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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Employment Trends And Grade Controls In The DOD General Schedule Work Force

The Department of Defense's General Schedule average grade rose from 7.29 in 1964 to 7.89 in 1980. This was due, in large part, to technology advancement and increasingly complex defense work, creating the need for more high grade professional, administrative, and technical workers and fewer low grade clerical personnel. It was not possible to determine the amount of grade escalation caused by any one factor.



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DOD's grade escalation was less than that experienced in other Federal agencies, suggesting that control mechanisms applied in DOD slowed growth. However, some controls can produce staffing imbalances, poor morale, reduced services, and other cost inefficiencies. Position management offers a better alternative to control unnecessary grade escalation. It does not arbitrarily cap justified grade increases, and it avoids the problems associated with other controls now in place.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report summarizes changes in the grade structure of the Department of Defense's General Schedule work force since 1964, discusses the reasons for these changes, and examines grade control mechanisms. This review responds to a request in the House and Senate conference reports on the Department of Defense Authorization Act, 1981.

The report points out that a number of different factors caused the upward climb in grade structure and recommends that position management be used to control unnecessary grade escalation.

At the request of the House Armed Services Committee, we did not get comments on this report. We are sending copies of this report to the Secretaries of Defense, Army, Navy, and Air Force; and the Directors, Office of Management and Budget, Office of Personnel Management, and Defense Logistics Agency.

A handwritten signature in cursive script that reads "Milton J. Arosola".

Acting Comptroller General
of the United States

D I G E S T

From 1964 to 1980, the Department of Defense (DOD) increased the number of its General Schedule employees by 9 percent from 523,000 to 571,000; the General Schedule average grade increased from 7.29 to 7.89. This average grade increase, often referred to as grade escalation, can reflect increases in the cost of doing business which may or may not be justified.

The changes in population and grade distribution varied in relation to time, DOD component, and occupation and did not suggest a single reason or simple basis for their occurrence.

These employment changes were caused, in large part, by the advancing technology and increasing complexity of defense work, which have combined to create the need for a more professional, technically-oriented work force. The increasing complexity of many programs, as well as the growing technical sophistication of weapon systems, has led to a growing demand for highly skilled (and, therefore, high graded) scientists, engineers, computer specialists, economists, administrators, lawyers, analysts, and other personnel in specialized occupations. (See ch. 2.)

In addition, the following personnel policies and organizational factors affected the work force and its grade distribution:

- Hiring restrictions. Limitations on hiring reduced DOD's ability to fill entry level positions. (See p. 13.)
- Career ladder promotions. Promotion actions coupled with reduced entry hiring caused the average grade to rise. (See p. 14.)
- Low grade attrition. Attrition rates are highest among entry level personnel, so that DOD retains a larger number of higher grade employees. (See p. 15.)

--Staffing patterns. The number and mix of personnel (civilian, military, contract) a service employs to perform professional, administrative, technical, and clerical work affects the grade distribution. (See p. 15.)

--Consolidations and mission changes. Consolidations often permit the merger of administrative support functions thereby decreasing the number of lower grade personnel. New DOD missions have often required advanced technology thus increasing employment in high grade occupations. (See p. 16.)

--Defense agency specialization. Since 1964 there has been substantial growth in the number of Defense agencies requiring personnel with more specialized managerial and technical skills. (See p. 17.)

--Contracting out. The less complex and lower graded work is most easily performed by contract labor at the present time. (See p. 17.)

In addition, some management actions, such as job dilution and excessive supervisory layering, produced unnecessary grade escalation. (See p. 18.)

Due to the many factors affecting average grade, and their interaction, it was not possible to isolate how much change in grade distribution was attributable to each possible cause.

Various mechanisms including average grade ceilings, high grade reductions, and position management have been used in DOD to control grade escalation. GAO could not determine the effect of the individual controls on the DOD grade structure. However, DOD's population increase, particularly in the mid-level and higher grades, was less than that of other Federal agencies, suggesting that the cumulative effect of the DOD controls has been to slow growth.

Mechanisms such as average grade controls or high grade reductions do not distinguish between justified and unwarranted grade escalation. Further, they tend to cause other problems such as staffing imbalances, reduced employee morale, high turnover, and reduced services. (See pp. 22-25.)

Position management, on the other hand, directly attacks unwarranted grade increases. Position management--a systematic approach for determining the number of positions needed, the skill and knowledge requirements, and the grouping and assignment of duties and responsibilities among positions--has as prime objectives personnel cost control and grade level conservation. While Army has been a front runner in position management efforts, some of the other DOD components are just now in the process of implementing the program. DOD stresses position management to control unwarranted grade growth. (See pp. 26-31.)

GAO believes DOD's policy guidance on position management, if properly implemented, offers a better alternative to control unnecessary grade escalation than presently mandated grade controls. Position management does not arbitrarily cap justified grade increases and it avoids the problems associated with other controls now in place.

RECOMMENDATIONS

GAO recommends that the Secretary of Defense:

- Take actions to insure each component complies with DOD policy guidance on position management.
- Require supervisory/managerial performance appraisals to include position management as a critical element whenever position management deficiencies exist.

GAO recommends that the Congress:

- During oversight hearings, require DOD components to report on the adequacy of position management programs including (1) results of onsite personnel management evaluations, (2) specific cost efficiencies and improvements planned and accomplished as a result of these programs, and (3) specific sanctions applied in cases of grossly negligent or intentionally poor classification or position management.
- Where a DOD component demonstrates it has implemented an effective position management

program, use it as the control mechanism in lieu of high grade, average grade, or other similar control mechanisms.

At the request of the House Armed Services Committee, GAO did not get comments on this report.

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ABBREVIATIONS

DARCOM	Department of the Army Readiness Command
DLA	Defense Logistics Agency
DMDC	Defense Manpower Data Center
DOD	Department of Defense
GAO	General Accounting Office
GS	General Schedule
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OSD	Office of the Secretary of Defense
PATCO	Professional, Administrative, Technical, Clerical, and Other Occupations

CHAPTER 1

INTRODUCTION

In 1980, the Department of Defense (DOD) employed 571,000 civilians in the General Schedule (GS) pay system. This GS system consists of 18 grades or levels of work and an associated 18-grade pay structure, with each grade broadly defined in terms of job difficulties and responsibilities. The fiscal year 1980 salary costs for DOD's GS personnel, excluding Senior Executive Service and supergrade personnel (GS-16-18), 1/ were approximately \$11.5 billion.

Changes in the way the work force is distributed among the GS grades are measured by average grade calculations. 2/ An increase in average grade, often referred to as grade escalation, can reflect increases in the cost of doing business. These increases may or may not be justified.

In the past, the Congress and the Office of the Secretary of Defense (OSD) have reduced some of the services' budget requests believing that increases in average grade indicate unjustified increased costs. Further, the Congress has placed ceilings on the number of high grade DOD civilian employees (GS-13 to GS-18).

OBJECTIVES, SCOPE, AND METHODOLOGY

The House and Senate Armed Services Committees requested that we analyze the changes in the grade structure of DOD GS employees since 1964 and determine the reasons for these changes. To answer this request, we also analyzed grade control mechanisms used in DOD and compared changes in DOD grade structure to those changes in the rest of the Federal Government. For the purpose of comparison, we selected the following years: 1964 because,

1/Employees in grades 16 through 18 were included in average grade calculations, but excluded from our other analysis. This omission was necessary due to the creation of the Senior Executive Service in April 1979 and the removal of most supergrades (GS 16-18) from the GS system. Because the total number of employees in grades 16, 17, and 18 consistently made up less than 1 percent of the GS work force, omission of these grades would have no serious effect on grade distribution analysis.

2/Average grade is computed by multiplying the population at each grade level by the grade number (GS-1, GS-2, etc.), summing the 18 products, and then dividing this sum by the total GS population. For example, an organization with three GS-5, two GS-7, one GS-8, one GS-11, and two GS-12 employees would have an average grade of 8.0.

as a pre-Vietnam war year, it is commonly used as a beginning and comparison point for analyzing DOD manpower trends; 1974 because it is an interim point for which we could analyze work force trends in the seventies following the Vietnam war; and 1980 because it is the most recent year for which data was available.

We discussed the use of grade controls and other monitoring efforts with OSD officials (Manpower, Reserve Affairs and Logistics); personnel and budget officials in the Departments of the Army, Navy, Air Force, and the Defense Logistics Agency (DLA); and officials in the Department of the Army Materiel Development and Readiness Command (DARCOM) who studied the results of grade controls in DOD. We also interviewed officials in the Office of Personnel Management (OPM) and the Office of Management and Budget (OMB).

More specific information on the data used in our review and concerns about the quality of the data follow.

Data sources and adjustments

The data used in this analysis includes only full-time GS employees and excludes intermittent, part-time, Foreign Service, Postal Service, and Wage System employees and political appointees. The data also excludes the Central Intelligence and National Security agencies and other Federal agencies exempted from reporting personnel data to OPM.

Unless otherwise specified, the DOD data was compiled as of October 1964, October 1974, and March 1980. Government-wide data was compiled between October and December 1964; as of October 31, 1974; and as of March 31, 1980.

The Defense Manpower Data Center (DMDC) supplied the data on the DOD GS work force. Using Civil Service Commission data, DMDC created the DOD 1964 occupational inventory file of full-time GS employees. The 1964 occupational series were reclassified into enumerated occupational series established by the Civil Service Commission during the 1970's. According to DMDC personnel, the reclassification was accomplished with less than a 1-percent error rate. DMDC also obtained its 1974 data on the DOD GS work force from the Civil Service Commission. The 1980 data was submitted directly to DMDC by the services and defense agencies.

The Agency Compliance and Evaluation Section of OPM supplied the Government-wide data on GS employees. The 1964 Government-wide data is published in the Civil Service Commission's survey of "Occupations of Federal White-Collar Workers" (7th edition). This survey included workers on the rolls as of October-December 1964. The 1974 Government-wide data is contained in the OPM publication "Occupations of Federal White-Collar Workers," dated October 31, 1974. The 1980 Government-wide data was published in

another OPM report "Pay Structure of the Federal Civil Service," dated March 31, 1980. The 1974 and 1980 data in these OPM publications were obtained from the Central Personnel Data File. This file is automated, maintained by OPM, and based on personnel transactions provided to OPM by Federal agencies. The file is a reporting system dealing with population statistics and is not an accounting system or a statistical sample. While statistics presented in the OPM reports are shown to the last digit, the data should be viewed as indicators only and do not imply single digit accuracy in every case.

Data quality

Many employee statistics for DOD were manually collected and collated prior to 1973. Beginning in 1973, DOD computerized its personnel statistics gathering operation, establishing a central collection point, DMDC, to record and forward statistics to the Civil Service Commission. Data from years prior to 1973, however, had to be specially programed into the system. As the computer system was refined, the data reliability improved. Thus, the most recent data is the most reliable. Because the completeness and accuracy of the 1964 data submitted by Federal agencies to the Civil Service Commission is questionable, it should be viewed as providing an indicator only of GS population and grade distribution.

CHAPTER 2

TRENDS IN THE DOD GS WORK FORCE

Changes in population and its distribution among the GS grades caused the DOD average grade to increase from 7.29 to 7.89 over the period 1964 to 1980. As the chart on page 5 shows, average grade in all DOD components increased in this 16-year period. These increases varied by agency and by major time periods. We identified a number of reasons for DOD's increase in average grade, but we could not determine the amount of grade escalation caused by any one factor. Our research leads us to believe, however, that the increasing complexity of the DOD mission and technological advances are the reasons for the significant employment increases in higher graded occupations (professional, administrative, and technical) and substantial decreases in the lower graded occupations (clerical). Other factors that contributed to an increasing average grade in DOD include personnel policies and organizational changes. In addition, some unnecessary grade escalation may result from poor management practices.

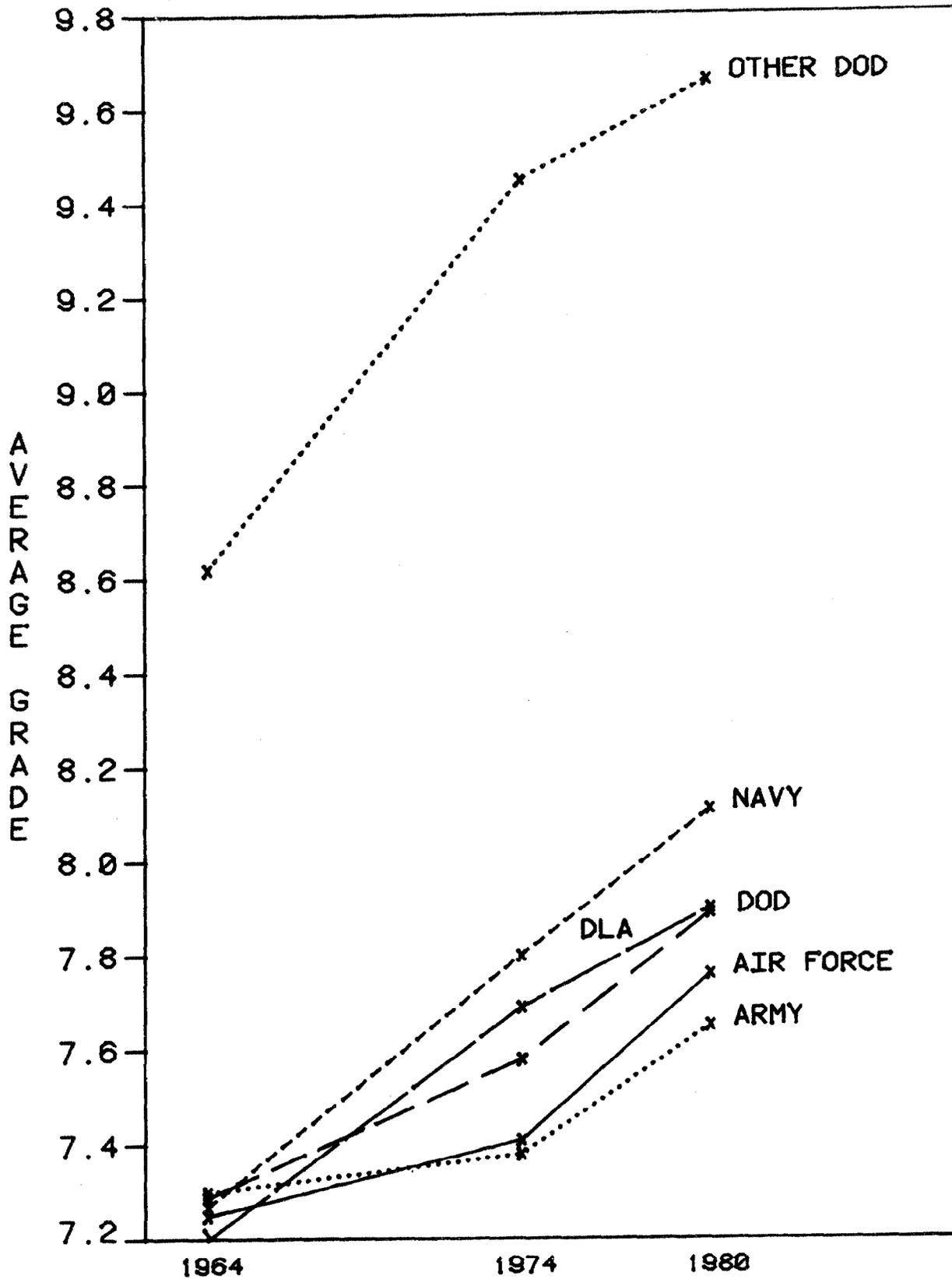
POPULATION AND DISTRIBUTION CHANGES IN DOD: 1964-1980

From 1964 to 1980, DOD's GS population increased by about 9 percent, from 523,000 to 571,000. This population increase, however, has not been consistent over the 16-year period. For example, from 1964 to 1974, the GS population grew substantially to almost 609,000. Since 1974 the trend has been one of general and gradual decline. Between 1974 and 1980, employment decreased by 6 percent to the present level of 571,000. All the military services experienced a population decline in this period; however, only the Air Force fell below its 1964 employment level. (Tables 2 through 7 in app. I show the GS population by DOD component for 1964, 1974, and 1980.)

The population and distribution (percent of the DOD GS work force) at each grade also changed, and, as a result, the average grade increased. As the charts on pages 6 and 7 show, the lowest grades (GS-2, GS-3, GS-4) had the largest decreases in both numbers and distribution, while GS-12 had the largest increases. Substantial increases also occurred at the GS-5, GS-7, GS-11, GS-13, and GS-14 levels. ^{1/} The largest population increases in these grades occurred during the 1964-1974 period, whereas the population in most GS grades decreased during the 1974-1980

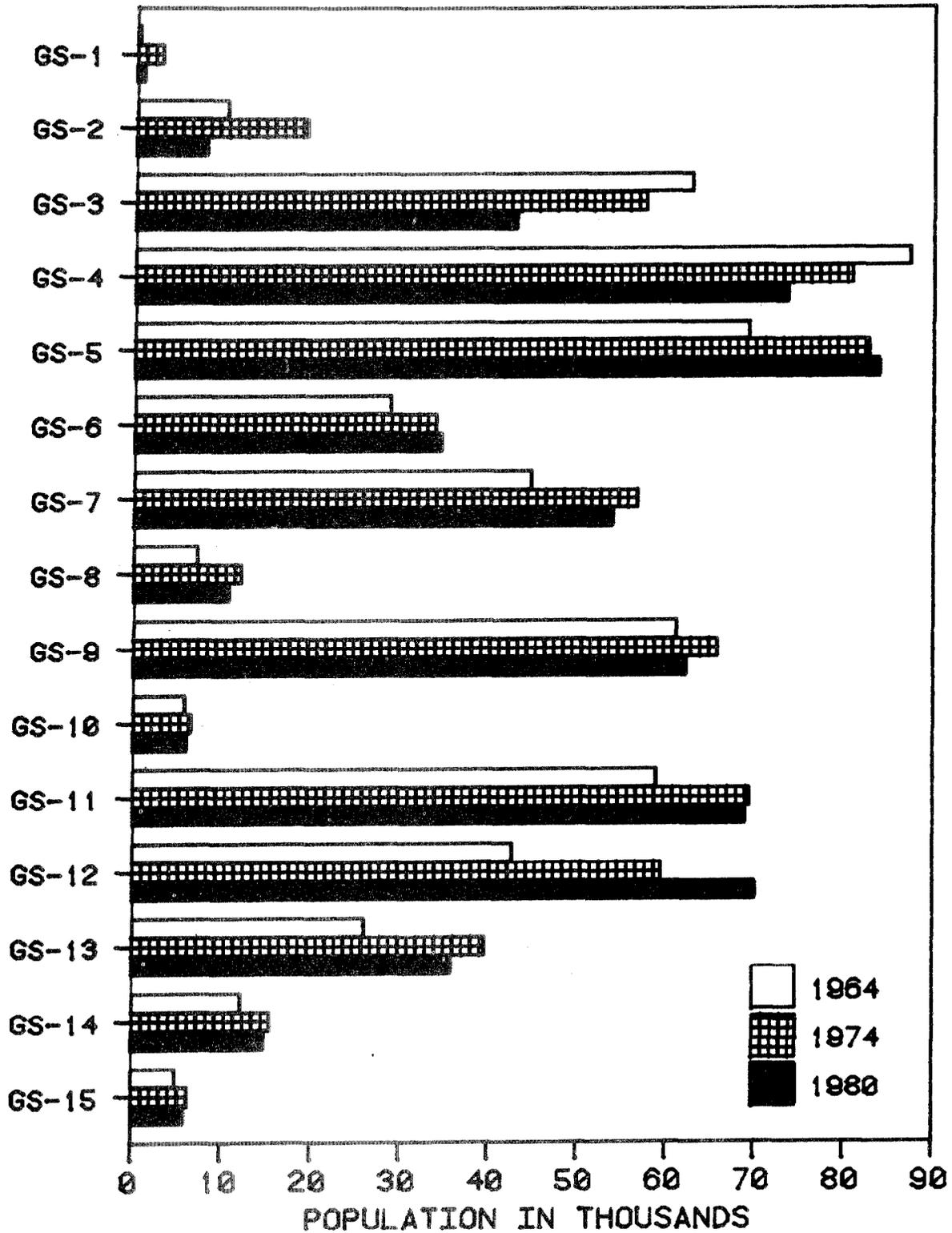
^{1/}While the GS-1 population increased by 90 percent from 1964 to 1980, the 1980 population at this grade was under 1,000. Therefore, the GS-1 population would have little overall impact on average grade.

TREND IN AVERAGE GRADE FOR DOD AND ITS COMPONENTS

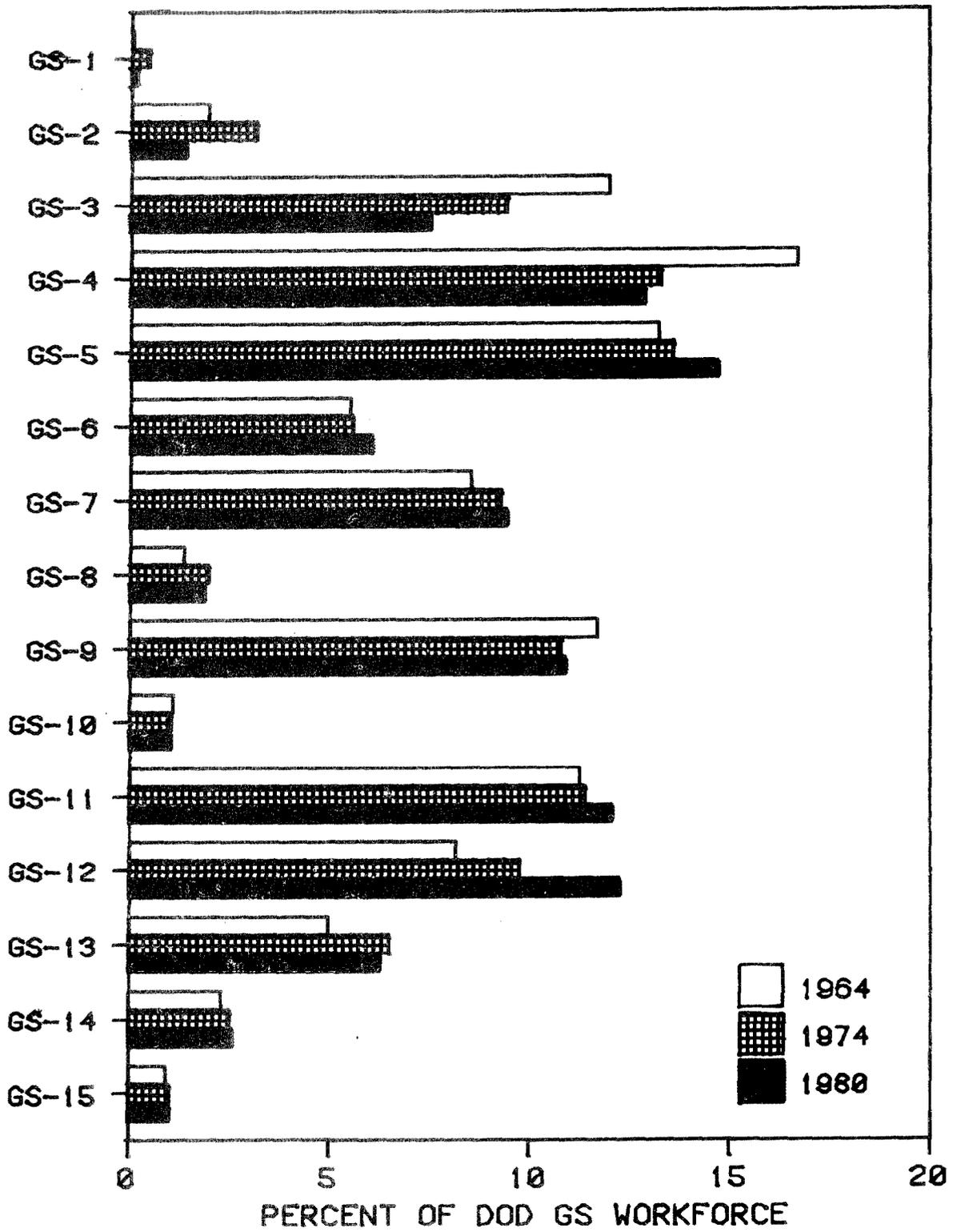


Note: While DLA is part of the other Defense agencies, it was treated separately because of its large population. DOD includes all DOD departments and agencies.

CHANGE IN DOD GRADE POPULATIONS 1964, 1974, AND 1980



CHANGE IN DOD GRADE DISTRIBUTION 1964, 1974, AND 1980



period. (The exception is the GS-12 population which grew throughout the 16-year period, adding over 27,000 employees between 1964 and 1980.) At no time did the populations in each grade fall to the 1964 employment levels.

These changes have translated into significant additional manpower costs. If the 1980 work force in grades GS-1 through GS-15 were distributed among the GS grades in the same manner as was the 1964 work force, salary costs in constant 1980 dollars would have been reduced by about \$764 million.

The reasons for these changes are discussed in the following sections. Further details on the shifts, including changes by DOD component, are shown in appendix I, tables 2 through 7.

CHANGES IN OCCUPATION MIX INCREASED AVERAGE GRADE

Between 1964 and 1980, many changes took place in the types of occupations within the DOD GS work force. This 16-year period is characterized by significant increases in the number of professional, administrative, and technical positions accompanied by major decreases in the number of clerical positions. ^{1/} (The chart on page 9 illustrates these changes.) The increasing complexity of the DOD mission and sophisticated technological advances triggered this occupational shift, which is the single most important and identifiable reason for the upward movement in the DOD GS grade distribution.

The number of professional and administrative workers increased by 25 percent, to approximately 240,000, and accounted for over 40 percent of the DOD GS work force in 1980. In contrast, DOD clerical employment declined by 7 percent to about 192,000. In 1964, the clerical category accounted for 40 percent of the DOD GS work force, and in 1980 only one-third of the GS work force was clerical. (App. IV and V list the job series which show population decreases and increases, respectively, of 100 or more employees between 1964 and 1980.)

^{1/}OPM classifies white-collar (GS) occupations according to five major occupational categories--Professional, Administrative, Technical, Clerical, and Other--often referred to as PATCO categories. The definitions of these categories are based on the subject matter of work, the level of difficulty or responsibilities involved, and the educational requirements of each occupation. (See app. II for OPM definitions of the PATCO categories.)

DOD General Schedule Population by
PATCO (note a): 1964, 1974, and 1980

	<u>Professional</u>	<u>Administrative</u>	<u>Technical</u>	<u>Clerical</u>	<u>Other</u>
<u>1964</u>					
Population (note b)	82,590	108,297	94,922	205,095	18,227
Average grade (note c)	11.24	9.96	7.52	4.02	4.87
Percent of DOD population	15.80	20.70	18.20	39.60	3.50
<u>1974</u>					
Population (note b)	90,838	140,971	129,688	220,228	20,751
Average grade (note c)	11.66	10.58	7.75	3.99	4.92
Percent of DOD population	14.90	23.20	21.30	36.20	3.40
<u>1980</u>					
Population (note b)	97,584	141,925	119,882	191,845	19,556
Average grade (note c)	11.69	10.51	7.88	4.25	5.05
Percent of DOD population	17.10	24.80	21.00	33.60	3.40

a/All PATCO comparisons are based upon the current PATCO designation for the occupational series. We were unable to identify the PATCO categories for 13,594 employees in 1964; 6,383 employees in 1974; and 11 employees in 1980.

b/For analysis and discussion purposes, the employees in "mixed" occupations (occupations in which the work falls into more than one PATCO category) have been added to the PATCO categories based on the kind of work performed at each grade level. Generally, the work in these "mixed" occupations is clerical or technical in the lower grades, and technical or administrative in grades GS-7 and above. (See app. III for a complete listing of these "mixed" occupations.)

c/The average grade calculations for administrative, technical, and clerical categories excluded personnel in "mixed" occupations.

Large employment losses in the clerical area accompanied by no growth in "Other" low grade occupations made the employment gains in high grade professional and administrative work all the more significant in raising the average grade.

Changes in kinds of work resulted in higher grades

The GS population increases between 1964 and 1980 were predominantly in the higher skilled, higher graded occupational groups. An occupational group consists of several series of positions in related occupations, professions, or activities. A series is a subdivision of an occupational group consisting of one or more positions in similar work, but differing in difficulty or responsibility, and therefore in grade and salary range. For example, a series in the Legal and Kindred Group includes, among others, the positions of General Attorney (professional) as well as positions of General Claims Examining (technical). (App. VI lists the 1964, 1974, and 1980 DOD population and average grade for each OPM occupational group.)

The increasing complexity of DOD's mission and technology advancement not only required increased employment in higher skilled, and thus higher graded occupations, but also required the creation of new occupational series. In 1980, DOD had about 52,650 employees in 62 job series which did not exist in 1964. (See app. VII for a list of these new series, 1980 populations, and average grades.) The majority of the new series were in the professional, administrative, and technical categories. In some cases, these new occupations represented basically new functions. In other cases, the new series represented specialized functions which have arisen from broader occupations.

Our analysis of the population and grade structure changes in the occupational groups indicates that DOD's employment of more technical, administrative, and professional employees is the main reason for its increase in average grade. Our findings are consistent with two earlier DOD analyses:

--A 1975 DOD study which examined the increase in the average grade of DOD GS employees between the years 1964 and 1974 concluded that two-thirds of the increase was attributable to change in occupational mix and one-third to other reasons (which the report defined as inflation). 1/

1/"Changes in the Grade Distribution of DOD General Schedule Civilian Employees 1964-1974," Manpower Research Note 75-1 (the Manpower Research and Data Analysis Center, Apr. 1975).

--In 1977, a DOD research study probed available cross-sectional data on DOD GS employees in an attempt to identify the causes of the trend in increasing average grade. This analysis concluded that almost three-quarters of the grade increase observed between fiscal year 1964 and fiscal year 1976 was the result of shifts in the occupational mix of the work force. 1/

Job shift accounts for growth in GS-12s

In 1980 DOD employed 27,000 more GS-12s than in 1964. Much of the population growth at this level can be explained by the shift to more professional, administrative, and technical employment. For many professional and administrative jobs, GS-11 or GS-12 represents the full performance level. The relationship of occupational shift to the increases at the GS-12 level is demonstrated by the GS-12 population growth in a few job series. Previously established professional and technical occupations, as well as newly created occupational series, showed large employment increases between 1964 and 1980. Those previously established series in which the GS-12 population increased by more than 500 employees include:

<u>Series</u>	<u>Title</u>	1964-1980 Increased number of GS-12s
510	Accountant	1,173
801	General Engineering	1,256
855	Electronics Engineering	3,717
1515	Operations Research	621
1520	Mathematics	641
334	Computer Specialist	4,237
1102	Contract and Procurement	1,187
2003	Supply Program Management	1,073
802	Engineering Technician	601
856	Electronics Technician	951
2181	Aircraft Operations	549

In 1980, the following 6 new series, created between 1964 and 1980, employed 3,603 GS-12s:

1/Walter B. Bergmann and James E. Willoughby, "Analysis of the Causes for the Increasing Trend in DOD General Schedule Average Grade--FY 1964 to FY 1976," (Analysis and Evaluation Directorate, Office of the Assistant Secretary of Defense (Manpower and Reserve Affairs), Apr. 1977).

<u>Series</u>	<u>Title</u>	<u>Number of GS-12s</u>
160	Equal Opportunity	254
205	Military Personnel Management	214
233	Labor Relations	185
345	Program Analysis	1,394
346	Logistics Management	1,385
895	Industrial Engineering Technician	171

These series, both new and previously established, provided positions for 19,609 more GS-12s in 1980 than DOD employed in 1964. Thus, these 17 job series accounted for 72 percent of DOD's growth at the GS-12 level.

Changes in DOD work force parallel
changes throughout the economy

The changes in the occupational mix and skill composition of the DOD GS work force are similar to the occupational shifts in the Federal Government and the private sector. Because advancements in technology and organizational changes affect the entire American labor force, DOD and the civilian sectors have a significant number of occupations in common. Thus, DOD work force trends are very similar to trends throughout the economy.

By using census data from the Current Population Survey Occupational Series, for the years 1974 and 1979, we compared some occupational changes in DOD to changes in the work force at large. The following examples clearly show that the large increase in the numbers of professional, administrative, and technical workers in DOD closely parallels increases in these occupations throughout the economy.

The DOD Labor Relations Specialist series (GS-233) which was created in the Federal work force after 1974, had 390 positions in 1980. In the total work force, Labor Relations Specialists have increased 29 percent, from 321,000 in 1974 to 413,000 in 1979.

Accountants (GS-510) in DOD increased from 9,046 in 1974 to 10,262 in 1980, a 13 percent increase. In the work force at large, the number of accountants increased 30 percent between 1974 and 1979, growing from 803,000 to 1,045,000. From 1974 to 1980, operations research (GS-1515) positions in DOD increased by 53 percent, from 1,638 in 1974 to 2,506 in 1980. In the total U.S. work force, there was a 38 percent employment increase in operations research, from 113,000 in 1974 to 156,000 in 1979.

The computer occupations have also expanded both in DOD and in the total work force. Between 1974 and 1980, there was an increase of 5 percent in computer specialists positions (GS-334) in DOD. In 1980, DOD employed more than 15,700 computer specialists.

In the total work force, computer system specialists and analysts increased by 88 percent between 1974 and 1979. There were more than 213,000 computer analyst and specialist positions in 1979. Computer programmers, systems analysts, computer operators, and keypunch operators were new occupations which grew rapidly in the 1960's. As computer terminals replaced keypunch operators in the 1970's, the number of lower-salaried keypunch operators declined.

Between 1974 and 1980, the number of General Attorneys (GS-905) in DOD grew 18 percent from 1,086 to 1,279. In the general economy, lawyers increased 40 percent, from 342,000 to 478,000.

More complex work and advancements in technology, in society in general and in DOD in particular, have created a need for a more professional, technically-oriented work force. The increased technical complexity of many Federal programs, as well as the growing technical sophistication of modern weapon systems, has led to a growing demand for highly skilled and therefore highly paid scientists, engineers, economists, administrators, lawyers, researchers, and systems analysts. At the same time, increased reliance on electronic equipment to perform clerical and support work has led to a decreased need for lower-graded positions.

OTHER REASONS FOR GRADE ESCALATION

While occupational shifts accounted for much of the grade escalation between 1964 and 1980, various personnel policies, organizational changes, and other interdependent factors also contributed to grade escalation. This section identifies some of these factors and their relationship to grade escalation. We could not isolate how much of the increase in average grade was attributable to any one specific factor, since much of the increase stemmed from the interaction of several factors.

Personnel policies affect grade distribution

Personnel policies and employment limitations in effect at various times during the past 16 years have produced some amount of grade escalation. While there is no precise way to measure to what extent these policies and actions contributed to grade escalation, they have had an undeniable impact on grade distribution.

--Hiring restrictions. Throughout the 1970's, efforts to control or reduce the DOD GS population have meant restricting new hires. Since very little new entry occurs at higher grades, the bulk of new hires enter Government service at the lower grades. Hiring freezes (such as the

2-for-1 limit imposed last year) generally result in fewer employees at the lower grades. Consequently the average grade tends to rise.

Hiring restrictions also encourage agencies to hire employees already possessing specialized skills and experience to minimize the impact of staff shortages on operations. Experienced personnel demand higher salaries and grades. Hiring a few higher grade experienced personnel instead of a larger number of entry level trainees raises the average grade.

- Retained pay and grade. Title VIII of the Civil Service Reform Act provides grade and pay retention for certain employees whose positions are downgraded (1) because of reclassification if the position has been classified for at least 1 year at the higher grade or (2) because of reduction-in-force procedures if the employee has served 1 year at a grade higher than the grade to which reduced.

In 1979, DOD reported having about 1,000 employees in the high grade category (GS-13 and above) because of this save-grade provision. Since the grade retention provision was retroactive to January 1977, some DOD employees were restored to former higher grades. The provision had the immediate effect of increasing average grade and, according to DOD, virtually eliminated average grade reductions that might have been otherwise accomplished through management action.

- Conversion of wage grade to GS. The conversion of wage grade positions to a GS series can affect average grade. For example, in 1975 a new classification standard for the General Facilities and Equipment Specialist (GS-1601) series eliminated the Wage Grade Superintendent position and reclassified all these employees to the GS. This reclassification increased the average grade for the GS-1601 series.

- Increased full performance level. An increasing average grade for occupational series can be caused by an increase in the full performance grade level. For example, in 1977 OPM revised the full performance level for nurses from GS-7 to GS-9. In 1974 there were 3,357 nurses in DOD with an average grade of 7.48. In 1980 there were 3,680 nurses in DOD with an average grade of 9.0. In 1974 only 13 percent of all DOD nurses were at the GS-9 level (436) and in 1980, 83 percent of the nurses were at the GS-9 level (3,048).

- Career ladder promotions. While entry level hiring is generally curtailed during mandated personnel reductions,

career ladder promotions are often still given. These promotion actions coupled with reduced entry hiring cause the average grade to rise.

During periods of static or declining employment, as in the 1970's, the impact of career promotions on grade escalation is easily observed. Between 1974 and 1980 the share of the DOD work force in grade 5 (typical journey level for many clerical positions) and in grades 11 and 12 (typical journey level for professional and administrative positions) increased substantially. Limited rehiring at the entry grades (GS-1 through 4 for clerical; GS-7 and 9 for professional and administrative) meant that the share of the GS work force in these grades declined or grew only slightly. Consequently, career promotions became a significant factor in accounting for grade escalation between 1974 and 1980.

- Attrition and Reduction-in-Force. To the extent possible, DOD agencies have accomplished mandated reductions in the GS population by attrition. In situations where attrition has not been sufficient to fulfill required cutbacks, then reductions-in-force have been implemented. In either situation the losses occur primarily in the lower grades because seniority rules require that employees with the least Federal service (and hence the lowest grades) be discharged first. As a result the average grade goes up.

Traditionally, attrition rates are highest in entry level positions. In fiscal year 1979, the attrition rates for Army, Navy, and Air Force personnel in grades 1 through 5 were 13 percent and higher. For personnel in grades 11 through 15, the attrition rates were under 10 percent. Whether personnel cutbacks are accomplished through attrition or reductions-in-force, the impact on average grade is the same--it will generally go up.

- Staffing patterns. The military departments follow very different staffing patterns to determine the number of civilian, military, and contract personnel needed to do various jobs. For example, the Navy has significantly higher percentages of scientists and engineers than the Air Force and Army. Since these are high-grade occupations, substantial employment in these areas exerts more of an upward pressure on Navy's grade structure than on Army and Air Force's. Additionally, Navy heavily favors civilian staffing of its scientific and engineering activities. This staffing pattern also exerts an upward pressure on Navy's average grade.
- Civilianization. For many years DOD policy has been to use civilian personnel in positions which do not require

military incumbents. Presidential and congressional concern about the mix of military and civilian personnel in support activities prompted DOD to initiate special programs to convert military support positions to civilian positions. Since fiscal year 1964, over 100,000 military jobs have been converted to civilian. Clearly, substitution of civilian personnel for military would affect the grade structure. In cases where decreases in officer strengths have been filled by appointing civilians to the billets that are professional, administrative, or technical in nature, the civilian grade distribution has been pushed upward.

A study of DOD officer requirements concluded that since 1950 the composition of the senior management group of DOD has changed from 95 to 52 percent military. This decrease in the percentage of officers may have brought about a compensatory expansion in the number of civilian professionals. Such conversion and expansion would tend to raise the average grade.

Organizational changes affect grade distribution

Since 1964 DOD has made many organizational changes which have influenced the GS grade structure. These changes have included:

- Consolidations. Throughout the 1960's and 1970's, all the military services have attempted to organize their activities more efficiently and in many cases have consolidated functions. Because managers who run the newly consolidated activities have increased responsibilities, they often have higher graded positions. At the same time, consolidation often allows the merger of many administrative support functions and, therefore, decreases the relative numbers of lower-graded personnel. The result is an increase in average grade.
- Mission changes. At the same time the services were attempting to consolidate ongoing functions, they were given new missions which often involved advanced technology and additional high grade jobs. Existing support services, however, did not increase. Thus, the average grade tended to go up.

We could not separate the effect of consolidations and mission changes from the other influences on grade structure already discussed. It appears, however, that the net effect of such changes has often been to raise the average grade.

--Specialized Defense agencies. Between 1964 and 1980, the most rapid increases in population and grades occurred in the "other" Defense agencies. There has been a substantial increase in the number of Defense agencies since 1960, including the establishment of the Defense Audit Service, Defense Communications Agency, Defense Contract Audit Agency, Defense Intelligence Agency, Defense Investigative Service, Defense Mapping Agency, and others. This increase reflects the increasingly complex and technically oriented nature of Defense activities and the need to coordinate certain specialized functions and policy positions throughout the Department. For the most part, the Defense agencies require personnel with specialized managerial skills and technical knowledge to accomplish and coordinate particular functions.

--Contracting out. It is DOD policy to rely on the private sector to provide goods and services to the maximum extent possible. According to DOD estimates, Defense departments and agencies currently contract for services that would otherwise require over 135,000 Federal civilian and military employees. From September 1978 to September 1980, DOD planned to reduce its civilian employment by 32,000. Contracting for work that could be done as well and for less cost by private business was to account for about two-thirds of the total reduction.

Several DOD personnel officials considered the use of contractors to perform work previously done by DOD civilian employees a leading contributor to the rise in average grade. Data was not available on the job series, numbers, and grade levels of employees most directly affected by contracting out. However, DOD personnel officials reported that less complex and lower graded work is most easily performed by contract labor at the present time.

Over the past 2 years, procedural problems in contracting out have restrained the rate at which additional functions have been converted. With the resolution of these problems, Navy personnel officials anticipate that the contracting out of additional functions will accelerate in the next years creating further upward pressure on the Navy average grade. If contracting for services were practiced on a large scale during the 1970's, it would have raised average grade over the years by depleting the work force of its lowest graded workers and by adding higher grade contract administrators and specialists.

Other interdependent factors

As already demonstrated, there are multiple interdependent reasons for grade growth in DOD. Some other justifiable reasons for grade escalation include:

- Automation. As discussed earlier, computers and other advanced electronic equipment are increasingly replacing lower graded clerical and administrative personnel and increasing the demand for higher graded professional and technical personnel.
- Materiel sophistication. Modern weapon systems have in many cases replaced large combat forces. The personnel required to design, procure, utilize, and maintain these systems are more highly trained and have higher grade structures.
- Demographics. Given the demands of increased technology and the complexities of the present day DOD mission, the DOD work force has more education and training today than in 1964. More education and training result in a higher grade structure for the work force.
- Competition with the private sector. DOD has a very high proportion of scientific and engineering personnel. To compete with private enterprise, DOD must offer equivalent salaries and promotion potential. This means higher entry level grades and career ladders.

Unwarranted grade growth

Despite the fact that much of the grade escalation since 1964 may be justified by the reasons discussed above, some management practices can produce grade escalation which is not justified. According to OPM officials, the following practices encourage unwarranted grade growth to some extent throughout the Federal Government:

- Inflated position descriptions. It is reasonably easy for a supervisor to write a position description to meet higher grade requirements even though the actual tasks do not warrant higher grades.
- Supervisory layering. The chain of command may be inflated by including multiple layers of reviewers and approvers between those doing the job and those managers ultimately responsible for products and services.
- Job dilution. Supervisors may write higher level duties into the position descriptions for several different

persons in order to inflate the grade level of several positions when all the duties could be concentrated into fewer positions.

--Narrow spans of control. The activity may be overmanaged. Thus the supervisor-to-worker ratio will be too high as will the average grade.

--Unwarranted use of assistants and deputies. Supervisors often delegate part of their responsibility to others, thereby justifying grade increases to those exercising delegated authority. Where the delegation is unjustified, unwarranted grade escalation occurs.

CHAPTER 3

ACTIVITIES TO MONITOR AND CONTROL DOD GRADES

Over the years various mechanisms have been used to control grade growth. In DOD these mechanisms have included average grade controls, congressional limitations on civilian high grade populations, and position management. Our work indicates that as a result of these mechanisms DOD has experienced less grade escalation than have other Federal agencies. However, two of these mechanisms--average grade controls and high grade limitations--seem to adversely affect DOD manpower management. These negative effects can include staffing imbalances, reduced employee morale, high turnover, and reduced services.

Our work also indicates that position management may be a more effective way to deter unwarranted grade growth without producing the adverse effects associated with other controls. DOD has established policy guidance on position management programs throughout the Department, and each of the services has taken actions to implement this policy.

GRADE CONTROL MECHANISMS

The "Change in Average Grade Report," average grade ceilings, and high grade limitations have all been used to monitor and control grade growth. While each of these mechanisms can help constrain grade escalation, there are problems associated with their use.

"Change in Average Grade Report"

In an effort to monitor, evaluate, and control increases in average grade, OMB and OPM, in 1977, developed a computerized information system to track and analyze changes in average grade within each agency on an occupation-by-occupation basis. OMB issued Bulletin No. 77-11 asking all agencies to evaluate their existing occupational grade structures in light of this new information and, wherever appropriate, to establish goals for reducing average grade. The "Change in Average Grade Report" is published semiannually by OPM from data contained in the Central Personnel Data File.

OMB and OPM officials hoped this new data would give managers at all levels a much better understanding of how the grade structure within their own functions changed, and how these changes compared to changes in average grade for the same occupations Government-wide. This kind of information is supposed to help agencies identify the specific areas where abuses may be

occurring, and those occupations where inefficiencies are built into the grade structure itself. With this information, agency heads could make better, more informed decisions on where to initiate job restructuring, improved work assignments, and similar position management techniques.

DOD's use of the "Change in Average Grade Report" has produced mixed results. The Air Force reported and the other services agreed that statistical anomalies create the illusion of "increases" where there have been none. In analyzing the Air Force job series having the greatest average grade increase, Air Force personnel officials observed the following:

1. Using the OPM statistics, the illusion of an increase in the Supply Clerical and Technician series (GS-2005) was created by the movement of approximately 600 Air National Guard personnel, without change in grade, from the General Supply (GS-2001) series to the GS-2005 series. The employees' average grade was (and is) approximately GS-6. The average grade of the GS-2005 series before they arrived was 4.69; the arrival of such a substantial number of GS-6 employees caused the average grade to rise. At the same time, the average grade of the GS-2001 series was approximately GS-8 before the movement of the 600 employees; the loss of these employees at the GS-6 level in that series caused its average grade to rise also. This "occupational shift" was found throughout the analysis of the "Change in Average Grade Report" and was the principal cause of the statistical "increase" in most series.
2. The Air Force position management program concentrates like levels of duties in like levels of grades. Low graded duties are shredded out of higher graded jobs and concentrated in low graded jobs. When the duties are concentrated in this way, operations become more economical; additionally, the lower graded jobs often become the subject of further concentration and/or automation leading to reductions in the absolute number of such jobs. This factor, plus mandatory reductions in force, has resulted in significant losses below the Air Force average grade, which in turn causes the average grade to rise. In some cases, this type of increase is actually a net saving since fewer people are employed.
3. New programs and changed missions account for the increases in certain occupational series; these types of increases are far smaller than those caused by occupational shifts and losses of low grade positions. Some of the new programs include support for the foreign military sales program, the establishment of civilian

physician positions to fill needs not met through the military physician programs, the civilianization of the Auditor General professional-level positions as directed by Congress, the civilianization of military officer positions in Open Messes, implementation of the automated Retired Annuitant Pay System, and the increasing implementation of automated word processing operations.

The OMB Bulletin 77-11 places primary authority on agency heads to insure that adequate grade reduction goals are met. As long as the goals are attained, agencies are not required to submit their plans to OMB unless specifically requested. Although OMB does not monitor agency use of the "Change in Average Grade Report," each service reports that it dutifully monitors the report. However, they rely more on position management and classification systems to control grade escalation before it becomes a problem.

Average Grade Controls

At various times throughout the 1970's, average grade ceilings or goals were established by OMB, OSD, and the DOD components to stabilize or, in some cases, roll back the average grade level of GS positions. In a July 27, 1979, memorandum, the Army Director of Civilian Personnel noted that the average grade level of full-time, filled GS positions generally stabilized or dropped when grade control programs were in effect and increased during periods of noncontrol. While the past use of average grade ceilings has restricted grade growth, several officials reported that grade controls were poor economy measures which can create a disproportionate and costly loss in efficiency. There are several significant drawbacks to using average grade ceilings. The main criticisms of average grade controls include:

- Poor indicators of cost-effective management. Increases in average grade can be cost effective. For example, replacing large numbers of lower level clerical employees with a few, higher graded computer operators has the effect of raising agencywide average grade even though it may actually result in greater efficiency and economy.
- Easily distorted. Temporary variations in the ratio of higher graded to lower graded occupations cause variations in agencywide average grade which are not related to actual increases or decreases in the grades of the employees within these occupations. For example, hiring extra secretaries to meet peak-load clerical requirements lowers agencywide average grade, even though no decreases in salary costs follow.

- Not related to mission and staffing needs. Average grade must remain high to attract and retain the personnel needed to perform complex technical work. The necessary high quality of the staff may not be maintained under a reduced ceiling.
- Justifiable increases not permitted. A number of situations may take place which will cause justifiable increases in average grade: (1) a mission or technology change which requires a greater number of highly skilled personnel or significantly reduces lower grade positions, (2) contracting out which eliminates lower grade positions and requires higher grades to monitor contractor performance, and (3) use of borrowed military personnel in lieu of low grade civilians.
- Reduced morale. An Army official indicated that the Army's greatest success in controlling average grade comes when the controls are strictest; however, such strict controls are also accompanied by reduced employee morale and productivity.
- Lack of inclusiveness. Average grade focuses on only the GS segment of the DOD population, but the DOD total work force is also composed of Federal Wage System employees, military personnel, and contractor personnel.
- Inappropriate baselines. The tendency to compare a current average grade with a historic baseline average presupposes that the former average grade was correct. But it is important to note that at different times during the year average grade may vary depending upon the number of temporary summer hires or the number of vacant positions at the time of the computation. It has been said that it would be more appropriate to consider an average grade figure to be proper only for the moment it is calculated.
- Concealed costs. Average grade controls may conceal costs. For example, older complicated equipment requires skilled personnel to maintain it in optimum condition. However, the skilled technician who could properly maintain the equipment is generally more expensive than a Wage Grade foreman. So installations will often hire the lower salaried employee. In the long run, the equipment may have to be replaced sooner and the replacement costs will be substantial. It is more important to look at actual costs rather than average grade, according to the DOD officials we interviewed, because it is possible to reduce average grade of an organization while increasing salary and operating costs or vice versa.

The usefulness of average grade controls to promote work force efficiency and cost effectiveness is questionable. Average grade controls may indeed hamper achieving these objectives.

High Grade Controls

Controls over the civilian high grade population have generally been manifested in the form of ceilings on the high grade population. Public Law 95-79, the Defense Authorization Act of 1978, is the latest of these high grade control initiatives. This act required a reduction of approximately 6 percent in the number of high grade DOD civilian employees (GS-13 to GS-18) by September 30, 1980. The civilian high grade reductions were equal in percentage (2 percent a year over 3 years, FY 78 to FY 80) to General Officer reductions. The ceilings were based on the on-board strength, as opposed to the authorized strength. Full implementation of the reduction was delayed until September 30, 1981, by an amendment to the fiscal year 1980 authorization.

An examination of the populations at grades GS-13, 14, and 15 over the 1974-1980 period showed that DOD decreased the number of employees at these grade levels, while non-DOD agencies have experienced substantial increases at these grade levels. (See app. VIII.) The DOD population declines were particularly noteworthy at the GS-13 level. At grades GS-14 and 15, the declines were more moderate.

High grade controls have forced DOD agencies to operate with fewer high grade personnel. However, high grade controls are subject to the same criticisms and drawbacks as average grade. DOD officials reported the following adverse results of high grade reductions:

- One Army Command, in explaining the difficulties which resulted from the reductions, gave us an example of a domino or ripple effect which multiplies the impact of even a single high grade reduction. An actual case supplied by the U.S. Army Communications and Electronics Materiel Readiness Command is cited. A GS-14 engineer position was eliminated and replaced with a Lieutenant Colonel. Under "bumping" rules, the GS-14 engineer was downgraded to a GS-13 and "bumped" the subordinate GS-13 section chief, who in turn bumped a GS-12. A GS-11 was then displaced and transferred to another organization. In reality, four civilians were displaced and their productivity reduced. A Project Leader (GS-13 industrial engineer) was also reduced in grade. He "bumped" a GS-12 who tried to bump another GS-12. Because of seniority he could not be placed into the similar GS-12 position and instead was downgraded. The GS-11 whom he displaced moved to an

unknown position or left the command. In summary, to downgrade a GS-14 and a GS-13, eight positions within this organization were significantly affected, and the position structure of the two sections within the branch was perhaps adversely affected.

--DARCOM reported the effect of the reductions and associated turbulence in its ability to retain interns--those young men and women being trained for future top management positions. DARCOM has lost nearly half of all interns graduated since 1974. During the period fiscal year 1974 to fiscal year 1980, the command has incurred costs of \$120 million to train interns who left the Department of Army within 5 years of program completion for better career opportunities.

--Losses of Navy scientists and engineers due to decreased opportunities for advancement have increased substantially. Navy Research and Development Centers have a rate of loss for scientists and engineers that has increased 47% in 2 years.

The Acting Assistant Secretary of the Army (Manpower and Reserve Affairs) specifically requested relief from the civilian high grade reductions required by the fiscal year 1978 DOD Authorization Act. In his March 5, 1981, statement before the House Subcommittee on Military Personnel and Compensation, William D. White said:

"The reductions present a serious impediment in providing those civilian skills required to support Army missions, particularly professional positions for research and development, medical services, procurement, and overseas construction programs. Additional high grade positions, not fewer, are needed to develop and manage the new and expanding programs evolving from increased real spending for national defense and to provide the needed technical base to support the military forces in the face of an ever expanding threat."

According to DARCOM officials, materiel readiness, including materiel management and procurement as well as materiel development, are all adversely affected by the high grade controls. Workload, employee performance and morale, and high grade positions are interrelated. If one of the variables is changed, the others are influenced to some extent. The overall effect of high grade controls on DOD mission accomplishment could not be determined through a macroanalysis of the reductions in grades GS-13 to 15. However, our prior work has shown that an unbalanced

allocation or use of personnel resources can result in failure to carry out necessary programs. 1/

POSITION MANAGEMENT AND CLASSIFICATION CONTROLS

OPM and DOD officials consider classification decisions and position management to be the very core of Federal personnel management. Under the Classification Act of 1949, agencies must classify their own GS-1 through GS-15 positions using OPM standards as guides. For each position, agencies must prepare a written description of duties, responsibilities, and supervisory relationships, which an agency official certifies is complete and accurate. OPM is responsible for monitoring the adequacy of agencies' classification practices.

Position management refers to those management actions to determine and maintain the appropriate type and mix of positions needed to perform the work of the organization. It is a systematic approach for determining the number of positions needed, the skill and knowledge requirements, and the grouping and assignment of duties and responsibilities among positions. The process is dependent upon management's translating mission goals into major tasks and organizational elements, subtasks and sub-elements, and ultimately, into duties of individual positions. Position management should dictate classification, not the reverse. Ineffective position management contributes to pressures for upgrading or to unwarranted grade growth. The following information further defines the concept as it is used in DOD.

POSITION MANAGEMENT

Objectives

- Position/workforce balance in terms of
 - Economy
 - Efficiency
 - Effective employee utilization

Fundamentals

- Classification standards
- Match grade with job difficulty/responsibility
- Review program every 3 years - as a minimum
- Each position subject to periodic review

Results

- Grades proportional to difficulty and responsibility

1/"Personnel Restrictions and Cutbacks in Executive Agencies: Need for Caution" (FPCD-77-85, Feb. 9, 1978).

- Balanced grade distribution
- Efficient and economical workforce structure

DOD Directive 1400.26, issued on July 28, 1979, established policy guidance for the uniform development, implementation, and administration of effective position management programs throughout DOD. The directive requires the heads of DOD components to (1) issue internal program policy and procedures consistent with key elements in the directive, (2) conduct periodic compliance inspections or surveys, and (3) commit sufficient resources to the program to insure support, coordination, and cooperation. The accountability and responsibility for position management are explicitly assigned to line managers and supervisors, who are to be evaluated at least annually for position management effectiveness. According to the directive, these evaluations of individual performance in position management will be used in merit pay determinations; Senior Executive Service compensation decisions; appraisals for promotion; and reassignment, retention, and reward of supervisory and managerial employees.

While Army has been a front runner in position management efforts, some of the other DOD components are just now in the process of implementing the program which is designed to promote grade level conservation. A discussion of current position management and other grade control efforts in the services follows.

Army

Current controls on average grade in the Army are fairly extensive. In addition to the occupational series targeted for grade reduction as required by OMB Bulletin 77-11, the Headquarters Department of the Army may also release guidance from time to time on additional occupational series which might have grading problems. Indications of Army's commitment to grade control include the following:

- The Office of the Deputy Chief of Staff for Personnel issued a directive, on December 3, 1979, on civilian grade management, instituting a policy of "stop grade escalation." The directive stated: "My staff will monitor grade trends and establish remedial ceilings for individual [Major Commands] MACOM/Staff Agencies when unjustified increases occur over a period of time and appropriate corrective measures are not underway. All levels of command may also use remedial ceilings."
- In a memorandum to major Army commands, dated August 8, 1980, the Adjutant General stated the Army position with regard to position management and average grade control:

"The basic Army objective is to insure that grade escalation has been halted. This means that in some situations the established civilian grade structure should be gradually reduced, with emphasis on corrective position management actions."

--Trends in average grade levels are monitored for individual Army activities. Where there is an increase in average grade and no significant mission or functional change has occurred, managers are expected to consider a checklist of position management options and apply appropriate options in support of Army's interest in personnel cost reduction and classification accuracy. The Army program provides for average grade ceilings in commands with unjustified increases.

--In implementing the Army policy to stop average grade escalation in fiscal year 1980 and fiscal year 1981, the Headquarters, DARCOM, issued a Civilian Grade Management Plan on April 15, 1980, which establishes the command's policies for controlling unwarranted grade escalation in civilian positions. This plan provides for quarterly reporting through command channels by summarizing grade structure trends, costs, and reasons for changes. The GS Civilian Grade Structure Summary, submitted quarterly by individual commands and activities to DARCOM, lists the number of positions filled and vacant at each GS grade level. An accompanying narrative explains reasons for changes in grade structure.

--In the interest of maintaining pay and position accuracy, every civilian position in Army is reviewed every 2 years. The review may be conducted either by OPM, Army Headquarters, or Personnel Specialists at the command level or by the individual supervisor. These classification reviews are conducted systematically, but positions are also subject to review whenever a reorganization is proposed, new standards are issued, or a series appears on the target list for intensive reviews.

--In addition to the review requirements at the command level, there are also reviews scheduled by the Army Headquarters field audit staffs. All installations are visited by an audit team every 2 or 3 years. The audit teams conduct extensive reviews of particular functions. These review teams have found that grade accuracy is high in the Army. For example, in fiscal year 1980 the review teams found an accuracy rate of 93.3 percent after a random review of 568 positions at 17 installations.

Air Force

The Air Force is currently operating under a February 20, 1980, position management regulation. The regulation explains how to set up a position management program under which supervisors and managers can work with civilian personnel specialists and manpower specialists to:

- Organize and structure positions in the most economical and efficient way to meet mission requirements and agency obligations.
- Implement and maintain specialized plans for improving position management continuously in each organizational entity.
- Absorb externally imposed programs without interrupting existing position management goals.

The Air Force also has a regulation, issued on January 16, 1980, controlling the evaluation of personnel management and administration. The regulation establishes objectives, policies, responsibilities, procedures, and guidance for managers and personnel administrators to use in evaluating civilian personnel management and administration. Attachments to the regulation include detailed guidance for evaluating a wide range of personnel activities, including position management and classification accuracy. In addition, the Air Force has drafted regulations specifically on position classification; these proposed regulations explain the authority and responsibilities of the civilian personnel classification program.

Air Force Personnel Management Evaluation Teams operating out of San Antonio review personnel activities at various installations. The teams examine many aspects of personnel management including staffing, classification accuracy, promotions, training, EEO activities, employee relations, and labor relations. These teams prepare reports on the evaluation results, indicating the accuracy of position classification as well as the strengths and weaknesses of various personnel functions at the installations.

In fiscal year 1980, there were 27 evaluation reports issued by the Air Force Office of Civilian Personnel Operations. In fiscal year 1981, this office scheduled reviews for 64 installations. In addition, OPM has included six Air Force installations in the continuation of their special evaluation of classification accuracy in fiscal year 1981.

All Air Force installations have 1 to 30 position classification specialists. Base level classifiers must review all civilian positions every 2 years. An Air Force official indicated that

classification accuracy should be around 95 percent. If an installation falls to a 90 percent accuracy level, the authority to classify positions may be rescinded.

Navy

At the time of our review, the Navy had issued draft guidelines on position management. Navy officials reported the following initiatives and accomplishments in reducing civilian personnel costs and controlling grade escalation:

a. From July 1975 through September 30, 1980, the Navy reduced the numbers of GS-13, 14, and 15 level positions by 1,481, 299, and 441, respectively, for a total of 2,221. Central classification of all GS-13 through GS-15 level positions from July 1975 through August 1980, as well as hiring freezes on high level positions, imposed by the Chief of Naval Material and the Chief of Naval Operations, were instrumental in achieving these reductions.

b. Budgetary grade level targets for GS-13 through GS-15 positions were assigned to all major commands within the Navy. These targets identified the maximum allowable number of civilians at these grade levels. The funds available for the compensation of civilians were adjusted to reflect these targets, which in most instances, were below current on-board counts at the respective grade levels. This measure induced managers to capitalize on attrition and other opportunities to restructure high level positions and reduce grade levels.

c. Existing programs are being reemphasized to assure the propriety of the way in which positions are structured (i.e., the Position Management Program) as well as the accuracy of the position descriptions and grade levels relating to the positions. Adherence to strict application of position classification and grade standards is being enforced by the establishment of a monitoring program at Command Headquarters and by the Chief of Naval Operations.

d. A vigorous on-site evaluation program has been established and is being implemented in which ad hoc groups of personnel specialists perform indepth analyses of the personnel programs of selected activities. Classification and position management programs form an integral part of these evaluations.

DOD officials believe the aggressive application of a strong position management and job classification program throughout DOD serves to properly structure and grade the DOD work force. Since we reviewed only component policies and operating procedures, we cannot determine the actual quality

of position management programs or the accuracy of classification actions in DOD.

According to officials at OPM, the classification accuracy rate is much higher for DOD agencies than for other Federal agencies. The OPM officials based their conclusions upon evaluations conducted annually in DOD agencies and other Federal agencies. OPM officials further indicated that DOD devotes more resources to classification work. The number of Position Classification Specialists in DOD is higher than in the other Federal agencies. In 1978 the ratio of DOD classifiers to employees was 1:621 while the non-DOD ratio was 1:1,413. In addition, the training program for Position Classifiers in DOD was considered by OPM to be more thorough than that of other Federal agencies.

RESULTS OF GRADE CONTROLS

We could not determine the effect each individual grade control mechanism had on the DOD grade structure. Over the 16-year period DOD's population and grade distribution increases were less than those experienced in non-DOD agencies, suggesting that the cumulative effect of the DOD mechanisms has been to slow growth.

While personnel cutbacks at grades GS-13 through GS-15 were congressionally mandated, DOD has also made reductions in other grades since 1974, specifically at grades GS-2, 3, 4, 7, 9, and 11. A comparison of the DOD population trends in these grades with the non-DOD Federal work force strongly suggests that DOD has exercised more control over its GS positions than have other Federal agencies. Even the significant grade increases in DOD, GS-5 and GS-12, for example, are not as great as the corresponding increases in the rest of the Federal work force. (See charts in app. VIII comparing the grade level population trends in DOD with non-DOD agencies for 1964, 1974, and 1980.)

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

The central issue in arguments about grade escalation is whether or not the explanations advanced for it do in fact justify its occurrence. Average grade is only a gross measure of changes in employee distribution and cannot indicate whether these changes are justified or cost effective. Many factors affect GS grade populations and, therefore, distribution, and it is unclear what degree of importance should be attached to any single factor. As noted in a Rand study on the subject, "In view of the changing nature of government functions, increasing technology, and the economic factors at work in the country, it is not clear what purpose is served by an indicator like average grade. The real problem is what mix of grades and occupations is necessary to conduct governmental business." ^{1/}

The objective in controlling the size and grade structure of the DOD GS population is to keep the costs of maintaining an adequate and efficient Defense work force at a minimum. Meeting this objective requires careful review not only of the indicators like average grade, but also of technology's impact on job mix, the effectiveness of position management and classification, and the effects of congressional and executive mandates on mission and staffing requirements.

We believe the primary reason for grade escalation in the DOD GS work force is the increasing complexity and advancing technology in the Defense function. We believe that beyond the purely defense-related technological advances, there have been major societal changes reflected in almost every American institution, including DOD. These changes have had a multiplier effect on the complexity of the Defense mission and on the need for a more highly trained and specialized work force. Consequently, there has been significant employment growth in higher graded professional, administrative, and technical occupations accompanied by major employment declines in clerical occupations.

Organizational changes, personnel policies, and employment limitations in effect at various times during the past 16 years have caused further upward pressure on the GS grade structure. In some cases, poor management practices have also contributed to grade escalation. Many of these factors are interdependent and have had a cumulative effect on grade distribution. We could not

^{1/}James H. Hayes, et al. "A Preliminary Analysis of the Increase in the Average Grade of General Schedule Federal Employees" (R-2329-MRAL) Rand (Santa Monica, CA, Nov. 1978) p. 38.

isolate how much of the increase in grade structure is attributable to each factor.

Since even a small amount of grade growth can cost an organization the size of DOD several million dollars annually, grade control mechanisms have been applied. We could not determine the effect of the individual controls--average grade ceilings, high grade reductions, position management--on the DOD grade structure. However, DOD's grade escalation was less than that experienced in other Federal Government agencies, suggesting that the cumulative effect of the DOD controls has been to slow growth.

Restrictions on average grade and high-grade reductions control personnel costs but do not distinguish between justified and unwarranted grade escalation. These types of controls can also produce staffing imbalances, poor morale, reduced services, and other cost inefficiencies.

Position management, on the other hand, directly attacks unwarranted grade growth. At its best, position management offers a systematic approach for determining the number of positions needed, the skill and knowledge requirements of positions, and the grouping and assignment of duties and responsibilities among positions. Prime objectives of position management are personnel cost control and grade level conservation.

The services appear to be emphasizing position management, including proper position classification, to control unwarranted grade growth. While we did not review the administration of these programs, our prior work has stressed the importance of position management and classification to efficient and cost-effective personnel management. In a 1975 report 1/ we stressed the need to develop at all management levels a special informed interest in economically structuring work and properly classifying positions.

We believe that DOD's policy guidance on position management, if properly implemented, offers a better alternative to controlling unnecessary grade escalation than presently mandated grade control mechanisms. Position management avoids the problems associated with other controls now in place and does not arbitrarily cap justified grade increases.

1/"Classification of Federal White-Collar Jobs Should Be Better Controlled" (FPCD-75-173, Dec. 4, 1975).

RECOMMENDATIONS

GAO recommends that the Secretary of Defense:

- Take actions to insure each component complies with DOD policy guidance on position management.
- Require supervisory/managerial performance appraisals to include position management as a critical element whenever position management deficiencies exist.

GAO recommends that the Congress:

- During oversight hearings, require DOD components to report on the adequacy of position management programs including (1) results of onsite personnel management evaluations, (2) specific cost efficiencies and improvements planned and accomplished as a result of these programs, and (3) specific sanctions applied in cases of grossly negligent or intentionally poor classification or position management.
- Where a DOD component demonstrates it has implemented an effective position management program, use it as the control mechanism in lieu of high grade, average grade, or other similar control mechanisms.

TABLE 1

GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
NON-DOD AGENCIES

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	3,236	567	1,682	- 48.0	0.6	0.1	0.2
2	16,592	12,458	15,970	- 3.7	2.8	1.7	1.9
3	67,390	51,510	47,145	- 30.0	11.6	7.2	5.7
4	80,354	78,836	97,873	+ 21.8	13.9	11.1	11.8
5	63,309	96,984	106,136	+ 67.6	10.9	13.6	12.8
6	28,538	46,418	53,412	+ 87.1	4.9	6.5	6.4
7	51,301	71,203	77,938	+ 51.9	8.9	10.0	9.4
8	12,447	14,282	16,824	+ 35.2	2.1	2.0	2.0
9	66,802	65,475	76,479	+ 14.3	11.5	9.2	9.2
10	11,016	14,615	22,470	+104.0	1.9	2.0	2.7
11	59,697	72,276	84,854	+ 42.1	10.3	10.1	10.2
12	47,608	71,666	89,302	+ 87.6	8.2	10.0	10.7
13	37,882	63,455	75,137	+ 98.3	6.5	8.9	9.0
14	19,696	32,012	43,355	+120.1	3.4	4.5	5.2
15	10,140	17,736	21,793	+114.9	1.8	2.5	2.6
16	2,193	2,681	740*	- 66.3	.4	.4	.1
17	740	854	223*	- 69.9	.1	.1	.0
18	323	325	81*	- 74.9	.1	.0	.0
Total	579,264	713,353	831,414		100%	100%	100%
Average grade	7.63	8.17	8.35				

* Senior Executive Service excluded.

a/Total may not equal 100% due to rounding.

TABLE 2
 GRADE POPULATIONS AND DISTRIBUTIONS
 1964, 1974, AND 1980 FOR GS EMPLOYEES
 DOD

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	373	2,897	710	+90.3	0.07	0.47	0.12
2	10,124	19,075	7,782	-23.1	1.93	3.13	1.36
3	62,661	57,447	42,721	-31.8	11.98	9.43	7.48
4	87,349	80,867	73,470	-15.9	16.70	13.28	12.87
5	69,236	82,759	83,868	+21.1	13.23	13.59	14.69
6	28,761	33,922	34,492	+19.9	5.50	5.57	6.04
7	44,717	56,577	53,799	+20.3	8.55	9.29	9.43
8	7,188	12,035	10,544	+46.7	1.37	1.97	1.85
9	61,138	65,791	62,227	+ 1.8	11.69	10.80	10.90
10	5,782	6,498	5,964	+ 3.1	1.10	1.06	1.04
11	58,924	69,405	68,879	+16.9	11.26	11.39	12.07
12	42,740	59,425	69,982	+63.7	8.17	9.75	12.26
13	26,054	39,600	35,747	+37.2	4.98	6.50	6.26
14	12,165	15,372	14,729	+21.1	2.32	2.52	2.58
15	4,962	6,340	5,786	+16.6	.94	1.04	1.01
16	569	693	90*	-84.2	.10	.11	.02
17	140	125	10*	-92.9	.02	.02	.00
18	54	40	6*	-88.9	.01	.00	.00
Total	522,937	608,868	570,806		100%	100%	100%
Average grade	7.29	7.58	7.89				

*Senior Executive Service excluded.
 a/Total may not equal 100% due to rounding.

TABLE 3

GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
ARMY

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	182	1,378	305	+67.6	0.08	0.58	0.14
2	5,171	8,683	3,528	-31.8	2.48	3.67	1.58
3	23,425	23,138	18,238	-22.1	11.27	9.79	8.17
4	33,237	32,334	31,003	- 6.7	16.00	13.68	13.89
5	26,767	31,824	33,018	+23.4	12.88	13.47	14.79
6	13,869	14,305	14,428	+ 4.0	6.67	6.05	6.46
7	18,591	25,869	24,324	+30.8	8.95	10.95	10.89
8	3,637	4,286	3,989	+ 9.7	1.75	1.81	1.79
9	21,446	22,550	22,150	+ 3.3	10.32	9.54	9.92
10	2,785	2,707	2,393	-14.1	1.34	1.14	1.07
11	23,579	24,679	24,179	+ 2.5	11.35	10.44	10.83
12	17,404	22,502	24,830	+42.7	8.37	9.52	11.12
13	10,357	14,441	13,452	+29.9	4.98	6.11	6.03
14	5,137	5,428	5,471	+ 6.5	2.47	2.29	2.45
15	1,930	1,908	1,906	- 1.2	.92	.80	.85
16	142	156	41*	-71.1	.06	.06	.02
17	28	19	3*	-89.3	.01	.00	.00
18	10	5	3*	-70.0	.00	.00	.00
Total	207,697	236,213	223,261		100%	100%	100%
Average grade	7.30	7.38	7.65				

* Senior Executive Service excluded.

a/Total may not equal 100% due to rounding.

TABLE 4

GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
AIR FORCE

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	45	855	124	+175.6	0.02	0.57	0.09
2	1,679	4,230	1,383	- 17.6	1.07	2.83	1.03
3	19,355	14,261	9,486	- 51.0	12.43	9.56	7.10
4	26,503	19,848	16,817	- 36.5	17.02	13.31	12.58
5	22,106	22,491	21,285	- 3.7	14.20	15.08	15.92
6	7,355	8,901	8,848	+ 20.3	4.72	5.96	6.62
7	13,127	12,618	12,776	- 2.7	8.43	8.46	9.56
8	1,626	4,357	3,557	+118.8	1.04	2.92	2.66
9	20,725	18,208	17,042	- 17.8	13.31	12.21	12.75
10	1,569	1,326	1,272	- 18.9	1.00	.88	.95
11	17,500	15,624	14,742	- 15.8	11.25	10.47	11.03
12	12,426	13,044	14,448	+ 16.3	7.98	8.75	10.81
13	7,460	9,079	8,204	+ 10.0	4.79	6.08	6.14
14	2,982	3,085	2,833	- 5.0	1.91	2.06	2.12
15	1,048	1,029	873	- 16.7	.67	.69	.65
16	94	129	4*	- 95.7	.06	.08	.00
17	25	20	2*	- 92.0	.01	.01	.00
18	6	4	1*	- 83.3	.00	.00	.00
Total	155,631	149,109	133,697		100%	100%	100%
Average grade	7.25	7.41	7.76				

* Senior Executive Service excluded.
a/Total may not equal 100% due to rounding.

TABLE 5
GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
NAVY

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	135	401	238	+ 76.3	0.10	0.25	0.15
2	2,765	4,810	2,194	- 20.7	2.10	2.92	1.37
3	16,680	16,376	12,413	- 25.6	12.70	9.96	7.77
4	23,489	21,973	20,040	- 14.7	17.89	13.37	12.55
5	16,528	21,227	22,799	+ 37.9	12.58	12.91	14.28
6	6,069	8,093	8,630	+ 42.4	4.62	4.92	5.40
7	10,221	12,845	11,728	+ 14.7	7.78	7.81	7.34
8	1,550	2,754	2,403	+ 55.0	1.18	1.67	1.50
9	15,146	16,580	15,532	+ 2.5	11.53	10.08	9.73
10	1,201	2,197	2,089	+ 73.9	.91	1.33	1.31
11	14,872	18,854	20,361	+ 36.9	11.32	11.47	12.75
12	10,872	17,625	23,543	+116.5	8.28	10.72	14.74
13	6,975	12,666	10,950	+ 57.0	5.31	7.70	6.86
14	3,226	5,297	4,850	+ 50.3	2.45	3.22	3.04
15	1,314	2,372	1,900	+ 44.6	1.00	1.44	1.19
16	218	236	29*	- 86.7	.16	.14	.02
17	23	28	2*	- 91.3	.01	.01	.00
18	4	2	1*	- 75.0	.00	.00	.00
Total	131,288	164,336	159,702		100%	100%	100%
Average grade	7.27	7.80	8.11				

* Senior Executive Service excluded.
a/Total may not equal 100% due to rounding.

TABLE 6
GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
DEFENSE LOGISTICS AGENCY

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note a))		
	1964	1974	1980		1964	1974	1980
1	11	228	34	+209.1	0.04	0.55	0.10
2	435	1,186	610	+ 40.2	1.96	2.86	1.75
3	2,890	3,192	2,224	- 23.0	13.05	7.71	6.37
4	3,487	5,646	4,524	+ 29.7	15.75	13.64	12.95
5	2,996	5,609	5,138	+ 71.5	13.52	13.55	14.71
6	735	1,502	1,525	+107.5	3.31	3.62	4.36
7	2,152	3,601	3,035	+ 41.0	9.71	8.69	8.69
8	243	292	291	+ 19.8	1.09	.70	.83
9	3,433	6,440	5,455	+ 58.9	15.50	15.55	15.61
10	185	143	87	- 53.0	.83	.34	.25
11	2,476	6,784	5,874	+137.2	11.18	16.39	16.81
12	1,593	4,028	3,932	+146.8	7.19	9.73	11.25
13	831	1,851	1,420	+ 70.9	3.75	4.47	4.06
14	435	586	558	+ 28.3	1.96	1.41	1.60
15	223	283	231	+ 3.6	1.00	.68	.66
16	15	15	1*	- 93.3	.06	.03	.00
17	4	5	1*	- 75.0	.01	.01	.00
18	1	0	0*	-100.0	.00	.00	.00
Total	<u>22,145</u>	<u>41,391</u>	<u>34,940</u>		<u>100%</u>	<u>100%</u>	<u>100%</u>
Average grade	7.20	7.69	7.90				

* Senior Executive Service excluded.
a/Total may not equal 100% due to rounding.

TABLE 7

GRADE POPULATIONS AND DISTRIBUTIONS
1964, 1974, AND 1980 FOR GS EMPLOYEES
OTHER DOD AGENCIES (note a)

GS	Population			Percentage change 1964-1980	Distribution (Percent of total GS population (note b))		
	1964	1974	1980		1964	1974	1980
1	-	35	9	-	-	.19	.05
2	74	166	6	- 91.9	1.19	.93	.35
3	311	480	360	+ 15.8	5.03	2.69	1.87
4	633	1,066	1,086	+ 71.6	10.25	5.98	5.65
5	839	1,608	1,628	+ 94.0	13.58	9.02	8.48
6	733	1,121	1,061	+ 44.7	11.86	6.29	5.52
7	626	1,644	1,936	+209.3	10.13	9.22	10.08
8	132	346	304	+130.3	2.13	1.94	1.58
9	388	2,012	2,048	+427.8	6.28	11.29	10.66
10	42	125	123	+192.9	.68	.70	.64
11	497	3,464	3,723	+649.1	8.04	19.43	19.38
12	445	2,226	3,229	+625.6	7.20	12.50	16.81
13	431	1,563	1,721	+299.3	6.97	8.77	8.96
14	385	976	1,017	+164.2	6.23	5.47	5.30
15	447	748	876	+ 96.0	7.23	4.19	4.56
16	100	157	15*	- 85.0	1.61	.88	.08
17	60	53	2*	- 96.7	.97	.29	.01
18	33	29	1*	- 97.0	.53	.16	.01
Total	6,176	17,819	19,206		100%	100%	100%
Average grade	8.62	9.45	9.66				

* Senior Executive Service excluded.

a/Includes the Office of the Secretary of Defense (OSD), the Organization of the Joint Chiefs of Staff and those organizations which perform specialized functions supporting the entire Department of Defense. While DIA falls in this category, it was treated separately because of its large population. The National Security Agency is excluded.

b/Total may not equal 100% due to rounding.

PATCO DEFINITIONS

PATCO categories are defined as follows:

Professional occupations are those that require knowledge in a field of science or learning characteristically acquired through education or training equivalent to a bachelor's or higher degree with major study pertinent to the specialized field, as distinguished from general education. The work of a professional occupation requires the exercise of discretion, judgment, and personal responsibility for the application of an organized body of knowledge that is constantly studied to make new discoveries and interpretations, and to improve the data, materials, and method.

Administrative occupations are those that involve the exercise of analytical ability, judgment, discretion, personal responsibility, and the application of a substantial body of knowledge of principles, concepts, and practices applicable to one or more fields of administration or management. While these positions do not require specialized educational majors, they do involve the type of skills (analytical, research, writing, judgment) typically gained through a college level general education, or through progressively responsible experience.

Technical occupations are those that involve work which is nonroutine in nature and is typically associated with, and supportive of, a professional or administrative field. Such occupations involve extensive practical knowledge gained through

on-the-job experience, or specific training less than that represented by college graduation. Work in these occupations may involve substantial elements of the work of the professional or administrative field, but requires less than full competence in the field involved.

Clerical occupations are those that involve structured work in support of office, business, field, or fiscal operations; duties are performed in accordance with established policies, experience, or working knowledge related to the tasks to be performed.

Other occupations are those miscellaneous occupations that do not fall into the above professional, administrative, technical, or clerical groups.

Mixed Occupations in the DOD Work Force

<u>Series</u>	<u>Title</u>
072	Fingerprint Identification
203	Personnel Clerical and Assistance
204	Military Personnel Clerk and Technician
301	General Clerical and Administrative
303	Miscellaneous Clerk and Assistant
335	Computer Aid and Technician
501	General Accounting Clerical and Administrative
520	Accounts Maintenance Clerical
525	Accounting Technician
963	Legal Instruments Examining
986	Legal Clerk and Technician
1001	General Arts and Information
1106	Procurement Clerical and Assistance
1107	Property Disposal Clerical and Technical
1421	Archives Technician
1531	Statistical Assistant
1670	Equipment Specialist
1897	Customs Aid
1899	Miscellaneous Inspection
2001	General Supply
2005	Supply Clerical and Technician
2102	Transportation Clerk and Assistant
2131	Freight Rate
2133	Passenger Rate

DOD GS Occupations With Population Decreases Greater than 100 (1964-1980)

Series	Title	1964		1980		Percent of population decrease (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
<u>Professional</u>						
403	Microbiology	416	11.36	218	11.11	48
610	Nurse	3,855	6.06	3,680	9.00	5
806	Materials engineering	873	11.93	541	12.36	38
810	Civil engineering	9,073	11.47	8,861	11.71	2
830	Mechanical engineering	8,339	11.45	7,873	11.68	6
850	Electrical engineering	2,304	11.09	1,912	11.40	17
893	Chemical engineering	765	11.61	660	11.53	14
1310	Physics	3,721	11.62	3,365	12.59	10
1320	Chemistry	2,552	11.25	1,892	11.63	26
1321	Metallurgy	416	11.80	315	12.21	24
1410	Librarian	1,454	9.16	1,028	10.21	29
1530	Statistician	422	11.57	178	11.43	58

DOD GS Occupations With Population Decreases Greater than 100 (1964-1980)

Series	Title	1964		1980		Percent of population decrease (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
<u>Administrative</u>						
201	Personnel management	3,858	11.02	3,185	11.11	17
221	Position classification	1,751	10.96	1,567	11.09	11
340	Program management	445	13.68	307	13.47	31
341	Administrative officer	3,755	9.60	2,195	9.72	42
1082	Writing and editing	950	9.08	825	9.23	13
1104	Property disposal	1,272	8.91	911	9.56	28
1150	Industrial specialist	3,346	11.12	2,296	10.90	31
1170	Realty	1,087	10.52	959	10.54	12
1171	Appraising and assessing	295	11.18	162	11.69	45
1630	Cemetery administrative	129	7.54	5	12.00	96
1640	Facility management	1,328	9.78	356	10.06	73
2010	Inventory management	12,081	9.11	7,820	9.57	35
2030	Distribution facilities and storage management	762	9.07	519	10.11	32
2032	Packaging	663	10.22	430	10.20	35
2050	Supply cataloging	3,705	7.75	1,671	9.13	55
2101	General transportation	1,358	7.52	1,189	8.35	12
2161	Marine cargo	236	9.58	87	9.40	63

DOD GS Occupations With Population Decreases Greater than 100 (1964-1980)

<u>Series</u>	<u>Title</u>	<u>1964</u>		<u>1980</u>		<u>Percent of population decrease (1964-1980)</u>
		<u>Population</u>	<u>Avg. grade</u>	<u>Population</u>	<u>Avg. grade</u>	
362	Electric Accounting machine project planning	1,091	8.08	30	8.30	97
388	Cryptographic equipment operation	489	6.00	35	6.26	93
390	Communications relay operation	512	5.53	225	6.90	56
817	Surveying technician	1,609	5.27	745	5.87	54
818	Engineering Drafting	2,734	5.96	1,171	5.43	57
1020	Illustrating	1,822	8.33	1,632	8.39	10
1105	Purchasing	6,130	4.60	2,630	5.72	57
1371	Cartographic technician	1,993	6.58	535	7.89	73
1521	Mathematics technician	252	5.53	136	6.51	46

DOD GS Occupations With Population Decreases Greater
than 100 (1964-1980)

<u>Series</u>	<u>Title</u>	<u>1964</u>		<u>1980</u>		<u>Percent of population decrease (1964-1980)</u>
		<u>Population</u>	<u>Avg. grade</u>	<u>Population</u>	<u>Avg. grade</u>	
<u>Clerical</u>						
302	Messenger	755	1.80	380	2.07	50
305	Mail and file clerk	9,441	3.61	6,518	3.63	31
309	Correspondence clerk	493	4.46	170	4.61	66
312	Clerk-stenographer and reporter	22,601	4.03	9,945	4.10	56
322	Clerk-typist	39,382	3.12	32,511	3.22	17
324	Cold-type composing machine	427	3.85	109	4.08	74
354	Bookkeeping machine operation	143	3.04	5	3.00	97
356	Data transcriber	7,618	3.08	5,442	3.23	29
357	Coding	602	4.02	458	3.88	24
359	Electric accounting machine operation	4,259	3.94	332	4.17	92
382	Telephone operating	4,292	3.46	2,507	3.49	42
385	Teletypist	1,429	4.60	193	4.60	86
590	Time and leave	337	3.13	140	3.30	58
<u>Other</u>						
085	Guard	6,529	4.15	5,641	4.63	14
<u>Mixed</u>						
520	Accounts maintenance clerical	6,979	4.48	411	4.75	94
1531	Statistical assistant	2,899	5.57	631	5.57	78
1670	Equipment specialist	10,742	10.10	8,443	10.18	21
2001	General supply	9,297	8.32	4,425	8.86	52

DOD GS Occupations With Population Increases Greater than 100 (1964-1980)

Series	Title	1964		1980		Percent of population increase (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
<u>Professional</u>						
020	Community planning	30	12.00	145	11.09	383
101	Social science	39	11.84	215	11.18	451
110	Economist	114	11.56	343	11.53	201
180	Psychology	556	12.13	921	12.17	66
185	Social work	24	9.87	178	10.83	642
401	General biological science	236	11.27	588	10.59	149
510	Accounting	9,037	10.94	10,262	11.02	14
602	Medical officer	420	12.87	815	13.43	94
644	Medical technologist	283	7.54	696	8.01	146
660	Pharmacist	88	9.65	307	10.61	249
801	General engineering	7,109	12.88	9,527	12.77	34
808	Architecture	619	11.51	747	11.38	21
819	Sanitary engineering	110	11.95	424	11.65	285
840	Nuclear engineering	203	11.82	992	11.82	389
855	Electronics engineering	9,965	11.84	15,390	12.19	54
861	Aerospace engineering	2,902	12.32	3,693	12.51	27
896	Industrial engineering	1,799	11.41	2,002	11.66	11
905	General attorney	1,136	12.85	1,279	13.08	13
1301	General physical science	1,134	13.39	1,240	13.04	9
1370	Cartography	2,262	9.56	3,049	10.24	35
1515	Operations research	545	13.54	2,506	12.59	360
1710	Education and vocational training	2,844	10.72	3,340	10.80	17

DOD GS Occupations With Population Increases Greater
than 100 (1964-1980)

Series	Title	1964		1980		Percent of population increase (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
<u>Administrative</u>						
018	Safety management	853	10.59	1,372	10.48	61
080	Security administration	1,452	9.94	2,041	10.08	41
132	Intelligence	2,311	11.48	2,529	11.98	9
212	Personnel staffing	1,557	9.12	1,886	10.58	21
230	Employee relations	462	10.16	791	10.95	71
334	Computer specialist	6,590	10.38	15,733	11.16	139
391	Communications manage- ment	168	10.16	1,008	11.81	500
504	Budget and accounting	76	10.98	379	10.78	399
505	Financial management	276	13.17	549	13.07	99
560	Budget administration	4,157	10.34	6,112	10.28	47
1071	Audio-visual production	359	11.13	466	11.21	30
1081	Public information	676	10.77	969	10.39	43
1083	Technical writing and editing	1,126	10.28	1,296	10.31	15
1084	Visual information	341	10.58	877	10.36	157
1101	General business and industry	722	11.40	2,706	9.95	275
1102	Contract and procurement	12,025	10.32	13,828	10.51	15
1144	Commissary store manage- ment	553	7.32	848	9.45	53
1173	Housing management	469	8.59	1,196	8.89	155
1601	General facilities and equipment management	200	10.82	1,448	11.62	624
1654	Printing management	338	10.20	448	10.31	33
1712	Training instruction	4,548	9.25	4,937	9.47	9
1810	General investigating	224	8.33	852	10.48	280
1811	Criminal investigating	104	12.43	645	11.17	520
2003	Supply program manage- ment	1,390	10.40	4,595	10.99	231
2152	Air traffic control	335	9.44	521	10.29	56

DOD GS Occupations With Population Increases Greater
than 100 (1964-1980)

Series	Title	1964		1980		Percent of population increase (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
<u>Technical</u>						
332	Computer operation	3,114	6.92	6,726	6.94	116
392	General communications	1,517	5.57	2,122	5.86	40
393	Communications specialist	806	11.59	1,194	10.93	48
621	Nursing assistant	2,841	3.14	3,339	4.35	18
645	Medical technician	427	6.05	638	5.74	49
647	Medical radiology technician	220	5.30	429	5.91	95
649	Medical machine technician	41	4.80	285	5.85	595
661	Pharmacy technician	4	3.75	139	4.86	3,375
681	Dental assistant	518	3.86	1,516	4.56	193
699	Health aid and technician	187	4.28	1,062	5.57	468
802	Engineering technician	13,597	9.19	13,945	9.29	3
809	Construction control	1,832	7.25	2,283	8.44	25
856	Electronics technician	6,264	10.04	9,739	10.15	55
962	Contact representative	27	6.88	213	6.56	689
1152	Production control	6,065	9.31	6,619	8.58	9
1311	Physical science technician	1,004	7.60	1,704	7.64	70
1411	Library technician	976	4.58	1,567	5.02	61
2181	Aircraft operation	340	11.64	2,145	11.45	531

DOD GS Occupations With Population Increases Greater
than 100 (1964-1980)

Series	Title	1964		1980		Percent of population increase (1964-1980)
		Population	Avg. grade	Population	Avg. grade	
316	Clerk-dictating machine transcriber	1,540	4.03	2,261	4.29	47
318	Secretary	24,973	5.26	29,807	5.33	19
344	Management clerical and assistance	2,591	8.06	3,658	6.31	41
350	Office machine operating	590	2.62	928	3.31	57
394	Communications clerk	159	4.47	344	4.40	116
544	Payroll	2,370	4.79	2,580	5.11	9
545	Military pay	3,548	4.64	4,190	5.00	18
998	Claims clerk	24	4.70	221	4.61	821
1087	Editorial assistance	1,050	5.25	1,330	5.14	27
2132	Travel	970	5.02	1,151	5.10	19
2134	Shipment clerk	1,809	4.52	2,782	4.57	54
<u>Other</u>						
083	Police	1,301	5.36	1,969	5.29	51
599	Accounting student trainee	6	4.33	168	4.23	2,700
899	Engineering and architecture student trainee	488	3.61	957	3.88	96
<u>Mixed</u>						
203	Personnel clerical and assistance	3,408	4.75	5,182	5.10	52
204	Military personnel clerk and technician	5,688	4.79	8,820	4.93	55
301	General clerical and administrative	37,444	6.91	40,283	6.82	8
501	General accounting clerical and administrative	5,337	6.12	5,688	6.79	7
525	Accounting technician	7,915	5.86	12,069	5.58	52
986	Legal clerk and technician	203	6.14	433	5.52	113
1001	General arts and information	202	8.97	464	9.00	130
2005	Supply clerk and technician	25,160	4.25	25,940	4.91	3

DOD GS POPULATION AND AVERAGE GRADE FOR EACH OFM OCCUPATIONAL GROUP

Group number	Occupational group title	1964		1974 (note a)		1980	
		Population	Avg. grade	Population	Avg. grade	Population	Avg. grade
000	Miscellaneous occupations	20,093	5.56	25,707	5.89	23,527	6.14
100	Social Science, Psychology, and Welfare	4,996	10.50	7,845	9.63	8,413	10.10
200	Personnel Management and Industrial Relations	17,698	7.61	22,516	7.36	23,876	7.47
300	General Administrative, Clerical, and Office Services	185,433	5.31	217,989	5.79	190,763	6.19
400	Biological Sciences	1,690	9.29	1,650	8.93	1,968	9.49
500	Accounting and Budget	44,010	6.93	45,838	7.19	46,552	7.51
600	Medical, Hospital, Dental and Public Health	9,483	5.48	13,874	5.73	16,727	6.54
700	Veterinary Medical Science	14	12.78	8	13.12	7	14.14
800	Engineering and Architecture	72,300	10.63	86,964	10.77	85,587	10.99
900	Legal & Kindred	2,050	10.14	2,219	9.83	2,804	9.38
1000	Information & Arts	8,632	8.56	10,357	8.71	10,168	8.75
1100	Business and Industry	32,950	9.04	38,368	8.83	39,913	8.74
1200	Copyright, Patent and Trademark	223	13.07	173	13.38	157	13.34
1300	Physical Sciences	15,274	10.21	15,957	11.02	14,744	10.89
1400	Library and Archives	2,526	7.31	3,205	7.52	3,172	7.60
1500	Mathematics and Statistics	6,553	8.50	6,261	10.70	6,623	11.17
1600	Equipment, Facilities and Service	13,110	10.04	12,254	10.29	10,811	10.37
1700	Education	7,495	9.78	9,807	9.63	10,020	9.45
1800	Investigation	403	9.38	957	11.05	1,573	10.68
1900	Quality Assurance, Inspection and Grading	12,668	9.75	14,783	9.65	13,416	9.56
2000	Supply	56,029	6.45	54,771	6.64	47,523	6.82
2100	Transportation	9,307	7.03	12,364	7.57	12,462	7.59
	Total	<u>522,937</u>		<u>603,867</u>		<u>570,806</u>	

a/1974 data contains 4,993 people in an unidentified occupational series.

New DOD GS Occupational Series

<u>Series</u>	<u>Title</u>	1980	
		<u>Population</u>	<u>Avg. grade</u>
<u>Professional</u>			
184	Sociology	24	10.50
193	Archaeology	55	10.24
408	Ecology	79	9.94
601	General health science	16	11.00
605	Nurse anesthetist	3	11.33
858	Biomedical engineering	25	11.40
880	Mining engineering	1	13.00
904	Law clerk	16	10.00
1315	Hydrology	48	10.75
1386	Photographic technology	67	11.84
1550	Computer science	305	11.43
<u>Administrative</u>			
011	Bond sales	1	11.00
023	Outdoor recreation planner	147	11.29
025	Park management	720	8.81
028	Environmental protection specialist	81	10.52
030	Sports specialist	216	8.19
160	Equal employment opportunity	939	10.73
205	Military personnel management	1,088	10.62
233	Labor relations	390	11.86
246	Contractor industrial relations	54	11.85
345	Program analysis	4,661	11.31
346	Logistics management	3,628	11.86
685	Public health program specialist	1	7.00
688	Sanitarian	10	8.60
930	Hearings and appeals	6	11.50
950	Paralegal specialist	94	8.38
1054	Theatre specialist	20	8.00
1056	Art specialist	158	8.42
1412	Technical information services	505	10.29
1715	Vocational rehabilitation	4	9.00
1910	Quality assurance	11,154	9.99
2125	Highway safety management	4	10.50

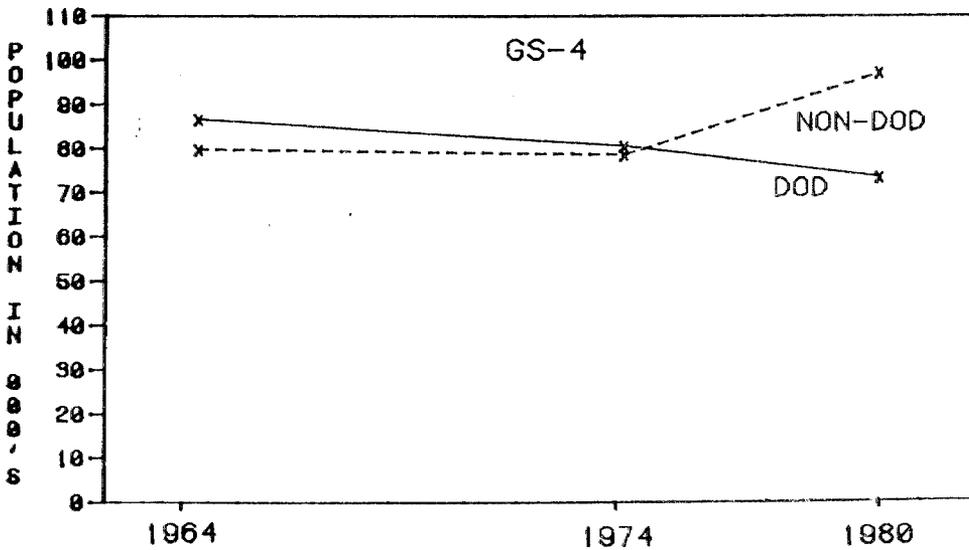
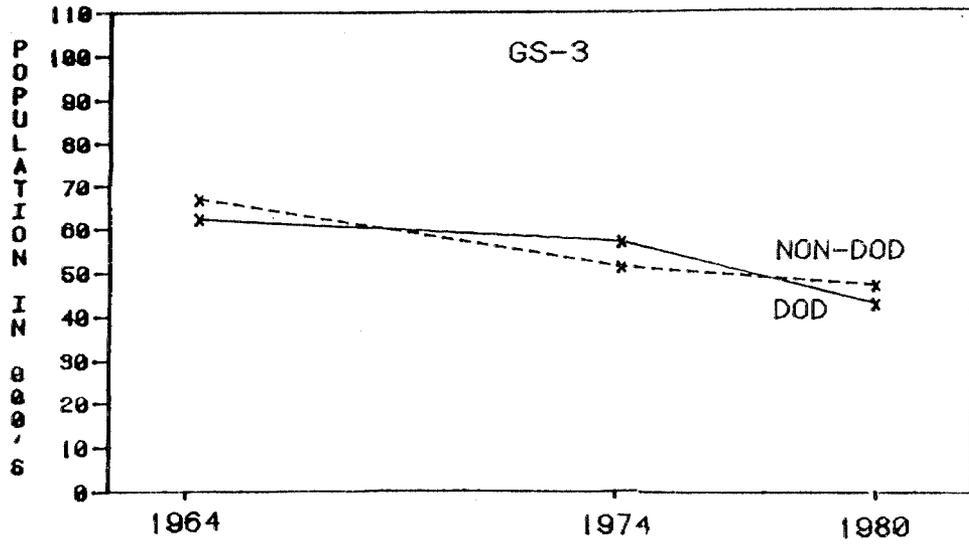
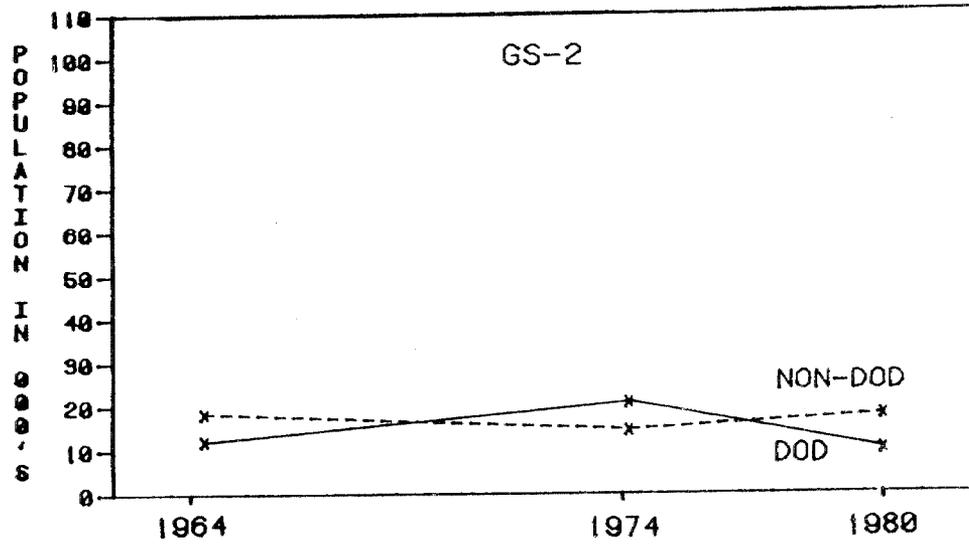
New DOD GS Occupational Series

<u>Series</u>	<u>Title</u>	1980	
		<u>Population</u>	<u>Avg. grade</u>
<u>Technical</u>			
019	Safety technician	103	6.77
021	Community planning technician	5	7.20
026	Park technician	347	4.86
029	Environmental protection specialist	22	5.73
186	Social service aide and assistant	323	6.77
189	Recreation aide and assistant	700	3.85
603	Physician's assistant	15	9.87
622	Medical aid (sterile supplies)	149	3.36
642	Nuclear medicine technician	40	7.57
646	Pathology technician	182	6.91
648	Therapeutic radiologic technologist	19	6.74
675	Medical records technician	845	4.58
684	Public health dental hygiene	28	6.61
698	Environmental health technician	67	6.61
895	Industrial engineering technician	2,415	9.20
1316	Hydrologic aide and technician	193	6.80
1702	Education and training technician	1,586	6.42
1960	Quality inspection	2,261	7.43
<u>Clerical</u>			
547	Benefit-payment roll	1	5.00
679	Medical clerical	1,449	3.65
<u>Other</u>			
099	General student trainee	688	4.05
199	Social science student trainee	13	4.46
499	Biological science student trainee	31	3.97
1891	Customs entrance officer	1	5.00

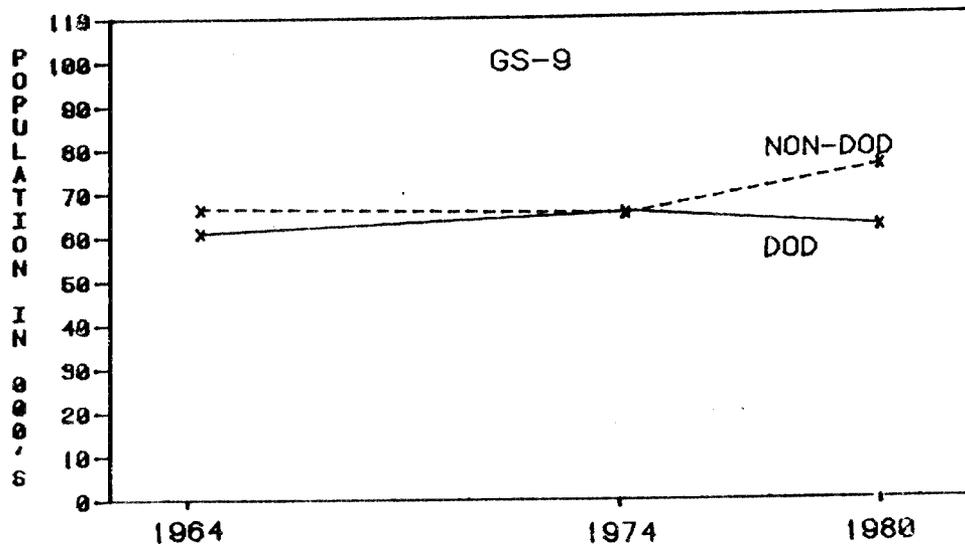
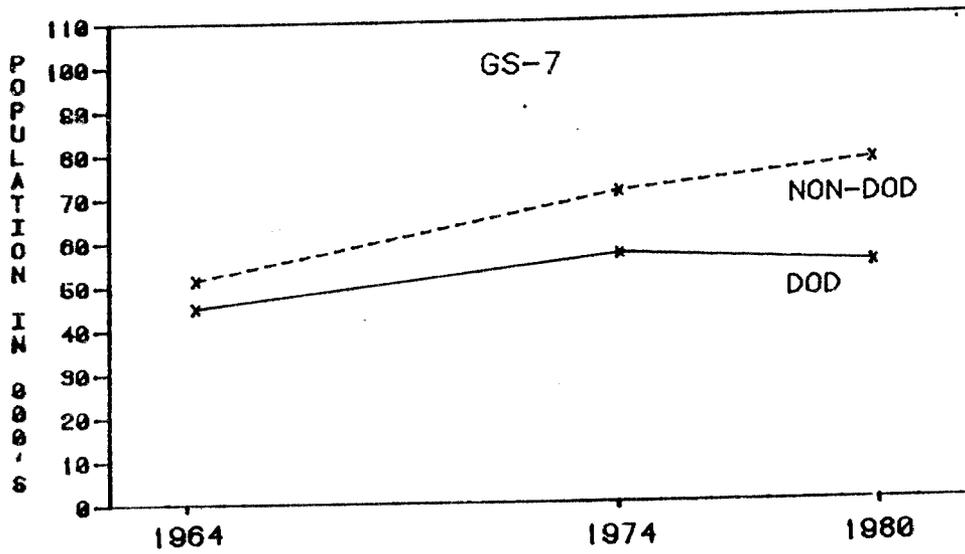
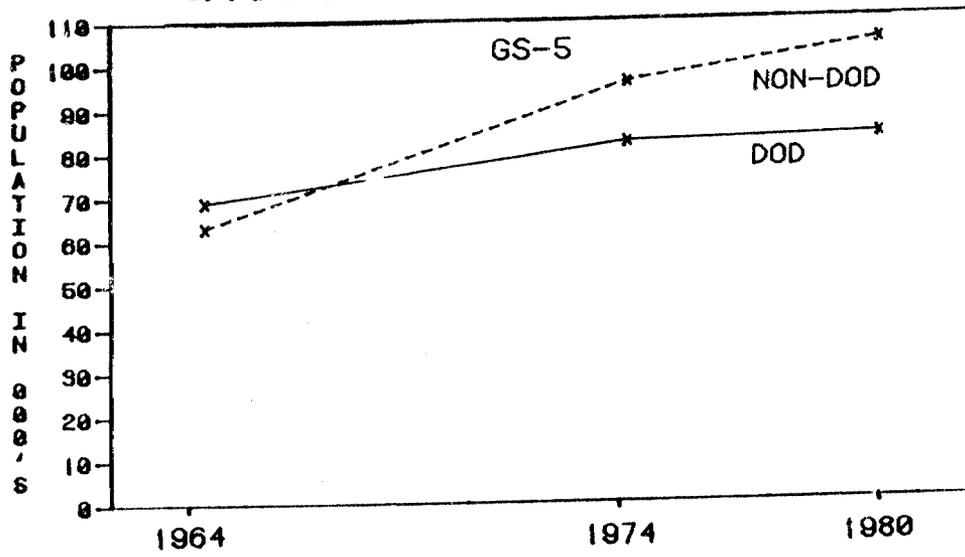
New DOD GS Occupational Series

<u>Series</u>	<u>Title</u>	1980	
		<u>Population</u>	<u>Avg. grade</u>
<u>Mixed</u>			
303	Miscellaneous clerk and assistant	4,904	4.25
335	Computer aide and tech- nician	4,138	5.62
1106	Procurement clerical	6,280	4.63
1107	Property disposal techni- cal and clerical	664	4.47
1897	Customs aide	2	5.00
2102	Transportation clerk and assistant	658	5.48

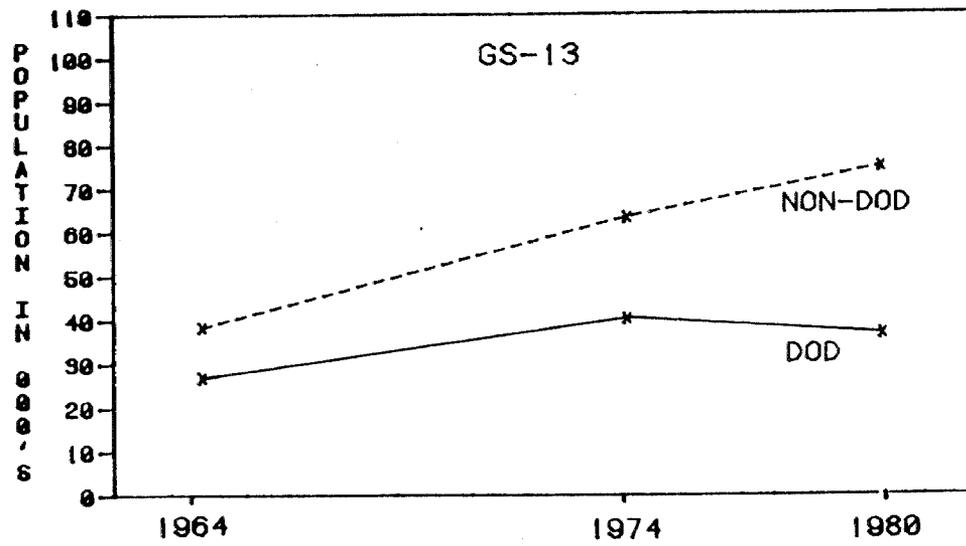
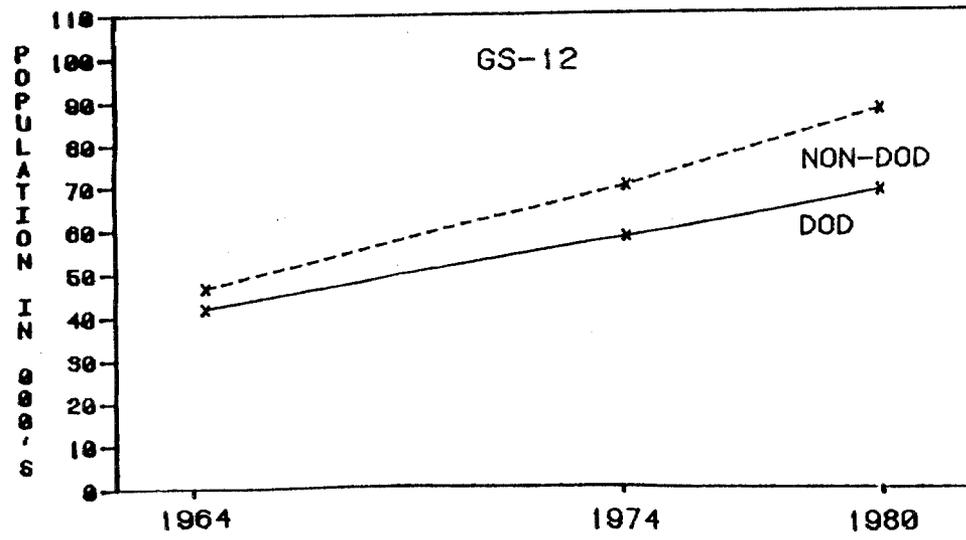
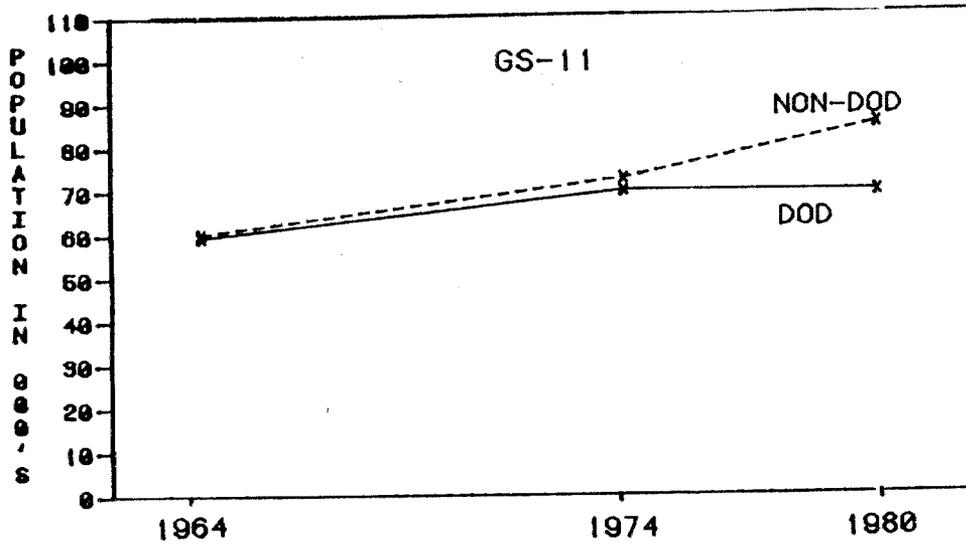
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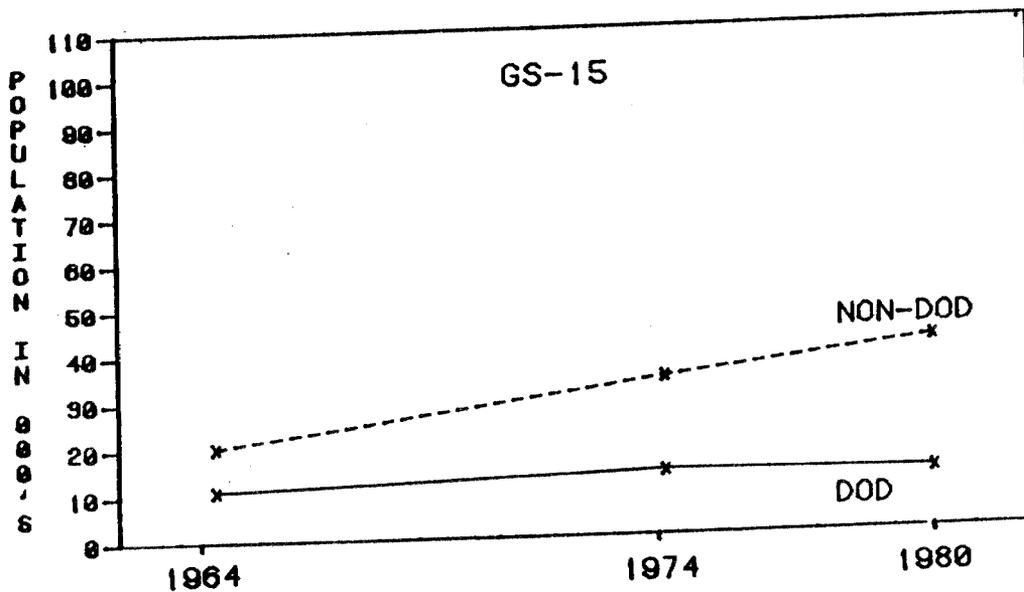
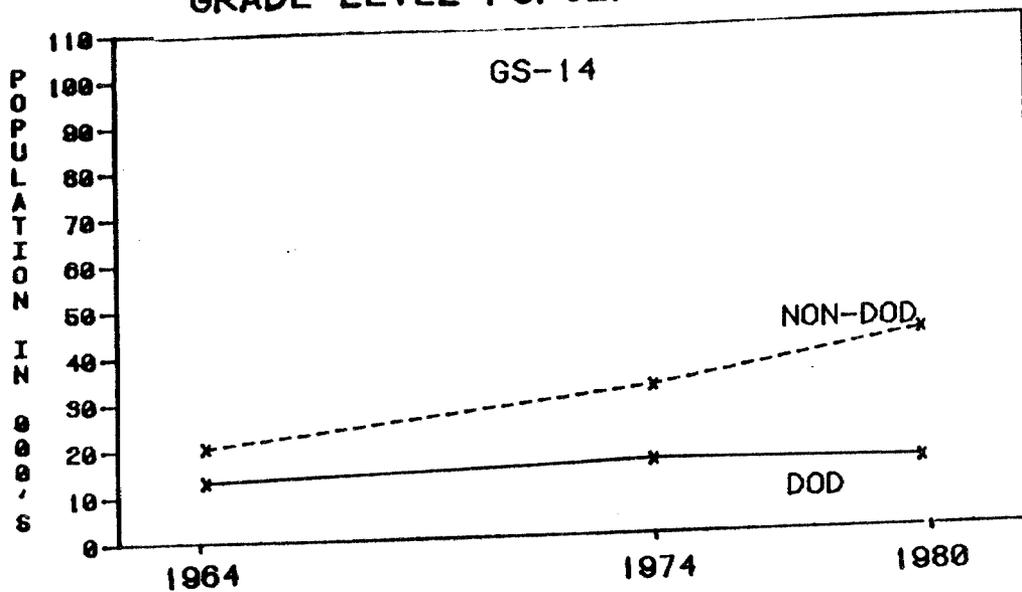
GRADE LEVEL POPULATION CHANGES



GRADE LEVEL POPULATION CHANGES



GRADE LEVEL POPULATION CHANGES



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