22	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	22-25	0	0.00	17	1.00	24	0.96	4	1.00	45	0.98
	26-30	1	1.00	35	1.00	96	1.00	4	1.00	136	1.00
	31+	8	1.00	47	0.98	150	0.96	100	0.77	305	0.90
	Total	9	1.00	99	0.99	270	0.97	108	0.79	486	0.94
Total	< 22	804	0.51	13	1.00	2	1.00	0	0.00	819	0.52
	22-25	5735	0.62	1009	0.77	73	0.88	15	0.87	6832	0.65
	26-30	2185	0.62	1206	0.75	444	0.87	7	1.00	3842	0.69
	31+	2247	0.78	1202	0.82	834	0.87	341	0.76	4624	0.81
	Total	10971	0.65	3430	0.78	1353	0.87	363	0.77	16117	0.70

determined for the more recent cohorts. These tables include the maximum number of observations available at each survival point. All recruits who entered in 1983 or earlier are included at the 12-month survival point, all who entered in 1982 or earlier are included at the 24-month survival point, and so on.[1]

PAYGRADE AT ENTRY

Some of the trends in these data are best illustrated by means of a figure. Figure 1 shows the survival rates over time by paygrade at the time of entry.[2] The figure provides some confirmation for the trend shown in table 1 using 6-month survival rates. There appears to be a significant difference between the survival rates for the E1-to-E3 group and the E4-to-E7 group. The figure shows a decrease in the differences within the E1-to-E3 group and an increase of the differences within the E4-to-E7 group. The differences within the groups are dwarfed, however, by the differences across the groups. Personnel returning at the petty officer paygrades (i.e., E4 to E7) are much more likely to stay in the Navy than those returning at apprentice paygrades (i.e., E1 to E3) over the entire 4-year period.

AGE AT ENTRY

Figure 2 shows the difference in survival rates of prior-service recruits through 48 months by age at entry for four age categories. The figure indicates a direct relationship between age and survival rates that grows over time. The youngest group has the lowest survival rates in all cases. The size of the differences among age groups is smaller than the size of the

[1] An alternative approach is to exclude anyone with less than 48 months of potential service, which would exclude all entrants after 1980. There is little difference between these two approaches, which is illustrated in appendix B.

[2] This paygrade is not necessarily the same as the paygrade at the time of discharge from the prior term of service.

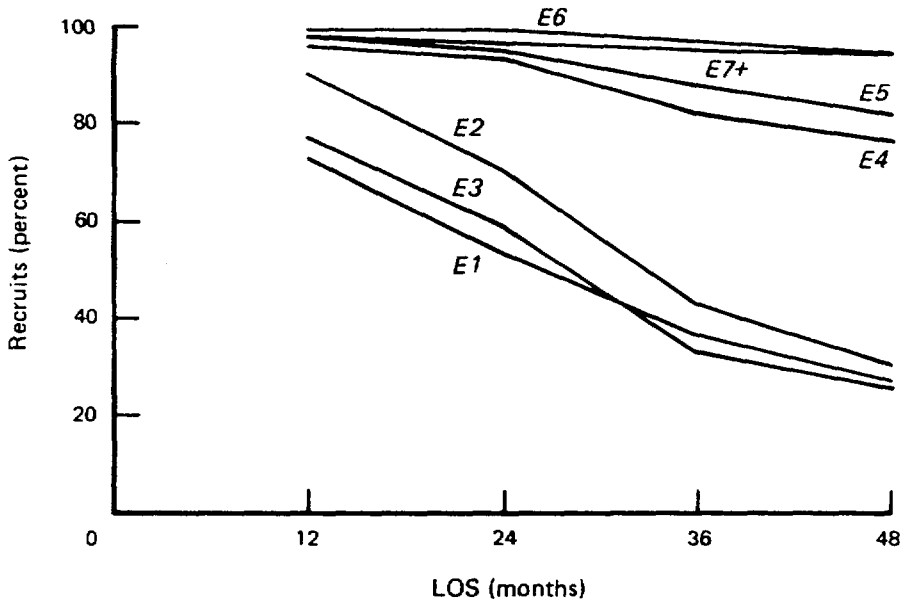

FIG. 1: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY PAYGRADE AT ENTRY

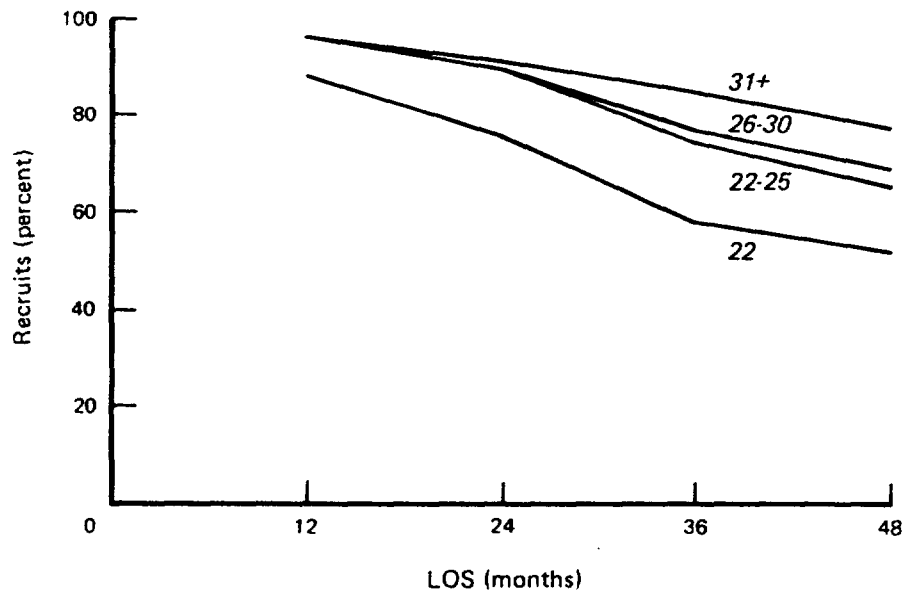

FIG. 2: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY AGE AT ENTRY

differences between the lower and higher paygrades. Part of the difference in age-group survival rates is due to the fact that the younger recruits are more likely than the older ones to fall within the apprentice paygrades. Most of the differences in the age groups can be attributed to differences in the distribution of paygrade groups. This point is illustrated in figure 3. The difference between E3 and E4 recruits is much larger than the difference between age 22-to-25 and 26-to-30 recruits. Although there is little difference across age groups among the E4s, there are some differences among E3s. In both cases, however, the survival rates for E3s are considerably below those for E4s.

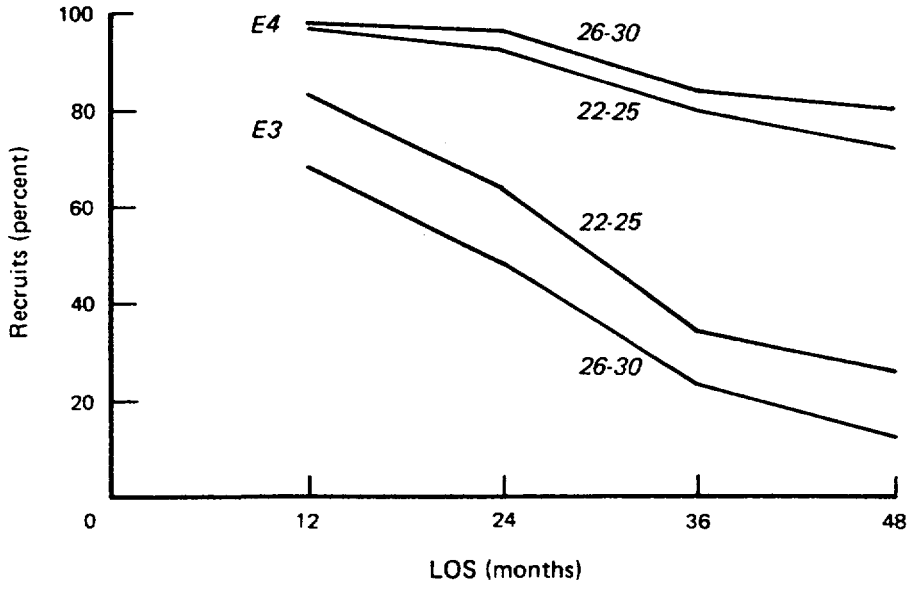

FIG. 3: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY PAYGRADE AND AGE AT ENTRY

The lack of a clear effect of age on survival rates for prior-service recruits is in sharp contrast to the effect for non-prior-service recruits. There is a monotonic relationship between age and survival among these recruits–the

younger the recruit, the more likely the recruit remains in the Navy beyond a year. This relationship does not exist for prior-service recruits, which is significant because OSVETs are subject to the same SCREEN test as non-prior-service recruits, and the SCREEN test includes age as one of the factors considered. Some OSVETs may be excluded from the Navy because of the age criteria, even though the age effects for prior-service recruits are quite different from those suggested in the SCREEN table. For example, consider a 25-year-old high school diploma graduate with an AFQT score of 18 and a 20-year-old in the same education and mental groups. The 25-year-old gets a SCREEN score of 69 and so would not be permitted to enlist; the 20-year-old gets a score of 75 and would be permitted to enlist, even though the 1-year survival rate for FY 1978 through 1983 was higher for 25-year-olds than for 20-year-olds.

LOS AT ENTRY

Figure 4 shows the path of survival rates through 48 months by LOS at time of entry. The differences across LOS groups is quite narrow at 12 months, but it grows over time.. The LOS 1-4 group has the lowest survival rates, and the LOS 9-12 group has the highest survival rates. Once again, the differences between age groups is considerably smaller than the differences between low and high paygrades. Much of the difference across LOS groups is surely attributable to differences in paygrade. Figure 5 shows the difference between E3 and E4 survival rates within LOS categories . The difference between paygrade groups is much larger than the difference between LOS groups.

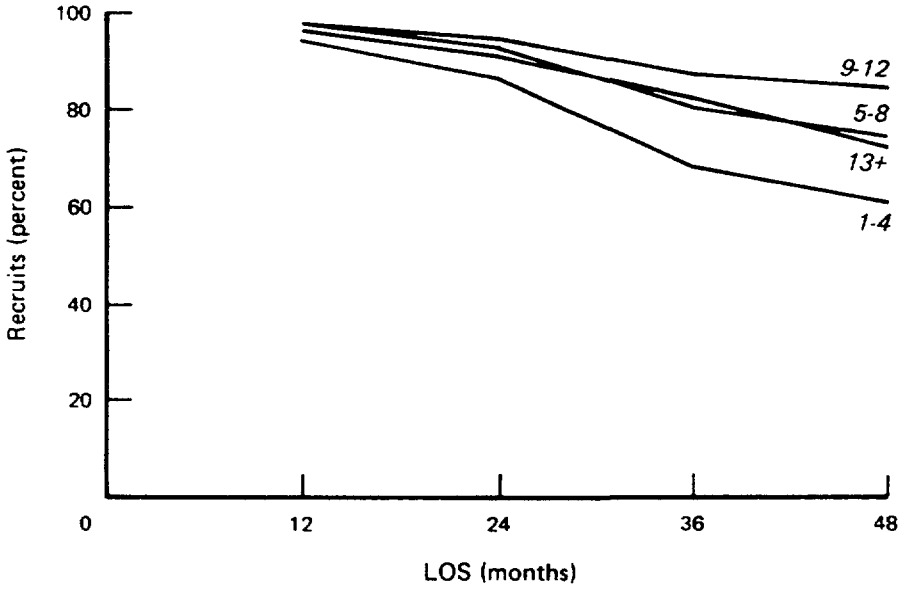

FIG. 4: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY LOS AT ENTRY

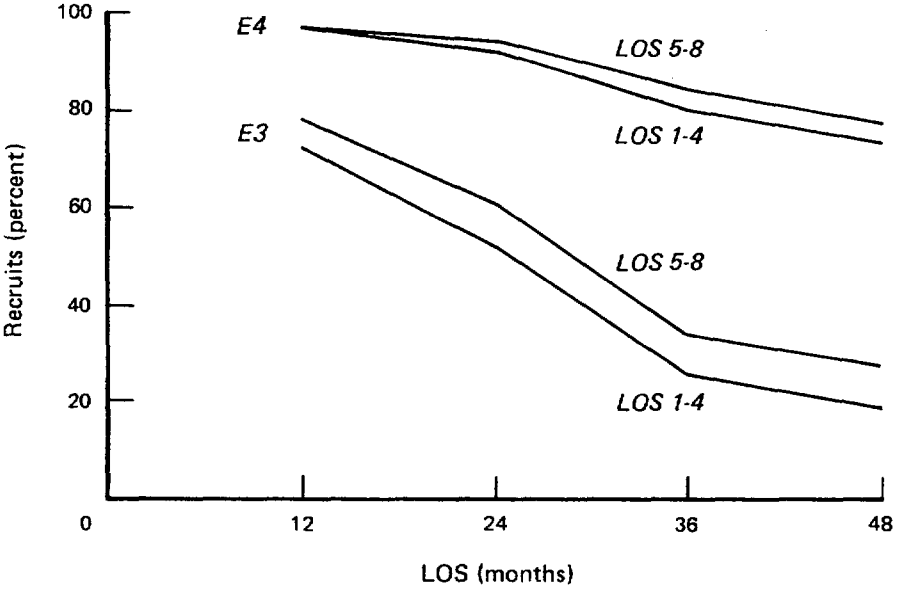

FIG. 5: SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS BY PAYGRADE AND LOS AT ENTRY

OTHER FACTORS AFFECTING SURVIVAL RATES

This section extends the analysis of the characteristics that affect survival rates of prior-service recruits. In the previous section, the concept of a SCREEN table was introduced, and variations in survival rates according to characteristics on the SCREEN table were discussed. This section disaggregates the prior-service data set to examine the effects of enlistment program, sex, education, and year of entry.

ENLISTMENT PROGRAMS

The data on enlistment programs can be examined in several ways. For example, each program could be looked at separately, but the problem with this approach is that there are only a few hundred observations in some of the programs. With such a small number of observations, there can be little confidence in the results being representative of a meaningful trend. Rather than a complete disaggregation into individual programs, two groups of programs are investigated. Programs are grouped as NAVET or OSVET and as continuous service, broken service, or a PRISE program.

Figure 6 shows the breakdown between NAVET and OSVET recruits. One problem with this grouping is how to handle the PRISE I and Other categories. The Navy data do not distinguish between NAVETs and OSVETs for these two programs, and figure 6 excludes both of these categories. If they were to be included, they would likely fall into the NAVETs category because most of these recruits are Navy veterans. Their inclusion has only a minor effect on the shape of the NAVETs line; it is almost identical for the first 2 years and several percentage points higher for the last 2 years. In figure 6, the NAVETs line is above the OSVETs line, but the two lines are roughly parallel. This result implies that differences in NAVET and OSVET survival occur in the first year of service. Among those who survive the first year, the survival rate through the fourth year is approximately

the same.[1]

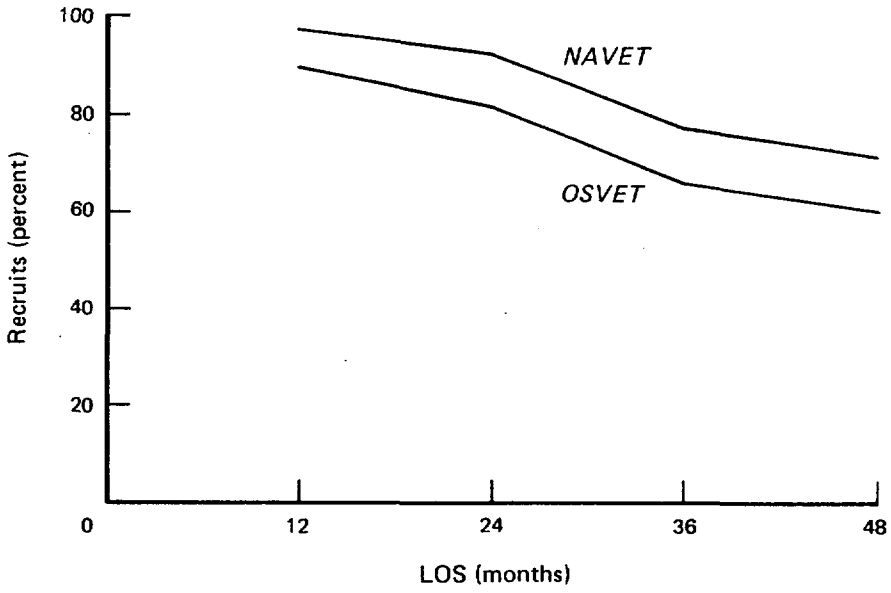

FIG. 6: SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS BY PREVIOUS SERVICE EXPERIENCE

Figure 7 divides the entry programs into three groups: those specifying continuous service, those specifying broken service, and the PRISE programs. With this specification, there is no overlap of programs, and all recruits (with the exception of the non-prior-service category) are classified. The survival rates of these groups are similar in the first 2 years of service, but in the third year, there is a relatively large decrease in the survival rate of those with broken service. This one-time drop may be related

[1]This result is not surprising. Both NAVETs and OSVETs have experienced the rigors of military life, and so it is likely that the distribution of tastes for military service is very similar for the two groups. OSVETs, however, have not had experiences that may be peculiar to the Navy. During the first year of Navy service, OSVETs are more likely to find the Navy experience not to their liking (e.g., getting seasick), but after this initial screening, their experiences are similar.

to end-of-contract reenlistment. Many of the broken-service recruits had a 2-year obligation, and when this obligation ended, there was a jump in attrition. In the PRISE programs, the initial obligation is at least 4 years. If a larger percent of the continuous-service recruits are also in for 4 years or more, this could explain the differences across programs.

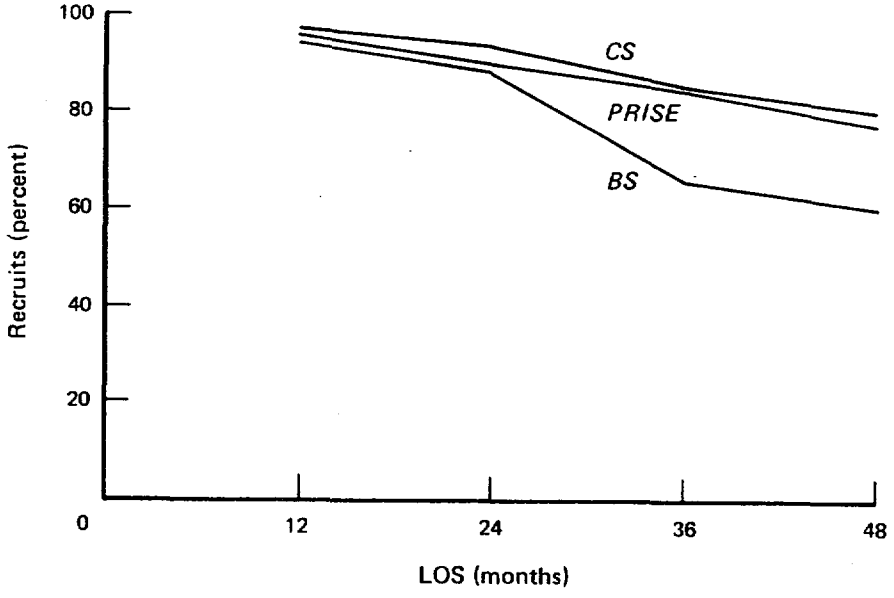

FIG. 7: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY TYPE OF ENTRY PROGRAM

OTHER CHARACTERISTICS

Figures 8 and 9 show the effect of sex and education on the survival rates. First, there appears to be little difference between the survival rates of males and females. Second, education is defined as a categorical variable: high school graduates and non-high school graduates. Survival rates for high school graduates are consistently higher than those for non-high

school graduates. This trend is consistent with the considerable evidence for non-prior-service recruits. The effect of education might appear stronger if a differentiation could be made between high school degree graduates and general equivalency degree graduates (GEDs). Among non-prior-service recruits, the survival rates for GEDs tend to be close to that for non-high school graduates, and the rates for degree graduates are considerably higher than for these two groups. The prior-service data program does not permit the exploration of this issue.

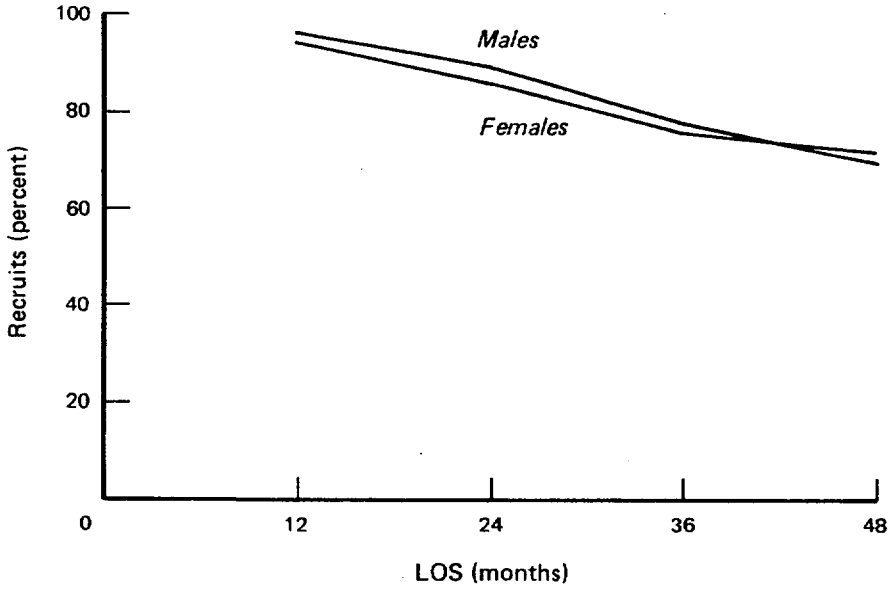

FIG. 8: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY SEX

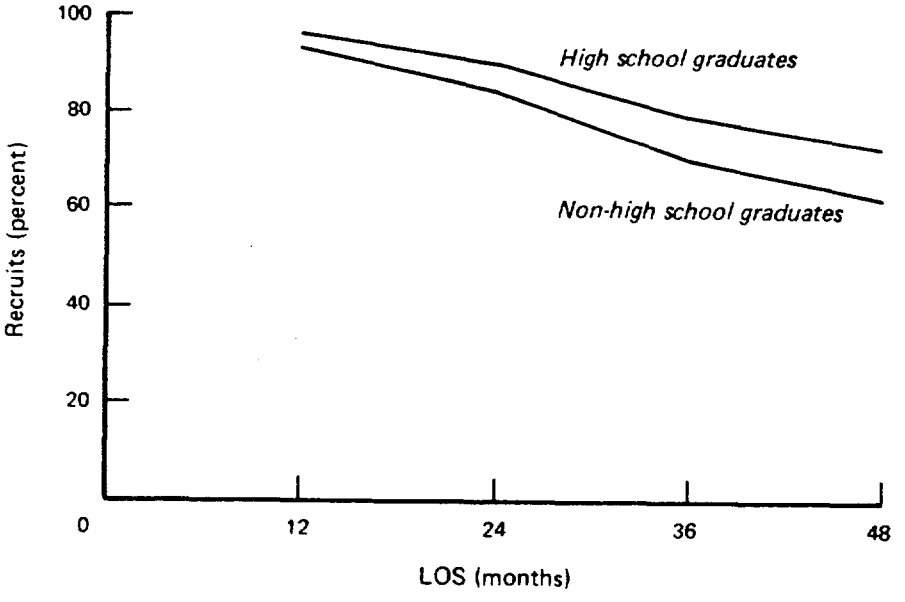

FIG. 9: SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY EDUCATION CATEGORY

TRENDS OVER TIME

Figure 10 shows survival rates at 9 and 21 months for the years 1978 through 1983. The 9- and 21-month survival rates were chosen to maximize the number of observations used for this comparison. The line through both bars for each year shows the percent of E1-to-E3 recruits in that year. Both the 9- and 21-month survival rates were lower for 1978 than for the other years, but in that year the percent of E1-to-E3 recruits was approximately twice as high as in the other years. Because E1-to-E3 attrition is higher than attrition for higher paygrades, it is not surprising that the overall survival rate is lower. The further drop in E1-to-E3 attrition between 1982 and 1983 is associated with a slight increase (1 percentage point) in both

survival rates.

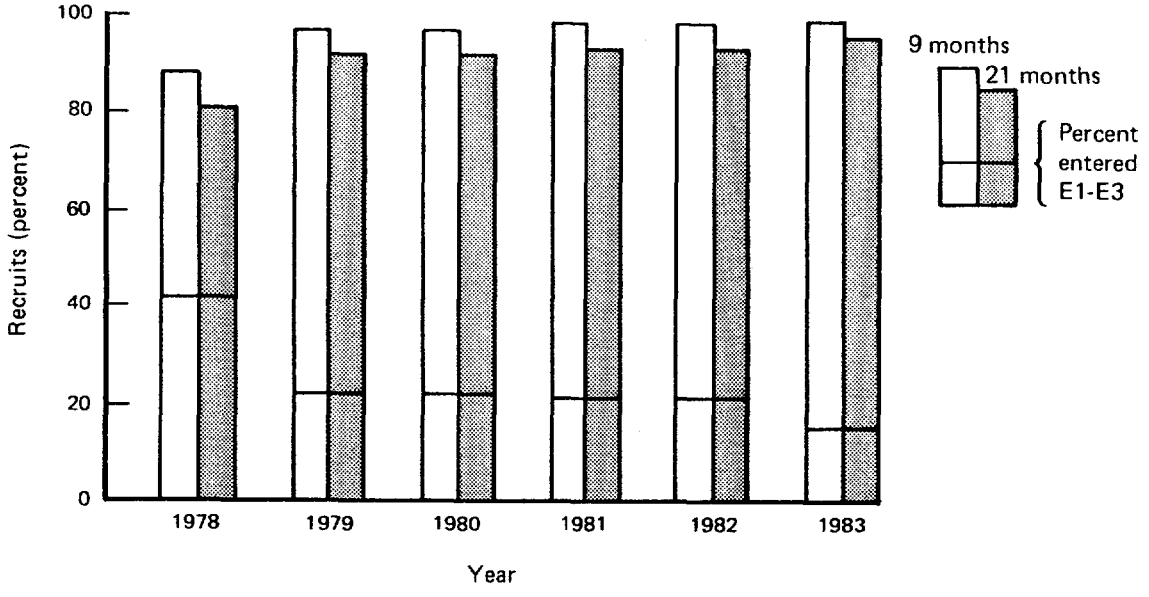

FIG. 10: 9-MONTH SURVIVAL RATES OF PRIOR-SERVICE RECRUITS BY YEAR OF ENTRY

PRIOR VS. NON-PRIOR-SERVICE RECRUITS

If the prior-service pool for recruits is considered an alternative to the non-prior-service pool, it is useful to compare the survival rates of the two groups. Such a comparison provides insights into the relative effort required to maintain the different types of recruits in service for a particular length of time. Prior-service recruits may have either a better or worse survival record than non-prior-service recruits. On the one hand, prior-service personnel have an understanding of the rigors of military life from their previous experience; consequently, they may be less likely to be unpleasantly surprised by the nature of their assignments. On the other hand, these recruits have already decided to leave the military once, and doing it again may be easier.

Figure 11 compares the 12-month through 48-month survival rates for prior-service and non-prior-service recruits who entered the Navy between 1978 and 1983.[1] The line for prior-service recruits is above that for non-prior service recruits at each of the 4 years of service. The largest differences are at the end of the first and fourth years. After 1 year, the difference in the survival rates is 8 percent. At 2 and 3 years, the lines are close to parallel, which indicates that attrition during this period is about equal, but in the fourth year, non-prior-service attrition increases, and the gap between the two is 15 percentage points.

Figure 12 distinguishes between prior-service recruits in E1-to-E3 and E4-to-E7 paygrades. The line for non-prior-service personnel falls between the two prior-service categories. E4-to-E7 recruits have the best survival rates and E1 to E3s the poorest.

[1]The information for the non-prior-service recruits is available from the SCREEN program described in [6].

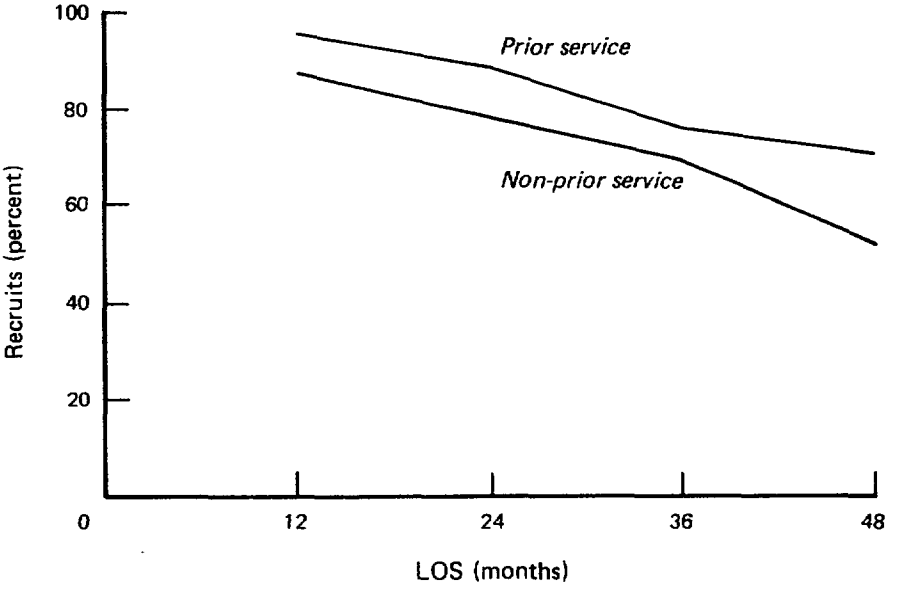

FIG. 11: SURVIVAL RATES OF PRIOR-SERVICE AND NON-PRIOR-SERVICE RECRUITS, 1978-1983

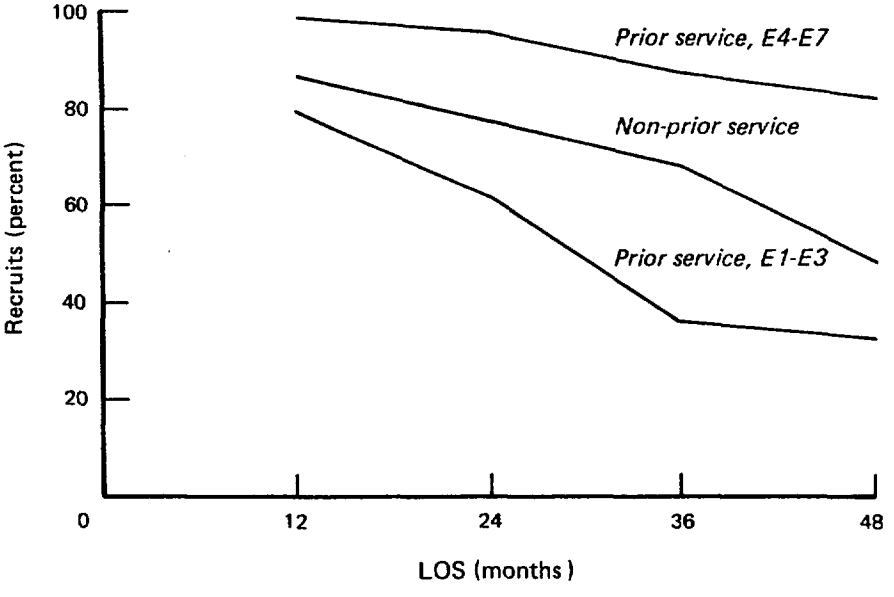

FIG. 12: SURVIVAL RATES FOR PRIOR-SERVICE RECRUITS BY PAYGRADE AND NON-PRIOR-SERVICE RECRUITS

The increase in attrition for non-prior-service recruits after 3 years of service that is shown in figure 11 can be explained by the type of non-prior-service entry program. Among the non-prior-service entry programs are the Active Mariner (AM) and the Apprenticeship Training Program (ATP), which have a 3-year obligation. The combined survival probability for these two programs at 48 months is 25 percent. If these two programs are eliminated from the non-prior-service grouping (figure 13), the survival lines are roughly parallel. Although prior-service recruits have a higher survival rate overall after the first year, the attrition rate for prior-service and non-prior-service recruits is roughly the same. Attrition in the first year may be higher among non-prior-service personnel because they have more of an adjustment to military life. This adjustment is probably the biggest reason for the difference in early attrition.

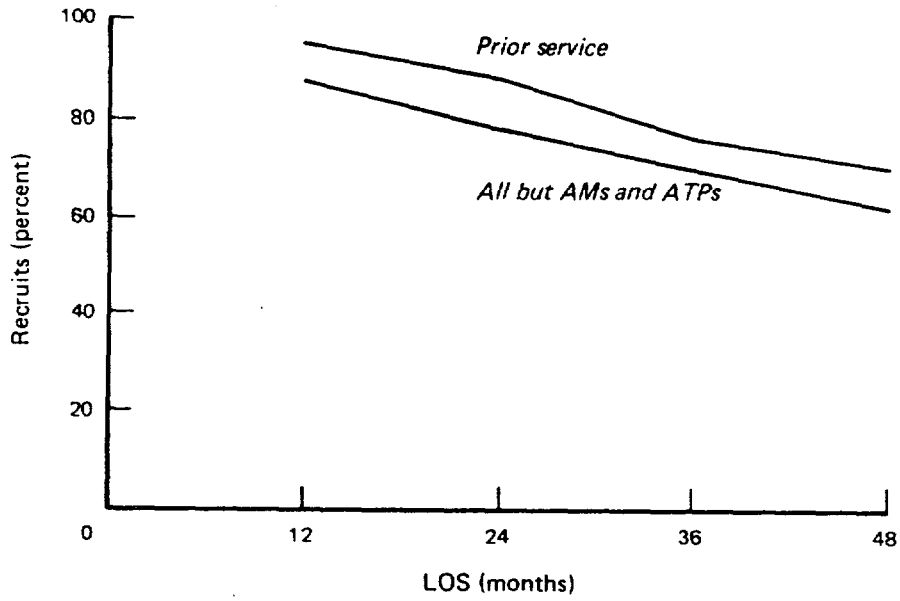

FIG. 13: SURVIVAL RATES OF PRIOR-SERVICE AND NON-PRIOR-SERVICE RECRUITS (EXCLUDING 3-YEAR-OBLIGOR RECRUITS)

CONCLUSIONS AND RECOMMENDATIONS

This memorandum summarizes the survival data for prior-service recruits between FY 1978 through FY 1984. These data are available on an interactive basis at CNA. The interactive program constructs tables that allow the user to study the survival rates of recruits with specific characteristics. The data provide a number of interesting insights into the value of prior-service recruits and serve as a basis for making several recommendations.

The paygrade at the time of reentry is the best characteristic available for screening recruits on the basis of survival probabilities. Recruits who enter at the E4-to-E7 paygrades have a 48-month survival rate of 82 percent; those who enter at the E1-to-E3 paygrades have a 48-month survival rate of 27 percent. Much of the variation in survival rates by other characteristics such as age at reentry or length of service at reentry apparently can be explained in terms of variation in the proportion of E1-to-E3 paygrades within a category.[1] This distinction between E1-to-E3 and E4-to-E7 recruits is particularly interesting because the rules for recruiting prior-service personnel already distinguish between these two groups.[2] It is more difficult, and in some cases impossible, for E1-to-E3 personnel to enlist. In spite of these rules, the survival rates are still relatively low for the E1 to E3s.

The pattern of survival rates for prior-service personnel is different from that for non-prior-service personnel. The difference is most evident in the effect of age on survival rates. For non-prior-service personnel there is an inverse relationship between survival rates and age, i.e., younger recruits are more likely to remain in the Navy than older recruits. This pattern does not exist for prior-service personnel. This difference is significant from a policy standpoint because the non-prior-service SCREEN table is used to

[1]The term "apparently" is used because these observations are made without benefit of multivariate analysis.

[2]See [7] for details.

evaluate OSVETs. Given this difference, it is apparent that the SCREEN table currently in use provides poor estimates of the of survival probabilities for certain groups of OSVETs.

The survival rate for prior-service recruits is higher than that for non-prior-service recruits. Most of the difference between these two groups occurs in the first year of service when the survival rate for prior-service recruits is 8 points higher. This difference implies that to keep 100 personnel through 4 years of service, it is necessary to find 161 recruits without prior service, but only 143 with prior service. In addition to the smaller number of recruits needed initially, prior-service recruits are also likely to cost less because of the relatively low levels of training they require. Another advantage of this group is that it takes less time to have a trained person ready for productive duty from among the prior-service pool.

Although recruiting prior-service personnel into petty officer ranks is cost effective for the Navy, there are some limitations and problems in using this pool. First, the size of the pool is limited by the extent of past attrition. As retention rates increase, the size of the pool will shrink. Second, recruiting prior-service personnel may be quite difficult. At some point these people decided that civilian life is preferable to military life. Whether the reason for this decision was economic or personal, recruiters may have to overcome obstacles.[1] Third, although there are some opportunities to retrain experienced personnel through the RESCORE program, recruiters are constrained in their recruitment of prior-service personnel by the specific petty officer needs of the Navy. In other words, the Navy may not need the specific skills of some of the prior-service personnel who are willing to enlist. Fourth, short-run budgetary constraints may make recruiting petty officers too costly. Recruiting goals for prior-service personnel serve as a basis for recruiters' activities. The budgetary cost to Recruiting Command

[1] The availability of prior-service recruits, in some cases shortly after they initially decided to leave the Navy, may indicate a failure in the personnel retention system. It is likely to be cheaper to keep people in the Navy in the first place than to let them leave and then return. Nonetheless, in some cases, people do change their minds, and in others, the needs of the Navy change over time.

of an E4 in the first year is greater than the cost of a non-prior-service recruit. Recruiters may be constrained in seeking additional prior-service personnel by these goals. Although the goal setters may be responding rationally to their own budget constraint, such decisions are not rational from the perspective of the Navy. The cost of an E4 (with the possible exception of a RESCORE recruit) is less than the cost of the E1 because the E4 is already trained. In addition, if survival rates and differences in productivity are factored in, the advantage for more senior personnel is even greater. In many cases, the Navy would be better off in the long run if it provided some flexibility in setting recruiting budgets. Some consideration should be given to developing a contingency fund to allow for increasing the recruiting budget to enable the recruitment of all qualified prior-service personnel available.

This analysis serves as a basis for three recommendations about recruiting prior-service personnel.

- Recruiting prior-service personnel into paygrades E4 and above should be encouraged and expanded.
- The regulations that discourage recruiting these personnel into paygrades E1 through E3 should be maintained and even strengthened.
- The practice of using the non-prior-service SCREEN tables to determine the eligibility of OSVETs should be discontinued. A new SCREEN table based upon the survival experiences of OSVETs should be created.

REFERENCES

[1] Lockman, Robert F. and Quester, Aline O., "Forewarned is Forearmed," *Proceedings,* U.S. Naval Institute (Feb 1984): 106-109

[2] U. S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States 1986,* 1986

[3] CNA Study 1068, *Chances of Surviving the First Year of Service: A New Technique for Use in Making Recruiting Policy and Screening Applicants for the Navy,* by Robert F. Lockman, Nov 1975

[4] CNA Research Contribution 425, *A New Look at Success Chances of Recruits Entering the Navy (SCREEN),* by Robert F. Lockman and Philip M. Lurie, Feb 1980

[5] CNA Research Memorandum 86-3, *Non-Prior-Service Accession Data Set: FY 1978-FY 1984,* by George R. Corliss, Jan 1986

[6] CNA Research Memorandum 86-45, *SCREEN Tables for Non-Prior-Service Accessions for FY 1978-1984,* by Aline Quester, Mar 1986

[7] Navy Recruiting Command, COMNAVCRUITCOM Instruction 1130.8B, *Navy Recruiting Manual Enlisted,* (Feb 85)

APPENDIX A
CONSTRUCTING A SCREEN TABLE

This appendix shows the computer commands needed to construct a SCREEN table for prior-service recruits. The process is similar to that explained in [4] of the main text for constructing a SCREEN table for non-prior-service recruits; however, this version of the program has some different options. The program itself is available in CNA9:[CORLISSG.DEP.EMR.PRIOR]MAKE_REPORT. Once it is copied into the user's workspace, the program is implemented by typing responses indicated in **boldface** type.

ENTER SELECTION FOR REPORT

YEAR SELECTION

1 - Year 78
2 - Year 79
3 - Year 80
4 - Year 81
5 - Year 82
6 - Year 83
7 - Year 84

How many years would you like to select? (9 for all): **2**

Enter first year selection: **6**

Enter second year selection: **7**

SEX SELECTION

1 - Male
2 - Female
9 - Combined

Enter the sex you want: **9**

PROGRAM SELECTION

0 - NON-PRIOR-SERVICE
1 - NAVET CONTINUOUS SERVICE
2 - NAVET BROKEN SERVICE
3 - NAVET/OSVET PRISE I
4 - NAVET PRISE II
5 - RESCORE CONTINUOUS SERVICE
6 - RESCORE BROKEN SERVICE
7 - OSVET BROKEN SERVICE
8 - OSVET PRISE II
9 - OSVET BROKEN SERVICE (NO RTC)

How many programs would you like to select? (10 for all): **1**

Enter first program selection **2**

EDUCATION SELECTION

1 - Non-HS Graduates
2 - HS Graduates
9 - Combined

Enter EDUCATION selection: **9**

SURVIVAL MONTH SELECTION

Valid entries are from 0 to 09
Enter survival months: **9**

Your report can be found at REPORT01.DAT

Would you like to produce another report (Y or N)? **N**

This program does not produce a hard copy of the report. The report is sent to the current directory. A hard copy may be produced by using a print command at the dollar sign prompt (i.e., **PRINT REPORT01.DAT**).

TABLE B-1

12-MONTH SURVIVAL RATES FOR ALL RECRUITS ENTERING 1978-1980

		Total recruits and fraction who survive to 12 months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	125	0.69	0	0.00	0	0.00	0	0.00	125	0.69
	22-25	236	0.84	4	1.00	1	1.00	0	0.00	241	0.85
	26-30	69	0.90	9	0.89	3	1.00	0	0.00	81	0.90
	31+	31	0.94	5	1.00	7	0.86	1	1.00	44	0.93
	Total	461	0.82	18	0.94	11	0.91	1	1.00	491	0.82
PG 2	< 22	209	0.90	4	1.00	0	0.00	0	0.00	213	0.91
	22-25	519	0.87	34	0.91	0	0.00	0	0.00	553	0.87
	26-30	137	0.77	37	0.95	2	1.00	0	0.00	176	0.81
	31+	42	0.88	20	0.90	7	0.86	1	1.00	70	0.89
	Total	907	0.86	95	0.93	9	0.89	1	1.00	1012	0.87
PG 3	< 22	256	0.91	2	1.00	0	0.00	0	0.00	258	0.91
	22-25	985	0.79	73	0.74	1	1.00	0	0.00	1059	0.78
	26-30	415	0.60	136	0.61	14	0.86	0	0.00	565	0.61
	31+	204	0.63	62	0.53	38	0.39	11	0.45	315	0.58
	Total	1860	0.74	273	0.63	53	0.53	11	0.45	2197	0.72
PG 4	< 22	175	0.99	2	1.00	0	0.00	0	0.00	177	0.99
	22-25	2428	0.98	296	0.98	1	1.00	0	0.00	2725	0.98
	26-30	1083	0.98	457	0.99	97	0.99	1	1.00	1638	0.98
	31+	545	0.94	210	0.98	141	0.99	50	1.00	946	0.96
	Total	4231	0.98	965	0.99	239	0.99	51	1.00	5486	0.98
PG 5	< 22	36	1.00	0	0.00	0	0.00	0	0.00	36	1.00
	22-25	1233	0.99	280	0.98	7	0.86	3	1.00	1523	0.99
	26-30	377	0.99	272	0.97	58	0.97	0	0.00	707	0.98
	31+	1032	0.99	396	0.99	129	0.95	36	0.92	1593	0.99
	Total	2678	0.99	948	0.98	194	0.95	39	0.92	3859	0.99
PG 6	< 22	3	1.00	5	1.00	2	1.00	0	0.00	10	1.00
	22-25	334	1.00	305	1.00	39	1.00	8	0.88	686	1.00
	26-30	103	1.00	260	1.00	174	0.99	2	1.00	539	1.00
	31+	385	1.00	462	0.99	362	0.99	142	0.94	1351	0.99
	Total	825	1.00	1032	1.00	577	0.99	152	0.94	2586	0.99
PG 7+	< 22	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	22-25	0	0.00	17	1.00	24	1.00	4	1.00	45	1.00
	26-30	1	1.00	35	1.00	96	1.00	4	1.00	136	1.00
	31+	8	1.00	47	1.00	150	0.99	100	0.95	305	0.98
	Total	9	1.00	99	1.00	270	1.00	108	0.95	486	0.99
Total	< 22	804	0.90	13	1.00	2	1.00	0	0.00	819	0.90
	22-25	5735	0.94	1009	0.97	73	0.99	15	0.93	6832	0.94
	26-30	2185	0.89	1206	0.94	444	0.98	7	1.00	3842	0.92
	31+	2247	0.95	1202	0.96	834	0.96	341	0.94	4624	0.95
	Total	10971	0.93	3430	0.96	1353	0.97	363	0.94	16117	0.94

TABLE B-2

24-MONTH SURVIVAL RATES FOR ALL RECRUITS ENTERING 1978-1980

Total recruits and fraction who survive to 24 months

	Age	LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
PG 1	< 22	125	0.44	0	0.00	0	0.00	0	0.00	125	0.44
	22-25	236	0.64	4	1.00	1	1.00	0	0.00	241	0.65
	26-30	69	0.75	9	0.89	3	1.00	0	0.00	81	0.78
	31+	31	0.87	5	0.80	7	0.86	1	1.00	44	0.86
	Total	461	0.62	18	0.89	11	0.91	1	1.00	491	0.64
PG 2	< 22	209	0.73	4	1.00	0	0.00	0	0.00	213	0.73
	22-25	519	0.70	34	0.74	0	0.00	0	0.00	553	0.70
	26-30	137	0.55	37	0.68	2	1.00	0	0.00	176	0.59
	31+	42	0.57	20	0.80	7	0.86	1	1.00	70	0.67
	Total	907	0.68	95	0.74	9	0.89	1	1.00	1012	0.69
PG 3	< 22	256	0.82	2	1.00	0	0.00	0	0.00	258	0.82
	22-25	985	0.62	73	0.60	1	0.00	0	0.00	1059	0.62
	26-30	415	0.40	136	0.43	14	0.57	0	0.00	565	0.42
	31+	204	0.50	62	0.37	38	0.16	11	0.36	315	0.43
	Total	1860	0.59	273	0.47	53	0.26	11	0.36	2197	0.56
PG 4	< 22	175	0.97	2	1.00	0	0.00	0	0.00	177	0.97
	22-25	2428	0.94	296	0.94	1	1.00	0	0.00	2725	0.94
	26-30	1083	0.95	457	0.97	97	0.95	1	1.00	1638	0.96
	31+	545	0.87	210	0.94	141	0.96	50	0.98	946	0.91
	Total	4231	0.94	965	0.95	239	0.96	51	0.98	5486	0.94
PG 5	< 22	36	1.00	0	0.00	0	0.00	0	0.00	36	1.00
	22-25	1233	0.97	280	0.93	7	0.71	3	1.00	1523	0.96
	26-30	377	0.95	272	0.94	58	0.90	0	0.00	707	0.94
	31+	1032	0.96	396	0.94	129	0.91	36	0.78	1593	0.95
	Total	2678	0.97	948	0.94	194	0.90	39	0.79	3859	0.95
PG 6	< 22	3	1.00	5	1.00	2	1.00	0	0.00	10	1.00
	22-25	334	1.00	305	1.00	39	1.00	8	0.88	686	1.00
	26-30	103	0.99	260	1.00	174	0.97	2	1.00	539	0.99
	31+	385	0.99	462	0.99	362	0.98	142	0.90	1351	0.98
	Total	825	1.00	1032	0.99	577	0.98	152	0.90	2586	0.99
PG 7+	< 22	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	22-25	0	0.00	17	1.00	24	1.00	4	1.00	45	1.00
	26-30	1	1.00	35	1.00	96	1.00	4	1.00	136	1.00
	31+	8	1.00	47	1.00	150	0.99	100	0.88	305	0.96
	Total	9	1.00	99	1.00	270	1.00	108	0.89	486	0.97
Total	< 22	804	0.78	13	1.00	2	1.00	0	0.00	819	0.78
	22-25	5735	0.86	1009	0.92	73	0.96	15	0.93	6832	0.87
	26-30	2185	0.82	1206	0.90	444	0.95	7	1.00	3842	0.86
	31+	2247	0.90	1202	0.93	834	0.93	341	0.88	4624	0.91
	Total	10971	0.85	3430	0.92	1353	0.94	363	0.88	16117	0.88

TABLE B-3

36-MONTH SURVIVAL RATES FOR ALL RECRUITS ENTERING 1978-1980

		Total recruits and fraction who survive to 36 months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	125	0.27	0	0.00	0	0.00	0	0.00	125	0.27
	22-25	236	0.41	4	1.00	1	1.00	0	0.00	241	0.42
	26-30	69	0.54	9	0.78	3	0.67	0	0.00	81	0.57
	31+	31	0.68	5	0.80	7	0.86	1	1.00	44	0.73
	Total	461	0.41	18	0.83	11	0.82	1	1.00	491	0.43
PG 2	< 22	209	0.52	4	1.00	0	0.00	0	0.00	213	0.53
	22-25	519	0.37	34	0.53	0	0.00	0	0.00	553	0.38
	26-30	137	0.23	37	0.30	2	0.50	0	0.00	176	0.24
	31+	42	0.38	20	0.60	7	0.71	1	0.00	70	0.47
	Total	907	0.38	95	0.47	9	0.67	1	0.00	1012	0.39
PG 3	< 22	256	0.61	2	1.00	0	0.00	0	0.00	258	0.61
	22-25	985	0.31	73	0.26	1	0.00	0	0.00	1059	0.31
	26-30	415	0.17	136	0.18	14	0.14	0	0.00	565	0.17
	31+	204	0.37	62	0.21	38	0.11	11	0.36	315	0.31
	Total	1860	0.33	273	0.22	53	0.11	11	0.36	2197	0.31
PG 4	< 22	175	0.82	2	1.00	0	0.00	0	0.00	177	0.82
	22-25	2428	0.79	296	0.79	1	1.00	0	0.00	2725	0.79
	26-30	1083	0.84	457	0.89	97	0.90	1	1.00	1638	0.85
	31+	545	0.78	210	0.83	141	0.92	50	0.96	946	0.82
	Total	4231	0.80	965	0.85	239	0.91	51	0.96	5486	0.82
PG 5	< 22	36	0.94	0	0.00	0	0.00	0	0.00	36	0.94
	22-25	1233	0.85	280	0.85	7	0.71	3	1.00	1523	0.85
	26-30	377	0.82	272	0.81	58	0.81	0	0.00	707	0.81
	31+	1032	0.92	396	0.89	129	0.87	36	0.67	1593	0.90
	Total	2678	0.88	948	0.85	194	0.85	39	0.69	3859	0.87
PG 6	< 22	3	1.00	5	1.00	2	1.00	0	0.00	10	1.00
	22-25	334	0.99	305	0.98	39	0.92	8	0.88	686	0.98
	26-30	103	0.99	260	0.96	174	0.95	2	1.00	539	0.96
	31+	385	0.99	462	0.98	362	0.97	142	0.85	1351	0.97
	Total	825	0.99	1032	0.97	577	0.96	152	0.86	2586	0.97
PG 7+	< 22	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	22-25	0	0.00	17	1.00	24	0.96	4	1.00	45	0.98
	26-30	1	1.00	35	1.00	96	1.00	4	1.00	136	1.00
	31+	8	1.00	47	1.00	150	0.97	100	0.85	305	0.94
	Total	9	1.00	99	1.00	270	0.98	108	0.86	486	0.96
Total	< 22	804	0.60	13	1.00	2	1.00	0	0.00	819	0.60
	22-25	5735	0.68	1009	0.82	73	0.90	15	0.93	6832	0.70
	26-30	2185	0.67	1206	0.79	444	0.90	7	1.00	3842	0.73
	31+	2247	0.84	1202	0.88	834	0.90	341	0.83	4624	0.86
	Total	10971	0.70	3430	0.83	1353	0.90	363	0.84	16117	0.75

TABLE B-4

48-MONTH SURVIVAL RATES FOR ALL RECRUITS ENTERING 1978-1980

		Total recruits and fraction who survive to 48 months									
		LOS 1-4		LOS 5-8		LOS 9-12		LOS 13+		Total	
	Age										
PG 1	< 22	125	0.13	0	0.00	0	0.00	0	0.00	125	0.13
	22-25	236	0.28	4	0.75	1	1.00	0	0.00	241	0.29
	26-30	69	0.35	9	0.56	3	0.33	0	0.00	81	0.37
	31+	31	0.35	5	0.80	7	0.57	1	1.00	44	0.45
	Total	461	0.25	18	0.67	11	0.55	1	1.00	491	0.27
PG 2	< 22	209	0.44	4	1.00	0	0.00	0	0.00	213	0.45
	22-25	519	0.27	34	0.24	0	0.00	0	0.00	553	0.27
	26-30	137	0.18	37	0.27	2	0.50	0	0.00	176	0.20
	31+	42	0.26	20	0.45	7	0.43	1	0.00	70	0.33
	Total	907	0.29	95	0.33	9	0.44	1	0.00	1012	0.30
PG 3	< 22	256	0.52	2	1.00	0	0.00	0	0.00	258	0.52
	22-25	985	0.26	73	0.25	1	0.00	0	0.00	1059	0.26
	26-30	415	0.13	136	0.15	14	0.14	0	0.00	565	0.13
	31+	204	0.30	62	0.18	38	0.05	11	0.09	315	0.24
	Total	1860	0.27	273	0.19	53	0.08	11	0.09	2197	0.26
PG 4	< 22	175	0.77	2	1.00	0	0.00	0	0.00	177	0.77
	22-25	2428	0.73	296	0.73	1	1.00	0	0.00	2725	0.73
	26-30	1083	0.79	457	0.84	97	0.85	1	1.00	1638	0.81
	31+	545	0.71	210	0.74	141	0.89	50	0.92	946	0.75
	Total	4231	0.75	965	0.78	239	0.87	51	0.92	5486	0.76
PG 5	< 22	36	0.83	0	0.00	0	0.00	0	0.00	36	0.83
	22-25	1233	0.81	280	0.81	7	0.71	3	1.00	1523	0.81
	26-30	377	0.77	272	0.76	58	0.78	0	0.00	707	0.76
	31+	1032	0.88	396	0.82	129	0.78	36	0.58	1593	0.85
	Total	2678	0.83	948	0.80	194	0.78	39	0.62	3859	0.82
PG 6	< 22	3	1.00	5	1.00	2	1.00	0	0.00	10	1.00
	22-25	334	0.97	305	0.94	39	0.87	8	0.75	686	0.95
	26-30	103	0.99	260	0.93	174	0.93	2	1.00	539	0.94
	31+	385	0.97	462	0.95	362	0.95	142	0.80	1351	0.94
	Total	825	0.97	1032	0.94	577	0.94	152	0.80	2586	0.94
PG 7+	< 22	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	22-25	0	0.00	17	1.00	24	0.96	4	1.00	45	0.98
	26-30	1	1.00	35	1.00	96	1.00	4	1.00	136	1.00
	31+	8	1.00	47	0.98	150	0.96	100	0.77	305	0.90
	Total	9	1.00	99	0.99	270	0.97	108	0.79	486	0.94
Total	< 22	804	0.51	13	1.00	2	1.00	0	0.00	819	0.52
	22-25	5735	0.62	1009	0.77	73	0.88	15	0.87	6832	0.65
	26-30	2185	0.62	1206	0.75	444	0.87	7	1.00	3842	0.69
	31+	2247	0.78	1202	0.82	834	0.87	341	0.76	4624	0.81
	Total	10971	0.65	3430	0.78	1353	0.87	363	0.77	16117	0.70