

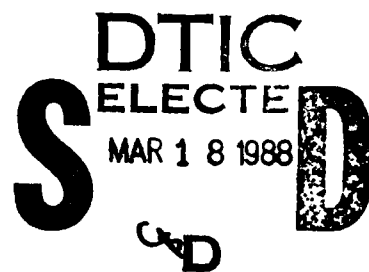


Technical Report 772

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The Effect of Transferability of GI Bill Benefits for Family Members on Army Retention and Career Choice

Hyder Lakhani, Paul Gade, and Glenda Y. Nogami



Personnel Utilization Technical Area
Manpower and Personnel Policy Research Laboratory



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ARI Technical Report 772

20. Abstract (Continued)

-based on a survey of soldiers' intentions to reenlist suggests that the Army can save about \$200 million per year.

Technical Report 772

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Benefits for Family Members on
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FOREWORD

The Personnel Utilization Technical Area of the Army Research Institute (ARI) performs multidisciplinary research in the areas of soldier family issues, retention, and readiness. Questions have recently been asked regarding the impact of the proposed transferability of benefits from the new GI Bill to family members of soldiers on soldier retention and career intentions, as well as the cost effectiveness of such a proposal. This in-house technical report addresses these questions, and was prepared as part of ARI's continual support for the Office of the Deputy Chief of Staff for Personnel.

The research presented in this report quantifies several of the economic, psychological, and sociological variables thought to affect retention and career intentions, and contributes to the ongoing theoretical and empirical discussion of military manpower modeling.

This research was sponsored by the Chief, Enlisted Sustainment and Distribution Division, and the Chief, Enlisted Accession Division, Office of the Deputy Chief of Staff for Personnel. A memo and a working paper based on this research were delivered in October 1985 and October 1986, respectively. A draft technical report was also submitted to sponsors at the Program Analysis and Evaluation Office, USA Community and Family Support Center. This project is part of ARI work unit 2.4.2 on Family Research. Preliminary results of this research were utilized in testimony before the House Veterans' Affairs Subcommittee on Education, Training, and Employment. The Army Times coverage of this testimony has been included in Appendix B of the report.



EDGAR M. JOHNSON
Technical Director

THE EFFECT OF TRANSFERABILITY OF GI BILL BENEFITS FOR FAMILY MEMBERS
ON ARMY RETENTION AND CAREER CHOICE

EXECUTIVE SUMMARY

Requirement:

An important responsibility of the Army Research Institute (ARI) is to conduct research on manpower, personnel, training, and family issues that are of particular significance and interest to the Army. One issue that has been raised is the Army's ability to increase the retention rate for enlisted soldiers in a cost-effective way. At present, the Army faces a declining rate of retention. An option that has been considered is to permit the transfer of GI Bill benefits from soldiers to their family members.

Procedure:

In this report, the authors use cost-effectiveness analysis to compare the increase in costs resulting from the use of GI Bill benefits and the Selective Reenlistment Bonus with the decrease in recruiting and training costs resulting from successful retention of enlisted personnel. Three scenarios for estimating cost effectiveness are considered. The potential increase in retention intentions is based on a survey of soldiers eligible to reenlist, and cross tabulations and nonlinear multivariate logit models are employed to explain reenlistment and career choice intentions. The multivariate technique mentioned above represents a significant improvement over the bivariate techniques that were employed in earlier research and were unable to incorporate all variables in a simultaneous framework.

Finding:

The results suggest that the Army could save \$9,400 per soldier in recruiting and training costs by permitting soldiers to transfer GI Bill benefits to their family members. Analysis of soldier survey data revealed that 47 percent of soldiers said they would be "more likely" or "much more likely" to reenlist if the transferability proposal were adopted. The associated increase in retention, estimated at 27 percent, could result in the Army saving about \$200 million per year in recruitment and training costs.

Utilization of Findings:

This research shows that the proposal to permit soldiers to transfer GI Bill benefits to their family members is cost effective for the Army. The proposed transferability may, however, be restricted to soldiers who agree to serve in the Army for at least 10 years.

THE EFFECT OF TRANSFERABILITY OF GI BILL BENEFITS FOR FAMILY MEMBERS
ON ARMY RETENTION AND CAREER CHOICE

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The Effect of Transferability of GI Bill Benefits for Family Members on Army Retention and Career Choice

Introduction

The development of innovative economic incentive policies to ensure retention and desired career choice of a sufficient, well-qualified, Armed force is increasingly dependent on comprehending and accounting for the family circumstances of service personnel. Retention and long term career decisions of soldiers are not made solely by the individual soldier. Rather, the soldier's family plays a critical role in these decisions. Economists have recognized the theoretical importance of maximizing the well-being of a family instead of that of an individual (Schultz, 1973; Becker, 1973, 1974, 1981). Sociologists have informed us about the changing family patterns evident from a pervasive change in acceptable gender roles (Segal, 1986). Psychologists and decision theorists have used the concepts of expected utilities and expected values of job retentions perceived by individuals (Mobley et al. 1979; Dachler and Mobley, 1973). These concepts have been extended to the expected utilities and values perceived by families as decision-making units in a community (Orthner et al., 1985). The Army has long recognized the relevance of family influences for retention and career choice decision and has maintained a wide range of family support and assistance programs to improve the quality of family life in the service. However, as these programs have grown in scope and cost, and as the Army has to make choice among alternative policies, attention must be focused on estimating the cost-effectiveness of specific alternative programs.

This research evaluates the new GI Bill. (Public Law 98-525). As of 1 July 1985, soldiers can enroll in this program if they (i) contract to serve on active duty for two, three or four years or serve for two years active duty plus four years of Selective Reserve, (ii) are a high school graduate or equivalent prior to completion of their tour of duty, (iii) complete at least 30 months of a 36-month enlistment or 20 months of a 24-month enlistment, and (iv) receive an honorable discharge (U.S. Code, 1985). This program was experimental for three years. In 1987, however, the Congress has passed a bill to make it a permanent feature (Army Times, May 25, 1987).

The program is contributory for enlisted soldiers: a soldier must sign up for it within the first two weeks of enlistment and contribute \$100 per month for twelve months. The benefits, inclusive of a soldier's contribution, range from \$7,200 for service of two years to \$10,800 for four or more years of service. The program provides basic post-service educational benefits of \$300 per month for three years. A basic benefit of \$250 a month for three years is provided for a two-year active duty assignment. (For Reservists, no contribution is required. Those who enlist for six years can receive \$140 per month in educational benefits. They can begin using it soon after they sign up). The new GI Bill appears to be more successful than its predecessor, the Veterans Education Assistance Program (VEAP) because the percentage of eligible soldiers who enrolled increased from 53 percent for the VEAP to 70 percent for the New GI Bill (Army Times, Dec. 2, 1985 and May 25, 1987).

It has been demonstrated that the old GI bill as well as its successor, the Veterans Educational Assistance Program VEAP, significantly increased enlistment contracts in the Army (Lale and Gilroy, 1984). While retention is lauded

as one of the objectives of the new GI Bill (U.S. Code, 1985), it is less likely to be realized because most of the soldiers, being high school graduates, are likely to leave the Army to enroll in a full time college. Also, under the current GI Bill, soldiers who contribute to the benefits and make the Army a career tend to lose their benefit, as it is neither transferable to family members nor refundable. In fact, a recent report prepared for the Congressional Budget Office concluded that the first term reenlistment rates in the Navy decreased significantly for sailors who were eligible to receive benefits under the old GI Bill or under the VEAP (Black, Hogan and Sylvester, 1986). In short, the new GI Bill is more likely to function as a recruitment tool than as a retention incentive.

A considerable proportion of the U.S. Army is stationed in Europe. About one-half of these soldiers are married. The high school children of these soldiers, unlike their counterparts in the Continental United States, cannot compete for sports scholarships to go to colleges in the U.S. The proposal to change the current "use or lose" provision of the new GI Bill so as to benefit the family members of the soldiers might help solve this problem.

Retention of soldiers has been a problem for the last few years. The Army provides Selective Reenlistment Bonuses (SRB) as incentives for reenlistment in critical Military Occupational Specialties (MOSs). A recent communication from the Director of Military Personnel Management of the Office of the Deputy Chief of Staff for Personnel noted that, "Although considerable funding is provided each year, available funds are insufficient to allow payment of an SRB to each of the approximately 75,000 soldiers who reenlist annually" (Department of the Army, 28 August 1986). The number of reenlistees constitutes only about

one-half of the population of soldiers eligible to reenlist (Defense 85). The number of reenlistments has been declining over time -- 84,209 in FY 1982; 81,925 in FY 1983; 76,636 in FY 1984; and around 75,000 in both FY 1985 and FY 1986 (Lakhani and Gratton, 1985). Reversing this trend is crucial in view of the potential decline in recruitment due to decline in projected youth population in general and that of high school graduates in particular (Tan and Ward, 1985). The anticipated decline in SRB budget due to the Gramm-Rudman legislation may also result in a decline in reenlistment that was induced by SRBs. Hence there is a case for designing alternative cost-effective policies that might increase future reenlistments.

Modifying the GI Bill so that the benefit is made transferable to a member or members of a soldier's family may transform it into an incentive for retention -- a soldier may be permitted to divide the value of the benefit in any way among his family members. Such an option may increase family satisfaction which, in turn, may increase retention and career choice in the Army. The implications of the available research on the influence of family members on the retention decisions are significant. For instance, in the draft era, a 1970 study of first term reenlistment in the Navy found that the "wife/girl friend" factor is persistently significant in explaining a direct relationship to reenlistment (Stolori et al., 1972). After the end of the draft, several Navy and Army studies confirmed the influence of spouse support on retention (Grace and Steiner, 1978; Lund, 1978). By 1980, about twenty separate studies on families and retention were reviewed and over 120 published and unpublished papers on military families were identified (Croan, 1980). Most of the findings of these studies have been generalized in a recent report on a more comprehensive model of retention (Croan, 1985). A recent study probed deeper into variables deter-

mining "satisfaction with family life" and explained the impact of the latter on retention "intentions" in the U. S. Army, Europe, in a multivariate framework (Lakhani, et al., 1985). The conclusions on the impact of reenlistment "intentions" can be extended to reenlistment behavior as retention "intentions" explain retention behavior in the Army positively (Motowidlo and Lawton, 1984). The beta coefficient for retention intentions in a sample of 320 soldiers is 0.62 so that an increase in retention intentions by 10 percent increases retention behavior by 6.2 percent.

The remainder of the paper is organized as follows. In Section 1 an examination of the cost-effectiveness of the proposed transferability option is presented. It brings out the extent of cost savings, per soldier, as a result of the decrease in recruitment and training cost that would be avoided if reenlistments would increase due to adoption of the proposed option. The expected increase in retention intentions is estimated in Section 2 by undertaking a survey of soldiers who were eligible to reenlist. A discussion of statistical significance of the retention intentions associated with the option is given in Section 3. The last Section outlines conclusions and policy implications. This section combines the increase in reenlistment intentions and behavior in order to arrive at an estimate of reenlistment behavior in the Army.

1.0 Cost-Effectiveness of the Transferability Proposal

In this section, we estimate Army savings due to reduction in recruitment and training costs as a result of an increase in retention associated with the transferability proposal. In Section 1.1, we present the first scenario of the

Army savings without adjustment for cost of attrition. The adjustment for cost of attrition is presented in Section 1.2. In Section 1.3, we present the third scenario which adjusts for the payment of Selective Reenlistment Bonuses.

1.1 Scenario 1: Army Savings Without Adjustment for Cost of Attrition

The Army invests considerable resources in recruiting and training soldiers. Returns on these investments are lost by the Army when these soldiers decide to separate at the end of their term of service. Furthermore, to the extent that the training is military-specific and not general in nature, the returns on these investments are lost to society as a whole, also. In Fiscal Year 1986, the Army spent \$6,700 per soldier on recruitment (U.S. Department of the Army, 1986). This amount includes the costs of U.S. Army Recruiting Command (USAREC) facilities, advertisement, examination of recruits, enlistment bonuses, accession travel, recruiters and the Army College Fund (ACF). The average expenditure is estimated as by dividing the total expenditure on these elements by the number of recruits. We exclude the cost of USAREC facilities because these are fixed costs that do not vary with the number of soldiers. We also exclude the cost of ACF because this amount is paid only to the soldiers who agree to join the critically undermanned occupational specialties. Exclusion of these two categories results in a per soldier recruitment cost of \$3,700 (\$6,700 minus \$3,000).

The Army training costs of formal courses given by the Training and Doctrine Command (TRADOC) account for 10 percent of the total Army budget. In Fiscal Year 1986, this was \$8 billion. These costs include fixed costs such as depreciation of buildings and equipment as well as such variable costs as the

cost of instructors, ammunition, etc. We exclude fixed costs from our analysis because they do not vary with the increase in the number of students in the short run and concentrate our analysis on the average variable cost per student. The average variable costs vary according to Military Occupational Specialty (MOS) and range from \$4,466 per student for such less technical training as Rodman and Tapeman to \$72,576 per student for the highly technical Electronic Warfare/Signet Intelligence Voice Interceptor MOS-98G in FY83. (Army Finance and Accounting Center, 1983). These training costs include costs specific to courses themselves as well as costs of military pay, travel, per diem allowances and supplies. We estimate average cost of training a soldier in an average MOS by adding up the **per student** (instead of **per graduate**) variable cost, by MOS, and dividing the sum by the number of MOSs. It must be noted that the amount of military pay included in the variable cost is only for the period of training. It is included in the variable cost because during training the student is not productively employed. Also, it is the opportunity cost of the soldier. Our estimate of average variable cost is \$19,600 per student.

The average cost to recruit and train a soldier is \$23,300 (\$3,700 + \$19,600) per student. This is the maximum amount of saving in cost to be realized by the Army if a soldier decides to reenlist instead of separate from the Army. (This amount is comparable with the estimated per soldier cost of \$19,000 used by Military Personnel Center.) Based on these estimates, it is cost-effective for the Army to pay the transferred GI Bill benefits of \$9,600 (\$10,800 minus soldier's contribution of \$1,200) per soldier in order to save \$23,300 in recruitment and training costs. The net savings to the Army would amount to at least \$13,700 per soldier.

The net savings would be higher than the preceding estimate where we have overestimated the costs and underestimated the savings. The over-estimation of the GI Bill costs is due to three conservative assumptions, namely: (i) 100 percent utilization rate of the GI Bill benefits, (ii) availing of the maximum amount of benefits by all the beneficiaries, and (iii) zero percent interest rate earned by the Army on the contributions made by the soldiers. Relaxation of these assumptions can reduce the costs of GI Bill transferability option. Reports prepared by the Veterans Administration reveal that the initial utilization rates of the benefits varied between 50 and 65 percent (Veterans Administration, 1982), in contrast to the 100 percent utilization rate assumed by us. Assuming that the transferrable benefit will be utilized by spouses of soldiers (since children are likely to be too young to use) and assuming that soldiers and spouses have similar attributes in terms of human capital (Benham, 1974), the utilization rate is not likely to exceed 50 to 65 percent. This factor can, therefore, cut the GI Bill cost into half and render it more cost-effective. Moreover, it is unlikely that all beneficiaries will utilize the maximum amounts of their benefits because of the potential drop out rates from colleges and hence the associated discontinuation of the benefits. Also, there is no provision for refunding the contribution of non-users in the current Bill (Army Times, August 12, 1985) and the Army earns interest on the soldier's contribution until he separates from the Army. The savings to be realized by the Army from the potential increase in retention are under-estimated on three counts. First, we exclude costs of training imparted by several non-TRADOC organizations. Second, the costs of unit training and on-the-job training are also excluded. Finally, we have excluded the savings in cost associated with premature separation of soldiers. For instance, the Army is required to pay unemployment insurance compensation of soldiers to the U.S. Department of Labor

which, in turn, is passed on to the state governments. These cost elements are excluded because of non-availability of the required data. In short, if data for these savings and cost elements were available, the net savings to the Army would be considerably in excess of \$13,700 per soldier.

1.2 Scenario 2: Cost-effectiveness After Adjustment for Attrition Cost

The preceding analysis assumes as if all the students complete their training successfully. In practice, there is considerable attrition from training. Estimates of attrition from training are around 20 percent (Baldwin, 1985; Farkas, Libby and Stromsdorfer, 1987; Weiland et al., 1986) and account for about half of attrition from the Army for all possible reasons. Hence, to keep a steady state force trained at a given level of readiness, the Army is required to enlist and train about five students for every four soldiers planned to be in the force to maintain a given readiness level. To account for this attrition, we need to add the cost of this attrition to the above referred cost of training estimated at \$19,600 per student. Assuming that the attrition cost is proportional to the number of attritees from the Army, namely 20 percent, we estimate the attrition cost at \$3,920 (20 percent of \$19,600). Therefore, the cost of training, including adjustment for cost of attrition from training, is estimated at \$23,520 (\$19,600 + 3,920). Hence the Army's savings in recruitment plus adjusted cost of training will be \$27,220 per soldier. As against this savings, the Army will incur an expenditure of only \$9,600 in GI Bill educational benefits, thereby resulting in a net saving of \$17,620 per soldier per year.

1.3 Scenario 3: Army Savings After Payment of SRBs

The SRBs are paid by the Army in order to retain qualified soldiers. An interpretation of the transferability proposal is that the retained soldiers will be paid both the SRBs and the GI Bill benefits. Hence we analyze the effect of this alternative scenario. The transferability of the GI Bill benefit may be cost-effective for the Army even when we add the cost of SRBs to the amounts of the GI Bill benefits. The reenlistment bonuses are paid only in shortage and critical MOSs. Further, the amount of SRBs vary according to MOS. Army authorized maximum amount did not exceed \$20,000 in FY 1986. The average SRB in FY 1981 was \$4,300 (Lakhani and Gilroy, 1984). Assuming that (i) the average amount of SRB in FY1986 is \$4,300 (in view of non-availability of data for FY1986) (ii) that it will be paid to all of the reenlistees, and (iii) that the average amount of a GI Bill benefit payment will be at the maximum, namely \$9,600, we get an average cost of the GI Bill benefit plus that of reenlistment bonuses at \$13,900 ($\$9,600 + \$4,300$). This cost is considerably less than the expected gross savings to the Army of \$23,300 per soldier due to avoidance of recruitment and training costs. In short, the Army can realize a net saving of \$9,400 ($\$23,300 - \$13,900$).

The net savings to the Army would be greater than \$9,400 per soldier estimated above if we relax our conservative assumption that the SRB payments will be made to all of the reenlistees in all the MOSs. In practice, the SRB is paid only in the critical and shortage MOSs. For example, in FY 1987, it is estimated that it will be paid to only 17,000 out of 75,000 reenlistees. (Department of the Army, August 1986). Adjustment for such a probability would

reduce the cost and increase the savings. Such an adjustment will be performed in the last section where we estimate total savings to the Army as a result of an estimated increase in reenlistment.

It must be emphasized that the analysis in this section deals with cost-effectiveness and not with cost-benefit tradeoffs. The former is concerned with average cost savings implications whereas the latter deals with economic **theory** of marginal costs and marginal benefits. Our analysis does not address the problem of increase in benefits in terms of increase in reenlistment and the associated **increase** in costs. Our interest is in **decrease** in costs. It is difficult to translate **theoretical** underpinning of **marginal** costs and benefits into **practical** calculus because of the non-availability of stringent data requirements. The empirical estimation of **marginal** costs and **marginal** benefits requires data for several points on schedules or curves for **marginal** costs and benefits. Therefore, the literature on cost-benefits analysis is mostly in the area of **average** costs and **average** benefits (Forsyth, 1972; Lakhani, 1980, 1982a, 1982b) instead of **marginal** costs and **marginal** benefits.

2.0 Survey Design and Response Rate

In September 1985, the U.S. Army Research Institute (ARI) was tasked by the Office of the Deputy Chief of Staff for Personnel to determine views of the soldiers on the transferability proposal. ARI was required to research the potential impact of both the unconditional and conditional options as well as the impact of each on reenlistment and career choice. Reenlistment referred to retention for an additional term whereas career choice related to potential long-term (20 to 30 years) service with the Army.

In order to determine potential impact of the transferability proposal, a written survey instrument was administered through the Army's RELAIN database system to about 1,000 soldiers in October 1985. This sample size was considered adequate to infer for a population of reenlistees of 75,000 (Department of the Army, 1986) or that of reenlistment eligible population of about 150,000. The RELAIN system consists of an administrative database of soldiers who are on the verge of deciding their reenlistment in the Army during a period of up to six months prior to their end of term of service. The survey instrument was administered to soldiers who had signed up for the GI Bill or the VEAP benefits. In addition, a control group of soldiers who did not participate in either program was also interviewed. The questions were both unconditional, (i.e., if the soldier approved of the transferability proposal irrespective of any conditions) and conditional (i.e., the requirement to reenlist and serve the Army for at least ten years). Information on intentions of the respondents to reenlist, as well as the soldiers perceptions of the impact of the transferability proposal on Army careers of all soldiers, was also collected. The usual demographic, social and organizational data on age, rank, race, gender, years of service, education, marital status, family size and Army occupation were also collected. A total of 922 responses from a group of first-term (N=192, 21%), mid-term (N=271, 29%), and career (N=459, 50%) soldiers was obtained. The numbers of responses in the following tables and the text differ from each other due to some soldiers not answering all questions. The questionnaire is included in Appendix A.

2.1 Response to Transferability Proposals

The question on transferability read: "There is a proposal to make soldier's GI Bill benefits transferable to his/her dependents (spouse or children) while the soldier is on active duty, or after he retires. How do you feel about this proposal?" The results, shown in table 1, revealed that 87 percent of all the soldiers either "approved" or "strongly approved" of the transferability proposal. An examination of these responses by rank revealed that the favorable responses increased with rank. For example, about 76 percent of the E1-E4, 82 percent of the E5-E6 and 93 percent of the E7-E9 approved or strongly approved of the proposal. This is consistent because senior soldiers embodied with higher training skills are more likely to stay and transfer their benefits to family members. Further, senior soldiers are most likely to have families to transfer the benefits to.

The constrained question reads: "Under this proposal, GI Bill benefits transferability would be offered as a reenlistment option for those soldiers who reenlist and serve at least ten years of continuous active duty. The soldier may transfer his benefits after ten years of service while on active duty or while in retired status. Benefits must be used within ten years of last discharge or retirement." Table 2 reveals that despite the constraint, 71 percent of all respondents still approved or strongly approved of the proposed transferability. The distribution was increasing with rank -- from 56 percent in E1-E4 to 68 percent in E5-E6 and to 77 percent in E7-E9.

Table 1

UNCONDITIONAL TRANSFERABILITY RESPONSES BY RANK

(Panel Rows indicate Frequency, Percent Total, Row% and Column %)

<u>RANK</u>	Strongly Approve	Approve	Indifferent	Disapprove	Strongly Dis- Approve	TOTAL
E1-E4	15	16	6	3	1	41
	1.73	1.84	0.69	0.35	0.12	4.72
	36.58	39.02	14.63	7.32	2.44	
	2.42	10.74	14.29	7.14	3.33	
E5-E6	244	86	26	28	20	404
	28.08	9.90	2.99	3.22	2.30	46.49
	60.40	21.29	6.44	6.93	4.95	
	40.26	57.72	61.90	66.67	66.67	
E7-E9	347	47	10	11	9	424
	39.93	5.41	1.15	1.27	1.04	48.79
	81.84	11.08	2.36	2.59	2.12	
	57.26	31.54	23.81	26.19	30.00	
TOTAL	606	149	42	42	30	869
	69.74	17.15	4.83	4.83	3.45	100.00

Table 2

CONDITIONAL TRANSFERABILITY RESPONSES BY RANK

(Panel Rows indicate Frequency, Percent Total, Row% and Column%)

RANK	Strongly Approve	Approve	Indifferent	Disapprove	Strongly Dis- approve	TOTAL
E1-E4	5	18	12	5	3	41
	0.58	2.09	1.40	0.35	0.35	4.77
	12.20	43.90	29.27	7.32	7.32	
	1.15	10.06	11.65	3.80	4.62	
E5-E6	175	96	51	49	30	401
	20.35	11.16	5.93	5.70	3.49	46.63
	43.64	23.94	12.72	12.22	7.46	
	40.32	53.32	49.51	62.03	46.15	
E7-E9	254	65	40	27	9	418
	29.53	7.56	4.65	3.14	3.72	48.60
	60.77	15.55	9.57	6.46	7.66	
	58.36	36.31	38.83	34.18	49.23	
TOTAL	434	179	103	79	65	
	50.47	20.81	11.98	9.19	7.56	100.00

2.2 Impact of Transferability Proposal on Reenlistment Intentions

The soldiers were asked about the likelihood of their own reenlistment if the transferability option were available to them. Table 3 shows that 47 percent of all respondents indicated they would be "more likely" or "much more likely" to reenlist. The distribution of these favorable responses by rank increased with an increase in grade -- from 27 percent for E1-E4 to 46 percent for E5-E6 and to 50 percent for E7-E9.

2.3 Impact on Perceptions of Long Term Career Intentions

The soldiers were asked "Do you think more soldiers would make the Army a career (20-30 years) if GI Bill benefits were transferable to dependents?" Eighty percent of the respondents thought that more soldiers would make the Army a career if transferability of benefits was permitted (Table 4). The distribution of respondents by rank was virtually uniform because 82 percent of the E1-E4, 75 percent of E5-E6 and 84 percent of E7-E9 perceived that other soldiers would be "more likely" or "much more likely" to make the Army a career.

2.4 Proposal Approval by Education Levels

The survey included information on the educational levels of the soldiers when they entered the Army as well as their current educational levels. The latter variable was used in this analysis as it appears to be more relevant because availability of the benefits is dependent on the educational level when

Table 3

EFFECT OF TRANSFERABILITY ON REENLISTMENT INTENTIONS

(Panel Rows indicate Frequency, Percent Total, Row% and Column%)

<u>RANK</u>	Much More Likely	More Likely	About the Same	Less Likely	Much Less Likely	TOTAL
E1-E4	2	9	27	3	0	40
	0.23	1.04	3.12	0.23	0.00	4.62
	5.00	22.50	67.50	5.00	0.00	
	0.72	6.92	6.31	9.52	0.00	
E5-E6	116	70	203	12	5	406
	13.41	8.09	23.47	1.39	0.58	46.94
	28.57	17.24	50.00	2.96	1.23	
	41.88	53.85	47.43	57.14	55.56	
E7-E9	159	51	198	7	4	419
	18.38	5.90	22.88	0.81	0.46	48.44
	37.95	12.17	47.26	1.67	0.93	
	57.40	39.23	46.26	33.33	44.44	
TOTAL	277	130	428	21	9	865
	32.02	15.03	49.48	2.43	1.04	100.00

Table 4

EFFECT OF TRANSFERABILITY ON ARMY CAREER

(Panel rows indicate Frequency, % Total, Row % and Column %)

<u>RANK</u>	<u>Would More Soldiers Reenlist</u>		
	<u>YES</u>	<u>NO</u>	<u>TOTAL</u>
E1-E4	35	7	40
	3.92	0.83	4.75
	82.50	17.50	
	4.92	4.09	
E5-E6	290	99	389
	34.44	11.76	46.20
	74.55	25.45	
	43.22	57.89	
E7-E9	348	65	413
	41.33	7.72	49.05
	84.26	15.74	
	51.86	38.01	
TOTAL	671	71	842
	79.69	20.31	100.00

the soldier separates from the Army. It might appear that soldiers with higher current educational levels would not be in favor of the transferability proposal since they are more likely to separate in order to use their GI bill benefits. As the sample statistics in Table 5 illustrate, this prediction was unsupported. Rather, 77 percent of soldiers with high school diplomas, 87 percent with some college or technical school education, 90 percent with an associate degree and 88 percent with college degrees "approved" or "strongly approved" of the transferability proposal.

2.5 Proposal Approval by Career Status

The respondents were classified into three groups: first-termers with zero to four years of service, mid-termers with 5 to 10 years of service and careerists with 11 or more years of service. Table 6 shows that the transferability approval rate increased with an increase in the years of service -- from 73 percent for first-termers to 81 percent for mid-termers and 93 percent for the careerists. The response rates remained considerable even for the constrained proposal requiring ten years of active service. Table 7 shows that 48 percent of first-termers (0-4 years of service), 69 percent of mid-termers (5-7 years of service) and 79 percent of careerists (8 years of service and above) "approved" or "strongly approved" of the conditional proposal.

Table 5

UNCONDITIONAL TRANSFERABILITY RESPONSES BY CURRENT EDUCATION
(Panel Rows Indicate Frequency, Percent Total, Row% and Column%)

CURRENT EDUCATION	Strongly Approve	Approve	Indifferent	Disapprove	Strongly Disapprove	TOTAL
LESS THAN	1	0	0	0	0	1
HSDG	0.1	0.00	0.00	0.00	0.00	0.10
	100.00	0.00	0.00	0.00	0.00	
	0.15	0.00	0.00	0.00	0.00	
GED	32	9	6	5	4	56
	3.29	0.92	0.62	0.51	0.41	5.76
	57.14	16.07	10.71	8.93	7.14	
	4.94	5.03	10.53	9.26	11.43	
HSDG	83	33	15	12	9	151
	8.53	3.39	1.54	1.23	0.84	15.52
	54.97	21.85	9.93	7.95	5.30	
	12.81	18.44	26.32	22.22	22.86	
SOME COLLEGE OR TECH	341	113	27	25	18	524
	35.05	11.61	2.77	2.57	1.85	53.85
	65.08	21.56	5.15	4.77	3.44	
	52.62	63.13	47.37	46.30	51.43	
ASSOCIATE DEGREE	136	16	7	6	4	169
	13.98	1.64	0.72	0.62	0.41	17.37
	80.47	9.47	4.14	3.55	2.37	
	20.99	8.94	12.28	11.11	11.43	

Table 5 (continued)

UNCONDITIONAL TRANSFERABILITY RESPONSES BY CURRENT EDUCATION
 (Panel Rows Indicate Frequency, Percent Total, Row% and Column%)

COLLEGE	55	8	2	6	6	72
DEGREE	5.65	0.82	0.21	0.62	0.10	7.40
	76.39	11.11	2.78	8.33	1.39	
	8.49	4.47	3.51	11.11	2.86	
TOTAL	648	179	57	54	35	973
	66.60	18.40	5.86	5.55	3.60	100.00

Table 6

UNCONDITIONAL TRANSFERABILITY RESPONSES BY CAREER STATUS

(Panel Rows Indicate Frequency, Percent Total, Row% and Column%)

CAREER STATUS	Strongly Approve	Approve	Indifferent	Disapprove	Strongly Dis- approve	TOTAL
1 ENTRY	83	57	24	19	9	192
	9.00	6.18	2.60	2.06	0.98	10.82
	43.23	29.69	12.50	9.90	4.69	
	13.61	32.57	47.06	35.85	27.27	
2 MILTERM	162	56	18	20	15	271
	17.57	6.07	1.95	2.17	1.63	29.39
	59.78	20.66	6.64	7.38	5.54	
	26.56	32.00	35.29	37.74	45.45	
3 CAREER	365	62	9	14	9	459
	39.59	6.72	0.98	1.27	0.98	49.78
	79.52	13.51	1.96	3.05	1.96	
	59.84	35.43	17.65	26.42	27.27	
TOTAL	610	175	51	53	33	922
	66.16	18.98	5.53	5.75	3.58	100.00

Table 7

CONDITIONAL TRANSFERABILITY RESPONSES BY YEARS OF SERVICE

(Panel/Rows Indicate Frequency, Percent Total, Row % and Column %)

YEARS OF SERVICE	Strongly Approve	Approve	Indifferent	Disapprove	Strongly Disapprove	TOTAL
0-4	42 4.58	51 5.56	46 5.01	51 3.38	24 2.61	194 21.13
	21.65 9.84	26.29 25.25	23.71 38.66	15.90 32.63	12.61 32.00	
5-7	47 5.12	43 4.68	19 2.07	18 1.96	6 0.65	133 14.49
	35.34 11.01	32.33 21.29	14.29 15.97	13.53 16.95	4.51 8.00	
8-10	65 7.08	32 3.49	19 2.07	11 1.96	11 0.65	138 15.03
	47.10 15.22	23.19 15.84	13.77 15.97	7.97 11.58	7.97 14.67	
11+	273 29.74	76 8.28	35 3.81	35 3.81	34 3.70	453 49.35
	60.26 63.93	16.78 37.62	7.73 29.41	7.73 36.84	7.51 45.33	
TOTAL	427 46.51	202 22.00	119 12.96	95 10.35	75 8.17	918 100.00

3.0 Multivariate Analysis

The descriptive crosstabular analysis in the preceding section, while useful for qualitative comprehension, does not account for the impact of an explanatory variable while controlling for other predictor variables. It also fails to provide tests of the statistical significance of the observed relationships between the variables. In order to overcome these limitations, we performed a multivariate logistic regression analysis.

3.1 Logit Model of Transferability Proposal

The probability of a favorable or unfavorable opinion on the transferability proposals is modeled as a function of several predictor variables. To do so, it is necessary to transform the responses of the soldiers into a probabilistic model. The response values of the transferability proposal are converted into a binary probabilistic variable. A soldier who "approved" or "strongly approved" of the proposal is assigned a value of one and a soldier who "disapproved" or "strongly disapproved" is assigned a value of zero. Those respondents who neither "approved" nor "disapproved" of the proposal are excluded from the sample. Inclusion of this choice in a trichotomous framework would have increased computation resources and added to complexity of the model without adding commensurably to analysis of the data. Also, the sample size did not decrease substantially by excluding these respondents from the analysis. This binary variable can be considered a behavioral dependent variable. Statisticians and econometricians label analyses that contain this type of variables as "qualitative response models" or "limited dependent" models because their values are binary instead of being continuous (Amemiya, 1981).

In general, these variables should not be analyzed by estimating ordinary least squares regression equations since they would yield biased results. One of the appropriate methodologies to analyze such a variable is the logistic or logit model (Maddala, 1983). A maximum likelihood estimation procedure is used to obtain the model parameter estimates. We postulate that the probability to favor the proposal is a function of the following predictor variables: (i) **Rank:** The rank of the soldier is hypothesized to explain the probability to favor the proposal positively because an increase in rank indicates promotion which leads to career orientation. These career-orientated soldiers are likely to stay in the Army and hence favor the transferability proposal. (ii) **Family Size:** An increase in the family size of a soldier is expected to increase the probability to favor the transferability proposal because availability of the benefits would enable the soldier to improve the educational levels of the family members. This variable ranged from zero (for unmarried soldiers) to five for married soldiers with four children. The average number of dependents is 1.58. (iii) **Current Educational Level:** An increase in the current educational levels of the soldiers is postulated to increase the probability to favor the transferability proposal. Previous research has indicated that soldiers with high school diplomas and beyond tend to reenlist at a greater rate relative to non-high school graduates (Westat Inc., 1985). They would, therefore, tend to agree to the transferability proposal to enable their family members to use it. This variable ranged from one to six --with 1 for less than high school education to 6 for college degree holders. (iv) **Ethnicity:** A binary, explanatory, variable on ethnicity is created with black soldier = 1, 0 = non-black soldier. The proportion of black and non-black soldiers in the sample was one-fourths and three-fourths respectively. This variable is hypothesized to be positively related to the probability to favor the transferability

proposal. Previous research has indicated that black soldiers generally tend to reenlist more relative to non-black soldiers (Lakhan and Gilroy, 1984). Since their separation rates are relatively lower, they would favor the transferability proposal since they would tend to qualify at no increase in opportunity cost to themselves. They would get a windfall gain. (v) **Sex:** It is hypothesized that male soldiers would tend to favor the transferability proposal at a relatively greater rate than female soldiers because female soldiers tend to separate from the Army at a greater rate perhaps for such reasons as using the GI Bill benefits to go to college, getting married, getting pregnant, etc. The binary variable is coded 1 for male, and 0 for female. (vi) **Number of Enlistment Terms:** It is postulated that an increase in the number of enlistment terms served by a soldier indicates taste for the Army. Consequently, the probability to separate from the Army would be smaller and hence the probability to favor the transferability proposal to benefit the family members would be higher. The values of this variable ranged from 1 to 5. This variable is included even though it is correlated with rank because of the Army's interest in retaining mid-level and career soldiers. Also, rank tends to reflect speed of promotion which is not perfectly correlated with the number of enlistment terms, particularly for the non-commissioned officers. (vii) **Plan to Use the Benefits:** It is hypothesized that those who planned to use the benefits would tend to not favor the transferability proposal. This is because these soldiers have already determined to use the benefits in the short run and are, therefore, unlikely to consider long term opportunities. The plans are represented by a binary variable. (1 for those who planned to use the benefits, and 0, otherwise).

The parameter estimates are shown in Table 8. All but one of the coefficients of the predictor variables, denoted by the beta coefficients, are consistent with the hypothesized relationships with the dependent variable. The exception is the variable on the number of enlistment terms. It is, however, not significant statistically. Four of the Beta coefficients with expected relationships are statistically significant at the 10 percent level. These are: (i) family size, (ii) current education, (iii) ethnicity and (iv) those who planned to use the benefits. Therefore, soldiers that: (i) have larger families, or (ii) have higher levels of current education, or (iii) are black, tend to have a higher probability of approval of the transferability proposal. Soldiers who planned to use the benefits tend to have a lower probability of approval of the transferability proposal.

3.2 Logit Model of the Effect on Reenlistment

The transferability proposal can be cost-effective if its adoption results in an increase in the reenlistment rates of the soldiers. In order to obtain this information, the survey respondents were asked the likelihood of their own reenlistment, if the transferability proposal was adopted. Table 3 reveals that about 47 percent of soldiers are "much more likely" or "more likely" to reenlist if the transferability option is available to them, 49 percent of the soldiers stated that their likelihood of reenlistment would be about the same and the remaining three (3) percent are "less likely" or "much less likely" to reenlist. One can interpret the soldiers that were "likely" or "much more likely" to reenlist as the increase in reenlistment intentions due to availability of the option. These responses are transformed into a binary criterion

Table 8

LOGIT RESULTS PREDICTING UNCONDITIONAL TRANSFERABILITY PROPOSAL

Number of Observations	715
Log Likelihood Ratio with Intercept	467.06
Chi Squared Statistic	31.45**

Predictor Variable	Beta Coeff.	Chi Squared Statistics
Intercept	0.08	0.01
Rank	0.19	1.14
Family Size	0.24*	3.37
Current Education Level	0.25*	2.62
Black	0.44*	2.59
Male	0.37	1.34
Number of Enlisted Terms	-0.27	1.59
Combat Units	-0.23	0.61
Plan to Use Benefits	-0.55**	3.77

* Significant at the 0.10 level

** Significant at the 0.01 level

variable. Soldiers who stated that they are "more likely" or "much more likely" to reenlist are given a value of one and those that stated that they are "less likely" or "much less likely" to reenlist are assigned a value of zero. Those that are indifferent in their decision to reenlist are excluded from the sample because of their indifference to the proposed option. (An alternative approach would be to assign a value of one to those "likely" or "much more likely" to reenlist and a value of zero to all others. This approach is, however, not selected because it tantamounts to forcing a negative decision on those who are indifferent or undecided about their retention intentions. Forcing a negative decision on the indifferent soldiers would tend to improve the results in this analysis so that our results are conservative compared to the alternative).

The criterion variable on retention intentions is hypothesized as a function of the following explanatory variables: (1) **Current Education Level.** An increase in the current education level of a soldier is postulated to increase the reenlistment rate because a more educated soldier is expected to have his family members receive an equivalent, if not higher, level of education than himself. Such an expectation on the part of a soldier can be realized more readily by the transferability of the GI Bill benefits to family member(s). (ii) **Ethnicity.** Black soldiers are hypothesized to reenlist at a higher rate as a result of the transferability option because many of these soldiers are economically disadvantaged and hence cannot generally afford to send their family members to college. (iii) **Gender.** It is hypothesized that male soldiers are positively related to reenlistment intentions because male soldiers generally tend to reenlist at a greater rate and make the Army a career relative to female soldiers. (iv) **Combat Unit.** It is postulated that soldiers

assigned to combat units are negatively related to reenlistment. This is because soldiers in these units generally face greater risks to their lives and are under stress for continuous vigil so that they are likely to separate despite the availability of the transferability. Soldiers in combat units (defined to include combat, combat support and combat service support) are denoted by the value of one and those in non-combat units are represented by a zero value.

(v) **Rank.** An increase in rank of a soldier was theorized to increase reenlistment probability because career oriented soldiers are likely to be concerned with rank and promotion prospects. Soldiers with higher rank and hence career orientation are likely to continue in the Army, particularly when they can transfer their GI bill benefits to their family members.

(vi) **Family Size.** An increase in the number of family members of a soldier is likely to increase the reenlistment probability because of an increase in the associated family responsibilities. Soldiers with higher family responsibilities tend to be risk-averse and hence would continue in the Army rather than confront the uncertainties of the civilian job market. Also, the availability of the benefits for the family members would be an additional inducement to stay in the Army and help solve the problem of education of a large number of family members.

(vii) **Number of Enlistment Terms Served.** An increase in the number of enlistment terms served by a soldier should result in an increase in reenlistment probability because this explanatory variable is highly correlated with years of service. An increase in the years of service tends to develop a taste for Army life and career and hence increase reenlistment.

(viii) **Plan to Use Benefits.** Soldiers who plan to use the GI bill benefits are not likely to reenlist since they have apparently already determined to go to college to use their benefits. Hence the relationship with the predicted variable is expected to be negative.

(ix) **Soldiers Approving of Unconditional Transferability.**

soldiers indicating that they "approve" or "strongly approve" of the unconditional transferability proposal are likely to reenlist relative to those who are against the proposal. The former are likely to perceive that they may not be able to use the benefits themselves and hence would tend to reenlist at a greater rate so that their family members can use the benefits. (x) **Soldiers Approving of Conditional Transferability.** These soldiers are likely to reenlist at a greater rate compared to those who did not approve of the transferability. The reenlistment probabilities of these soldiers are also expected to be greater than the reenlistment probabilities of soldier approving of the unconditional transferability (noted above) because of the willingness of these soldiers to be subjected to the stringent requirement of ten years of service.

The estimation results are given in Table 9. The log likelihood ratio converged, it is high (similar to R-squared), and its associated Chi-Squared statistic is significant. In this table, it can also be seen that all of the signs of the Beta coefficients are in concert with conceptual expectations, except for the rank variable. This is not a problem as the parameter estimate is not significant. Three of the coefficients are statistically significant at the level of 10 percent or less. These were gender, unconditional transfer and conditional transfer. Therefore, it is concluded that male soldiers and soldiers who are in favor of the transferability option, both conditional and unconditional, are likely to reenlist at a significantly greater rate compared to other soldiers. An examination of the values of the last two Beta coefficients indicates that, as expected, soldiers approving of the conditional transfer (Beta=0.88) are more likely to reenlist than those in favor of the unconditional transfer (Beta=0.64).

Table 9

LOGIT RESULTS PREDICTING REENLISTMENT INTENTIONS OF SOLDIERS

Number of Observations		651
Log Likelihood Ratio with Intercept		655.9
Chi Squared Statistic		59.28**
Predictor Variable	Beta Coeff.	Chi Squared Statistics
Intercept	-0.60	0.86
Current Educational Level	0.13	1.23
Black	0.03	0.02
Male	0.54*	3.18
Combat Unit	-0.18	0.61
Rank	-0.01	0.01
Family Size	0.06	0.32
Number of Enlistment Terms	0.03	0.05
Plan to Use Benefits	-0.35	2.40
Approving Unconditional Transferability	0.64*	4.36
Approving Conditional Transferability	0.88*	12.93

* Significant at the 0.10 level

** Significant at the 0.01 level

3.3 Logit Model of Impact on Long Term Career Choice

The preceding analysis on reenlistment pertains to the short-term career choice. The long term (20 to 30 year) career decisions of soldiers are determined from the responses to the question on what the respondent thought about more soldiers making the Army a career, if the transferability proposal is enacted. Information on responses to this question is used as a measure of long term Army career intentions. We created a binary variable by assigning a value of one to soldiers who responded that they thought that other soldiers were "more likely" or "much more likely" to make the Army a career and by assigning a value of zero to those that noted that other soldiers were "less likely" or "much less likely" to make the Army a career. This variable was estimated as a logistic function of the same set of ten explanatory variables used in the previous short-term model. The hypothesized relationships are also the same as those for the short-term reenlistment model.

The estimation results are given in Table 10. The log likelihood function converged and its ratio is highly significant, as indicated by its associated Chi-Squared coefficient. In this Table, it can also be seen that all of the Beta coefficients for the predictor variables have the expected relationships with the predicted variable and three of these coefficients are significant at the 0.10 level. These are: (i) family size, (ii) soldiers who planned to use the benefits, and (iii) those who approved of the conditional transferability proposal. Therefore, it is concluded that (i) soldiers with larger family size and (ii) soldiers who approve of the conditional transferability are more likely to make the Army a career than the other soldiers. On the otherhand, soldiers who planned to use their benefits were not likely to make the Army a

Table 10

LOGIT RESULTS PREDICTING CAREER INTENTIONS

Number of Observations		347
Log Likelihood Ratio with Intercept		158.5
Chi Squared Statistic		38.41**
Predictor Variable	Beta Coeff.	Chi Squared Statistics
Intercept	-1.25	0.79
Current Educational Level	0.08	0.08
Black	0.07	0.01
Male	0.69	1.22
Combat Unit	0.39	0.59
Rank	0.28	0.87
Family Size	0.52*	3.48
Number of Enlistments	-0.38	1.31
Plan to Use Benefits	-0.92*	2.67
Approving Unconditional Transferability	0.68	1.10
Approving Conditional Transferability	1.91*	11.52

* Significant at the 0.10 level

** Significant at the 0.01 level

career. It is interesting to note that while family size is not significant for retention intentions (Table 9), it is statistically significant for career intentions.

4.0 Summary, Conclusions, Policy Recommendations and Limitations

Cost-effectiveness of the transferability proposal is analyzed by comparing the cost of recruiting and training a soldier with the cost of payment of GI Bill benefits and the cost of selective reenlistment bonuses to the Army. It is estimated that the Army would save \$23,300 per soldier in recruitment and training cost compared to an estimated cost of payment of the GI Bill benefit transferability of \$9,600. Therefore, the gross savings per soldier amount to \$13,700 ($\$23,300 - 9,600$). In case the retained soldiers are also paid SKBs, estimated at \$4,300 per soldier, the net savings is estimated at \$9,400 per soldier. If the training costs are adjusted for the cost of attrition from training, the savings to the Army is the highest at \$17,620 per soldier. (Section 1). The savings in cost of \$9,400 (or \$13,700 or \$17,620) per soldier could be realized by the Army only if more soldiers would reenlist as a result of the proposed transferability of the GI Bill benefits to family members. The potential extent of such an increase is determined by undertaking a survey of soldiers who were eligible to reenlist (Section 2). The written instrument asked soldiers about their intentions to reenlist and making the Army a career. Analysis of the data revealed that 47 percent of soldiers are "more likely" or "much more likely" to reenlist if the transferability proposal is adopted. These responses are interpreted as increases in reenlistment intentions as a direct consequence of the proposed transferability option.

In order to determine statistical significance of the effect of transferability option on reenlistment, while controlling for other variables, a multivariate analysis of the variables is conducted by estimating logit equations (Section 3). Conclusions from the results of the equation explaining an increase in the reenlistment probabilities of the soldiers are as follows: (1) An increase in (i) male soldiers or, (ii) soldiers approving of both conditional and unconditional transferabilities increased the reenlistment probabilities. (2) Soldiers approving of the conditional (ten years service requirement) transferability are more likely to reenlist relative to those approving of the unconditional transferability.

The extent of increase in reenlistment intentions associated with the option is 47 percent. All of these intentions will not, however, materialize into actual reenlistments. Motowidlo and Lawton (1984) analyzed relationship between reenlistment intentions and reenlistment behavior, while controlling for several other variables. Their two Army samples comprised of 320 and 299 soldiers. The Beta coefficients estimated by them for the two samples are 0.62 and 0.57 respectively. We use the value of 0.57 for estimating reenlistment behavior in this paper. We estimate the increase in reenlistment behavior as a result of adoption of the proposed option at 27 (0.57×0.47) percent. Currently the number of reenlistments are 75,000 per year (Department of the Army, 1986). A 27 percent increase due to the proposed option is likely to increase the number of reenlistments by 20,250 per year. Such an increase can help mitigate the declining trend in reenlistment, thereby reducing recruitment and training costs. An implicit assumption in this estimated increase is that the Army will demand the same high quality soldiers as in the past. This assumption is based on the fact the high quality soldiers are cost-effective (bal-

dwin, 1985). This increase in retention will help stem the declining retention trend as well as the decline associated with a decrease in SRB budget and the anticipated decline in the availability of high quality recruits associated with projected decline in population. Based on our estimate of cost saving of \$13,700 per soldier in Scenario 1, the resulting cost saving to the Army would amount to \$277.42 million (20,250 x \$13,700) per year. Using the alternative estimate in Scenario 2 at \$17,620 per soldier, we estimate Army savings at \$356.8 million/year. Finally, based on the estimate of savings at \$9,400 per soldier in Scenario 3, we estimate the Army savings at \$190 million/year. This amount is considerably higher than the cost of the option at \$110 million estimated by the Department of Defense (Army Times, December 2, 1985) for all the three services. Therefore, adoption of the proposed option can be recommended on the grounds of cost-effectiveness.

One of the limitations of our analysis is that we have excluded the higher cost of military pay of the retained soldiers compared to that of the first term soldiers. This exclusion is due to non-availability of the required data on the distribution of pay grades and years of service of the individual soldiers. Our analysis of the aggregate data from the pay tables reveals that the average difference in monthly basic pay, say, from pay grade E4 to E5 for up to ten years of service, is \$90 per month or \$1,000 per year per soldier. This addition in cost will increase the cost of retaining 21,750 soldiers by about \$22 million. This amount can, however, be offset by the savings in the SRB cost. For example, we assumed that all of the 20,250 soldiers will be paid SRB at the rate of \$4,300 per soldier. In practice, only 22 percent of reenlistees are paid SRB, e.g., 17,000 out of 75,000 (ODCSPER, 1986). Hence if we adjust

the Skb payment to only 22 percent of 20,250 that is, to only 4,455 soldiers at the average rate of \$4,300 per soldier, we get a saving of \$19 million. This amount almost offsets the cost of additional military pay at \$22 million.

The only other potential increase in cost excluded from our analysis is the retirement cost. There are two reasons for its exclusion. First, the transferability proposal requires only ten years of service so that it will not vest retirement which requires twenty years of service. Second, we do not have the required data on probabilities of staying for twenty years, once the soldiers have served for ten years. We recognize that more soldiers would tend to stay until retirement once they have served for ten years. In any case, this increase in cost of the proposal due to increased retirement costs is likely to be more than offset by the savings associated with our assumptions of over-estimating costs and under-estimating savings. We have under-estimated Army savings by excluding several elements of cost savings because of non-availability of the required data. These include costs of: (i) unit training, (ii) non-TRALOC advanced individual training, (iii) on-the-job training, and (iv) separation, such as the payment of unemployment benefits by the Army to the U.S. Department of Labor. The costs associated with the proposal are over-estimated by assuming that: (i) the utilization rate of the GI Bill benefits will be 100 percent (instead of 50 to 65 percent estimated by the Veterans Administration), and that (ii) the drop out rate of the beneficiaries from the colleges will be zero. The combined effect of these assumptions will considerably offset the additional costs of retirement. Hence our estimate of savings to the Army of about \$200 million per year is a conservative estimate.

Another limitation of this analysis is that we did not have any information on what were the reenlistment intentions of the soldiers prior to the proposed option. If they intended to reenlist anyway, the increase in reenlistments and hence the savings calculated in our analysis would be over-estimated. In case we assume that those who intended to reenlist prior to the proposal have now responded as "indifferent," our conclusion remains unchanged because we have excluded this "indifferent" category from our sample. It must be recalled that this category comprised one-half of the respondents. Hence we have been conservative in counting reenlistment intentions. Moreover, to strengthen our case, we must note a remark by Rep. G.V. "Sonny" Montgomery, the father of New GI Bill. He is reported to have stated that even if only 100 aviators stay in the service because of transferability, "the program would more than pay itself" (Army Times, December 2, 1985). This number (100) is considerably less than the estimated increase of 20,000 retention behavior in our study. Hence it is safe to conclude that the transferability option is likely to be cost-effective compared to the replacement costs of recruitment and training.

It must be noted that the cost of GI Bill to the Army does not necessarily result in a dollar for dollar benefit to the recipient because the benefit is not in cash but in kind. Economic theory suggests that income in kind is valued less than income in cash. Therefore, it is not surprising that recipients of food stamps sell them at prices considerably below their face value to buy non-food goods. Similarly, GI Bill educational benefits will also be valued at a lower amount compared to its dollar cost to the Army. A way out of this dilemma would be to determine cash value of GI Bill benefit and offer that lower amount in cash to the recipient.

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APPENDIX A

INTERVIEW FOR TRANSFERABILITY OF GI BILL BENEFITS TO DEPENDENTS

DEMOGRAPHIC INFORMATION

1. RANK

- a. E-1
- b. E-2
- c. E-3
- d. E-4
- e. E-5
- f. E-6
- g. E-7
- h. E-8
- i. E-9

2. GENDER

- a. Male
- b. Female

3. ETHNIC GROUP

- a. White
- b. Black
- c. Hispanic
- d. Other

4. EDUCATIONAL LEVEL (WHEN THEY ENTERED THE ARMY ON ACTIVE DUTY)

- a. Less than HSDG
- b. GED
- c. HSDG
- d. Some college/technical school
- e. Associate degree (2 year degree)
- f. College degree (B.S. or B.A.)

5. EDUCATIONAL LEVEL TODAY

- a. Less than HSDG
- b. GED
- c. HSDG
- d. Some college/technical school
- e. Associate degree (2 year degree)
- f. College degree (B.S. or B.A.)

6. TOTAL NUMBER OF YEARS SERVED IN ACTIVE ARMY? _____

7. NUMBER OF ENLISTMENTS SERVED (INCLUDE CURRENT TOUR)

- a. First
- b. Second
- c. Third
- d. Fourth
- e. Fifth or more

8. TERM OF CURRENT ENLISTMENT?

- a. Two years
- b. Three years
- c. Four years
- d. Six years
- e. Other

9. MARITAL STATUS

- a. Single, never married
- b. Married to a civilian
- c. Married to another military member
- d. Legally separated
- e. Divorced
- f. Other

10. NUMBER OF CHILDREN

- a. None
- b. One
- c. Two
- d. Three
- e. Four
- f. Five or more

11. WHAT IS YOUR PMOS? _____ SMOS? _____

12. IN WHAT KIND OF UNIT (COMPANY/BATTERY/TROOP/DETACHMENT) DO YOU/DID YOU SERVE?

- a. Combat (Field Artillery, Air Defense Artillery, Armor, Armor Cavalry, Infantry)
- b. Combat support (Chemical, Engineer, Military police, Military intelligence, Signal, Aviation)
- c. Combat service support (Adjutant general, Finance, Ordnance, Quartermaster - Supply, Transportation, Medical)
- d. Headquarters unit (Garrison without deployment unit)
- e. Don't know

COLLEGE FUND QUESTIONS

13. HAVE YOU ENROLLED IN / OR ARE YOU COVERED BY ONE OF THE FOLLOWING?

- a. Old G. I. Bill (Vietnam-era G.I. Bill)
- b. Army College Fund (VEAP-era)
- c. VEAP (Veteran's Education Assistance Program)
- d. New G.I. Bill for Vietnam-era Soldiers
- e. New Army College Fund
- f. Other (specify: _____)

14. HAVE YOU USED ANY OF YOUR BENEFITS TO DATE?

- a. not enrolled in any educational program
- b. Yes, have used my benefits
- c. No, have not yet used my benefits

15. DO YOU PLAN TO USE YOUR BENEFITS?

- a. Yes
- b. No
- c. Don't know

16. THERE IS A PROPOSAL TO MAKE A SOLDIER'S GI BILL BENEFITS TRANSFERABLE TO HIS/HER DEPENDENTS (SPOUSE OR CHILDREN) WHILE THE SOLDIER IS ON ACTIVE DUTY OR AFTER HE RETIRES. IF THE SOLDIER ETS'D, THE BENEFITS COULD ONLY BE USED BY THE SOLDIER.

HOW DO YOU FEEL ABOUT THIS PROPOSAL?

- a. Strongly approve
- b. Approve
- c. Neither approve nor disapprove
- d. Disapprove
- e. Strongly disapprove

17. PLEASE EXPLAIN WHY YOU FEEL THIS WAY.

18. UNDER THIS PROPOSAL, G.I. BENEFITS TRANSFERABILITY WOULD BE OFFERED AS A REENLISTMENT OPTION FOR THOSE SOLDIERS WHO REENLIST AND SERVE AT LEAST TEN YEARS OF CONTINUOUS ACTIVE DUTY. THE SOLDIER MAY TRANSFER HIS BENEFITS AFTER TEN YEARS OF SERVICE WHILE ON ACTIVE DUTY OR WHILE IN A RETIRED STATUS. BENEFITS MUST BE USED WITHIN TEN YEARS OF LAST DISCHARGE OR RETIREMENT.

HOW DO YOU FEEL ABOUT THIS PROPOSAL NOW?

- a. Strongly approve
- b. Approve
- c. Neither approve nor disapprove
- d. Disapprove
- e. Strongly disapprove

PLEASE EXPLAIN WHY YOU FEEL THIS WAY.

19. IF THE G.I. BENEFITS TRANSFERABILITY WAS AVAILABLE TODAY, WOULD YOU BE MORE LIKELY, ABOUT THE SAME, OR LESS LIKELY TO REENLIST?

- a. Much more likely
- b. More likely
- c. About the same
- d. Less likely
- e. Much less likely

20. WHY?

21. DO YOU THINK MORE SOLDIERS WOULD MAKE THE ARMY A CAREER (20 -30 YEARS) IF G.I. BENEFITS WERE TRANSFERABLE TO DEPENDENTS?

- a. Yes
- b. No

22. WHY?

23. DO YOU HAVE ANY OTHER COMMENTS?

APPENDIX B

THE EFFECTS OF TRANSFERABILITY OF GI BILL BENEFITS FOR FAMILY MEMBERS ON
ARMY RETENTION AND CAREER CHOICE

Press clippings of General(s) Maxwell, Thrurmon and LIG Robert M. Elton's
testimony to the Congress on the GI Bill option.

Conferees Swayed to Reject Improvements to New GI Bill

By RICK MAZE
Times Staff Writer

WASHINGTON — Improvements in the New GI Bill were rejected by a House-Senate conference after the Army reversed its position at the last minute and concluded that the changes were not necessary.

The conference committee working out differences between the House and Senate versions of the Defense Authorization Bill rejected Senate-passed provisions that would have given new recruits 120 days to decide whether to enroll in the program, given refunds to members who decided within two years of enrollment that they no longer want the educational benefits and returned to survivors the contributions of members who died while on active duty without receiving their educational benefits.

The only change approved by the conference committee was an amendment that allows Vietnam-era veterans who have left active duty and returned since Dec. 31, 1976, to earn New GI Bill benefits.

The conference committee's report, released July 29, said, "The conferees agree that, due to the complex nature of this program, it should be allowed to operate for

at least one year before it is amended." The House Veterans' Affairs Committee has tentatively scheduled October hearings to reconsider the GI Bill provisions that were rejected by the conference committee.

The officer who swayed the vote was Army Vice Chief of Staff Gen. Maxwell Thurman. Although the Defense Department and the services had supported the Senate provisions as a substantial improvement to the New GI Bill program that took effect July 1, Thurman provided a statement used in the conference by Rep. G. V. Montgomery (D-Miss.) that said the changes were not necessary. Montgomery is chairman of the House Veterans' Affairs Committee and is a senior member of the House Armed Services Committee.

Thurman's statement, which congressional sources said apparently was made in response to a plea for support from Montgomery, made it difficult for Senate negotiators to argue for the changes, sources said.

Thurman was out of the country and unavailable for comment on why he opposed the Senate provisions.

Montgomery told Army Times that the point Thurman wanted to make is that the New GI Bill had only been in effect for 15

days at the time the conference was deciding the issue, and that any changes in the program at that point would undermine the advertising the Army had underway.

Thurman's statement was given great weight by the conferees because the general had been one of the most vigorous among the many military officials who had testified in support of the New GI Bill, which primarily is aimed at aiding Army recruiting. Thurman formerly headed the Army Recruiting Command.

The New GI Bill provided benefits at no cost to members who entered service before Dec. 31, 1976 — the cutoff date for Vietnam-era GI Bill eligibility — and have been on continuous active duty if they remain in the service for at least three more years. Those who joined the service after the cutoff for the Vietnam-era GI Bill or who enlisted on or after July 1 can buy coverage.

New recruits are automatically enrolled in the program upon enlistment but have two weeks to decide if they want out of the program. That decision is irrevocable and the money collected for the benefits, \$100 a month for one year, is not refundable.

The Senate bill would have given the recruit 120 days rather than 14 to decide about joining, and rather than being auto-

matically enrolled and having to opt out, the Senate would have made recruits have to opt into the program. The change was sought to prevent recruits from finding themselves forfeiting \$100 a month for future educational benefits they really did not want.

Montgomery has opposed the change because he believes people are less likely to enroll in a program that would cost them money than to stay in a program in which they automatically participate.

Refunds also would have been provided under the Senate bill. None are currently available.

Montgomery has opposed refunds for service members who later decide they want out because he fears the money might be lost on impulse purchases. He has stated no position on providing refunds to survivors of members who die on active duty, another Senate-passed provision.

As part of the conference agreement, the Senate Armed Services Committee killed a House-passed bill supported by Montgomery that would have made minor technical changes in the New GI Bill and that was originally designed to move up the effective date of the program from July to April

DoD Won't Seek 'Transferability' of New GI Bill Benefits

BY RICK MAZE
Times Staff Writer

WASHINGTON — Pentagon officials have told a House panel they do not intend at present to ask Congress to expand the New GI Bill so military members could transfer unused educational benefits to their dependents.

Without a request from the services for such "transferability," Congress is unlikely to approve it, said Rep. G. V. Montgomery, D-Miss., chairman of the House Veterans' Affairs Committee.

"It is really out of our hands," Montgomery said. "The chiefs don't want it, so I don't think we should really try for it."

Air Force Lt. Gen. Edgar A. Chavarrie, deputy assistant secretary of defense for military manpower and personnel policy, told the lawmakers that while transferability would be a "very popular addition" to the New GI Bill, the Defense Department feels the issue needs more study.

He said that because of congressional interest in reducing the military budget, the military departments "are not anxious to have transferability compete for funding" with other incentive programs, such as the retention bonuses.

Defense estimates the transferability option would add \$110 mil-



Army Times, Dec. 2, 65

CHAVARRIE (left) said the Defense Department wants further study of transferability of New GI Bill benefits. But without a request from the services, said MONTGOMERY (right), Congress is unlikely to approve it.

Times Photos



transferability option should be restricted to service members who have been in the Army for 10 or more years.

A detailed plan on how educational benefits could be transferred to dependents has not been prepared, but it is generally understood that such a plan would allow the member to divide the benefits between one or more dependents so long as the total payment did not exceed the amount to which the member would be entitled.

Chavarrie said DoD believes transferability of benefits would be an attraction to service members with 12 to 14 years of service, and estimates that 20 percent of career enlisted personnel and 30 percent of career officers would use the benefit.

Maj. Gen. Winfield S. Harpe, director of Air Force personnel programs, said the Air Force favors requiring a service member to agree to serve longer to get transferability.

Harpe added, however, that the Veterans Administration rather than the services should fund the benefit, the same position taken by the other services. "Despite the inherent benefits of transferability, the Air Force does not believe it prudent to divert resources from higher priority

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New GI Bill program, said the services may be overly concerned about the program's cost because if only 100 aviators stay in the service because of "transferability, the program would more than pay for itself."

A recent Army survey of soldiers about transferability found that 80 percent said it would make them more likely to make the military a career, said Army Lt. Gen. Robert M. Elton, Deputy Chief of Staff for Personnel.

Seventy percent of the survey participants, Elton said, feel the

program.

Testifying Nov. 19 before the House Veterans' Affairs Subcommittee on Education, Training and Employment, Chavarrie said Defense will "continue to assess a transferability provision" as to its potential value as a retention tool. He said it was premature to judge the need, so Defense is recommending that the provision "not be enacted at present pending further evidence of its impact on retention and recruiting."

Montgomery, the member of Congress most responsible for the

tion to New GI Bill costs.

DoD and service officials said they do support three proposed changes to the New GI Bill for recruits: lowering the monthly contribution of service members by spreading payments out over 20 months rather than 12 months; offering refunds to service members who participate in the program but later find themselves ineligible to collect benefits after they leave the service; and giving recruits up to 30 days rather than the current 14 days to decide whether they want to enroll in the