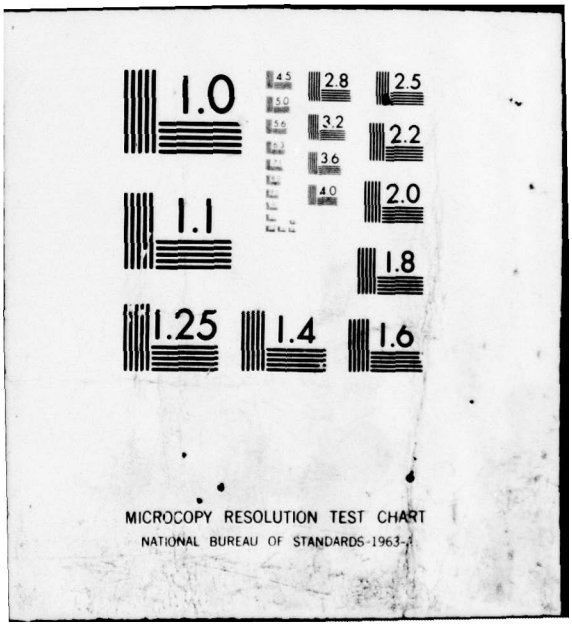
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Submitted to:

Office of Naval Research
Department of the Navy

(FINAL REPORT: Contract No. N00014-77-C-0674)

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report explores the implications for military personnel planning and policies of the tendency toward intergenerational occupational inheritance; that is, the probability that children will follow occupations similar to those of their parents. Our specific interest is in the prevalence of children of career military personnel ("juniors") in the current and future Navy, both for the implications their numbers may have for problems of quantitative manpower supply as well as for qualitative aspects of force composition. The limited objectives of the present exploratory effort were to:

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1. conceptualize the issues,
2. ascertain the availability of pertinent data
3. evaluate the dimensions of succession phenomena and their possible significance for concerns of the Navy, and
4. suggest important research and routine data collection.

The pool of juniors will remain a consequential source of new recruits for most of the remainder of the Century, although there will be some decline from a current peak period. Juniors have comprised far larger proportions of recent entry cohorts than those of any past period and should contribute significantly to greater re-enlistment rates in the immediate future.

Despite their significant contribution to manpower requirements, juniors currently have fairly low occupational inheritance. Inquiry might well be addressed to why military service as a career is rejected by most juniors.

From alternative value perspectives, that juniors appear to choose military careers no more than from 3 to 6 times the rate of their peers may appear more than sufficient.

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Bruce Dunning of BSSR conducted most of the searches of data for the present study and prepared extensive estimates by painstaking calculations of time series of the U.S. military career population during this Century. Norma Chapman has been of invaluable help at all stages of this project. Frank Harding of the Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs was instrumental in having data collected in the DOD 1978 Survey of Retired Personnel on career service of the respondents' children and provided us with special tabulations of the data. The USAF Military Personnel Center provided the invaluable special tabulations of data from the 1977 periodic survey of USAF personnel. Marvin Denicoff, of ONR, has displayed extraordinary patience whilst we pursued what proved to be mostly will-o'-the-wisps in our search for sources of data on which we could base models of intergenerational succession in the Navy. Assistance from Elizabeth Stevens, Connie Zuga, and Tony Cantrick of BSSR is also gratefully acknowledged.

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ABSTRACT

This report explores the implications for military personnel planning and policies of a well-established general social scientific principle. This principle is the tendency toward intergenerational occupational inheritance; that is, the higher-than-random probability that children will follow occupations similar to those of their parents.

Individual occupational inheritance has importance for the policy concerns of this report as it is reflected in organizational succession; that is, who will be the successive incumbents of positions in the armed forces. Our specific interest is in the prevalence of career military personnel ("juniors") in the current and future Navy, both for the implications their numbers may have for problems of quantitative manpower supply as well as for qualitative aspects of force composition.

The study focuses on career succession, that is, the extent to which the offspring of career military personnel themselves follow military careers. The objectives of the present study were exceedingly limited ones. It was undertaken as a small exploratory effort to:

1. conceptualize the issues,

2. ascertain the availability of pertinent data,

3. evaluate the dimensions of succession phenomena and their possible significance for concerns of the Navy, and

4. suggest important research and routine data collection.

The pool of juniors will remain a consequential source of new recruits for most of the remainder of the Century, although there will be some decline from the current peak period. The juniors whom we conclude have comprised far larger proportions of the most recent entry cohorts than those of any past period, should contribute significantly to greater re-enlistment rates in the immediate future, as will be the case with successively entering cohorts for the remainder of the Century.

In interpreting evaluations of all-volunteer force personnel procurement efforts, however, it is important to make allowances for the contribution of the growing junior pool to recent experience. Our crude

analysis, using parent distributions to infer junior prevalence in service entry-age cohorts, suggests that this rate of increase will not be sustained during the period in the immediate offing. This will be a period when Navy recruiting will also face for the first time a decrease each year rather than an increase in the total U.S. population in the 18-24-year age range.

Despite their significant contribution to current manpower requirements, juniors apparently have rates of service participation which might be regarded as surprisingly low. Inquiry might well be addressed to the reasons for rejection of military service as a career option by the large majority of all young persons who are reared in military families.

From an alternative value perspective, however, that juniors appear to choose military careers at rates no more than from 3 to 6 times those of their peers may appear more than sufficient. Recommendations are made for remedying the inadequacies of data on military personnel and their families so as to permit accurate assessment of intergenerational effects on the quantity and quality of personnel resources for the Navy.

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MILITARY INTERGENERATIONAL OCCUPATIONAL SUCCESSION
An Exploratory Study[1]

1. INTRODUCTION

1.1. Inheritance

This report explores the implications for military personnel planning and policies of a well-established general social scientific principle. This principle is the tendency toward intergenerational occupational inheritance; that is, the higher-than-random probability that children will follow occupations similar to those of their parents. Unlike the bulk of scientific attention to this principle, which addresses the vertical dimension of occupational status, the focus here is on the institutional dimension;[2] in particular, the probability that a person whose parent pursued a military career will in turn pursue a military career.

1.2. Succession

Individual occupational inheritance has importance for the policy concerns of this report as it is reflected in organizational succession; that is, who will be the successive incumbents of positions in the armed forces. Our specific interest is in the prevalence of children of career military personnel ("juniors")[3] in the current and future Navy, both for the implications their numbers may have for problems of quantitative manpower supply as well as for qualitative aspects of force composition. We will use the term "succession," as shorthand for

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[1]This research was carried out for the Office of Naval Research under Contract No. N00014-77-C-0674, dated September 1, 1978. Points of view or opinions stated are those of the authors and do not necessarily represent the official position of the U.S. Navy.

[2]Some sociologists make the distinction between status mobility, movement on the vertical dimensions of income, prestige, etc., and situs mobility, movement between institutional or occupational domains, such as industries and economic sectors.

The most pertinent body of literature is that on "social origins of occupations" (see Chapter 3).

[3]For this Navy-sponsored study, we will use the term of Navy argot, "juniors," even when referring to children of other services, which use the term "brats."

"military intergenerational succession," to refer to the proportion of all military personnel, or personnel of a given category, "on board" at a given time who are children of those who were in a career status at some earlier time. Succession, as defined here, is the aggregate, organizational aspect of individual career inheritance. Our discussion will stress that intergenerational occupational transmission can have quite different significance from the organizational perspective than from that of the individual, in that it is possible for the succession rate to be relatively high at one historical period as compared with others, even though individual inheritance rates for that period are relatively low. The reverse can also be true. This is because succession reflects the course of organizational histories as well as the individual and family life histories of those involved with the organization. The paramount object of attention here is how succession is constrained by the changing demography through time of military organizations in relation to demographic change in the larger society. From these historical-demographic considerations, theoretical maximum limits to succession and empirically probable minima should be inferable.

1.3. Career Succession

This study focuses on career succession, that is, the extent to which the offspring of career military personnel themselves follow military careers. As an operational definition of "career military personnel," we will usually mean persons on active duty with more than 10 years of active duty, as well as those who retired with length-of-service eligibility, or for disability reasons after 10 or more years of active duty.

Primarily because of the almost total absence of pertinent data, we will not examine succession in reserve components. This is an unfortunate omission, both because of the reserve recruiting problem that is currently being confronted by the armed forces and because of the importance of reserve components in long-term historical analyses of military occupational inheritance.

We shall also give only passing attention to the significance of brief, noncareer service of one's parent on inclinations toward

enlistment. This is because some military service was so close to universal for most of the pertinent parent cohorts in analyses of recent experience.

1.4. Navy Focus

While our research is conducted for the Navy and therefore has special interest in succession in the Navy, the exploratory phase necessarily focuses on the U.S. armed forces as a whole. There is a paucity of data on the Navy and most sources of recent data were not by service of parent. Further, there is some evidence of the generality of military service career orientations and of cross-service inheritance effects.

Finally, for the exploratory study, we are focusing consideration on sons of military personnel. This is not to minimize the increasingly important role of women in the armed forces, but reflects the limitations of available data.

1.5. Exploratory Purpose

The objectives of the present study were exceedingly limited ones. It was undertaken as a small exploratory effort to:

1. conceptualize the issues,
2. ascertain the availability of pertinent data,
3. evaluate the dimensions of succession phenomena and their possible significance for concerns of the Navy, and
4. suggest important research and routine data collection.

2. BACKGROUND

2.1. Current Importance of the Topic

The problem of estimating occupational succession in the military has special importance at the present historical juncture for a number of reasons.

2.1.1. Historical Uniqueness:--Among these reasons is that the United States, for the first time in its history, is reaching a point where the impact of intergenerational succession on military recruiting and the resulting qualitative composition of the force is potentially of major dimensions. Unlike the case in many other major nations that always maintained large standing forces, the pool of children of career military personnel in the United States was historically very small relative to the places to be filled in its slowly, step-wise expanding regular force. This was true even given a tendency for occupational inheritance to be considerably greater for military occupations than for most others. The current situation is one wherein this special pool has a ratio to regular force recruiting levels that is far greater than ever before. This ratio will continue be high in the immediate future.

2.1.2. A Neglected Topic:--Because the above situation is very new and its effects are only beginning to be manifested, it has not received appreciable attention. The American armed forces have not had to make the elaborate institutional adaptations to intergenerational succession that have characterized the military forces of many nations in various historical epochs. Succession is not a matter to which military planning and policy have given noticeable attention.

While military occupational inheritance is a topic that has regularly received some attention from the research and scholarly communities, this work has focused almost entirely on elite succession. Rarely have Defense Department or academic data collection systems developed information on parents' or offspring occupations such as would be applicable to the purposes of this study.

2.1.3. Policy Change and Adjustment:--The military-demographic developments which orient this study are emerging during a particularly dynamic period of policy change and operational readjustment. These

developments are associated with the institution of the all-volunteer force and with changes in the services' specific missions. Manpower shortages and costs, current and projected, impose severe constraints on almost all aspects of defense planning. We feel it is important to explore whether the potential of intergenerational succession, whose effects are yet to be manifested, may be sufficiently large as to alter the premises from which such planning proceeds. This is not to suggest that juniors will necessarily form a major source of total manpower supply, but rather that they may comprise those marginal differences which should significantly change estimates regarding the quantity and quality of potentially available military manpower, particularly manpower for the career force.

2.1.4. Fertility and Dependents:--Among personnel policies currently under reexamination are a number where decisions could have powerful effect, one way or the other, on a sociological characteristic of military personnel that contributes to the potential for military career inheritance. This characteristic is their reputedly high fertility.

Dependent matters have gained increasing importance in recent years as issues confronting policy. Decisions affecting the ability of lower-grade personnel to have wives and children with them in overseas billets are of the type with quite direct bearing on the timing, if not the completed rates, of the fertility of military wives. Many other personnel policies affect the relative attractiveness of the service to those with greater or lesser inclination to parenthood or which afford incentives or disincentives to parenting at particular career junctures.

Because of the importance of the reproduction rates of career military personnel to succession phenomena, we will discuss such scant evidence as we could locate regarding them.

The fortunes of career personnel also presumably will have some consequence for the inclinations of their children toward military career choice.

2.1.5. As Exemplar of Non-Economic Perspectives:--Intergenerational succession merits particular attention as an exemplar

of a larger class of important sociological problems that currently tend to be overlooked because there is no place for them within the predominant paradigms of current military personnel planning and research. In historically unparalleled degree, consideration of military personnel matters currently proceeds within an economics paradigm. The all-volunteer force concept has accentuated already strong tendencies toward the application of an economic rationale to personnel matters. The concept had important roots in economic theory (and associated ideology). These origins have led to analyses and policies that place special emphasis on relative incentives in a labor market as determinants of recruitment and retention, particularly, pecuniary incentives and those with putative pecuniary equivalence. We are concerned in this study with manpower supply factors that may have considerable independence from relative changes in pecuniary and other material incentives of military occupations, as well as from developments in the larger labor market. We are concerned here with processes that are external to economic analysis, but which are important as determinants of givens with which econometrics must proceed; that is, in economic terms, the preference schedules and information fund of a class of members of the manpower pool and with particular historical-demographic processes that make this a significantly numerous class. The outputs of the sociological and demographic analyses to be explored here would be inputs of certain supply elasticity values to econometric manpower equations. That the phenomena of interest here are external to the currently dominant paradigms creates special problems, and special opportunities for contribution, from knowledge about intergenerational succession.

The emphasis on pecuniary incentives associated with the transition from the draft to an all-volunteer force has occasioned unease among some military professionals, as well as among outside observers of the change. The rationalizations of the system are felt by these observers to be incongruous with traditionalistic aspects of the military institution and its culture. Economic rationalism and individualism are suspected of having a subversive influence on the appeals of "duty, honor, country" of military tradition. The juniors who are the object of attention of the present study may be presumed, as a group, to have

more intensive socialization to these norms than almost any other component of the population. The frequency with which they make choices and commitments to career service may illuminate the strength of traditional appeals. Future research on the reasons underlying these choices may illuminate whether contemporary military manpower policy has the negative consequences some fear on such motivations for service. (Cf. Blair and Bachman, 1976.)

Regardless of whether the eventual findings of valid research prove that high or that low rates of inheritance are taking place, the result will be one that should be of some concern to the Navy. We conclude this to be true because any conditions we can visualize that would keep the occupational inheritance factor from being a significant determinant of manpower supply would be conditions that "turn off" children of career military personnel from the pursuit of naval careers. The most plausible assumptions suggest that there are far fewer impediments to recruitment and retention of youths whose fathers saw career service than of others in the same age class and that their eventual representation throughout the armed forces should be some multiple of their appreciable and growing representation in the pertinent age pools. If succession rates prove to be lower than would be predicted from historical rates of military occupational inheritance, it would be important for the Navy to turn its attention to what it is doing that disinclines these youth who presumably know the Navy best from choosing it as a career.

On the other hand, should an extremely high level of "self-recruitment" be evident, there may be valid reason for greater attention to keeping the military system an open and broadly representative one.

It is difficult for us to visualize an outcome of detailed knowledge of inheritance and succession which could remain an object of indifference. For, as we shall discuss, in order for succession to be at modest levels during the remainder of this Century, inheritance rates will have to be unprecedentedly low.

3. PREVIOUS RESEARCH AND AVAILABLE DATA

3.1. Limited Utility of the Literature

Although the study of intergenerational occupational mobility has always been a topic of prime interest in the social sciences, the existing literature does little to illuminate the topic of our immediate interest. The most adequate bibliography of which we are aware listing substantive and methodological works pertinent to our topic is that by Glenn, Alston and Weiner (1970). Particularly pertinent are the sections of their bibliography on "Social Origins" and on "Family Background." We will examine here what can be learned, and what cannot, from previous research.

3.1.1. Numerical Unimportance:--We have already remarked on the uniqueness of recent U.S. history as one reason for the inapplicability of previous work to our present problem. Heretofore, persons with extended careers of military service were not sufficiently numerous to figure as a specific parental class in most general studies of intergenerational mobility in the U.S. For most of the history of the U.S., the peacetime armed forces were less than 0.15 percent of the population and did not exceed 0.25 percent until after World War II. (See Table 3.1.)

3.1.2. Neglected Occupational Category:--The visibility of military personnel in general occupational studies has remained low even during the most recent three decades when their numbers were fairly large because the standard occupational statistics used in social and economic studies are those of the Census Bureau or the Bureau of Labor Statistics which are devoted to the civilian labor force. Many special studies of intergenerational mobility use the same category systems as these statistics. Military fathers often disappear in particular codes of occupations (e.g., officers get coded under "proprietors, managers and officials") or of industries or employers (where they are encompassed in the "government" category). Active duty military personnel are usually excluded from special surveys and studies, whether governmentally or privately conducted.

Table 3.1

MILITARY PERSONNEL ON ACTIVE DUTY
AS PER CENT OF TOTAL U.S. LABOR FORCE.
SELECTED YEARS, 1801-1967

Year	Number[1] in Thousands	Per Cent of Labor Force[2]
1801	7	*
1810	12	*
1820	15	.05
1830	12	.03
1840	22	.04
1850	21	.03
1860	28	.03
1865	1,063	*
1870	50	.04
1880	38	.02
1890	39	.02
1898	236	*
1900	126	.04
1910	139	.04
1918	2,897	*
1920	343	.08
1930	256	.05
1939	334	.06
1945	12,123	18.6
1950	1,460	2.3
1953	3,555	5.3
1960	2,476	3.5
1965	2,655	3.4
1967	3,377	4.2

[1] Office of Secretary of Defense, Directorate of Statistical Services. Military personnel strengths as of June 30 of each year cited.

[2] Labor force statistics refer to gainful workers, 10 years and over, for 1820-1930, to total labor force, 14 years and over, for 1939-1963, and 16 years and over for 1965 and 1967. Data are from United States Department of Commerce, *Statistical Abstract of the United States, 1960* (Washington: Government Printing Office, 1961), Tables Nos. 261, 263; from United States Department of Labor, *Monthly Report on the Labor Force, April, 1963* (Washington: Department of Labor 1963), Table A-1; and from United States Department of Labor, *Employment and Earnings and Monthly Report on the Labor Force, July 1967* (Washington: Department of Labor, 1967) Tables A-1 and A-27.

Labor force statistics are not available for years marked with asterisk.

Source: Harold Wool, The Military Specialist: Skilled Manpower for the Armed Forces (Baltimore: The Johns Hopkins Press, 1968), p. 2.

Military occupations have been of some significance in the total national manpower picture during the recent decades--for males, more numerous than the civilian clerical category until the 1970's and, currently, about the same magnitude as all farm workers (U.S. Bureau of the Census, 1977). The career military personnel of our focus have been of much more modest proportions, however.

3.1.3. Elite Focus:--Intergenerational occupational analyses with data on military personnel, therefore, are confined to special studies of populations of concern to social scientists, particularly those focused on military officers or those covering elite groups, more generally.

3.1.4. Paucity of Information on Navy:--Most of the information available from the literature deals either with military personnel in general or with intergenerational succession in ground forces, although in the latter studies military backgrounds of parents of current Army personnel generally include naval service.

3.1.5. Emphasis on "Vertical Mobility":--The literature also has less utility than we would like because social scientists, in their attention to "social origins" of occupations and occupational inheritance, have been preoccupied with ordinal dimensions having invidious import. The interest in intergenerational vertical mobility has been pursued avidly with great neglect of other dimensions and attributes of occupational statuses. Indeed, unless qualified to avoid the implication, the term "status" automatically conveys a vertical meaning to both the social scientist and the layman. Occupational movement along other dimensions--such as from one sector of the economy to another or from "manual" to "mental" jobs--figures prominently in the literature primarily for the implications it may have, substantive or methodological, for questions of vertical mobility. This is true despite the fact that some occupational movements, which can be extremely significant for the person, and for the society, can be completely orthogonal to any normative vertical scale; for example, clerk-typist in a government office to clerk-typist in a bank. Similarly, great vertical mobility can be associated with static

position on some other dimension. The military occupation presents an extreme example of this: "sailor" or "soldier" have been occupations in American society that have contained within them vertical statuses ranging from the declasse to some of the nation's most prestigious elite figures.

3.1.6. Increasing Importance of the Military Family:--Little (1971: 247) has pointed out that there are few subjects in the sociology of the military organization that have received as little attention as the military family. Although this neglect has begun to be remedied by research during this decade, its long continuance may owe something to the fact that, historically, little provision was made for family life within the military community. The frontier post, which was the dominant form of the military garrison, made no provision for family quarters except for senior officers. Even officers in the Army were barred from marriage until they had attained the rank of captain. In the peacetime force, marriage was almost completely ruled out for enlisted personnel. As late as World War I, no allowances were provided for the families of those who had enlisted or were conscripted. During the years between the wars, the military family was thought of exclusively as the officer's family. It was not until the full-scale mobilization of World War II that a new conception of military service began to emerge, and the federal government assumed limited fiscal responsibility for conscriptee families in the form of family allowances and limited medical care. A full range of community institutions providing such services to the family as housing and schools was not provided until after the war, and the necessity of maintaining a volunteer armed forces later led to a more formal recognition of the importance of undisrupted family life in dealing with the problems of career retention (Little, 1971).

Goldman (1976) summarizes changes of military policy from ones which discouraged marriage and fertility for all ranks to those of the present which facilitate connubiality. The percent married of Navy personnel increased in the 20 years after 1953 from 37 to 52 percent and the number of children per Navy family from 1.42 to 1.81. In the top three enlisted grades and among field grade officers, the

percent married is higher than for the national population of comparable age.

3.2. Early Studies

Sorokin (1927: 164-166), in his classic treatise on social mobility, reflects the usual interest in "horizontal" dimensions of status as they are important for vertical mobility. He placed the military institution first among all others as a vehicle of vertical mobility. He lists many reasons, primarily those related to war, as explaining why it "has always played the role of the 'social stairway.'" Much of his evidence for this is anecdotal and uses instances of individuals and social groups at various times and places to illustrate how military occupations have been an avenue of social ascent, and, often as well, descent. But he also summarizes extensive quantitative data. His work in many ways is intended as a counterweight both to radical biological hereditarianism and to radical environmentalism. For many years, the pursuit of studies with a social Darwinian and eugenics orientation had produced a large amount of information regarding the resemblance of children and parents in social characteristics, including status and occupation. Depending upon the specificity of categories and other differences in method, as well as on places and circumstances, Sorokin found that for modern Western societies, rates of father-to-son occupational transmission varied from minima of about 3 percent to a maximum of 70 percent. Except for agricultural occupations, some military officer populations were among the few that approached the maximum value, for example, Charles Davenport and Mary Scudder's (1919) study of prominent U.S. and British naval officers, in which 62.9 percent of sons had occupations like that of their father. He cites some other studies including his own, where the transmission rate was much lower for military men, for example, of all independent sons of Army and Navy executives, only 14.3 percent were in the same status.

A factor to which Sorokin (1927: 358-359) gives prominence in speaking of the military as a vehicle of upward social mobility at various times is the proportionately higher mortality rate that prevailed for officers in many wars than for other ranks. Such losses in various wars of the 18th and 19th Centuries often decimated large

portions of the officer class and (although Sorokin does not make this point) this usually occurred before they had much of a chance to produce their own heirs. Such disproportionate losses led to extensive recruitment of leaders from below as well as from outside the traditional military class. (See also Vagts, 1959.)

Long periods of peace or of only minor conflict, however, produce a tightening situation, and the creation of relatively impermeable barriers to entrance into the officer corps. The patterns of warfare also have changed in more recent times, such that only the lowest and newest recruits to officer ranks had particularly high losses in the U.S. armed forces during the 20th Century (Biderman, 1967). For the period that is pertinent to current intergenerational military transmission, mortality in war is not a very large factor for the parent generation, although it may be significant with regard to excess mortality during the Viet Nam period for sons of career personnel who otherwise would now be found in career statuses.

3.3. Major Studies of the 1960's

Two seminal studies which touched on the question of military intergenerational succession in the American armed forces appeared in the 1960's. In 1960, Morris Janowitz published The Professional Soldier and in 1963, Lloyd Warner and his colleagues published The American Federal Executive. It is important to note both of these studies focused on the top leadership or potential top leadership of the armed forces.

3.3.1. Janowitz:--Janowitz (1960) relied primarily on data from three sources:

a) an historical sample of some 760 admirals and generals representing the years 1910, 1920, 1935, and 1950,

b) data collected by Masland and Radway from officers on duty in the Pentagon for their study of military education published in 1957, and

c) intensive interviews in 1958 of "a sample of future military leaders, consisting of 113 officers on duty in the three service headquarters." The officers in this sample were mainly colonels and

brigadier generals (or the Navy equivalents), this rank distribution being selected because of the likelihood that such officers would be senior military leaders within a few years.

Janowitz's interest in "self-recruitment" was part of a broader examination of the social origins of the "professional soldier" as influencing the style of leadership characteristic of our armed forces in the past and in the prospective future. His concern was with the character of the institution, more than with the fortunes of individuals. "Self-recruitment" in his discussion was relevant as an indicator of whether the armed forces would have the broadened base of social recruitment of leadership that would be consistent with requirements for a professional force in contemporary America, such as a "democratization" of outlook and behavior, adaptive behavior, and accountability to ultimate civil authority.

He found that 7 percent of the U.S. Army leadership in 1910 had fathers who were officers. By 1920, the proportion had increased to 10 percent and, in 1935, almost one-quarter (23 percent) of the American Army leaders were the sons of officers. By 1950, however, the proportion of officers' sons in the Army's elite had decreased to 11 percent. Comparing these data with data on the German Wehrmacht, and utilizing additional data on the social origins of American officers, Janowitz concluded that "in the past the American system has not produced a self-perpetuating elite." But, noting that 25 percent of the 1960 class of West Point were sons of officers, he also concluded, "Along with a broadening of the base, there has been at least a temporary increased reliance on self-recruitment."

Despite the historical orientation of his work, Janowitz gave inadequate attention to historical changes in the size of armed forces and the intergenerational lags and the consequences of periods of military expansion, stability and contraction. In Table 3.1 showing the changing size of the nation's active duty force since 1801, a general pattern of step-wise growth is apparent. After each war, the size of the peacetime armed forces stabilizes at a level considerably above that of the pre-war period. The exception is the return after the Mexican War to the pre-war level. Janowitz noted that the great post-World War

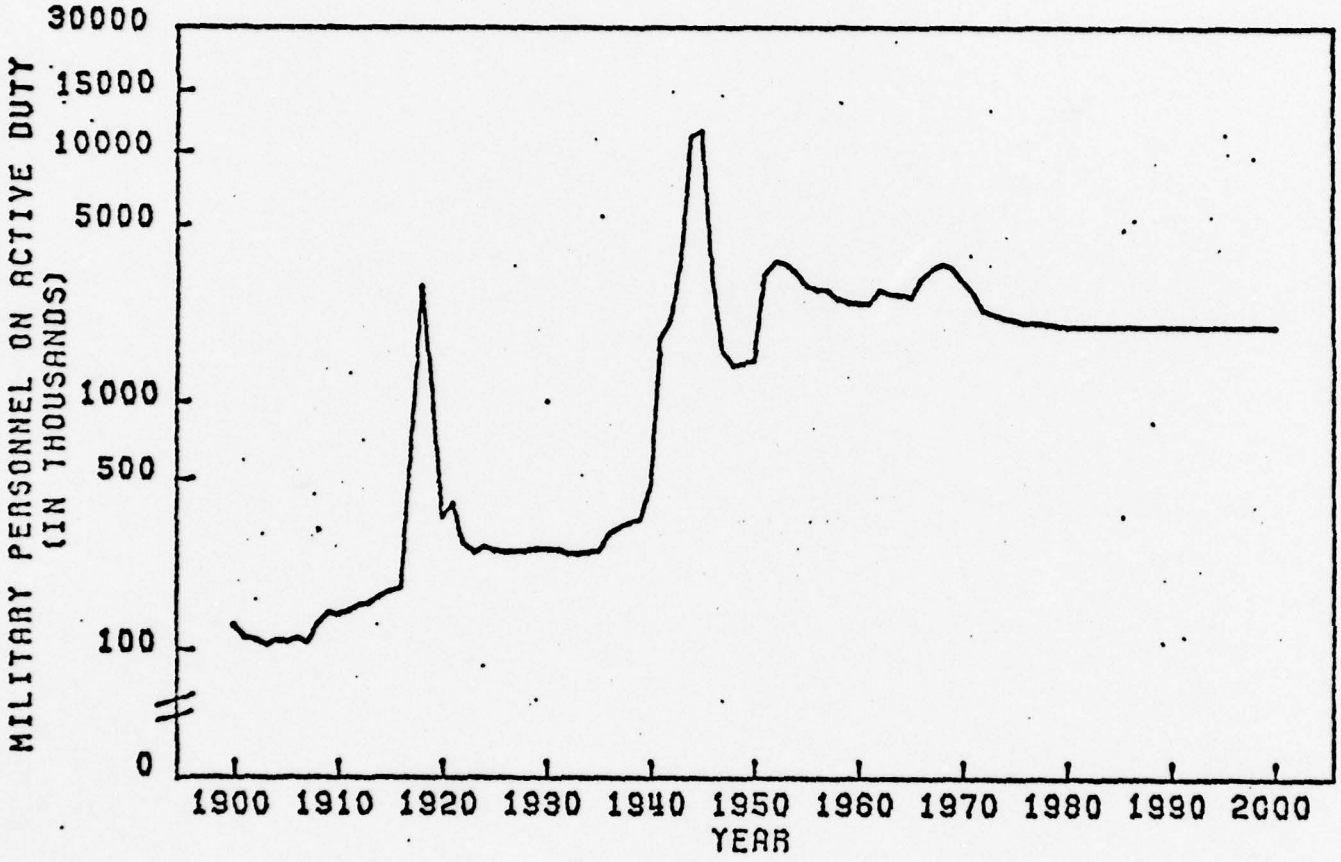
II expansion of the U.S. regular military establishment over its previous size inevitably broadened its base of social recruitment. In other interpretations of data on self-recruitment, however, he does not consider the elementary constraints of historical demography that are central to the orientation of the present project. In particular, he does not reflect on the significance of the duration of periods of stability to the succession rates at various points during subsequent periods of an expanded force, nor does he note the likely effects of a shrinking force toward increasing "self-recruitment" in the future. In 1895, before the Spanish-American War, active duty strength of the armed forces was 42,200. After the War, the nation accepted the philosophy of "carrying a Big Stick." In 1901, the force stood at 112,000 and in 1910, the year on which Janowitz focuses, it was 139,000. This was too early in the period of expansion for much second-generation effect to take place at the higher levels, and rapid military expansion was continuing to take place. External recruitment perforce was necessary. The year, 1935, that Janowitz takes for comparison with 1910, by contrast, was the last year of a period of fairly long stability. The active duty strength was about 252,000, exactly what it had been a decade earlier and less than its level 15 years earlier. It was only 2.3 times as large as it had been 40 years earlier. It was a peak year for self-recruitment, for the following year, the U.S. armed forces once again began a period of expansion. (See Table 3.1 and Chart 3.1.)

Similarly, in discussing changes in self-recruitment, Janowitz presents a table containing data comparing the German and American military. While the table contains data on changes in the absolute numbers of officers, his text does not remark on the degree to which the "openness" or "tightness" of the system was very much a function of the history of the changing size of the two establishments.

Janowitz tends to emphasize changing socio-political factors and value structures to explain particular observed percentages that we term "succession" ratios. Almost all other works in the field tend to interpret such ratios as indicators of the relative tendency of organizations (or occupations) to prefer their own (or of their own to be attracted to the parent's occupation). Rarely is there sufficient

CHART 3-1

APPROXIMATE STRENGTH OF ACTIVE DUTY ARMED FORCES, 1900-2000



1975-2000: DATA PROJECTED

Source: Actuarial Tables, Office of the Assistant Secretary of Defense (M&RA)

recognition in the literature that these ratios may not reflect differences between occupational groupings in any propensity toward self-recruitment or changes in a given organization over time in that propensity, but rather the historical dynamics of occupational and population numbers.

One notable exception in the literature is the study by Warner, et al.

3.3.2. The American Federal Executive Study:--As part of their study of The American Federal Executive, Warner et al. (1963) collected data on the social origins of senior Federal civil servants and military executives. They were interested in the executives who in 1959 occupied "the highest civilian and military positions of the federal government"--what kind of men and women they were and how they reached their positions--and in comparing the government executives with leaders and owners of large businesses whom Warner had earlier studied. Their sample of 2,919 military officers was selected to be comparable in status with the high level civilian executives they studied--those with "the highest positions and the most power and prestige"--rather than to be representative of all senior officers, much less the officer corps as a whole.

The mail questionnaires used in the study asked for the "principal occupations of others in your family," including "your father (when you became self-supporting)." Only a modest proportion (9 percent) of the 1959 military executives had fathers whose "principal occupation" was in the uniformed services. (Some retired fathers who would be defined as "career military" by the terms of the present study would have been missed by Warner's question.)

The Warner (1963) study, as noted, recognized the importance of taking into account the changed occupational distribution from one generation to the next. It employed a ratio of each of the occupational groups to the proportion of the U.S. adult male population in that occupational category in 1930--a year chosen to correspond to the reference time of the question on father's occupation for the average executive. Uniformed services occupations were represented among the fathers of military executives five times more frequently than would be

expected from the 1930 occupational distribution. While this was a fairly high order of intergenerational inheritance, the category "business executives and owners" was even more disproportionately represented among fathers and "professionals" had only a slightly smaller ratio. When only U.S.-born military executives were considered, the proportion of military executives with military fathers was 10 times that of the representation of the uniformed services in the 1930 occupational distribution (Warner, et al., 1963: 66). This was by far the highest such ratio for any group in the entire study.

Warner and his associates also examined occupational transitions over three generations. Only 2 percent (37) of the paternal grandfathers of military executives had uniformed service careers. To a greater degree than was characteristic of any other occupational categories, however, there was stability over three generations for the military category; that is to say, of those military executives who had military paternal grandfathers, 84 percent also had military fathers. This was the highest stability for any of the occupational categories of military and civilian executives whom Warner studied.

The backgrounds of wives and spouses were also examined in the Federal Executive study. An insignificantly higher percentage of the maternal grandparents (3 percent) than the paternal grandparents (2 percent) of military executives were found to have military backgrounds. In addition, "The military leaders, the only service having a small nucleus in their own profession (9 per cent), married wives (11 per cent) who were daughters of military men. There seem to be twin tendencies present--a solid core of military men marry endogamically and a sizable percentage continue the military life of their fathers" (Warner, 1963: 92).

Warner's (1963) use of a single year's occupational distribution for the parent generation affords only a crude index of relative rates of intergenerational inheritance. Among the complications that it glosses are the spreads of the distribution of fathers' ages, differential rates of reproduction, and the changing age composition of occupational categories. Nonetheless, Warner's (1963) effort is quite unique among studies of intergenerational transmission of military

status in that it attempts a true inheritance measure--that is, a measure that takes into account the relative size of the occupational groups at the two points of an intergenerational interval. Notably, the study also took immigration into account, by analyzing separately, the foreign-born components of the population.

3.4. Comparative Succession

The most common form of data available in the pertinent literature is that based upon observations of the proportion of a particular military group that has military parents. Such succession rates are contained in papers relating to various statuses in the armed forces of various countries for various periods. These ratios are usually given in the literature as indicators of the degree to which the military was, by design or by its institutional features, distinctive from the civil society. We have summarized many of these observations of succession rates in a table in Appendix I.

The Appendix table displays a striking range of variation of succession rates. Succession ranges from one percent or less for Australian Navy and Air Force senior officers in 1956 to 72 percent for successful officer training applicants in Great Britain in 1970 and 80 percent in Spain in 1964-1968. Our hypothesis, although we have not assembled the detailed information nor constructed the models needed to test it accurately, is that the inheritance factor--that is, the tendency of military organizations to pursue policies that favor their own kind and for children of military personnel to favor their parents' calling--varies mostly in a range that is relatively narrow as compared with the variation following from the historical changes in the sizes of the forces and the demographic variables that determine the population of juniors eligible for service during any particular period.

It is noteworthy, for example, that, with the one exception of Spain in the 1960's, our highest succession rates are not those for the military elite of Imperial Germany but rather for the run-of-the-mill officer aspirants in Great Britain in the 1970's. Our lowest rates, those for the Australian Navy and Air Force in 1956 or for the U.S. officer retirement cohort of 1964, reflect the characteristics of forces that have greatly expanded since the parent generation served,

while our highest rates are for forces soon after major reductions of size.

With such factors taken into account, there would be far more consistent relationship than is evident in the table between rank and succession rates, and with elites having the highest succession followed by the military academies, with enlisted ranks having the lowest rates. (The small size of military academies relative to supplies of eligibles make their succession rates reflect policy in relatively greater measure than historical demography. In the U.S., there is indeed legal policy which affords some preferment to juniors.)

Interpreted in this light, as well, the rates for the U.S. armed forces are not singularly low. While only with more radical reductions of the size of the establishment than have occurred or are planned would they approach the values of the 1970's for Great Britain, we would anticipate that they will not be dissimilar in the near future for those of contemporary France, whether officers, academy cadets or enlisted personnel are considered. Similarly, we would expect the rates for the West German Bundeswehr to climb appreciably from the low levels they have been at thus far, as the second generation of the original period of remilitarization comes of age.

To interpret these observations of succession, however, it is essential to apply models incorporating historical demographic perspectives. In particular, a succession rate for a specific military group at any point in time, t, is a product of:

A. the ratio of juniors in the national population to other eligibles for positions in the organization;

B. the number of available military positions during an entry period;

C. the relative participation rates of juniors and others.

"A," the prevalence of juniors, is a function of (1) the ratio of the military parent generation to the population and (2) the relative rates of reproductivity of the military population and the total population, with (3) immigration and emigration and differential mortality being additional, although usually lesser factors. The

changing sizes, age and sex composition, marriage, fertility and mortality rates of the armed forces and the larger society are all data pertinent to a complete model.

"B," the availability of positions, is a function of the size of the organization at the time of observation, and of the turnover affecting entry openings, the latter including the existing composition, policies affecting voluntary and involuntary retention. The mortality of incumbents is sometimes a key factor.

"C," relative participation, we hypothesize, involves participation rates of juniors (occupational inheritance rates) that are much more stable with regard to changes in "B" than are the participation rates for other members of the population. For the radical changes of "B" during periods of mobilization, the differential participation is much less than in "normal" periods. When, as at various periods in our recent history, over 80 percent of male age cohorts serve, obviously there is small margin left for differential entry-level participation by juniors. Even at the extreme that is characteristic of mass military mobilization, however, we expect differentially high participation by juniors because social and genetic advantages of the juniors should result in a higher proportion of them meeting the minimum "mental, moral and physical" eligibility criteria for service. During a period of an all-volunteer force, the succession rate may vary in some measure as a direct function of the stringency of minimum eligibility standards, if these limit the total intake of non-juniors.

Military institutions allow application of simpler models of succession than many civilian ones in that all statuses can be graded in fairly neat progression from earlier to later and higher to lower, with almost no lateral entry or skipping.

Nonetheless, there are temporal dispersions that can make rigorous application of succession modelling extremely complex. These include the considerable range in ages of the parents of any particular age group of sons, and the spread of ages at which the sons are in a pertinent status. Chart 3.2 illustrates the effects of the dispersion of life events in the parent generation on those of the next generation. The charts are heuristic devices that can be studied to see relations

between periods in the history of the armed forces and the periods during which the intergenerational reflection of those periods will be manifest. Chart 3.2 takes, first, the perspective of a single year parent birth cohort of career officers--those born in 1950--who serve until length-of-service retirement. The Chart shows the temporal relation between the births, service entries and retirements of most (about 90 percent) of the children of this cohort and the corresponding events for the parent generation.[4]

Next, the chart illustrates the same relationships, but from the perspective of a single-year entry cohort, and shows the variation which follows from the dispersion of the ages at entry of that cohort. Lastly, the perspective of a one-year parent retirement cohort is shown.

The chart is a crude one because it does not use even approximations of the distributions of the cases in each of the life event intervals. Thus, for example, it does not reveal the progressively thinner density at the extremes of the ranges of each additive step. For example, there will be extremely few members of a retirement cohort who, at date of retirement, will have sons over 30 years of age. At the same time, the Chart does not show the full span of time over which there will be some juniors serving of a particular parent cohort. A more accurate model would also have to take account of interactions such as the dependence of date of retirement or parenting on age at entry. Presumably, there is little parenting by officers prior to entry regardless of age at entry.

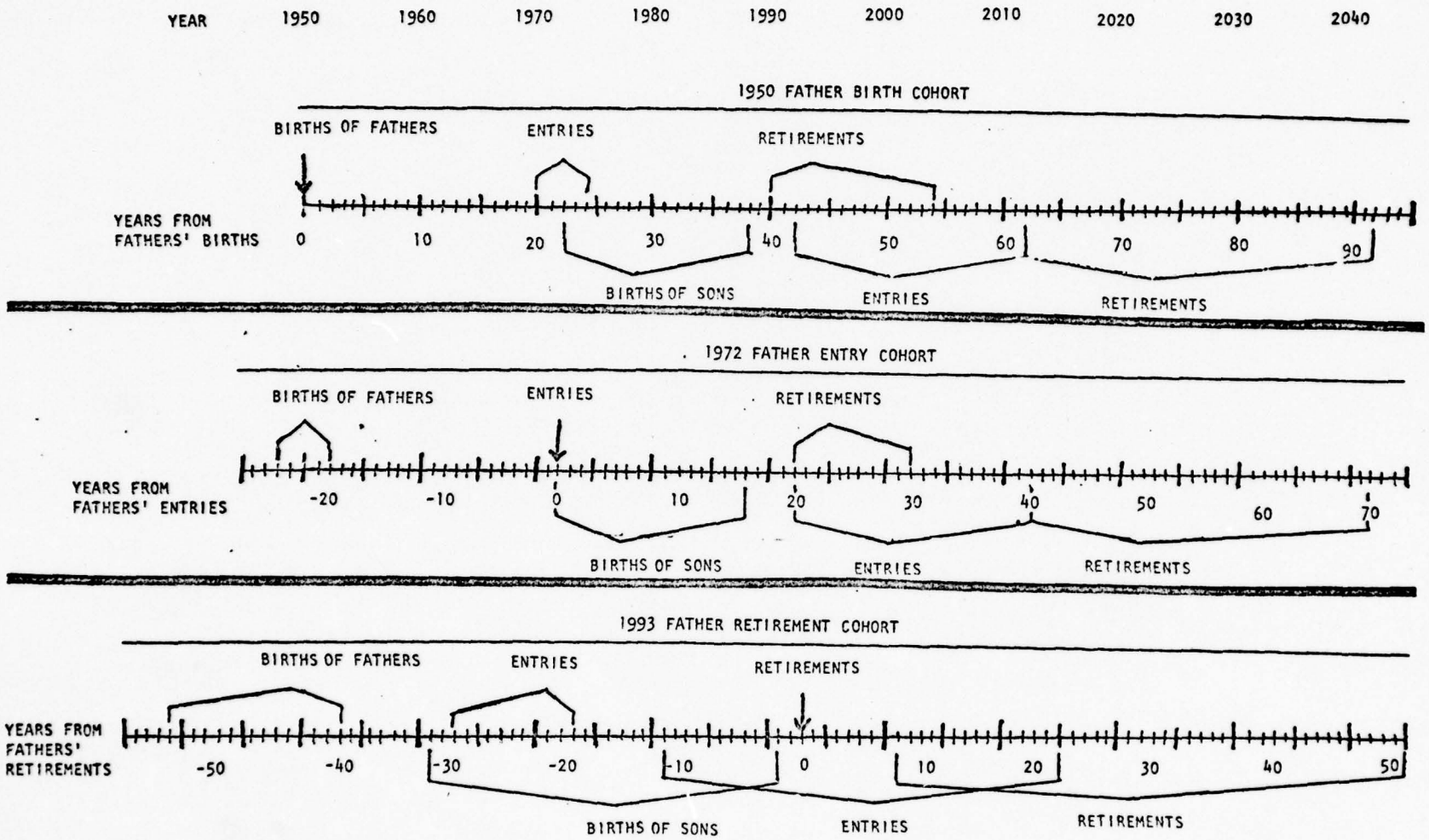
Given its assumptions that parenting and stages of career have the same spacing through time, the Chart suggests that most juniors of officers who in turn enter as officers will be entering when their parents are between 42 and 62, with 50 being the approximate median age

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[4]The Chart assumes that in both generations, most officers enter between the ages of 21 and 26, and retire with between 20 and 30 years of service, with 22 years as the median. Parenting is assumed to take place between the ages of 22 and 38, with 28 the median age of father at birth of child. That is the approximate value for recent years for the U.S. general population. We suspect the median for military fathers is as much as two years higher, but we have no data on military fathers' parenting ages.

CHART 3.2

ILLUSTRATIVE TIMING OF LIFE EVENTS OF FATHERS AND SONS FROM THE PERSPECTIVE OF HYPOTHETICAL ONE-YEAR BIRTH, ENTRY AND RETIREMENT OFFICER FATHER COHORTS



of parent. There will be an appreciable number of juniors on active duty for more than 40 years after their fathers retired and the full span of service for the two generations is about 70 years. Chart 3.2 illustrates the application of the scale to 1940 father cohorts, but values specific to those cohorts have not been used and it can be used to estimate the timing for any other cohorts. Most officers born in 1940 begin service between 1961 and 1966. Their children, in turn, begin to appear in the system in 1983, about half of those who serve will have entered by 1993, and those who continue through a full career will be retiring about the year 2010.

The second portion of the Chart shows, for example, that the officer intake in a given year begins to have an appreciable intergenerational succession effect 21 years later that continues for about 17 years. There is a period of about 10 years when persons of both generations are serving simultaneously.

In the last section of the Chart, we see that for a group retiring in a given year, it will be a half-century before the retirement takes place of the younger children of that group who serve for 30 years.

Similar charts viewing succession from the perspective of junior entry cohorts would reveal the very wide ranges of periods of service of the parent generation. For example, of juniors who enter in 1980, there will be a scant number whose fathers were born as early as 1916, and even earlier, and some whose fathers were born as recently as 1937. These fathers represent periods of commissioning from 1928 to 1964. The concentration of parents of this junior cohort is in the age classes that would have entered service during the period from the end of World War II to shortly after the Korean War, however. This illustration suggests the considerable attenuation of the peaks and valleys of the size of the force in the parent generation as they are reflected in the age distributions of the next generation and therefore in their periods of service. Because we have no good data on the major source of this variation--that is, the timing of parenting for military professionals--the effect can only be described in a general way. Given the concentration of the distributions of ages for the key life events around modal values, however, some of the unevenness of the sizes of

parent cohorts will be reflected in the junior cohorts. This unevenness is of less consequence for our topic than the long-term effect of there having existed for an entire generational span a large military professional population with a reasonably high rate of reproduction. This will produce a fairly steady stream of future juniors for many years to come--into the next century.

4. ESTIMATING THE IMPORTANCE OF INTERGENERATIONAL SUCCESSION

4.1. Irrelevance of Existing Literature

We found after an extensive review of the literature that there was no previous work that cast direct light on our problem of estimating the importance of intergenerational succession for current and future Naval manpower supply. Not only was there a total absence of pertinent conclusions, attention to occupational inheritance of military statuses has almost invariably suffered from the lack of conceptual clarity with regard to the essential historical demographic dynamics affecting the phenomena.

4.2. Data Needed for Model

The project in its earliest stages worked out conceptualizations of the problems of estimating the past, current and prospective importance of intergenerational career succession for manpower supply and composition. The major problem throughout has been to locate data that would afford estimates of the order of magnitude of the current and prospective pool of juniors and their service participation.

Data were needed for several kinds of measures. Our primary interest is in what we term intergenerational career succession ("succession," for short) by which we mean simply the percent of those in a particular armed forces status (e.g., a one-year enlistment or active duty age cohort, or all junior officers, or all career personnel on active duty on a given date) who are children of career military personnel. The first class of data we sought was for measures of this type. The premise from which the study proceeds, however, is that past succession is a poor guide to future succession unless it is interpreted in light of the rapidly changing number of juniors. It is essential to interpret past succession in terms of inheritance rates--that is, the proportion of all age-eligible juniors who succeed to a particular military status in a particular time interval. We have searched for direct data on inheritance, as this might be available from surveys containing service participation information for all children of career personnel. An alternative view of the phenomenon is from the perspective of the parent generation, rather than the child's

generation. It would be important to be able to form estimates of the number of future careerists that are produced for each member of a parent cohort of careerists. We have coined the term "occupational bestowal rates" for such measures of career reproductivity since it is not a perspective taken often in the occupational inheritance literature. (Glenn, Alston and Weiner, 1970: 425.)

4.3. Indirect Estimates

We have also attempted to estimate inheritance rates indirectly. This has been done by comparing the ratios of juniors to others in the same age interval in service and in the general population. Both because of the lack of direct data on the number of juniors and because of the importance of estimating the future populations of juniors, we have had to proceed from information on the parent population; that is, age distributions of active duty careerists and retired members of the armed forces. To form estimates of the junior pool from data on the parent population requires data for estimating the parent's reproductivity.

4.4. Empirical Data on Succession

We have collected data on succession rates for various military statuses in a number of periods. Data for estimating recent trends or even point values for recent succession were scant and, where available, were invariably defective for the purposes of the present study.

A major difficulty is the manner in which questions on father's occupation or father's military participation are phrased in questionnaires. Some of the most pertinent studies are those which ask about father's current occupation when the subject was a specific age--15 years-of-age is often chosen and is the age used in the most important source of this type we have available. The modal age for fathers of 15-year-old juniors, however, is about 44 which is above the current modal retirement age for armed forces careerists. Many juniors would answer questions about what work their father was doing when they were 15 by giving the father's second-career civilian occupation. Questions about father's current occupation given to armed forces members are even more defective in this respect from our perspective.

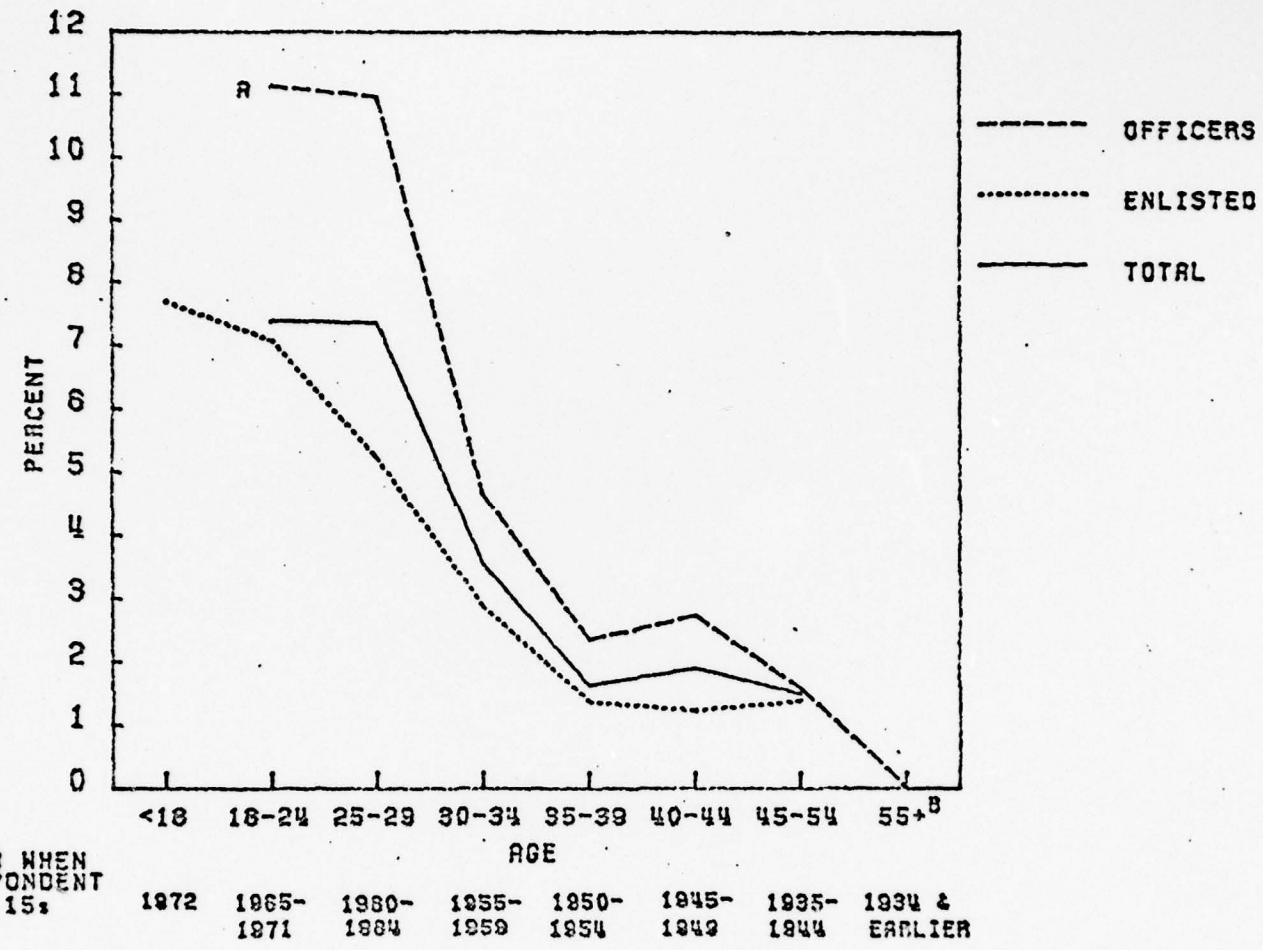
Some surveys ask about father's military participation but, with only a few important exceptions, these either do not ask about length of service or else use upper class-interval values, such as "four or more years" or "eight or more years," that are too low to identify career personnel. In 1970, there were 1,255,000 veterans who had served in both World War II and the Korean War, many of whom completed more than 8 years of service but did not become career members.

For all their defects, the available data on succession are nonetheless instructive. We know that until fairly recently, intergenerational succession was insignificant except for the highest ranks of the officer corps. For example, of the entire May, 1964, retirement cohort from all services, only 2 percent of the officers and 1 percent of the enlisted men had fathers whose major or longest occupation was military (Sharp and Biderman, 1966). But in that same year, an NORC survey (Moskos, 1970) of a sample of all active duty personnel found that 3.4 percent of the officers and 1.9 percent of enlisted personnel had fathers with military as their occupation when the respondent was 15 years old. Succession rates for the Navy in the NORC survey were generally higher than for other services.

The scattered observations we have for subsequent years show the sharply increasing rates of succession expected on the basis of the demographic hypotheses of the study. For example, in a BSSR study of first and second term Navy enlisted men in 1972, 12 percent reported that their fathers had 20 or more years of military service (Feinberg and Dunning, 1973). A particularly dramatic demonstration of the apparent increase in military succession rates is available from our analyses of unpublished data from a 1974 survey of USAF personnel. The accompanying charts show steep inverse relations between percent with fathers in the military when the subject was aged 15 years and the variables age, length of service and rank and grade, except at the upper extremes (e.g., 30-plus years of service). (See Charts 4.1, 4.2, 4.3.) The slopes obviously reflect the growing age pools of juniors, since pronounced effects in the opposite direction for each of these variables would be expected from other data showing strong tendencies for juniors to serve longer and to achieve higher rank.

CHART 4.1

PERCENT MILITARY JUNIORS BY AGE, UNITED STATES AIR FORCE, ACTIVE DUTY SAMPLE, 1974



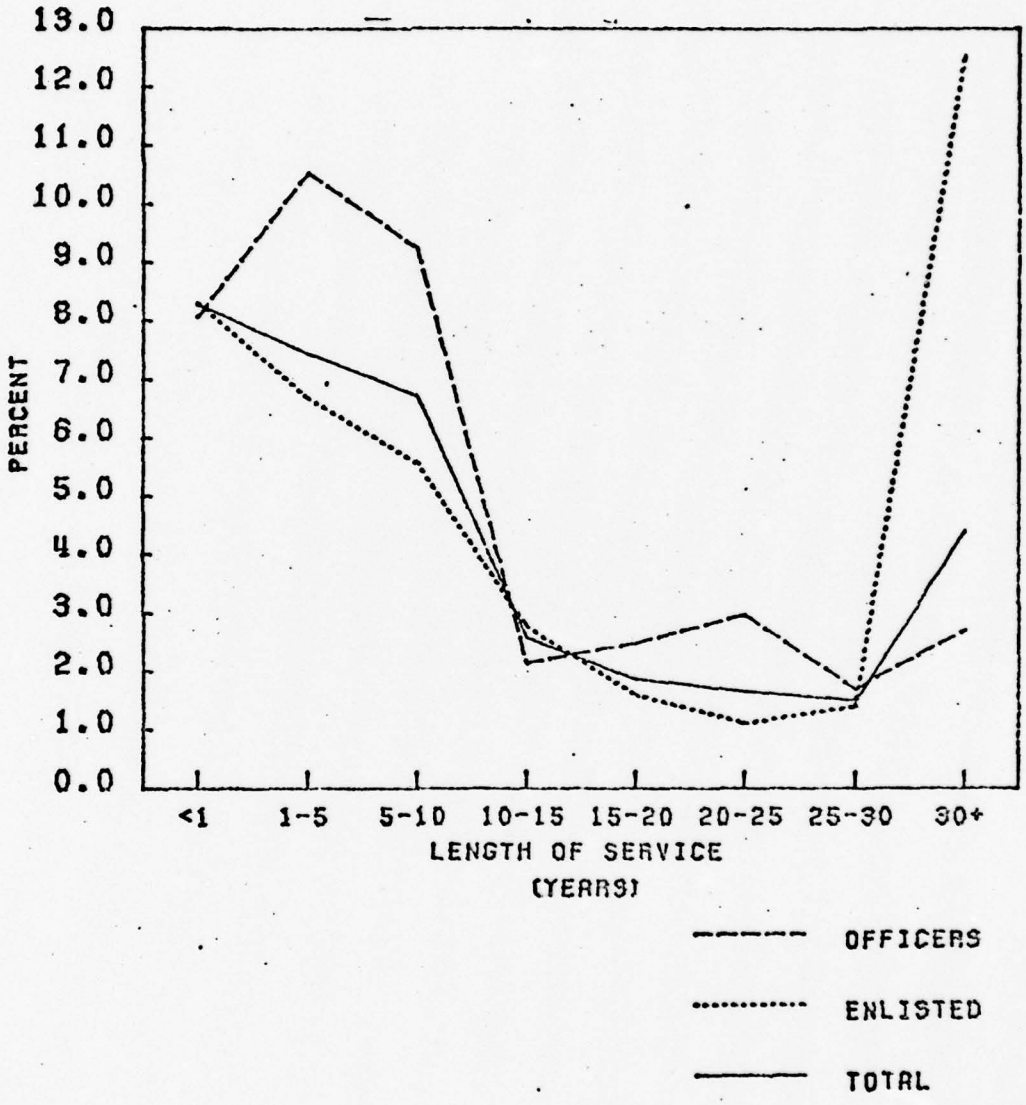
A) NO OFFICERS UNDER THE AGE OF 21
B) DATA AVAILABLE FOR OFFICERS ONLY FOR THIS AGE GROUP

Source: 1974 Air Force Survey

N: Officers-6,569
Enlisted-19,913
Total-26,482

CHART 4.2

PERCENT JUNIORS BY LENGTH OF SERVICE, ACTIVE DUTY AIR FORCE PERSONNEL,
1974

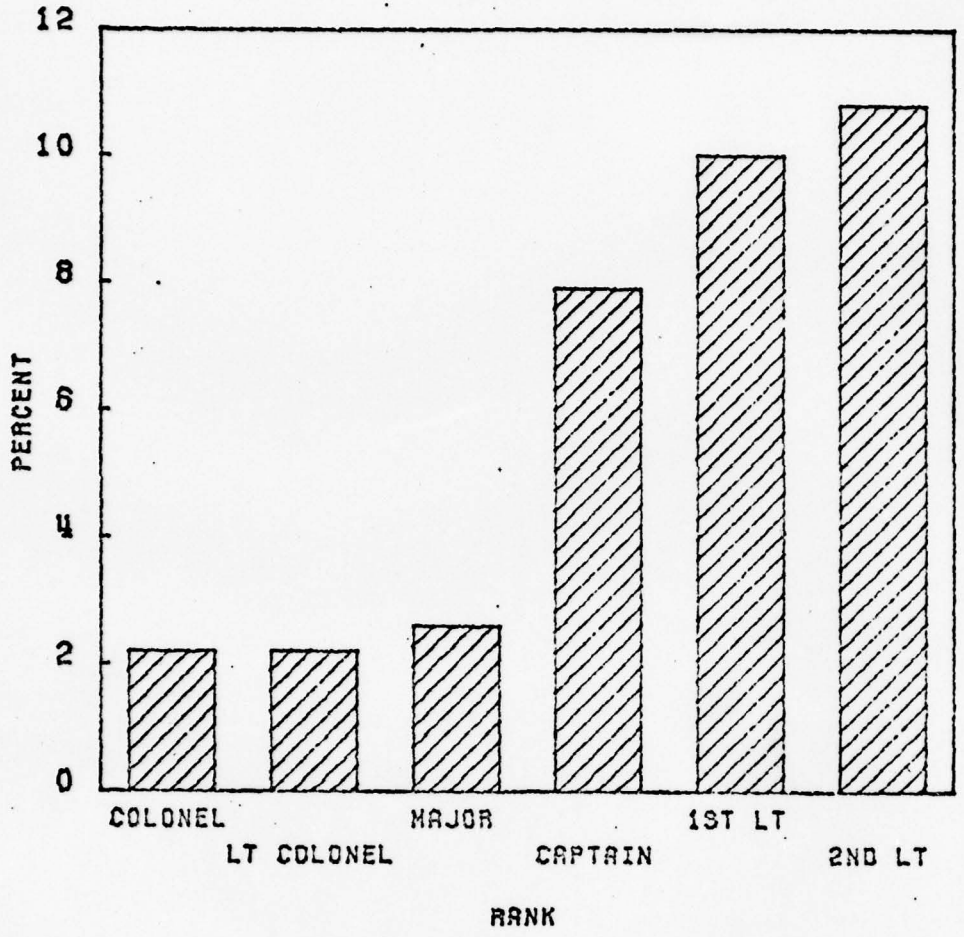


Source: 1974 Air Force Survey

N: Officers-6568
Enlisted-19931
Total-26,499

CHART 4.3

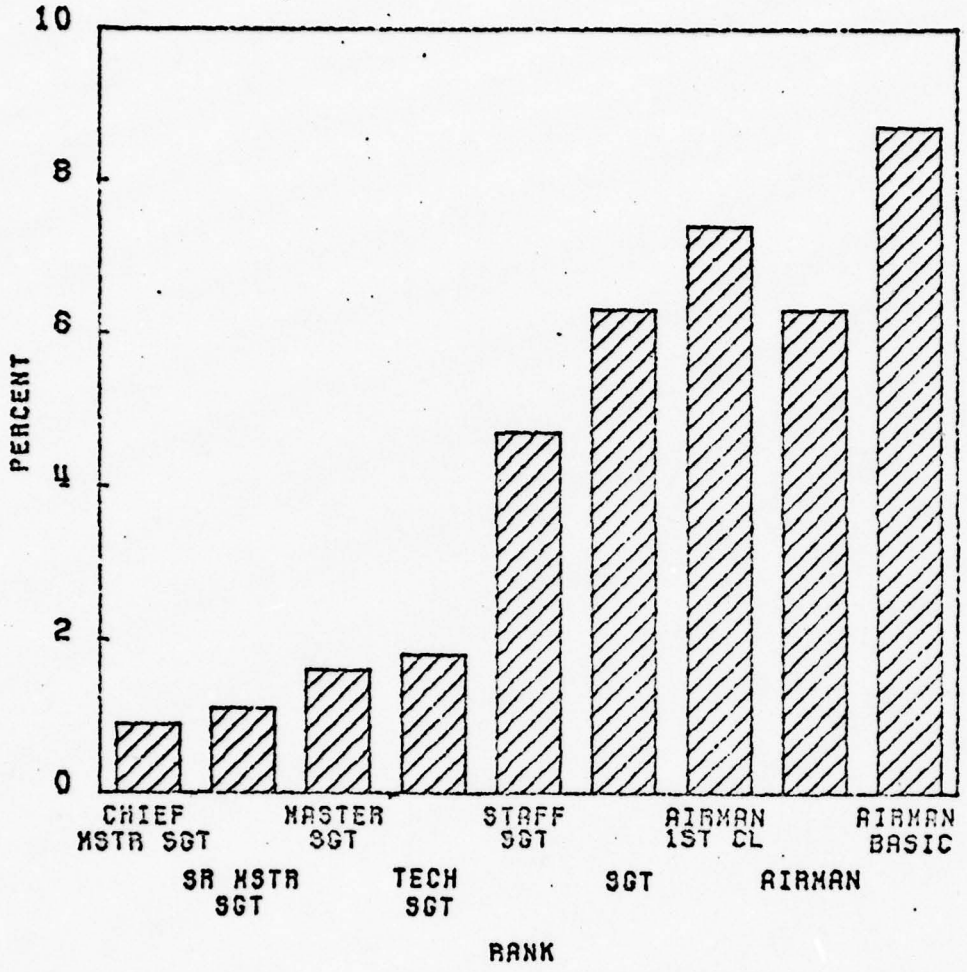
PERCENT JUNIORS BY RANK, FOR ACTIVE DUTY AIR FORCE OFFICERS, 1974



Source: 1974 Air Force Survey N: 6547

CHA... 4.3, continued

PERCENT JUNIORS BY GRADE, FOR ACTIVE DUTY AIR FORCE ENLISTED PERSONS, 1974



Source: 1974 Air Force Survey N: 19579

Other recent data also show high succession rates as compared with those observed in studies of earlier years. Card, et al., 1975, surveyed a sample of college students stratified to represent those in an ROTC program and those not taking ROTC, as well as a sample of Army officers who had been commissioned during the period July 1970 to July 1974. Of the college students enrolled in ROTC, 20.1 percent had fathers who had more than 15 years of military service, as compared with 5.9 percent of those not taking ROTC. Of the Army officers, 17.3 of the reservists and 23.3 percent of the regulars had fathers with over 15 years of service.

4.5. A Bestowal Estimate

4.5.1. 1977 Retiree Survey:--We have not been able to locate any data that afford inheritance estimates directly. The closest approximation to such information was afforded by the 1977 DOD survey of military retirees which included a question on whether any of the children of the respondent was making a career of military service. Unfortunately, the question that could be included in the survey did not accord with our desired specifications and both the question and the response alternatives leave critically important information unknown or ambiguous. Thus, we do not know how many of the retirees have various numbers of children in a career status. A respondent could check that he/she had children in both officer and enlisted career statuses, but this was the only form of plural participation of children that could be identified. We also were able to obtain only a limited number of the special tabulations we desired of these data, and those were received only after the expiration of our contract. Considering only the marginals of the distribution, the military occupation bestowal factor appears quite small--only 10.6 percent of all the male respondents reported that they had children who were pursuing a military career. The significance of bestowal is greater if we take into consideration the fact that most of the children of retirees are too young to be in a career status, particularly children of younger retirees. The modal age of parent of a person entering the armed forces we estimate as about 50, and 40 percent of all retirees in 1977 were younger than 50 (Table 4.1). Further, sufficient evidence of child's career intention to produce a

"yes" response from the retiree respondent may not occur until later ages. If we examine, as in Table 4.2 those in the age span 50-64 who had children did not check "children not old enough," we find about 14 percent with children pursuing a career. We could not estimate a rate for male children, only from the survey data. (The question used is ambiguous as to whether this alternative should be checked only if no children are "old enough" or only some child is not. Presumably, at least some respondents would interpret it in the latter way and the eventual numbers embarking on military careers will be greater than those we have taken from this survey.)

A bestowal estimate from the retiree survey was made by assuming that retirees' children who were too young to manifest career commitment would eventually have the same career participation rates as others, and that those retirees not checking the "Children too young" response had no such children.

It was also necessary to make an assumption regarding the cases in which more than one child pursues a career. For the latter purpose, we had only the empirical observation from Card, et al. (1975) for Army officers--30 percent of them had one or more siblings who were also serving. (The chance of more than one child from the same family serving, if one is serving, is not indicated by the responses in the retiree survey, considering that they reveal only those presumably more unlikely combinations of officer and enlisted persons from the same family. About 3 percent of the parents with any child serving have children serving in both officer and enlisted status.) Assuming that 15 percent of the retirees with any career child have two such children, our estimate from the retiree data is that 100 career men will contribute about 16 career persons for the future force.

From the correlation of career children with retiree ages, we infer that this is an underestimate due to question ambiguity with regard to children's age eligibility. The retiree survey also yields overly conservative future estimates in that the tabulations include Title III reservists and disabled persons with relatively short service. Older enlisted cohorts had lower fertility than more recent ones. In addition, blacks and other minorities, who are growing proportions of

TABLE 4.1

"ARE ANY OF YOUR CHILDREN MAKING A CAREER OF MILITARY SERVICE?"
BY AGE OF RETIREE: 1977 DOD RETIREE SURVEY, MALE RESPONDENTS

Children with Military Careers	Age of Retiree									
	29 or less	30-39	40-49	50-54	55-59	60-64	65-69	70-74	75-98	All Ages
No	29.4	32.2	63.1	68.5	77.3	73.4	72.1	68.9	68.1	67.1
No-- No Children	34.8	19.2	7.6	9.3	8.9	15.3	18.5	22.1	21.9	11.2
No-- Too Young	35.2	47.6	19.3	8.4	2.4	0.5	0.0	0.0	0.0	11.2
Yes-- Enlisted Pers.	0.0	1.1	8.6	8.9	5.4	4.5	4.9	3.6	0.9	6.6
Yes-- As Commissioned Off.	0.5	0.0	1.2	4.3	5.3	6.2	4.5	4.8	9.1	3.5
Yes-- Both Enl. Pers. and Com. Off.	0.0	0.0	0.2	0.6	0.7	0.1	0.1	0.5	0.0	0.4
Total	2.0	3.9	33.8	18.2	21.8	11.4	4.9	2.6	1.2	100.0
N	21,207	41,040	356,424	192,264	230,045	120,209	51,910	27,719	12,868	1,053,687

TABLE 4.2

NUMBER AND PERCENT WITH ANY CHILDREN IN A MILITARY CAREER
BY CHILDREN'S CAREER STATUS AND AGE OF RETIREE
FOR MALE RETIREES AGES 50-64* WHO HAVE AGE-ELIGIBLE CHILDREN, 1977

Children in Military Career	Age							
	50-54		55-59		60-64		All, 50-64	
	No.	%	No.	%	No.	%	No.	%
None	131,740	83.2	177,717	87.1	88,232	87.1	397,689	85.8
Yes, One or more								
Yes-- Commissioned Officer	8,231	5.2	12,186	6.0	7,488	7.4	27,905	6.0
Yes-- Enlisted Person	17,125	10.8	12,516	6.1	5,462	5.4	35,103	7.6
Yes-- Both Enlisted and C.O.	1,164	.7	1,576	.8	96	.1	2,836	.6
Total	158,260	100	203,995	100	101,278	100	463,533	100

*Includes both Non-disability and Disability Retirees

Source: 1977 Military retiree Survey

the parent population, display higher observed bestowal effects than whites.

Despite its limitations, the retired survey's data show clearly that a very large majority of juniors does not follow fathers' footsteps. This does not mean, however, that the impact of intergenerational succession on manpower supply and force composition will be small. The size of the military force of the parent generation was about a third larger than that of the present and projected future. Therefore, with a bestowal rate of about .16, there would be a succession rate in the long term of about .21.

Bestowal rates will be affected markedly by the increased role of women in the military, since children of either sex must now be considered prospective eligibles. Durning (1978: 574) gives a succession rate in 1977 at the Naval Academy for women cadets (36%) that is precisely twice that for men cadets.

If, however, we consider career military women as a parent population from which we estimate a bestowal rate, it is currently trivial, judging from the results of the Retiree Survey. This is because 80 percent of the women retiree respondents have had no children. Policy changes may increase the fertility rates for career women in the future so that they no longer come so close to rates for women in the religious orders, but the policy changes are so recent that they will have had little effect on career succession during this century.

4.6. Estimating Junior Population from Parent Populations

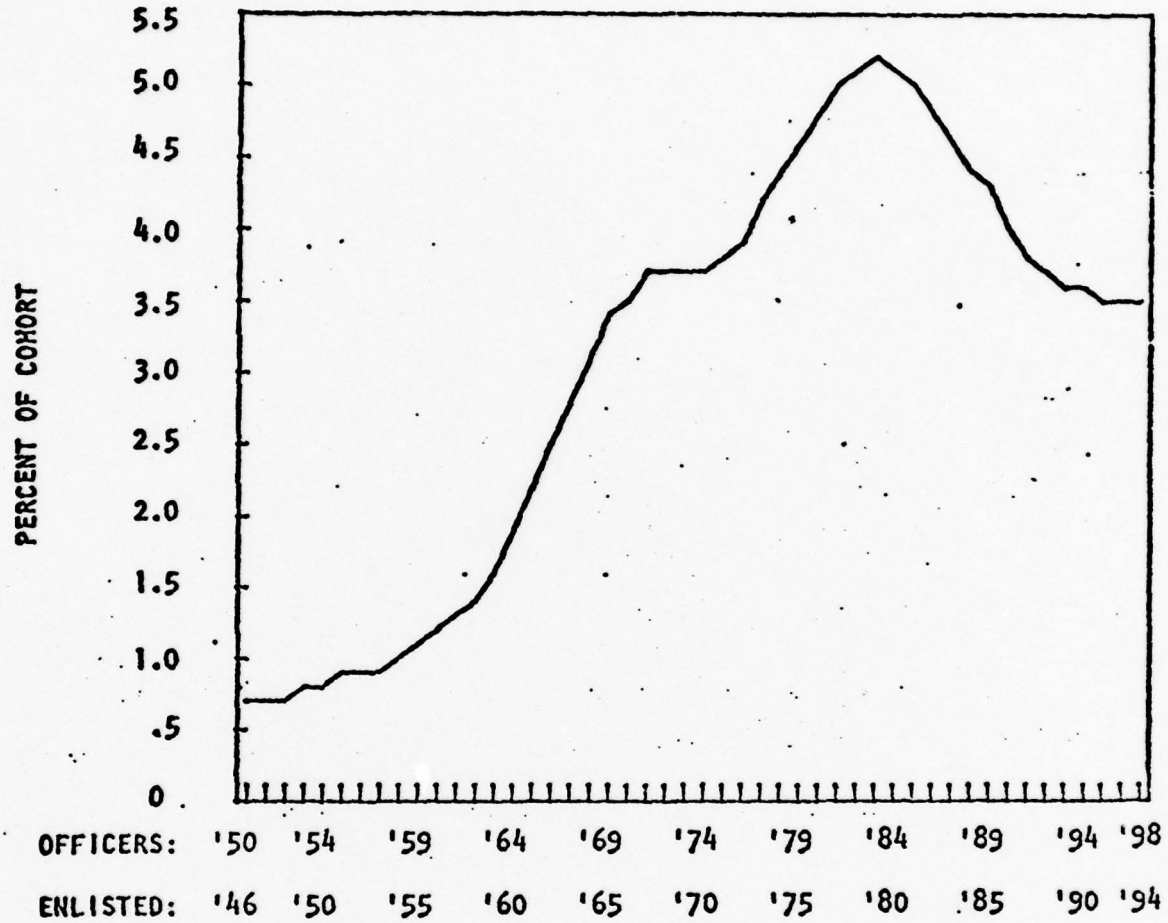
4.6.1. A Half-Century Estimate:--The prospective impact of intergenerational succession is also illuminated by indirect estimates of inheritance based on estimates of the size of the junior pool in relation to observed military participation rates of juniors and their nonjunior age peers. We have scoured extensively for demographic data for use in such estimates. Lacking direct information on the age distribution of juniors--past, present or future--we have had to make our estimates on the assumption that the junior population will vary as a function of the age distribution through time of career parents. An

estimate of juniors as a percent of service entry populations for the remainder of the century was developed. We added together the military active duty and retired populations for each single year of age for ages 30-75, excluding one third of the disability retirees (the approximate percent with brief service) and all Title III retirees. We then computed a moving average of this "military career population" as a percent of the total U.S. male population at each age, using an 8-year interval for the moving average to reflect the span of ages of fathers at birth of child encompassing most births. Appropriately lagged, we believe the resulting distribution is a useful approximation of a time series of juniors as a percent of entry-age-eligible entry cohorts for the period from the end of World War II to the Year 2000. This series is shown in Chart 4.4.

4.6.2. Incidental Findings on Natality:--The estimated series assumes, first of all, that military men will have the same rates and timing of reproduction as all other men in the population. It has universally been assumed that military families have high fertility rates relative to the civilian population--an assumption stated in the proposal for the present study. This erroneous impression arose from published data giving aggregate comparisons of birth rates for military wives and for all women. For example, Army Times Publishing Company (1973) published tables of such comparisons for the years 1966 to 1972 during which the yearly rate was about 170 for military wives ages 15-44 and 116 for all U.S. wives of those ages. The high relative rate for military wives, however, proves due to the concentrations of these women in the more fertile years. We have performed an analysis with Census data that indicates the assumption of high reproduction of military families is incorrect. When the number of children ever born to mothers whose husbands are in the armed forces is compared with that of all U.S. mothers in each of several narrow age intervals, we find the natality of military mothers has been appreciably lower than the national rate. This is shown in Table 4.3, which permits comparisons of military mothers as a percent of all others in a given age class in 1960 and 1970 with the children of military mothers as a percent of all children ever born to mothers of that age class. The table suggests that military natality is lower, and usually occurs later in life, than

CHART 4.4

ESTIMATES OF JUNIORS AS A PERCENT OF THE NATIONAL POPULATION IN ASSUMED MODAL AGE SPAN FOR SERVICE ENTRY AS OFFICERS, 1950-1998, AND AS ENLISTED PERSONS, 1946-1994



Notes: Ratio of juniors to national population for any year of age is estimated by ratio of the military career population to the national population in the age span 26-33 years older than the juniors. "Military career population" is the combined active duty and retired population in 1976. Male distributions only were used. Horizontal scales assume Age 19 as modal age of entry for enlisted persons and Age 23 for officers.

Sources: 1. U.S. Bureau of the Census, Current Population Reports: Population Estimates and Projections. Series P-25, No. 643. Tables 1 & 4.
2. U.S. Department of Defense actuarial tables, Number of Military Personnel on Active Duty September 30, 1976, by Pay, Grade and Age, and Number of Military Personnel Receiving Retired Pay on 30 Sep. 1976, by Age on that Date.

the national norm. The table indicates, however, that military natality is increasing and there is even one age category of the table (Mothers 35-39 in 1970) for which military mothers averaged more births than their age peers. A separate examination we have made by age, race and father's occupation indicates the increase between 1960 to 1970 in the relative natality of wives of servicemen is due largely to the increased representation of blacks in the military. Although we find that wives of black servicemen have natality rates which are closer to rates for white servicemen's wives than to those for all blacks, nonetheless the former still appreciably exceed the white service wives' rates in all age classes. Since we could locate no previously published analyses of the fertility of U.S. military families, the incidental findings will be an important by-product of our study.

4.6.3. Biases of Estimates:--Natality differentials probably result in our Chart 4.4 having an overestimate of junior population ratios of about 3 percent for recent cohorts and about 7 percent for older cohorts. Higher ratios of black and other minority populations in the career force in future years relative to those in the general population may make the future junior percentages much higher than estimated, however. The percent of never-married persons is not sufficiently different currently as between mature career military men and the national norms to warrant adjustment of our crude estimates to take account of these differences.

Our procedure for constructing the estimated junior population series in Chart 4.4 assumes implicitly no civilian-military differences in mortality rates. While we have no data on differential neonatal mortality for children of military personnel, our examination of life tables used by the DOD actuary for military populations shows chances of surviving any given year of life for most of the life span do not differ sufficiently from civilian life tables to affect our estimates substantially.

Our procedure also assumes a closed population. Direct and secondary demographic effects of immigration will make for lower ratios of juniors to others than in our estimates. (To be sure, the immigration includes career personnel of foreign armed forces and their

TABLE 4.3

MOTHERS WITH HUSBANDS IN THE ARMED FORCES,
NUMBER AND AS A PERCENT OF ALL U.S. MOTHERS, AND THEIR CHILDREN EVER BORN,
NUMBER AND AS A PERCENT OF ALL CHILDREN EVER BORN, BY AGE OF MOTHER; 1960 AND 1970

Age of Mother	Mothers with Husband in Armed Forces				Children Ever Born to Mothers with Husband in Armed Forces			
	Number		Percent of all U.S. Mothers in Age Class		Number		Percent of all Children Ever Born to Mothers of Age Class	
	1960	1970	1960	1970	1960	1970	1960	1970
15-19	24,495	18,612	5.04	4.33	31,341	21,538	4.61	3.93
20-24	131,943	111,393	4.95	3.89	232,524	156,023	4.60	3.31
25-29	145,403	129,915	3.69	2.97	351,728	287,122	3.50	2.82
30-34	115,539	128,383	2.50	2.99	319,014	381,178	2.34	2.91
35-39	107,567	90,665	2.23	2.13	306,629	302,269	2.09	2.32
40-44	48,486	44,801	1.16	1.00	126,988	144,087	1.02	.95
45-49	17,944	27,910	.50	.64	43,264	85,746	.41	.62
50 and older	9,570	14,369	.10	.12	21,813	37,303	.07	.10
All ages	600,947	556,048	1.78	1.52	1,433,301	1,415,266	1.46	1.31

Source: U.S. Bureau of the Census. Women by Number of Children Ever Born. 1960. Tables 31 and 32; Women by Number of Children Ever Born. 1970. Tables 46 and 47.

voung children, perhaps exceeding in ratio to all immigrants the ratios of career military to civilian in the native population.)

The most severe problem with our estimates is that we could locate no data whatsoever from which we could make estimates of the ages of military fathers at the birth of their children. From data on mothers (and those not precisely in the desired form), we infer that military fertility generally has occurred later in life than is characteristic of the national population. We do not know exactly how much later, nor how birth timing for military fathers has varied over the years. This affects the lag factor used for our time scales. The average intergenerational interval (mother's age minus child's age) is clearly greater for service wives than others, and we suspect an even greater discrepancy for the father-to-son intervals. The curve we have plotted, therefore, may be displaced a year or two to the left from its proper position in that it assumes a median 29-year lag from father's birth to son's birth. In Chart 4.4, the average of each 8-year interval of the parent population distribution including 4 years below the median 29-year lag point and 3 years above it was plotted.

Given the at least partially offsetting biases affecting our estimates, we find our chart acceptable for making heuristic order-of-magnitude estimates of the changing junior contributions to the age pools from which military recruiting takes place for the second half of the 20th Century.

4.6.4. 1946-1998 Junior Estimates:--Chart 4.4 suggests that the representation of service-age children of career service fathers is at its highest during the late 1970's and early 1980's--about 5 percent of the population--and reaches a maximum about 1979. A gradual increase characterizes the entire previous period with an acceleration of the rate of increase after the 1927 birth cohort of parents, the cohorts that reached service age after World War II. Although there will be a decline from the levels of the late 1970's and early 1980's, where juniors are about 5 percent of the national population, the curve remains at a high plateau of about 3.5 percent for the remainder of the Century.

Another view of the historical demography in the period since World War II is given by Chart 4.5 which shows the growth of the parent generation of careerists from 1948 to 1976. The age interval 38-58 is taken as that including most service fathers of children in the service entry ages, 17-22. The number of active duty and retired persons are counted, including length-of-service retirees and disability retirees with 10 years or more of service. This chart would suggest that during a period when the total U.S. age pool in the 17-22 bracket approximately doubled, the junior population increased by better than a factor of 10. Such vital statistics data as we have also suggest substantial increases in the relative fertility of military wives during the same period.

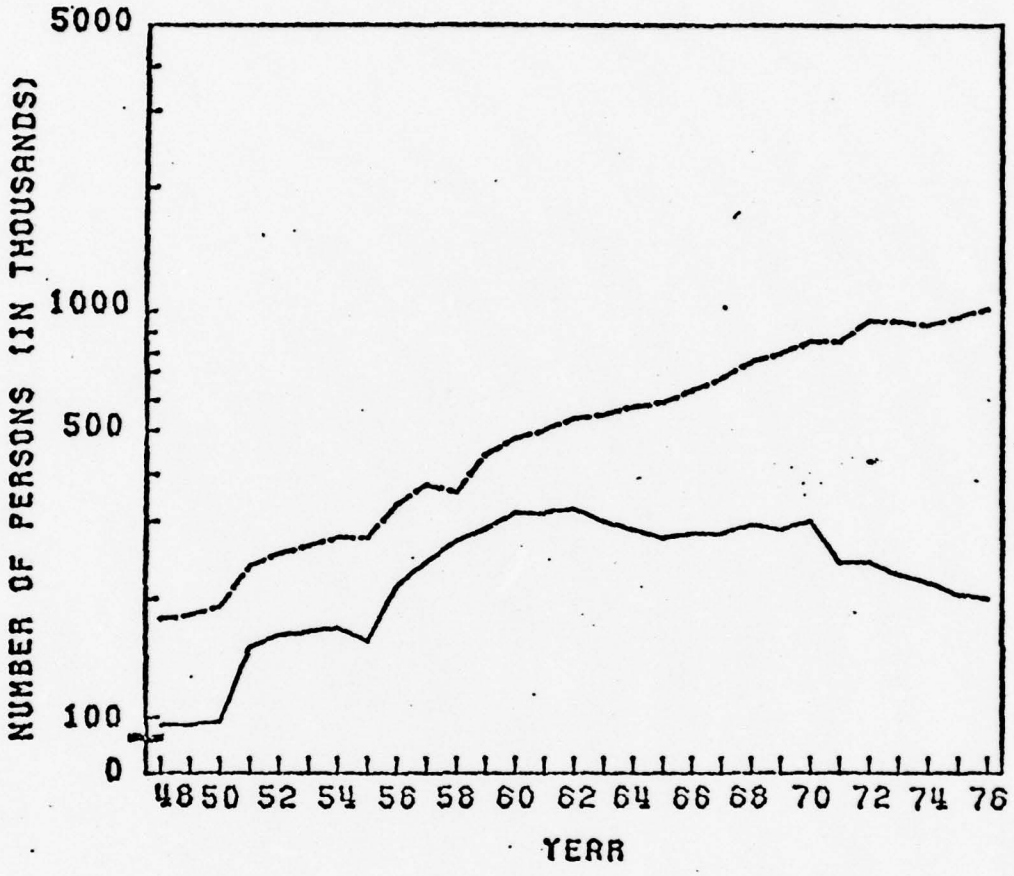
Chart 4.6, showing projected retirements and the growth of the retired population to 2005, presents another view of the steady increments to parent and, hence, junior populations for the future. For comparison, Charts 4.7 and 4.8 are included showing for the entire century the U.S. population 17-22 years of age and the Armed Forces on active duty.

4.6.5. Estimates of Overrepresentation of Juniors:--The estimates of the representation of the junior population in the national population we have thus constructed provide a basis for our interpretation of the observations we have of succession rates for recent years in terms of inheritance rates. Thus, for example, Feinberg and Dunning's (1973) sample of first and second enlistment Navy personnel in 1972 found 12 percent had fathers with 20 years of service. We estimate that about 3.7 percent of the native population of the U.S. in this age range was juniors, suggesting their representation among Navy enlisted at something like three times their representation in the population. For the data from Card, et al. (1975), cited earlier, on Army officers first commissioned between 1970 and 1972, we find juniors overrepresented among reserve officers by a factor of about 4.5 and among regular officers by a factor of 6.2. We estimate juniors are overrepresented among ROTC cadets by about a factor of 4.

For analysis of the succession rates from Air Force 1974 survey, our procedure must be somewhat different since that survey asked for

CHART 4.5

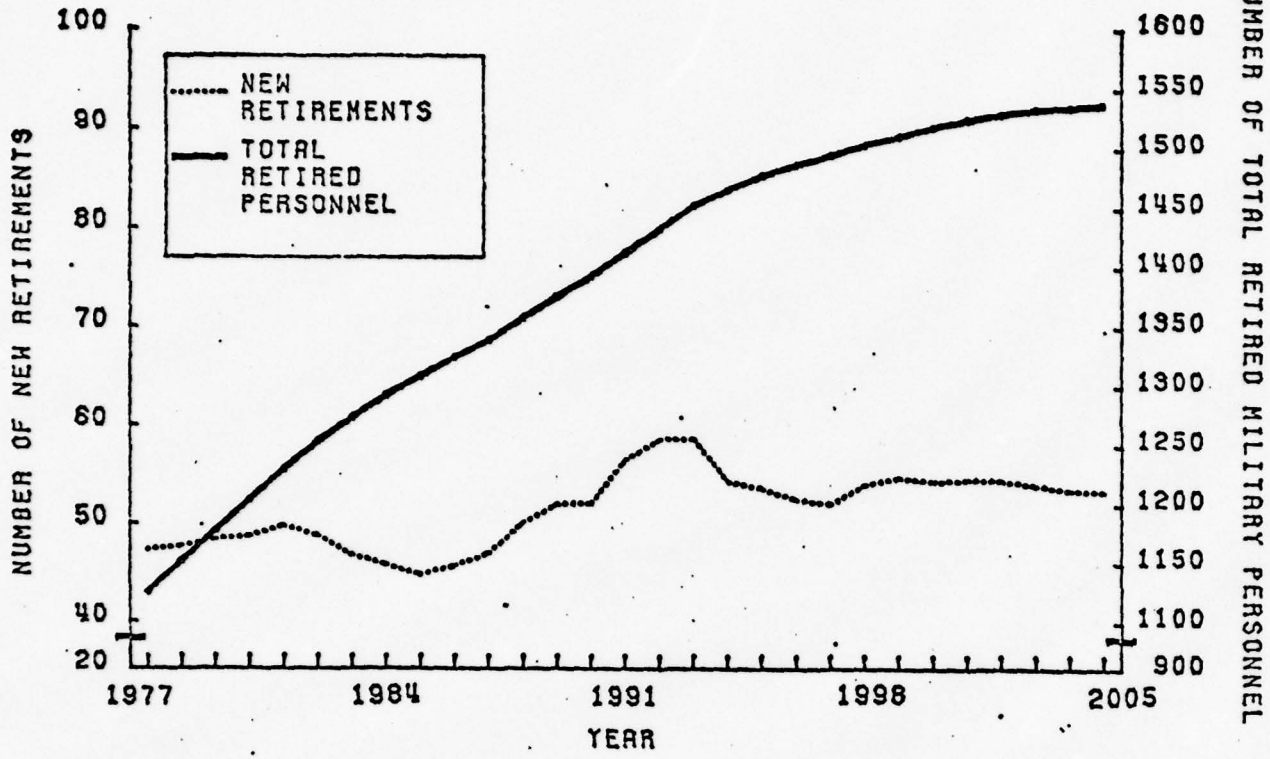
ESTIMATED NUMBER OF ACTIVE DUTY PERSONNEL (AGED 38-58) AND ESTIMATED NUMBER OF ACTIVE DUTY AND CAREER RETIREES (AGED 38-58) FOR 1948 TO 1976 (SEMI-LOGARITHMIC CHART)*



*NONDISABILITY RETIREES RETIRED FOR LENGTH OF SERVICE PLUS DISABILITY RETIREES WITH 10 OR MORE YEARS OF ACTIVE SERVICE. BASED ON ACTIVE DUTY AND RETIREE DATA PROVIDED BY THE ACTUARIAL CONSULTANT, OASD (M & RA) AND THE U.S. DEPARTMENT OF DEFENSE, SELECTED MANPOWER STATISTICS, FOR VARIOUS YEARS. BECAUSE OF GROUPED AGE CATEGORIES FOR ACTIVE DUTY PERSONNEL, LACK OF AGE GRADED DATA FOR ACTIVE DUTY WOMEN AND THE AVAILABILITY OF AGE GRADED DATA FOR ONLY A FEW YEARS, EXTENSIVE INTERPOLATIONS WERE REQUIRED TO ARRIVE AT THESE ESTIMATES.

CHART 4.6

PROJECTED NUMBER OF NEW RETIREMENTS AND NUMBER OF PERSONS RECEIVING MILITARY RETIREMENT PAY FOR 1977 TO 2005*



*NUMBERS IN THOUSANDS

NOTES:

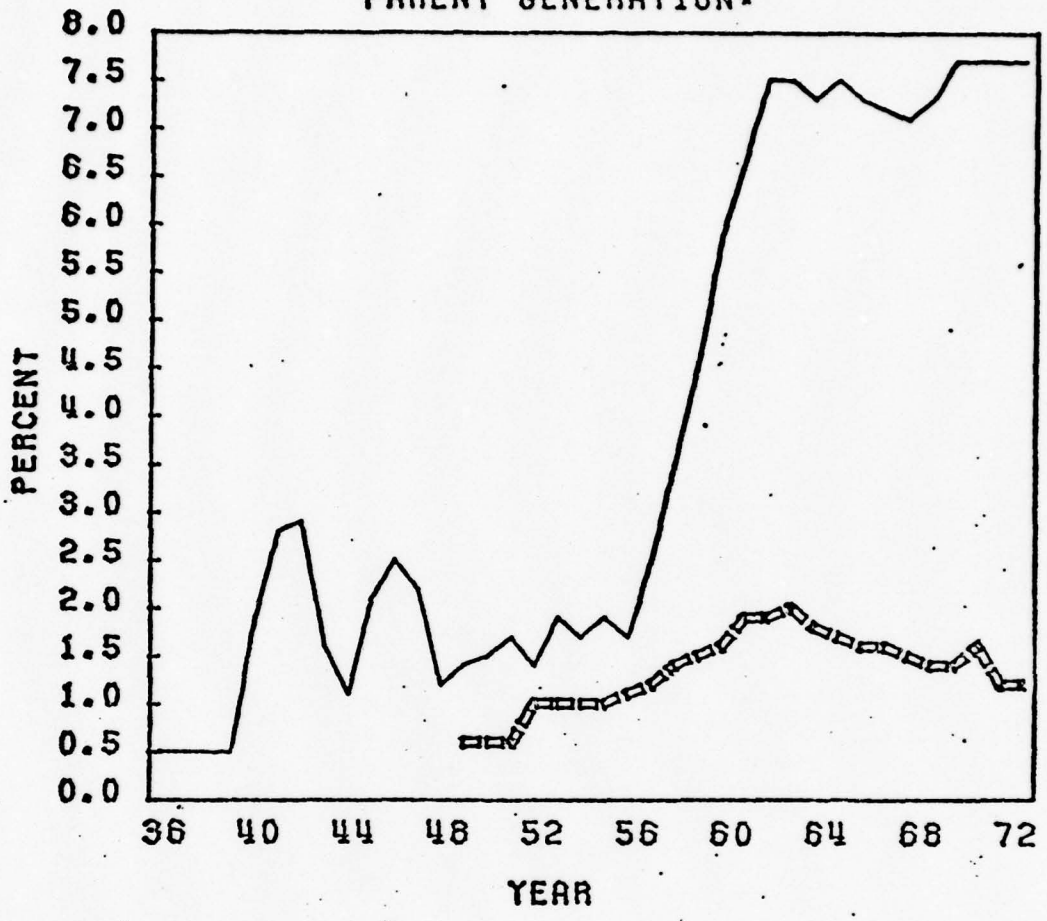
1) NEW RETIREMENTS INCLUDE VR WAIVERS AND DUAL COMPENSATION.

2) ASSUMPTIONS:
ANNUAL INCREASE IN ACTIVE FORCE 1.01 FROM 2,070,417 TO 2,154,640 FOR 5 YEARS, THEN REMAINING CONSTANT FOR NEXT 25 YEARS.

Source: Actuarial Tables, Office of the Assistant Secretary of Defense (M&RA)

CHART 4.7

RELATION OF SUCCESSION IN THE AIR FORCE TO VARIATION IN RELATIVE SIZE OF MILITARY PARENT GENERATION*

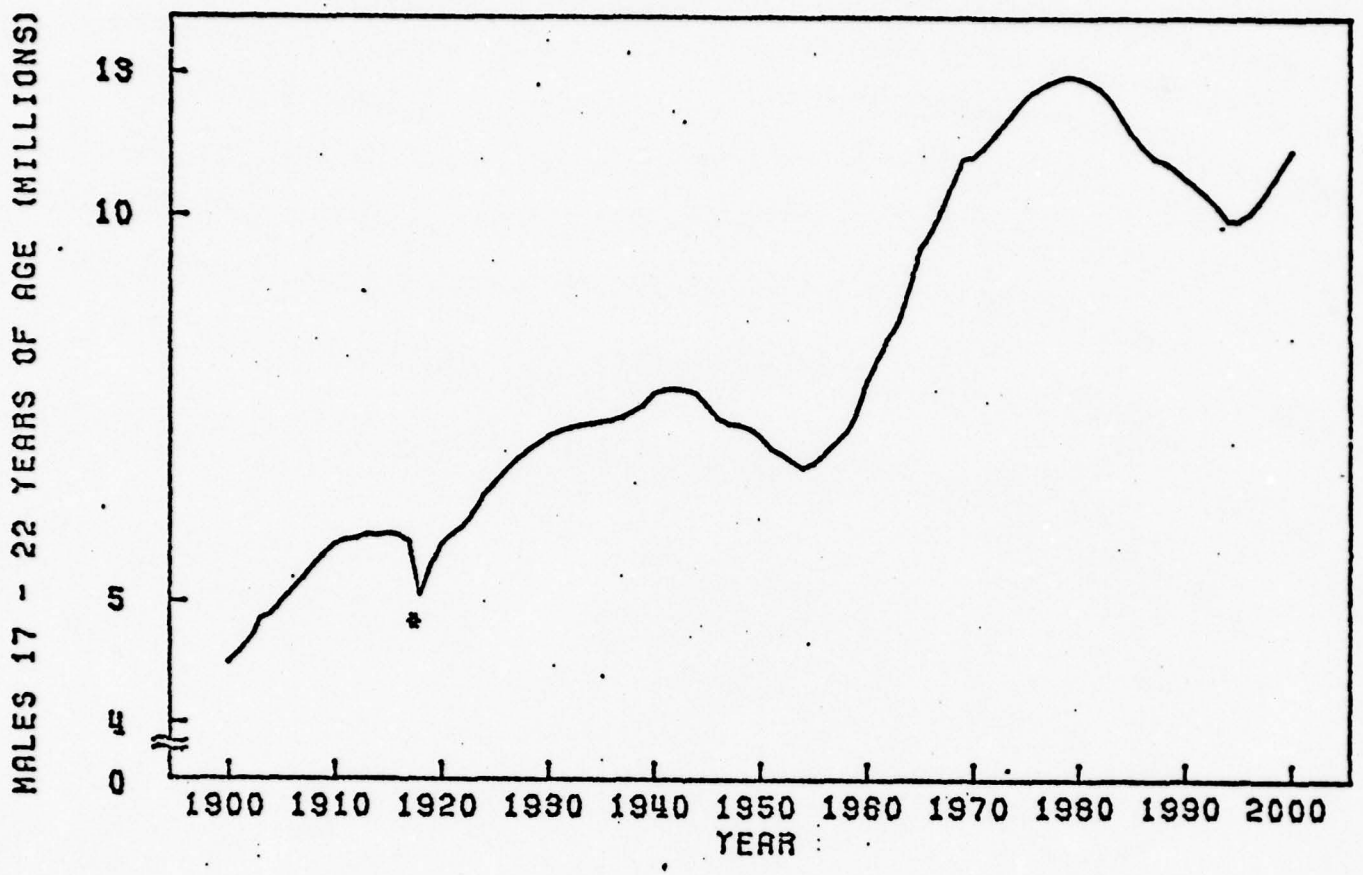


*PERCENT JUNIORS OF AIR FORCE AGE COHORTS, 1974, BY YEAR THE COHORT WAS AGE 15, AND ACTIVE DUTY MALE MILITARY PERSONNEL, AGED 40-49, AS A PERCENT OF COMPARABLE U.S. POPULATION, 1948-1972. YEARLY ESTIMATES OF JUNIORS BASED ON 3 YEAR MOVING AVERAGES.

SOURCES: 1974 AIR FORCE SURVEY; SELECTED MANPOWER STATISTICS, APRIL 15, 1973. TABLE P25.1; U.S. BUREAU OF THE CENSUS, CURRENT POPULATION REPORTS. SERIES P-25. 1948-1959: NO. 311
1960-1972: NO. 519, TABLE 1

CHART 4.8

ESTIMATES OF THE MALE POPULATION OF THE UNITED STATES,
AGES 17 - 22, 1900 - 2000 (SEMI-LOGARITHMIC CHART)



SOURCES: U.S. BUREAU OF THE CENSUS, CURRENT POPULATION REPORTS,
SERIES P-25.
1900-1959: NO. 311;
1960-1973: NO. 519, TABLE 1;
1974-1976: NO. 643, TABLE 1;
1977-2000: NO. 704, TABLE 8, SERIES 2.
U.S. DEPARTMENT OF DEFENSE, SELECTED MANPOWER STATISTICS,
1963 AND 1977, P25.1.

* 1917, 1919, & 1918 ARE UNDERESTIMATED. DATA EXCLUDE ARMED FORCES OVERSEAS FOR ALL YRS PRECEDING 1940. NUMBER OVERSEAS WAS SMALL EXCEPTING 1917-1919. ESTIMATES OF ALL AGES OVERSEAS FOR 3 SUBSTANTIAL YEARS: 1917: 146000; 1918: 1342000; 1919: 550000

father's occupation when the respondent was age 15--"what work was he doing...?" It provided separate response alternatives for deceased and retired, disabled or unemployed, so that presumably only fathers on active duty were considered "military." We therefore have compared in Chart 4.7 Air Force juniors as a percent of all Air Force personnel in 1974 in the same birth cohort with personnel on active duty in the age range 44-49 in the year each junior cohort was age 15, as a percent of the national population in that age interval. We find that our imputed parent generation at no point exceeded 2 percent of the national population in the equivalent age range, while junior representation in the Air Force averages considerably over 7 percent for the cohorts which were age 15 in 1960 or later. Juniors are represented among younger officer age cohorts at about twice the percentage as among airmen. The overrepresentation is considerably lower for most of the cohorts of the 1950's, among which the juniors range progressively from about 1 to 5 percent of the Air Force and the parent generation from 0.6 to 1.6 of the national population. The parent population data are not included in the Chart for the sons age 15 in the World War II period. The high junior percentages for that period presumably reflect both the high numbers of older men on active duty during the war and the higher succession rates among sons who continued on active duty until or beyond the modal retirement ages.

It is notable that the representation of juniors stays high among the very young airmen, even though the active-duty parent generation for these cohorts is progressively smaller as a percent of the population. This suggests the possibility that juniors' rates of service participation remain high in the face of declining armed forces accessions in the post-draft environment. The Charts (4.2 and 4.3) of juniors as a percent of Air Force personnel, by rank and by length of service, presented earlier, disclose even more clearly than our analyses by age cohorts, the importance of juniors as a recruiting source for the Air Force with the introduction of the all-volunteer force.

4.6.5. Biases in Data from Air Force Item:--A caveat should be stressed with regard to these data from the Air Force survey, as well as from other sources which use father's occupation at a specific age of

the respondent. Responses to the Air Force survey question, which made respondent's age 15 the reference year for father's active duty, yield an unrepresentative selection of juniors. The question identifies only children born to atypically young fathers and children whose fathers remained on active duty beyond the modal retirement age span, with these two factors--age of father at birth of child and at retirement having interactive selective effect. The resulting biases for the sample of juniors yielded by the item include overrepresentation of children low in the birth order, with longer periods of socialization in a military milieu, and with fathers of higher military rank achievement and career commitment, and fathers in enlisted statuses. We suspect that most of these selective effects yield a set of juniors with higher than average military career inclination.

Depending upon how data from such a survey item are used, the result can be either to exaggerate or minimize the importance of intergenerational inheritance. Where the question is used with a national population for an estimate of the prevalence of juniors, or if the data are from a service sample and are used for estimating succession rates for the sampled population, a severe underestimate will result, since the question clearly fails to identify all juniors, and we strongly suspect it identifies only a minority of them. If such data are used for estimating inheritance rates for juniors within the sampled population, however, we suspect an overestimate occurs.

4.7. Officer and Enlisted Statuses

The paramount concern regarding the sufficiency of available manpower currently is with meeting requirements for enlisted personnel. Although children of enlisted personnel now predominate in the junior population and will be in even greater proportion in future years, it has been suggested that a high number of the children of enlisted careerists may be destined for officer careers. This expectation is consistent with theory of military service as a mode of vertical mobility.

We have examined such data on intergenerational status correspondence as we have available. Tables 4.4 and 4.5 present data from the Retiree Survey on the percentages of officer and enlisted

retirees, respectively, with children who are pursuing careers as officers or as enlisted persons. The data are presented by service of the parent. Relatively small percentages of the enlisted retirees' children are serving as officers as compared with officer children serving in enlisted statuses. (See Table 4.5.) This in part is due simply to the reflection, in their far greater total numbers, of God's love for enlisted persons. In the DOD retired survey, there is confusion in the tabulations we have available between the effects of age and rank of parents on status of child. There was a slightly greater rate of current bestowal for retirees who had had some commissioned service than those who had never served as officers, but there was no difference if only those retirees are considered whose children were old enough to be in a career status. Children of older parents (70 or over in 1977) were predominantly in officer status and children of younger retirees (54 or younger) predominantly enlisted personnel, while there were approximately equal numbers of children in officer and enlisted statuses for retirees in the middle span of years. The range of the ratio of officers to enlisted among children pursuing careers in the military was from about 1/9 for children of retirees under 50 to about 9/1 for children of retirees over 75. Within our available data, it is difficult to assess the degree to which this variation reflects the fact that the younger enlisted children are those in early stages of their career during which even many of those destined to be officers still have enlisted rank, as opposed to the progressively higher ratios of officers at each successive age interval of the retired population.

The case of the Navy and Marine Corps officers is particularly noteworthy for the low percentages with children in officer statuses, with this, in turn, contributing to total bestowal rates lower than for officers of the other two services. By contrast, higher percentages of Navy and Marine enlisted retirees have children in a career status than do Army and Air Force enlisted retirees.

As the succession rates for the Army and Air Force we discussed earlier reveal, the importance of juniors for the officer corps is proportionately greater than that for the enlisted ranks, and this is

TABLE 4.4

ESTIMATED NUMBER AND PERCENTAGES OF RETIREES*
WITH OF-AGE CHILDREN BY WHETHER CHILDREN ARE IN A MILITARY CAREER,
RETIREES' STATUS AND SERVICE

Children in Military Career	Service of Retiree															
	Navy				Army				Air Force				Marines			
	Off.		Enl.		Off.		Enl.		Off.		Enl.		Off.		Enl.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No	56,478	88.2	135,024	85.5	105,701	85.9	140,953	85.9	73,662	85	174,808	87.7	11,174	87.7	28,796	86.6
Yes, Commissioned Officer	3,902	6.1	3,646	2.3	11,381	9.2	5,190	3.2	8,298	9.6	4,274	2.1	985	7.7	689	2.1
Yes, Enlisted Person	3,360	5.2	18,462	11.7	5,463	4.4	16,921	10.3	4,389	5.1	19,616	9.8	522	4.1	3,771	11.3
Yes, Both	289	.5	794	.5	552	.4	1054	.6	287	.3	686	.3	54	.4	0	0
Total	64,029	100	157,926	100	123,097	100	164,118	100	86,636	100	199,384	100	12,735	100	33,256	100

*Includes both Non-disability and Disability Retirees.

TABLE 4.5

STATUS (OFFICER OR ENLISTED) OF CHILDREN
BY SERVICE AND STATUS OF PARENT
FOR RETIREES WITH ONE OR MORE CHILDREN IN CAREER SERVICE
(Percents)

Child's Status	Service and Status of Retiree							
	Navy		Army		Air Force		Marines	
	Officers	Enlisted	Officers	Enlisted	Officers	Enlisted	Officers	Enlisted
Officer*	53.5	18.7	66.5	25.8	64.7	19.6	64.3	15.4
Enlisted*	46.5	81.3	33.5	75.2	35.3	80.4	35.7	84.6
Total	100	100	100	100	100	100	100	100
N	7,840	23,696	17,948	24,219	13,261	25,262	1,615	4,460
*Those retirees with children in both categories were counted in each category:	289	794	552	1,054	287	686	54	0

true despite the fact that about two-thirds of the children of retirees in the armed forces are pursuing careers as enlisted personnel.

5. MAJOR CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.1. Summary of Major Conclusions

5.1.1. Model for Estimating Changing Importance of Juniors in the Manpower Pool:--For predicting the importance of "juniors" (children of career military professionals) as a source of future military manpower, a complete model must include demographic and social-psychological variables affecting occupational outcomes. The present study has focused on the demographic variables: the number of juniors present in the national population over time, the age composition of the junior population, and historical rates of military participation of juniors, all as affected by changes in the sizes of the career force and the national population over intergenerational time intervals and as relative to the juniors' age peers in the general population.

5.1.2. Data Availability for Hypothesis Testing:--Data are generally unavailable for accurate tests of the hypotheses of the present study, including its central hypotheses that (1) pronounced effects of intergenerational career inheritance would be manifest in the Armed Forces in the 1970's--20 years after the beginnings of a large, permanent U.S. military establishment, (2) these effects would continue to be significant in the forseeable future, (3) that they would be accentuated by declines in overall force levels.

5.1.3. Historical Patterns:--Until recently, juniors have never been numerically important in military force composition of the U.S., except for the elite, usually academy-recruited element of the officer corps. Among elites, intergenerational succession has varied through time as a function of historical changes in the size of the armed forces.

5.1.4. Recent Succession Trends:--Although trends in intergenerational succession rates cannot be accurately established from existing data, information available from recent surveys is consistent with the central study hypotheses. Such data reveal clearly that juniors were an insignificant proportion of all active duty personnel in the 1950's (even among the career force) but subsequently have been increasingly heavily represented. In the most recent surveys available,

covering persons who entered service between 1970 and 1974, the representation of juniors was substantial. Illustrative observations of succession for the later period (percent junior) were 12 percent among sampled groups of first and second term Navy enlisted men, >8 percent of recent Air Force enlisted recruits, 17 percent of a sample of recently commissioned Army reserve officers and 23 percent of recently commissioned Army regular officers; and >11 percent of recently commissioned Air Force officers. From data from an Air Force survey (the only source of such data), it was evident that, except at the most senior levels; the percent junior was lower at each successively higher level of rank, age and length of service.

5.1.5. Trends in Relative Size of the Junior Population:--For no period was it possible to establish accurately the size or age composition of the junior population, either directly from data on national population samples containing a suitable question on parents' occupations or indirectly from cumulative data on family composition or reproduction rates of parent generations of the career force. Crude estimates and projections of the representation of juniors in cohorts reaching age for service entry were constructed for the second half of this Century by assuming that this representation would be in proportion to the representation of the parent generation career force members in national population cohorts. Thus estimated, junior representation in the entry age population will be at a peak at about 1980, with the peak coming precisely at the beginning of the decline of the national pool of youths coming of service age. The supply of juniors in the entry ages, however, will not fall below about 4 percent of entry age cohorts during the remainder of this Century.

5.1.5. Inheritance Rates:--No recent data were available for making direct estimates of military occupational inheritance rates--that is, for determining the proportion of all children of career military personnel that makes a career of military service. Data from a recent survey of retired personnel, however, suggests the rate is fairly modest--about 14 percent of all retirees who have children old enough reported that any of their children were making a career of the military. From data of this retired survey, we estimate that for every

100 career parents, there will be about 15 children who pursue careers. Since the future force is expected to be only about two-thirds the size of the force of the preceding generation, this would imply about 21 percent of future careerists will be juniors.

5.1.7. Partial Independence of Succession Rates from Inheritance Rates:--Current rates of military occupational inheritance in the U.S. appear to be relatively low, in comparison with those of other times and nations. Succession rates are nonetheless currently extremely consequential and juniors will remain a numerically important source of military manpower supply for the rest of the Century. Because the masking effects of demographic change are so great, it is impossible to determine accurately recent differential retention rates for juniors. The senior ranks of both officer and enlisted corps, however, clearly have very high proportions of juniors, but this is the consequence of enlistment and retention processes of the past.

5.1.8. Importance of Juniors as a Source of Enlisted Manpower:--Despite the tendency to associate the terms "junior" or "brat" with children of officers, the large majority of juniors are children of enlisted persons. Furthermore, a large majority (about two-thirds) of juniors who are making a career of military service currently is in enlisted, rather than in officer statuses. This is because relatively few children of career enlisted persons serve as officers, in comparison with the proportion of children of career officers who serve as enlisted persons. Higher percentages of Navy and Marine corps enlisted retirees have children who are pursuing military careers than do officer retirees of these services. The reverse is true for Air Force retirees, however, while about equal percentages of Army enlisted and officer retirees have children who are in a career status. The more recent the retirement cohort of the parent generation, the greater the ratio of enlisted to officers among their children who are making a career of military service.

5.1.9. Incidental Demographic Findings:--The marriage rates of military personnel and the fertility of military wives are important for succession. The best available data indicate that wives of career military personnel have reproduced less and later than their age peers

in the general population. More recent natality for career military wives, however, has been relatively greater than in the past, due in part to the increasing minority representation. Although rates for black service wives is greater than that for whites, the rates for the former are far lower than for blacks in the general population. Very few career personnel remain unmarried. The net reproduction of the entire military career population is assumed to be not very divergent from the national norm, although the data do not permit proceeding beyond rough judgments of magnitude and trends.

5.2. Recommended Future Data Collection and Analysis

5.2.1. 1978 DOD Survey:--Fortunately, the defects of available data are about to be considerably remedied by questions asked in the 1978 Department of Defense Survey of Enlisted Personnel and Officers about the service experience of members of the respondent's immediate family. (See Exhibit 5.1.) This survey will afford data on the service experience (in four broad years-of-service categories) of both parents and current members' children and demographic information important for their analysis. Intensive analyses of the data of this survey for their bearing on intergenerational transmission is recommended as a first step in pursuing issues raised in our exploratory study. The prospective availability of these data discouraged intensive investment in inferior sources available for the present study.

While affording great gains in information over that available to this exploratory review of the problem, the design of the 1978 DOD survey will fail to remedy some critical gaps in the information necessary for analyses of the data with adequately specified models of occupational inheritance. It omits items addressed to various of the military demographic problems that beset our study and that relate as well to other important problems of the armed forces involving prediction of future dependent populations and their characteristics. Among the missing items of information that would be important for analyses of inheritance are dates of birth for parents and for family members with armed forces experience, dates of service for the latter, and information on children of current members who are no longer in a dependent status. The survey also yields specific information on

EXHIBIT 5-1

THE 1978 DEPARTMENT OF DEFENSE SURVEY QUESTION
REGARDING THE MILITARY EXPERIENCE OF FAMILY
MEMBERS OF ACTIVE DUTY PERSONNEL

IV. MILITARY EXPERIENCE OF FAMILY MEMBERS

38. How many members of your immediate family have ever served on active duty in the military? Please count your Father (or male guardian), your Mother (or female guardian), any of your Children and your Brothers or Sisters. Do not count other relatives.

○ None ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 or more

| ← * IF NONE, GO TO Q40 *

ANSWER QUESTION 39 ONLY IF MEMBERS OF YOUR IMMEDIATE FAMILY HAVE SERVED IN THE MILITARY.

39. Please record the following information about EACH member of your immediate family who has served in the military.

A. What is the person's relationship to you?
B. In what service does (or did) the person serve? (Mark all that apply)
C. How many total years of service does (or did) the person have?

There is space for up to four family members. If there are more, record information about only four in this order: Parents – Children – Brothers and Sisters.

1.	2.	3.	4.
A. Relationship to you: ○ Father/male guardian ○ Mother/female guardian ○ Child ○ Brother ○ Sister	A. Relationship to you: ○ Father/male guardian ○ Mother/female guardian ○ Child ○ Brother ○ Sister	A. Relationship to you: ○ Father/male guardian ○ Mother/female guardian ○ Child ○ Brother ○ Sister	A. Relationship to you: ○ Father/male guardian ○ Mother/female guardian ○ Child ○ Brother ○ Sister
B. Service ○ Army ○ Navy ○ Marine Corps ○ Air Force	B. Service ○ Army ○ Navy ○ Marine Corps ○ Air Force	B. Service ○ Army ○ Navy ○ Marine Corps ○ Air Force	B. Service ○ Army ○ Navy ○ Marine Corps ○ Air Force
C. Years of Service ○ Less than 4 years ○ 4–9 years ○ 10–19 years ○ 20 or more years	C. Years of Service ○ Less than 4 years ○ 4–9 years ○ 10–19 years ○ 20 or more years	C. Years of Service ○ Less than 4 years ○ 4–9 years ○ 10–19 years ○ 20 or more years	C. Years of Service ○ Less than 4 years ○ 4–9 years ○ 10–19 years ○ 20 or more years

service experience for only four members of the respondent's family. Given the lack of data in that survey on age of parents, analyses of the DOD data will require tenuous aggregate imputations of age distributions of one generation from data on another, if useful inheritance and bestowal estimates are to be derived.

5.2.2. Need for Retiree and Survivor Surveys:--For a thorough understanding of the significance of intergenerational inheritance, furthermore, information from an active duty sample would have to be supplemented by data about children of those previous career members of the force none of whose children are currently on active duty. An accurate estimate of inheritance rates and bestowal factors can be derived only from data for the entire population, or from samples of all surviving members of the relevant cohorts of parents and children, including those children who never served. We think the importance of the issue merits collecting such data by conducting special surveys of retirees and survivor annuitants for the purpose. Ideally, these surveys would be followed-up by direct collection of data from children identified by retiree and survivor respondents. (A method is available whereby the original respondents could provide names of children for follow-up without compromise of the confidentiality of other information the respondent provides.)

5.2.3. Meeting Need for Demographic Data:--Data from surveys and analyses, such as those recommended above, cannot be analyzed adequately without recourse to external data on demographic developments affecting inheritance and succession. We strongly recommend the pooling of the interests of the military departments in the problem of our present concern with other interests in military demography toward the end of remedying the many inadequacies of demographic data we have encountered.

The present study has also been handicapped by the extreme paucity of armed forces statistics on variables essential for both explanatory and predictive models of intergenerational succession. For this purpose and many other important applications, we would recommend strongly systematic collection and analysis of vital statistics data for armed forces personnel. Age, birthplace and occupation of fathers were once universal items of service personnel records. It would be useful were

such information again collected and processed, along with data on military experience of family members. All the pertinent items figure in personnel data forms for security clearances, but to our knowledge such information has never been organized for statistical purposes.

We recomend a project be undertaken to evaluate the adequacy of demographic and actuarial statistics on the armed forces, with a view toward the most efficient remedying of their most serious inadequacies and toward their systematization.

The interests of the armed forces also have not been represented well in the construction of questionnaires and analytic categories for demographic and labor force Censuses and surveys. By collecting data on military service in terms of VA-eligibility periods rather than a complete chronological scale, the Census loses much of the value of the data for purposes such as those of the present study (see Figure A-1, Appendix II). By omitting from the original samples some or all persons serving in the armed forces, and their children, the major federally sponsored longitudinal surveys not only fail to serve special armed forces interests in these subpopulations, but they also constitute seriously biased samples of the civilian population and labor force when panels are surveyed in subsequent years. While brief periods of service during the young adult years remains the manner in which armed forces experience figures most commonly in the lives of Americans, statistical attention is too exclusively oriented to this form of service participation to the neglect of the career force as a large and enduring component of our occupational structure. Even in surveys of samples of the general population sponsored by the military departments, it is rare for questions about military participation to be well designed to reflect career experience of self or parents properly. A subsidiary recommendation of our study is the importance of documenting for the statistical, research and policy communities the serious effects on various data systems of the neglect of military personnel and their families and for devising ways of remedying this neglect.

Some of the missing vital statistics for military career population could be constructed from special tabulations of past Census data and

from prospective data of the 1980 Census, and from National Center for Health Statistics data.

We recommend more vigorous representation of the interests of the Defense Department in manpower, population and vital statistics of the U.S. It is notable that Defense statistics are not one of the 18 subject matter areas that have been entered into planning consideration by the Office of Federal Statistical Policy and Standards (1978) in its A Framework for Planning U.S. Federal Statistics and no DOD agency figures at all in its listing or discussion of the statistical agencies of the government.

5.2.4. Qualitative Data on Career Choices of Juniors:--Separate reports we intend to make on data developed in the present exploratory study will include discussions of a variety of other kinds of data bearing on the problem, including studies showing the importance of parental influence, generally, on occupational choice and on inclinations toward military service.

The 1978 DOD Survey constitutes an extremely valuable source of data on characteristics of juniors as they contribute to the qualitative make-up of the force. The DOD Survey questionnaire included a variety of items that can be used to illuminate the career decisions of juniors that may be identified among respondents to that survey. Analyses of the data of that survey will also serve to illuminate characteristics of the service experience, and reactions to that experience, of parents who have children old enough for service participation and do not participate, as contrasted with those parents whose children do enter service. The special ad hoc surveys we recommend of retirees and survivors could complement the data from the DOD survey.

Secondary analyses of the DOD survey should also be supplemented by more intensive interview studies of juniors to identify factors contributing to the apparently modest rates of inheritance we have observed. Understanding factors that disincline those young people who presumably know military service best from making it their career should be a source of pertinent insights on the recruiting and retention problems of the armed forces in a highly competitive environment. Juniors are unlike the average young person whose direct contacts with

persons who saw military service are mostly with those who entered during periods of the draft and with these and other persons who mostly served in the least favored ranks and circumstances. It is such persons, after all, who constitute the large mass of the persons who have ever served. Juniors, on the other hand, have extensive contacts with persons who have enjoyed the more favored situations of rank, duty and perquisites that come later in the career. Research studies that will gain information on these aspects of service life as it is mirrored in the image formed of the service by juniors should prove highly illuminating. Such cross-sectional surveys, however, cannot provide many of the kinds of information that would be available were it possible to identify juniors in official records. This would make possible longitudinal analyses of career progression of this sub-population, along with analyses of qualifications and performance, including scores on qualifying tests.

5.3. Implications for Navy Policy

The implications of our study for the Navy vary depending upon the normative perspective taken. From the standpoint of meeting desired quotas for enlistment and retention, our observations hold forth some encouragement. The pool of juniors will remain a consequential source of new recruits for most of the remainder of the Century, although there will be some decline from the current peak period. The juniors whom we conclude have comprised far larger proportions of the most recent entry cohorts than those of any past period, should contribute significantly to greater re-enlistment rates in the immediate future, as will be the case with successively entering cohorts for the remainder of the Century.

In interpreting evaluations of all-volunteer force personnel procurement efforts, however, it is important to make allowances for the contribution of the growing junior pool to recent experience. Our crude analysis, using parent distributions to infer junior prevalence in service entry-age cohorts, suggests that this rate of increase will not be sustained during the period in the immediate offing. This will be a period when Navy recruiting will also face for the first time a decrease each year rather than an increase in the total U.S. population in the

18-24-year age range. We anticipate a brief period--about 5 years--during which juniors will be a declining percentage of progressively smaller entry cohorts.

Despite their significant contribution to current manpower requirements, juniors apparently have rates of service participation which might be regarded as surprisingly low. Inquiry might well be addressed to the reasons for rejection of military service as a career option by the large majority of all young persons who are reared in military families.

From an alternative value perspective, however, that juniors appear to choose military careers at rates no more than from 3 to 6 times those of their peers may appear more than sufficient. Even with military occupational inheritance of such orders of magnitude, a considerable proportion of the career force will be inbred, a matter disturbing to advocates of a military establishment broadly representative of the population.

To the degree that there is interest in racial representativeness, it is also pertinent that minority ethnic members appear to have both higher reproduction rates and higher inheritance rates than other members of the career force. If these differential rates indeed obtain, a particular minority ratio in the force at a particular point in time implies a higher rate a generation later, other things being equal. Because of the recency of the desegregation measures which opened career positions to minorities, the effects of minority intergenerational succession on career force composition is still in its first stages.

The foregoing considerations need not be viewed as presenting a dilemma for policy choices so as either to encourage or discourage military occupational inheritance. Policy choices grounded in either aim might well be of questionable legitimacy. It is important to recognize, however, that manpower policy choices addressed to other objectives may have unforeseen consequences if there is neglect of the significance for their outcomes of the changing prevalence of juniors in the population and their relatively high rates of service participation.

APPENDIX I

COMPARATIVE SUCCESSION RATES

This appendix presents a Table of Intergenerational Succession Rates: the Percent of Military Personnel with Military Fathers for Various Nations, Times and Military Statuses of Parent and Offspring. Entries are grouped by the status level of military population studied, and, within these levels, alphabetically by country. The table lists the percent of the military population having fathers identified as military by the criterion indicated in the table.

As noted in the text of the present report, the succession rates given vary with the restrictiveness of the criterion and the procedure used to identify the father's military status. Information on the criteria for fathers' military status and the identification procedure is sometimes ambiguous in the sources. It is not always clear whether the father is necessarily a career military person in the sense of the present study or merely had the status during a war period or held some other non-professional status involving only temporary periods of field duty, such as was the case with some members of the hereditary military nobility of European countries. Where we could identify clearly that the criterion generally did not approach our definition of a career parent, however, we excluded the source. Some values are given for highly restrictive criteria, for example, general officers whose fathers were also general officers or West Pointers who were sons of West Pointers. A less restrictive succession value is sometimes also given for the same population, e.g., "military father."

Intergenerational Succession Rates:
Percent of Military Personnel with Military Fathers
for Various Nations and Times
and Military Statuses of Parent and Offspring

1. Elites
2. Entire Officer Corps
3. Junior Officers
4. Cadets & Candidates
5. Enlisted

1. ELITES

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
a. Australia	1956	Navy Senior officers	1	Officers	Encel, 1968: 143
"	"	Army Senior officers	9	Officers	"
"	"	Air Force Senior Officers	<1	Officers	"
b. Germany	1911	"Military Leadership"	17	General officers	Janowitz, 1960: 96
"	"	"	27	Other Officers	"
"	"	"	44	Officers	"

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
b. Germany (continued)	1925	"Military Leadership"	27	General officers	Janowitz, 1960: 96
"	"	"	29	Other Officers	"
"	"	"	52	Officers	"
"	1933	"	22	General officers	"
"	"	"	29	Other Officers	"
"	"	"	51	Officers	"
"	1939	"	15	General officers	"
"	"	"	15	Other Officers	"
"	"	"	30	Officers	"
"	1941	"	14	General officers	"
"	"	"	16	Other Officers	"
"	"	"	30	Officers	"
"	1944	"	15	General officers	"
"	"	"	14	Other Officers	"
"	"	"	29	Officers	"
c. Great Britain	1870	Lt. Gen, Generals, Field Marshall	26	Military professionals	Otley, 1968: 90
"	1897	"	46	"	"
"	1913	"	47	"	"

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
c. Great Britain (continued)	1926	Lt. Gen.,General, Field Marshall	26	Military professionals	Otley, 1968: 90
"	1939	"	40	"	"
"	1956	"	44	"	"
"	c. 1900	In Who's Who:		"Occupation:"	Perrin, 1903: 467
"	"	Army	46	Army	"
"	"	"	8	Navy	"
"	"		54	Military	"
"	"	Navy	16	Army	"
"	"	"	28	Navy	"
"	"		44	Military	"
"	All British history	In Dictionary of National Biography:		"Occupation"	"
"	"	Army	34	Army	"
"	"	"	1	Navy	"
"	"		35	Military	"
"	"	Navy	6	Army	"
"	"	"	25	Navy	"
"	"		31	Military	"
d. Great Britain and U.S.A.	18-19th Century	Naval Leaders	25	Military	Davenport, 1919: 10-19

1. Elites (concluded)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
e. Greece	1968	Army Majors & above	18	Military	Kourvetaris and Dobratz, 1973: 36
f. U.S.A.	1910	"Military leadership"	7	Officers	Janowtiz, 1960: 96
"	1920	"	10	"	"
"	1935	"	23	"	"
"	1950	"	11	"	"
"	"	"Navy leadership"	11	"Professional Soldier"	"
"	"	"Air Force leadership"	5	"	"
"	1959	"Military executives"	10	"Uniformed Service" at son's career entry	Warner, 1963: 323

2. Officer Corps

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
a. Canada	1966	Army Officers	11	Military Occupation at subject's age 15	Coulombe, 1971: 185
"	"	Navy Officers	7	"	"
"	"	Air Force Officers	2	"	"
b. France	1971	Officers aged 35 and over:		Military:	Martin, 1977: 23
"	"	Army	21	Officer	"
"	"	Navy	20	"	"
"	"	Air Force	13	"	"
"					
"	"	Navy	7	"	"
"	"	Air Force	10	"	"
"	"	Army	37	Military	"
"	"	Navy	27	"	"
"	"	Air Force	23	"	"
"	1971	Officers aged 35 and under:		"	"
"	"	Army	19	Officer	"
"	"	Navy	20	"	"
"	"	Air Force	15	"	"
"	"	Army	17	Non-Officer	"

2. Officer Corps (Continued)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
b. France (continued)	1971	Officers aged 35 and under		Military:	Martin, 1977: 23
"	"	Navy	4	Non-Officers	"
"	"	Air Force	13	"	"
"	"	Army	36	Military	"
"	"	Navy	24	"	"
"	"	Air Force	28	"	"
"	"	Saint-Cyr Graduates	26	Officers	Martin, 1977: 24
"	"	"	15	Non-Officers	"
"	"		41	Military	"
"	"	Officer School for NCO's, Graduates	16	Officers	"
"	"	"	19	Non-Officers	"
"	"		35	Military	"
"	"	Reserve Officers	14	Officers	"
"	"	"	10	Non-Officers	"
"	"	"	24	Military	"

2. Officer Corps (Continued)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
b. France (Continued)	1971	Technician Officers	11	Officers	Martin, 1977:24
"	"	"	25	Non-Officers	"
"	"	"	36	Military	"
"	"	Reserve Officers on active duty	9	Officers	"
"	"	"	3	Non-Officers	"
"	"	"	12	Military	"
c. Greece	1968	Officer Corps	11	"Military"	Kourvetaris and Dobratz, 1973
d. Spain	1964-1968	Army	80	Officers	Martin, 1977:32
"	"	Navy	66	"	"
"	"	Air Force	56	"	"
e. U.S.A.	1962	Members of Retired Officers Association	3.2	"Military career"	Doerr, 1964: 13
"	1964	Retired in May, 1964		Major or longest held occupation	Sharp & Biderman, 1966
"	"	Officers	2	Military	"
"	"	Enlisted	2	"	"

2. Officer Corps (Concluded)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
e. U.S.A. (continued)	1964	Officers:		Military occupation at subject's age 15	Moskos, 1970: 195
"	"	Army	5	"	"
"	"	Navy	4	"	"
"	"	Air Force	2	"	"
"	"	Marine Corps	3	"	"
"	"	Enlisted:		"	"
"	"	Army	2	"	"
"	"	Navy	2	"	"
"	"	Air Force	2	"	"
"	"	Marine Corps	2	"	"
f. West Germany	1960-1961	Officers	12	"Military"	Kourvetaris and Dobratz, 1973: 236
3. Junior Officers					
a. U.S.A.	1973	Regular Army	23	15 years military experience	Card, 1975: 56
"	"	Active Duty Reserve Army	17	"	"

4. Cadets and Candidates

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
a. Australia	1911-1961	RMC Cadets	10	"Armed Services"	Encel, 1968: 144
"	1911-1960	Army Military School	11	Officers	Encel, 1968: 143-44
"	1960	"	8	"	"
b. Belgium	1960	Military Academy	20	"	Martin, 1979: 32
c. France	1945-1958	Saint-Cyr Students	29	Officers	Martin, 1977:27
"	"	Naval School Students	31	"	"
"	1960	All Military Academies	30	"	"
"	1967-1973	Saint-Cyr Students	28	"	"
"	1973	Naval School Students	23	"	"
"	1969	Air Force Academy Students	14	"	Martin, 1977: 28
"	1970	"	14	"	"
"	1971	"	21	"	"
"	1972	"	32	"	"
"	1973	"	23	"	"
"	1974	"	13	"	"

4. Cadets and Candidates (continued)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
c. France (continued)	1969	Air Force Academy Students	9	NCO's	"
"	1970	"	11	"	"
"	1971	"	9	"	"
"	1972	"	2	"	"
"	1973	"	6	"	"
"	1974	"	8	"	"
d. Great Britain	1961-1970	Successful candidates for regular commission	59-69	Commissioned Officer	Garnier, 1973: 180
"	"	Successful short-commission candidates	61-71	"	"
"	1970	Applicants selected for officer training	72	"Armed Forces	"
"	"	"	52	"Officer"	"
e. Ireland	1963	Student Officers	11	Officers	Jackson, 1968: 121
f. Netherlands	1948-1951	"	22	"	Martin, 1977: 32
g. Norway	1930-1939	"	20	"	"
"	1950-1960	"	7	"	"
h. Sweden	1925/27	The Army College	27	Officer	Franden, 1967
"	1939/43	"	16	"	"
"	1943/46	The Army College	16	"	"

4. Cadets and Candidates (concluded)

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
h. Sweden (continued)	1956/67	Military Colleges	11	Officer	Franden, 1967
"	1958/59/60	"	7	"	"
"	1960/61/62	"	8	"	"
i. U.S.A.	1977	Male Naval Acad. 1st Year	18	"Military family	Durning, 1978: 574
	"	Female Naval Acad. 1st Year	36	"	"
"	1962	Military Acad. 2nd Year	8	West Point Officer	Lovell, 1964: 148
"	"	"	12	Non-West Point Off.	"
"	"	"	2	Enlisted Man	"
"	"	"	22	All Military	"
"	1945-1960	Military Acad. Entering Class	16 (minimum 1948)	"Professional Military"	Lovell, 1964: 135
"	"	"	25 (maximum 1949)	"	"
"	"	"	22 (median)	"	"
"	196?	Air Force Acad. Class of 1966	24	Career military	Doerr, 1964
"	"	West Point Class of 1960	25	Officers	Janowitz, 1960
j. West Germany	1960-1961	Off. Candidates	11	"Military"	Kourvataris and Dobretz, 1973: 236
"	1973-1975	Officer Candidates	8	"Soldier"	Lippert, 1977
"	1973	Enrollees in officer school	9	"Soldier	"
"	1974	1st Entering Class of Armed Forces Univ.	8	"	"
"	1975	2nd Entering Class of Armed Forces Univ.	7	"	"

5. Enlisted

Country	At Time	Military Population	Percent with Military Fathers	Criterion for Fathers	Source
a. Canada	1966	Army enlisted	5.3	"Military occ. when subject was 15 years old"	Coulombe, 1971: 185
"	"	Air Force enlisted	6.4	"	"
"	"	Navy enlisted	3.4	"	"
b. France	1970	Army NCO's			Martin, 1977: 23
"	"	16 yrs. service	13	"	"
"	"	11-15 yrs. service	19	"	"
"	"	6-10 yrs. service	16	"	"
"	"	1-5 yrs. service	15	"	"
"	"	Navy NCO's		"	"
"	"	16 yrs. service	13	"	"
"	"	11-15 yrs. service	19	"	"
"	"	6-10 yrs. service	13	"	"
"	"	1-5 yrs. service	11	"	"
"	"	Air Force NCO's		"	"
"	"	16 yrs. service	9	"	"
"	"	11-15 yrs. service	17	"	"
"	"	6-10 yrs. service	16	"	"
"	"	1-5 yrs. service	12	"	"
"	1963	Army enlistees	13	"Military"	Martin, 1977: 20
"	1967-1968	"	8	"	"
"	1970	"	8	"	"
"	1972	"	8	"	"
"	1975	"	6	"	"
"	"	Navy enlistees	8	"	"

APPENDIX II

SEARCH AND APPRAISAL OF EXISTING DATA

Critical to the purposes of the present study was the location of data sets permitting the cross-identification of military experience of parents and children.

Ideally, the data for our type of study would come from Census or sample surveys of the entire population of the U.S., so that relative rates of service participation for all members of a particular cohort of one generation could be associated with whether or not their parents or their children held a military status. Career military persons are such a small percentage of the population that they form a statistically useful subset in only extremely large data sets on the general population.

Highly useful, albeit less than ideal, are data on armed forces populations permitting identification of the military status of parents or children. For our models, age and periods of military participation were important to have in the data sets for members of both generations.

Because little data were found that even remotely approached what would be desired, surrogate means of estimating the intergenerational transmission were sought. For these purposes, we needed various long-term demographic series on military populations, particularly career members, such as distributions of age, sex, periods of service, age at retirement, mortality and natality for members of the active duty and retired populations. Data on corresponding demographic items for the national population were also relevant.

Although we have been successful in providing the bases for some crude estimates of the current and prospective significance of intergenerational succession, the data necessary to do so with any degree of accuracy or rigor are not now available.

The deficiencies of data that preclude answering the questions posed by this study reflect what we regard as the deplorably underdeveloped general status of demographic and actuarial data on the armed forces and the armed forces participation of the population of the United States. On the one hand, there has been the neglect of demography

and actuarial science within the staff support statistical activities of the Department of Defense and in its research and development programs. On the other hand, there has been a neglect by demographers, statisticians and social scientists of armed forces participation as a significant factor affecting demographic, economic and social change in American society.

DOD Sources

The reasons for incompleteness of records at the Department of Defense soon became apparent in a search for data sources. The Defense Department actuary in the Office of the Assistant Secretary of Defense (Manpower Reserve Affairs and Logistics), who had assisted us in previous demographically-oriented studies, had retired. After he left, many of his records were discarded. Older data on the demographic experience for active duty, retired and dependent populations we had hoped to use were no longer available. The new actuary informed us that he was faced with a staggering workload and was too understaffed to be able to supply us with any special compilations. He sent us the following:

Average active duty strength, 1900-1976

Average years of service for pay purposes, 1970

Actual and projected numbers of military personnel on active duty with twenty years or more of service, 1949-1986

Actual and projected years of service at retirement, 1966-2040

Number of retired personnel, 1900-1977

Yearly retirements from active duty, 1955-1970 (in complete series)

Average age of retirees, 1966

Nondisability retirements from active duty, 1966

Disability retirements from active duty, 1966

Projected number of new retirements, 1977-2005

Other contacts with Department of Defense personnel who were familiar with the Department's statistical activities tended to confirm the impression that data that could fulfill our needs were not regarded

as important enough to keep. At the Naval Facilities Engineering Command we were told that detailed dependent data had been dropped from the files. At the Naval Recruiting Command, we were told that the Armed Forces Application for Enlistment (Form 1966) had formerly included an item of father's occupation. But the Naval Recruiting Command did not compile data on this item or maintain records of it. At the Customer Services Branch of the Bureau of Naval Personnel, we were informed that this item was not included on the current "Armed Forces Application for Enlistment." Data from this item were not compiled anywhere in that office and could probably only be found in individual service records. The Branch provided its "Green Book" containing data on numbers of active duty personnel and accessions. It did not include any usable data on dependents. At the Navy Statistics Branch, we were told that, with a few exceptions, historical data could not be obtained from tapes. It was only on flat paper, which was usually destroyed after a few years because it was regarded as no longer needed, or to comply with record disposal regulations. This advice was confirmed by the Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics), where we were told that the kind of data we needed could only be found in surveys conducted by the services. This office did, however, refer us to the Defense Manpower Data Center, which had recently acquired the results of the 1977 Retiree Survey. After a long delay, a set of tabulations of data from that survey was made available. Its major limitations are discussed in the text of this report.

Contacts with the other services were established, leading to correspondence with the USAF Personnel Center. This office supplied the results of the 1974 survey of officers and enlisted persons, one of the two most pertinent sources of data we obtained.

The 1977 Military Retiree Study was jointly sponsored by the Office of the Assistant Secretary of Defense for Health Affairs. According to the Department of Defense, this survey was constructed for the purpose of obtaining information regarding demographic characteristics of the military retiree population, their employment experiences since retirement, residential mobility, medical care requirements and utilization of commissaries and exchanges. It also yields information

regarding the inheritance of occupation from the point of view of the parents, such that preliminary estimates of bestowal rates among retirees might be computed. A question was included asking if any of the respondents' children were "making a career of military service," without specifying what was meant by "career." The wording of the question unfortunately did not allow retirees to indicate how many of the children were in the armed forces. Nor were the ages or total number of the retirees' offspring available; the survey asked this only about dependents, and those children in service would be among those no longer in a dependent status.

Of 12,356 mailed questionnaires that were delivered to a stratified random sample of retirees from the DOD Military Retiree File, 6,930 completed questionnaires were returned. The response rate was 56 percent.

Unfortunately, only a limited number of tables from this survey could be provided.[5]

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[5]The raw responses were weighted for tabulations to correct for the various sampling ratios used in the stratified sampling plan and differential nonresponse rates, so that the marginal frequencies reflect the major service components of the military retiree population as of June 1976. According to the Department of Defense, the weight for each stratum of the sample is the ratio of the number of cases in the population for the stratum to the number of usable responses obtained in the sample of the stratum. These stratum were the four services, grade status and disability status.

In order to assess the possibility of bias resulting from differences between survey respondents and the population of retirees, the Department of Defense calculated percentages of respondents and total retiree population for the year of retirement and years of service completed. On the whole there was reasonably good comparability between the survey respondents and the total population on these two variables. The only major divergence between the respondents and retiree population was for the year of retirement for those in the Navy Non-disabled Enlisted classification. The degree of fit between respondents and the retiree population for other variables was not assessed. Experience with other surveys suggests that the respondents are likely to have a higher socioeconomic status than the retiree population. They are likely to be residentially more stable than the retiree population. Their participation may also indicate greater satisfaction with their military experience than is true of the retiree population as a whole.

Contact with the Office of the Assistant Secretary of Defense (Comptroller) proved fruitful. It supplied us with aggregated numbers of military dependents in a series starting in 1954 (Series P25.3). Unfortunately, these data could not be disaggregated by age or father's military status.

The only age-graded data on dependents which we were able to locate in the Department of Defense were an incomplete series of reports to the Comptroller of grouped age distributions of dependents at 150 overseas locations. Begun in 1953, this series of reports was discontinued in 1975.

Other Government Services

Searches through published Census data were also largely unproductive of material on military juniors. The most important sources were data on children ever born to wives by husband's occupation for the 1960 and 1970 Decennial Census Samples, five percent samples and from a special fertility survey in 1977. Although the Census Bureau has long had an office which specializes in the armed forces component of the population, its concerns have been largely those of working out procedures for the enumeration of military populations rather than with analytic orientations toward the significance of demographic developments for the armed forces or the significance of past, present and future military participation for general demographic developments. An examination of Decennial Census of Population and Housing schedules and those of special Census surveys reflects the scant influence of concerns with these topics in their planning. This becomes apparent when one attempts to apply Census data to the concerns of the present study with the family composition of present and past members of the armed forces, as discussed elsewhere in this report. Service history is available only on an item that has as response alternatives legislated categories of veterans' benefits eligibility. These categories are awkward and incomplete for the purpose of establishing service history within the life careers of Americans, as shown in Figure A-1.

FIGURE A-1

Years of Service Missed by 1970 Census Item on Military Service

1970 Census Item

26. If This is a Man-

a. Has he ever served in the Army, Navy, or other Armed Forces of the United States?

[ ] Yes
[ ] No

b. Was it during - (Fill the circle for each period of service)

Vietnam Conflict (Since Aug 1964). . . .[ ]
Korean War (June 1950 to Jan 1955) . . .[ ]
World War II (Sept 1940 to July 1947). .[ ]
World War I (April 1917 to Nov 1918) . .[ ]
Any other time . . . . . .[ ]

Specific dates not included since November 1918:

1. December 1918 to August 1940
2. August 1947 to May 1950
3. February 1955 to July 1964

Total years excluded: 34

Establishing a table of years of service by age for the male population of the nation, we believe, would be formidable task. We know of no such tabulation based on a large sample, although an approximation to it could be constructed from Census tapes. Because of the desire for comparability, the Census period-of-service item is that used in various special government surveys.

The manpower statistics of the nation also have severely limited applicability to questions such as those posed in this study because of

the lack of integration of armed forces and civilian labor force and industry data. The work of the Bureau of Labor Statistics in the main turns a blind eye and a deaf ear to the armed forces. Thousands of Americans have moved mysteriously each year in and out of labor force time series, traceable with difficulty if at all to their entering or leaving roles in the armed forces. The BLS has no specialist who is concerned with the implications of these movements for forecasts with regard to such matters as national manpower supply or unemployment.

In general, wherever interrelationships of civilian and military manpower developments require simultaneous consideration, analysis rests on the use of separate aggregate data of each of these two classes, rather than data sets in which the two populations are integrated.

The families of military personnel, with whom we are particularly concerned, get particularly lost in the statistical shuffle. In the wealth of information we have on the families of Americans, the families of many members of the armed forces are usually missing. They more often than not are unrepresented or only partially represented in the surveys of the labor force or the various special surveys of the general population undertaken in line with the interests of the government in welfare, housing, health, etc. In 1977, about 300,000 sponsored military dependents were in foreign countries, about ten percent of all dependents.

There have been various studies of the general population, and several broad-purpose data series, which have been structured to provide for finely disaggregated information on intergenerational occupational transmission, by questions about parents' occupations. A special characteristic of military careers, however, makes all of these sources less than ideal, when they are at all usable. Because the predominant pattern in the military is retirement at an early age, answers to the questions most frequently asked about parent's occupation will only reveal a second-career civilian pursuit for many fathers who have retired after extensive active duty. This source of ambiguity of data for our present purposes characterizes even some major data resources that have been collected with a view toward their applicability to armed forces recruiting interests; for example, the 1972 National Longitudinal

Study of High School Seniors (2.7 percent, or over 340 cases, gave "military" as father's occupation) and Project Talent. The latter includes an occupational category of armed forces officers, but not for enlisted fathers. There is less ambiguity in the data from the 1969 American Council on Education-Carnegie Commission survey of American graduate students which asked respondents to report their fathers' "principal occupation," with "Armed Forces" as one of the response alternatives (Creager, 1971; Trow, 1975). The ACE-Carnegie data from surveys of the cohorts of freshmen entering undergraduate education in the years 1966 through 1969 might come somewhat closer to tapping the desired population of fathers since the relevant question about fathers was "primary occupation during most of his working years" and the relevant response alternative was "Military Service (career)." These surveys include samples of 200,000 freshmen students in 188 institutions. The questionnaire contained a question regarding the father's "primary occupation during his working years" with "Military Service (career)" as one response choice. It also asked the student's "expected long-run career occupation," with military service as a response alternative. These items have the advantage of including students whose fathers are military retirees, but, like the "Youth in Transition" survey, can only reveal career plans. Using these data, for example, Roizen (1975) presents a table showing that of a sample of students in higher education, nearly a third of the black graduate students in 1969 had military fathers, i.e., they indicated the "Armed forces" as the father's "principal occupation." The author further suggests that in the late 1960's, black graduate students were five times as likely to have fathers in the military as were black non-students. But the proportion of all graduate students giving military in the Roizen table also was amazingly high, 19 percent. This percentage far exceeds the proportion of military men of the appropriate age to have children in graduate school at that time. From our Chart 4.4, we estimate that 3.5 percent of the national population in the age span in which most graduate students fall were juniors.

The American Council on Education's Cooperative Institutional Research Program has conducted annual surveys of all incoming college freshmen each year since 1967 (American Council on Education, 1975)

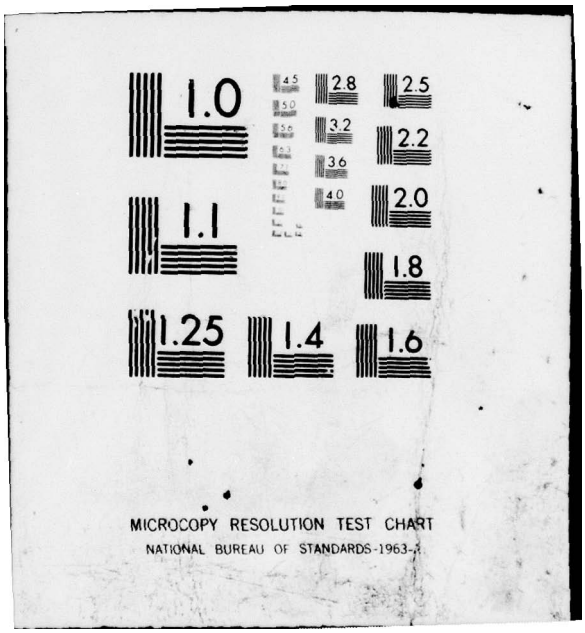
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where the forms include a question on father's (current) occupation or last occupation for deceased fathers with "Military (career)" as one of the code categories. Again, if answered correctly for second-career retired members, this item would fail to identify the large majority of all fathers who served until retirement. The frequencies for fathers in military occupations in the tabulations of this series vary through time within a fairly narrow range (1.6 to 2.0 percent of all freshmen) reflecting the number of older persons on active duty in each year and missing the growing population of children of retirees. It is a useful data base for our interests, nonetheless, because of the length of the series and the large number of pertinent cases it contains. A reflection of the use of the armed forces by blacks for upward social mobility is seen in the relatively high percentages of freshmen in "predominantly black colleges" whose fathers have military careers, varying from 2.3 to 3.4 percent, twice the rate for white students in predominantly white institutions in some years. It also permits some judgment on deferrals of service entry by juniors relative to others when taken together with the preceding year's high school senior data.

Parnes' 1966 through 1971 surveys for the Department of Labor of young men between the ages of 14 and 24 similarly provide information on fathers' occupations (U.S. Department of Labor, 1970). In this case, father's occupation at respondents' age 14 was requested, and it can be assumed that most of the fathers in military service when their sons were aged 14 were career military personnel. But both retired military fathers in second careers and a number of fathers in earlier stages of military careers would be missed. Further, the Parnes survey did not include respondents who themselves were in military service at the time of the survey, but some data on prior military service can be derived from occupational history data provided by respondents. Similar difficulties attach to a May 1971 Gilbert Youth Survey of a national sample of youths aged 16-21 which asked about fathers' military service "now" and in the "past" (HumRRO, 1971).

Ambiguity in identification of parent's occupation also affects studies which have specifically concerned themselves with military populations, even those such as that of Warner et al. (1963) which

employed a particularly well-conceived question pattern on parents' (and grandparents') occupations. Some elite studies, such as those summarized by Janowitz (1971:96), have used more detailed directory and published biographic information.

Aggregate data are available from a survey of a general sample of all active duty personnel conducted in 1964 by the National Opinion Research Center for the Military Manpower Policy Study (see Moskos 1970), but in addition to being subject to ambiguities in the case of retired fathers, retabulation would be required to differentiate career and career-intending personnel from the mass of short-term draftees and draft-motivated in the sample.

Father's occupation data were also collected in a survey of retired officers and enlisted men (Sharp and Biderman, 1966). Such data are of historical interest. The low prevalence of retirees giving "military" as father's occupation in the 1965 retirement cohort studied reflects primarily the low ratio of pre-World War II armed forces strength to that of the post-war era.

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