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COMMANDERS' HANDBOOK FOR ASSESSING INSTITUTIONAL DISCRIMINATION--ETC(U)  
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**ARI TECHNICAL REPORT**  
TR-78-B13

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COMMANDERS' HANDBOOK FOR ASSESSING INSTITUTIONAL  
DISCRIMINATION IN THEIR UNITS

by

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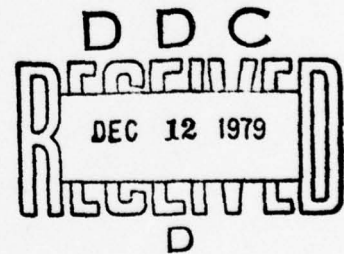
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July 1978

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Army Project Number 20763744A769 Personnel Effectiveness

This report on an advanced development research project is designed to meet military management requirements for research bearing on a specific management problem. A limited distribution is made, primarily to the operating agencies directly involved.

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## FOREWORD

Since 1972 ARI has been conducting research focusing on the policies, operational problems and programs of the Army Equal Opportunity Program. In 1974 ARI, under contract, developed a system for measuring institutional discrimination in the Army. This research, published as ARI Technical Paper 270 and subsequently as DA PAM 600-43, has been used by DA DCSPER to assess equal opportunity status in the Army as a whole. The Commanders' Handbook for Assessing Institutional Discrimination in Their Units was developed in response to a DA DCSPER requirement to develop a similar approach for use by commanders at or below MACOM level. This research was developed under RDT&E Project 2Q263744A769, Army Contemporary Issue Development, under contract No. DAHC 19-76-C-0015 with Human Sciences Research, Inc. augmented by personnel support at the ARI field unit located at the Presidio of Monterey, California.

# COMMANDERS' HANDBOOK FOR ASSESSING INSTITUTIONAL DISCRIMINATION IN THEIR OWN UNITS

## BRIEF

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### Requirement:

To develop a system enabling commanders at brigade and higher organizational levels to assess and monitor the equal opportunity status of their commands with specific reference to the identification and eradication of institutional discrimination.

### Procedure:

Chain-of-command responsibilities for assuring equality of opportunity and treatment are reviewed. Institutional and personal discrimination are differentiated. The nature of institutional discrimination is examined from the perspective of a commander who needs to (1) ascertain whether it is present within the command and (2) ameliorate its effects when it does exist. An index is employed which can assess anomalous representation of minority group members in personnel action areas. Twenty-seven specific areas, where local personnel decision processes dominate, are recommended for monitoring. The resulting information can substantially assist commanders to actively seek early identification of discriminatory practices and to initiate corrective actions as required by AR 600-21.

### Product:

The handbook explains how to implement and use the Difference Indicator System. It will allow commanders with relatively small resource inputs to determine if institutional discrimination is occurring within their commands. Guidance is provided concerning where appropriate data may be found. Forms which are ready for duplication are furnished. Hypothetical examples are presented to clarify the concepts and to illustrate actions which commanders can take to effect changes.

### Utilization:

A one-year field tryout is currently in progress involving the 7th Division at Fort Ord. In addition, another FORSCOM post is in the process of implementing selected portions of the system.

The handbook is a self-contained package ready for use by commanders of brigade and larger units. It is a management tool designed to aid commanders in carrying out their equal opportunity responsibilities.

COMMANDERS' HANDBOOK FOR ASSESSING INSTITUTIONAL DISCRIMINATION IN THEIR UNITS

CONTENTS

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	Page	
CHAPTER I	GENERAL	1
	Equal Opportunity Policy in the Army	1
	Purpose of This Handbook	2
CHAPTER II	THE COMMANDERS' EQUAL OPPORTUNITY RESPONSIBILITIES	3
	Responsibilities of the Chain of Command	3
	Implementing Equal Opportunity Responsibilities	5
	Actions the Commander Can Take	6
CHAPTER III	INSTITUTIONAL DISCRIMINATION IN THE ARMY--AN OVERVIEW	10
	The Meaning of Institutional Discrimination	10
	The Existence of Institutional Discrimination in the Army	12
	The Effects of Discrimination on Mission Effectiveness	13
	The Need to Eliminate Institutional Discrimination	14
CHAPTER IV	THE DIFFERENCE INDICATOR SYSTEM	16
	Applying the Difference Indicator in a Unit	17
	Selecting the Dimensionson Which to Measure Differences	19
	Collecting the Data Required	21
	Aggregation	23
	Time Periods	24
	Sources of Information	24

	Page
Calculating the D.I.	25
The Upper and Lower Limits of the D.I.	26
The Importance of Expected Number Size	28
Graphically Displaying the Difference Indicators	29
CHAPTER V      HOW TO INTERPRET RESULTS AND PLAN APPROPRIATE ACTION	36
Interpreting a Single Set of D.I.s	36
Comparing Subordinate Units	43
Examining Trends Over Time	45
Assessing the Consistency of a D.I.	46
Assessing Success of Change Efforts	48
Diagnosing Growing Problem Areas	50
The Use of Explainer Variables	50
Concluding Comment	57
APPENDIXES	58

TABLES

Page

Table 1. Differences between two D.I. values

44

FIGURES

Page

Figure 1.	Example of a completed difference index calculation form	27
2.	Illustrative example of Type I graphic display	31
3.	Illustrative example of Type II graphic display	32
4.	Illustrative example of Type III graphic display	33
5.	Total D.I.s for unit for one-time period (Illustrative Example)	38
6.	Illustrative examples of four different types of D.I. trend lines	47
7.	Illustrative trend line assessing success of change efforts	49
8.	Illustrative example of using D.I. trend lines for growing problem areas	51

CHAPTER I

GENERAL

*Abstract*  
Equal Opportunity Policy in the Army

This document is intended to aid Army commanders in carrying out an important part of their Equal Opportunity responsibilities--insuring that institutional discrimination is not perpetuated in their units. This responsibility is given by AR 600-21 Personnel-General, Equal Opportunity in the Army, effective 1 September 1977. *Abstract*

That regulation specifies the basic policy of the Army with respect to equal opportunity. It states that the objectives of the Equal Opportunity Program include:

- . identifying and eliminating all discriminatory practices;
- . assuring equal opportunity in all favorable personnel actions and equal treatment in all unfavorable personnel actions;
- . supporting the soldiers' drive for individual and cultural recognition as a member of the Army team;
- . maintaining an environment in which each member of the military is assured fair and impartial treatment at all times.

The regulation defines Affirmative Action as being a series of initiatives aggressively pursued to search out and correct areas of inequity and discrimination. It further stresses that Army equal opportunity activities go beyond non-discrimination and include planned and positive steps to identify, and where found, eliminate existing discriminatory practices.

The regulation underscores the fact that the most insidious and difficult to pin-down form of discrimination occurs in the area of personnel decisions. It further emphasizes that the primary responsibility for eradicating any form of such discrimination lies squarely on the chain of command. Equal opportunity policy in the Army recognizes the existence of institutional discrimination and charges Army leadership with the responsibility for insuring its elimination in all Army activities.

#### Purpose of This Handbook

This handbook was created to assist Army commanders in implementing their responsibilities for taking affirmative actions to eliminate institutional discrimination within their commands. Its purpose is to create an understanding of:

- . the concept of institutional discrimination;
- . the commanders' responsibilities with respect to institutional discrimination in their commands;
- . the need to assess institutional discrimination within a unit;
- . the use of Difference Indicators to perform an assessment;
- . the interpretation of results and planning of appropriate action.

The illustrative examples provided in the handbook and the format of the data tables, for the most part, are based on its application to a TO&E unit--specifically at battalion, brigade, and division levels. With minor modifications in labeling, the system can also be used in TDA-type units as well as in major commands.

## CHAPTER II

### THE COMMANDERS' EQUAL OPPORTUNITY RESPONSIBILITIES

#### Responsibilities of the Chain of Command

The widespread instances of violent racial incidents at military installations in 1969 led to a programmatic response by the Army which included creation of the role of Race Relations/Equal Opportunity (RR/EO) Officer and NCO. Training programs designed to alleviate racial tensions were developed and attendance by all Army personnel was made mandatory. RR/EO personnel originally were given responsibilities for conducting RR/EO training as well as for investigating complaints and advising commanders.

Since 1970, both the training programs and the basic equal opportunity policy documents have been periodically augmented and revised. The trend in the basic policy changes has been clear. In response to the expressed concerns of commanders that the RR/EO structure was a "stovepiped" structure, tending to circumvent the normal chain of command, the policy has increasingly stressed that the responsibility for equal opportunity rests with the chain of command. That the RR/EO role is now clearly a staff role.

The equal opportunity responsibilities of all commanders and supervisors are specified in AR 600-21 (Paragraph 1-3, h) as follows:

#### All Commanders and Supervisors

1. Actively seek identification of discriminatory practices and initiate aggressive actions to remove factors contributing to them.

2. Initiate and conduct EO programs which assure equal opportunity and interpersonal/intergroup harmony for all military personnel, their dependents, and civilian employees.

3. Conduct training on a continued basis for commanders, key civilian and military staff personnel to assist them in managing the military EO program.

4. Conduct EO training consistent with requirements established by MACOMs and in conformance with Chapter 3 of this regulation.

5. Monitor and assess the execution of EO programs and policies at all levels.

6. Assure that allegations of discrimination based on race, color, religion, sex, age, or national origin, by an Army member or employee, are promptly investigated and corrective action taken as appropriate.

7. Provide full-time staffing of authorized positions and resources to carry out the EO Program.

8. Assure that personnel policies with respect to EO matters are understood at all levels.

9. Establish procedures for assessing and reporting the status of EO activities within the command, agency, or activity, and monitor compliance with such procedures.

10. Assure that Public Affairs Officers maintain a close working relationship with all local news media, to include those serving minority groups.

11. Prevent actions by individuals and groups which are derogatory or inflammatory to others of different race, color, sex, age, religion or national origin.

To carry out these responsibilities, commanders need information. In short, they need a way of systematically monitoring the status of equal opportunity within their commands.

#### Implementing Equal Opportunity Responsibilities

To implement equal opportunity responsibilities, it is not sufficient for the commander to rely on well-written policy statements and sincere expressions of equal opportunity principles. Good intentions will not suffice; specific management actions based on knowledge are required.

If commanders find any evidence in their units of differences in treatment that appear related to skin color, their duty is to find out why those differences are occurring and eliminate the sources if they are not based upon valid, job-related factors. If no differences are found, commander need to be able to document that fact. Having such information at hand will provide commanders with the capability of refuting charges of discrimination, should they occur. Such data can also be used for proving to minority and majority soldiers alike that differences in treatment based on skin color are not occurring within their commands, at least insofar as those factors which are under the control of their commands are concerned.

If commanders find differences which are related to race and for which there are no valid, job-related reasons, their responsibility is

to take appropriate actions to eliminate such differences. Here, once more, they need specific information. They also need to know whether the actions taken are having the intended result; i.e., how much did the differences decline? For all of these reasons, therefore, commanders need objective, systematic, quantitative information on which to base their equal opportunity management decisions.

#### Actions the Commander Can Take

Commanders who understand their equal opportunity responsibilities and who are sincerely committed to insuring equal opportunity in their command face a complex and difficult task. Unfortunately, there are no simple "how to do it" answers available to them. Some of the differences found between majority and minority groups in their commands are likely to be the results of factors outside of their control, but some of them probably result from the practices, procedures, and processes of normal personnel functions. They can do little to change the first, but they are in a position to effect change in the second. The first problem is to determine which is which, then to initiate action concerning those factors about which a commander can do something.

The data system to be explained in this handbook will not tell a commander directly what the causes of any differences are; it will only indicate possible problem areas. But, the system can be used to tell him about some factors that do not cause the difference. Since every unit and every situation is different, it remains the responsibility of the commander to find out why differences are occurring and to remove

all factors which discriminate arbitrarily. No handbook can possibly identify or suggest all the actions a commander might consider, but a few general points can be noted.

First, because of the inferior housing, health, employment, and education which minorities have experienced in the civilian world, minorities on the average do less well on some tests and measures of academic achievement which are used to make judgments about qualifications for promotions, job assignment, and occupational specialties. This fact tells us something about the nature of the tests used and especially about the experience of minorities growing up in the U.S. civilian society. Test differences say nothing about the intrinsic capabilities of minorities to perform the jobs required.

Second, in judging the performance and qualities of another person, one's perceptions are subconsciously shaped and influenced by the values and standards one has acquired in the process of growing up. Minorities, for the most part, did not participate in the development of quite the same values and standards which whites have learned, accept, and act upon. In many instances, the values and standards of minorities differ from those of whites. However, minorities are generally judged from the perspective of white-generated standards which in a given instance may or may not be related to actual job performance. A simple example might help make this point. Consider a situation where a commander is attempting to discipline a young soldier from a Spanish-speaking culture. The commander demands that the soldier look him in the eyes while being reprimanded and considers the soldier insubordinate because he does not

maintain eye contact. What the commander does not know is that in that soldier's culture, averting the eyes in such a situation is a sign of respect for the superior. This is one simple example of much cross-culture misunderstanding. The soldier displays respect; the commander perceives insubordination. Becoming increasingly aware of such subtle factors as these is necessary if a commander is to optimally lead personnel from diverse cultural backgrounds.

There are many specific actions commanders can take with regard to potential problem areas they have identified. Such actions generally reduce to some variation of the following:

- . Initiate training sessions to make leadership aware of discriminatory practices and how they can be eliminated.
- . Identify individuals who are discriminating intentionally or unintentionally and require them to stop.
- . Inform appropriate headquarters and commands of procedures found to discriminate against minorities, including any recommendations which would ameliorate the situation.
- . Educate all personnel on how promotion and assignment processes work and what standards and criteria are used to make decisions.
- . Initiate studies to determine why a particular difference is occurring.
- . Objectively document and publicize nondiscrimination.
- . Monitor equal opportunity status.

- . Establish procedures designed to alert personnel to the possibility of discriminatory decisions and thereby lessen their occurrence.
- . Educate all personnel but especially those in leadership positions about the strong commitment of the Army to its Equal Opportunity and Affirmative Action Policies and about the responsibilities which this commitment places on various personnel.

The Difference Indicator System described in the following pages is intended to provide commanders with specific guidance in finding where such affirmative actions may be needed within their commands.

## CHAPTER III

### INSTITUTIONAL DISCRIMINATION IN THE ARMY--AN OVERVIEW

#### The Meaning of Institutional Discrimination

The Army has played a leading role in creating and implementing equal opportunity programs. The Army was the first large organization to move beyond the concept that racial discrimination was merely the result of the behavior of bigoted or racist individuals. Beginning in 1973, the Army began to examine the ways in which routine personnel procedures frequently had effects discriminatory against minority personnel. Such results were not intended, were not desired, and in many instances, were not even known. By clearcut statements of policy and through its Affirmative Actions Plan, the Army has firmly committed itself to eliminating such forms of discrimination. When normal organizational practices result in discriminatory impact on persons of different race or sex, then there exists a situation termed institutional discrimination. Institutional discrimination occurs when normal procedures have consistently adverse impact on persons of different skin colors or sex regardless of whether such results are intended or not.

The study which explored and documented the occurrence of institutional discrimination against blacks was reported in: Measuring Changes in Institutional Racial Discrimination in the Army.<sup>1</sup> The reader is

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<sup>1</sup>Nordlie, Peter G., Thomas, James A., & Sevilla, Exequiel R. Measuring Changes in Institutional Racial Discrimination in the Army (Arlington, VA.: U.S. Army Research Institute for the Behavioral and Social Sciences, Dec 1975), Technical Paper 270. This report has been augmented, updated, and published as DA Pam 600-43, Apr 1977.

referred to the original document for more detailed information. In that study, institutional racial discrimination was formally defined as: ...a difference in what happens to people in an organization--a difference which:

1. is correlated with skin color;
2. results from the normal functioning of the organization;
3. operates to the consistent disadvantage of persons of a particular skin color.

Another characteristic of institutional discrimination which should be understood is its tendency to persist. When the normal functioning of an organization results in differences between what happens to members of different groups, the differences tend to continue to occur. The situation producing the differences does not automatically correct itself as time passes. Institutional discrimination against blacks or other minorities ceases only when concerned leaders, first, become aware of the problem, and, second, take appropriate actions to modify the relevant organizational procedures and processes.

It is important to note that the definition says nothing whatsoever about intention or motivation of individuals, nor about policy of the organization; it only refers to the results of ordinary procedures. Another important point in this definition which needs to be understood is that the concept does not apply to an individual, nor a particular case. It only applies to a collection of individual cases in which a difference between various groups is found.

This latter point is critical because one tends to focus on individual,

intentional acts whenever the issue of race or sex discrimination is raised. Actions of individuals against minorities are personal discrimination, not institutional discrimination. In considering individual racist or sexist behavior, one focuses on intentions, but in the case of institutional discrimination, one is concerned only with outcomes. Because institutional discrimination can occur independently of attitudes or intentions of individuals who perpetuate it, an organization can continue to practice discrimination even though its policies explicitly prohibit it, even when its leadership is sincerely committed to elimination of discrimination of all types.

#### The Existence of Institutional Discrimination in the Army

In the Army's study of institutional discrimination, it was found that skin color was often related to what happens to people in the Army as measured on several dimensions. In this context, the term dimension refers to a category of personnel actions such as "promotions to E7", or "less than honorable discharges." The differences between what happened to blacks and whites on a large number of dimensions was measured by a quantitative index called a Difference Indicator which is described in detail in Chapter IV. Essentially, a Difference Indicator tells the commander how different two groups are on any given dimension. In the Army study, these indicators were used to measure the difference in results of personnel decisions between whites and blacks on over sixty dimensions. The Difference Indicator results in zero whenever there is no difference in what happens to people in the two groups being compared.

Departures from zero of the Difference Indicators show how much difference there is in what happens to the two groups as well as the direction of the difference.

Consistent and often large differences between whites and blacks were found on almost every dimension studied. Overall, blacks were underrepresented on those dimensions where it was to their disadvantage to be underrepresented and overrepresented where it was not to their advantage. There was also evidence that over the past several years a reduction in black-white differences on some dimensions had occurred, on some there was no change, and on still others, the differences had been increasing. The study provided objective and quantitative data on the magnitude and direction of differences between what happens to whites and blacks in the total Army. The results clearly support the proposition that differences were nearly always disadvantageous to blacks.

The sometimes large and frequently stable differences between blacks and whites reflected by the Difference Indicators begin to provide information about institutional discrimination in an organization. It is this type of measurement which commanders can usefully apply to their own commands to identify white-non-white differences.

#### The Effects of Discrimination on Mission Effectiveness

Discrimination is like a cancer which can eat away at the vitals of an organization and decrease the ability of that organization to perform its primary mission. The performance decrement may be low profile and hard to detect such as the consistent underutilization of manpower, or

the less than maximal motivation of some members to contribute fully to the mission of the organization. On the other extreme, the performance decrement may be highly visible and clearly destructive such as violent confrontations among members of the unit. Between these extremes are such occurrences as the permanent loss of personnel through unprogrammed separations or the temporary loss following judicial punishment. Any unit which is experiencing a high incidence of these kinds of events can hardly be maximally combat ready.

To the extent that discrimination persists in an organization, it will serve to fuel the bitterness and frustration of those who suffer from it. On the other hand, ineffective leadership concerning equal opportunity problems can lead to charges of "reverse discrimination" by majority soldiers which are also detrimental to interracial harmony and which decrease the unit's ability to perform its mission.

#### The Need to Eliminate Institutional Discrimination

For a unit to achieve maximum combat readiness, its leadership must have dealt effectively with equal opportunity issues. One necessary action is to insure that all possible steps have been taken to identify the presence of institutional discrimination and to eliminate its occurrence.

When leadership fails to undertake such action, it risks being held responsible both by unit personnel and by superiors for continuing unacceptable discrimination. Such perceptions can generate dissatisfaction of minority soldiers. Such a situation could seriously reduce the ability of a unit to perform effectively and would clearly point to a

failure of leadership. Because the presence of institutional discrimination is not only detrimental to unit effectiveness but also runs counter to the official Army policy of assuring equal opportunity and treatment for all, it is the responsibility of individual commanders, regardless of the strength of personal convictions, to identify and to the maximal possible extent eradicate institutional discrimination within the command.

One point should be strongly emphasized. Nothing in this handbook should be understood as suggesting that a commander should take arbitrary actions with respect to minorities or women in order to make the numbers come out "right." If, for example, he or she finds that minorities are highly underrepresented among those receiving awards, and it is decided that from then on, that 22 percent of all awards will go to minorities regardless of any other factor, a travesty is being made of equal opportunity program and its basic spirit is violated. The only actions the commander can take that help reduce discrimination are those that help remove its causes.

This is critical point and one which is frequently misunderstood. Equal opportunity has nothing to do with providing special privilege or arbitrary and unfair advantage to anybody. The goal of equal opportunity is to insure that all persons truly have equality of opportunity. No one should be denied equality of opportunity as a result of policies and procedures which have that effect.

## CHAPTER IV

### THE DIFFERENCE INDICATOR SYSTEM

The Difference Indicator System is a management tool which can provide commanders with the capability for routine monitoring of the status of certain key aspects of equal opportunity. The system is particularly useful for assessing the presence of institutional discrimination against minority personnel.

Institutional discrimination against minorities is a difference in what happens to people in an organization--a difference which:

1. is correlated with minority group membership;
2. results from the normal functioning of the organization;
3. operates to the consistent disadvantage of persons belonging to the minority group.

The Difference Indicator (D.I.) provides a simple, readily understood number which can give the commander important information about the extent of differences occurring in his organization between majority group and minority group personnel. The D.I., to be described in detail on subsequent pages, is basically a ratio of the actual number of minority group members in a category to an expected number. The expected number is the frequency of occurrence of minority persons on the particular category if group membership (majority versus minority) were totally unrelated to being in that category. The expected number is the number of minority group members who would occur in the category if all factors affecting inclusion were constant between the two groups. The

D.I. value provides a measure of overrepresentation or underrepresentation of minority group members relative to the expected number. In the situation where the actual number and the expected number are equal, the D.I. will equal zero. A D.I. value of +20 means that there are 20 percent more minority members than expected. Conversely, a D.I. of -50 means that there are 50 percent fewer minority individuals than expected.

#### Applying the Difference Indicator in a Unit

Several sequential tasks are involved in applying Difference Indicators in a unit:

1. Selecting the Dimensions;
2. Collecting the Data;
3. Calculating the D.I.s;
4. Graphically Displaying the D.I.s;
5. Interpreting Results and Planning Appropriate Actions.

Once the procedures are understood, these tasks can be completed routinely with a minimum of effort. However, they must be done carefully. The initial task of setting up a system for collecting D.I. data requires considerable effort. After implementation has been completed, little effort is needed to maintain and use the system. In this chapter, the process of calculating and displaying the D.I. is described. In the next chapter, how to interpret obtained results is discussed.

The examples used assume that a division commander has decided to apply the Difference Indicator System to all the brigades and battalions in the division. Although the system can be used by a single brigade,

the most efficient and informative application is for it to be implemented throughout all battalions and brigades of a division. It can also be used in TDA units but, in general, it should not be used in units smaller than battalion size because the small numbers involved may lead to ambiguous results.

Difference Indicators can be used to measure differences between any two definable groups such as, for example, whites and blacks, men and women, or handicapped and nonhandicapped. Their use, however, becomes more limited the smaller the number of people in either of the two groups being compared. This presents a problem when one attempts to use the D.I.s to compare, for example, Asian Americans with whites at the battalion level. The number of Asian Americans in most battalions is just not large enough to make the D.I.s useful. Asian Americans might well be examined by D.I.s at the level of a major command or of the total Army but for smaller units the D.I. approach would not be useful because of the strong chance element. It is for this reason that below the level of major command, it is recommended that the data for all non-white racial and ethnic minorities be combined into one group. In doing this, no assumptions are made about the similarities and differences of non-white groups. By this approach, it is possible to compare two reasonably-sized groups--the white majority versus the non-white minority--to determine the extent of the differences in what happens to majority compared with minority personnel. Until such time as the number of women in the Army substantially increases, it is not recommended that the D.I. system be used to compare men and women below the level of

a major command.

In this handbook it shall be subsequently assumed that all comparisons are between white and non-white personnel, as defined above. When the terms majority and minority are used, they should be considered to refer to these specific groups unless otherwise indicated.

#### Selecting the Dimensions on Which to Measure Differences

The first step is to determine on what dimensions majority-minority differences are to be measured. Normally, the dimensions of interest are those that result from personnel decisions. Other things being equal, it is desirable to select those dimensions which reflect important impacts on people's lives. In addition, it is important to select dimensions which division, brigade, or battalion levels of command can influence. This means that decisions which are exclusively the responsibility of the Department of the Army are appropriate when applied to the Army as a whole, but are not appropriate when applied to individual subordinate units. At specific levels of command it is appropriate to measure efforts on dimensions which are influenced in some way at those levels.

In the development of this handbook for use at or below the level of a division a large number of dimensions were considered for inclusion in the Difference Indicator System. On basis of importance, general data availability, and substantial local decision authority the number of dimensions was reduced to 27. Listed on the next page are the dimensions recommended for use at division, brigade, and battalion levels. Specific suggested operational definitions are included in Appendix A. The first one of these--Enlisted Racial Distribution of the Unit--is

Difference Indicator Dimensions for Division,  
Brigade, and Battalion Levels\*

1. Enlisted Minority Distribution

PROMOTIONS

2. Promotion to E4 without Waiver
3. Promotion to E5 without Waiver
4. Promotion to E4 with Waiver
5. Promotion to E5 with Waiver

TRAINING AND EDUCATION

6. Selection for Career Enhancing Training
7. Completion of Career Enhancing Training
8. Selection for PNCOC, BNCOC, PLC, or BLC
9. Completion of PNCOC, BNCOC, PLC, or BLC
10. High School Completion Program Enrollment
11. Completion of High School Program
12. EIB or EFMB or Equivalent (where applicable)
13. Awards

COMMAND ASSIGNMENT

14. Company Commanders
15. First Sergeants

NON-JUDICIAL PUNISHMENT

16. Company Grade Article 15s
17. Field Grade Article 15s

UNPROGRAMMED DISCHARGES

18. Unprogrammed Separations
19. Chapter 9 Separations
20. Chapter 10 Separations
21. Chapter 13 Separations
22. Expeditious Discharges
23. Courts-Martial
24. Punitive Discharges

REENLISTMENT

25. Bars to Reenlistment
26. Career Reenlistments
27. First Term Reenlistments

\* Detailed definitions for these dimensions are found in Appendix A.

somewhat different from the others in that it provides an indication of how the racial distribution of the unit compares with the Army as a whole. The remaining 26 dimensions provide information about seven different areas of personnel actions:

1. Promotions;
2. Training and Education;
3. Awards;
4. Command Assignments;
5. Non-Judicial Punishment;
6. Unprogrammed Discharges;
7. Reenlistment.

Other dimensions certainly may be added and commanders should consider adding some that have special relevance to their particular kind of unit. However, measurement of the 27 listed will provide a fairly comprehensive picture of the status of equal opportunity within a unit.

#### Collecting the Data Required

In order to use the Difference Indicator System, certain data must be collected carefully and accurately. To calculate a D.I. which compares majority and minority groups, two values are needed:

- . the actual number of minorities on that dimension; and
- . the expected number of minorities on that dimension. Each of these numbers must apply to the same time period or point in time. The actual number is obtained by counting the number of minorities in a particular category. The expected number is calculated from three other

numbers.

1. the total number of persons "eligible" or who have a chance to be in that category;
2. the number of minorities "eligible" or who have a chance to be in that category;
3. the number of all individuals who do occur in that category.

To be eligible means having a chance to become an "actual" in a particular dimension. For Promotion to E4 without Waiver, the eligible population would be the number of E3s who meet the minimum requirements for promotion to E4. For Bars to Reenlistment, the eligible population is all enlisted personnel in the unit eligible for reenlistment at ETS, because any could receive a bar to reenlistment.

By dividing (2) above by (1) above, the expected proportion of minorities in the category is determined. Multiplying this proportion by the total number of persons in the category (3) above, results in the expected number of minorities in that category. An example of this is as follows:

1. Total number of persons eligible for selection for  
NCO Academy = 104
2. Number of minorities eligible for selection for  
NCO Academy = 22  
Dividing (2) by (1) =  $\frac{22}{104}$  = .21
3. Total number of persons selected for NCO Academy = 84  
Multiply expected proportion times total number  
selected (.21 x 84) = 17.64

4. Expected number (17.64 rounded) = 18

Remember that the expected number of minorities is that number of minorities which would occur in a given category if minority group membership were unrelated to being in that category. It is the number which would result if the persons selected for a particular category were done so completely randomly from the eligible population. The expected number has no meaning other than as a reference point from which to measure. It should not routinely be interpreted as indicating a goal or quota. It is merely a point from which to measure and has the same meaning wherever it is applied. The establishment of appropriate goals is a separate task which is not considered in this handbook.

Another way of expressing the information required to calculate a D.I. for a particular dimension is the following:

1. the actual number of individuals occurring in the category;
2. the eligible number of individuals who could occur in the category;
3. the minority/majority group membership identification of all eligible and actual individuals.

#### Aggregation

Data collection begins at the battalion level and D.I.s can be calculated for each battalion. Data for battalions organic to a brigade can be aggregated with data from the brigade HHC to provide the basis for calculating D.I.s for the brigade. Similarly, brigade-level data can be aggregated with division HHC to provide the data for calculating D.I.s for the total division.

### Time Periods

It is recommended data be compiled by quarters, although almost any time interval can be used. Quarters work better than months because by month, many of the numbers are likely to be too small to be meaningful. If expected numbers for some dimensions are too small when the data is examined by quarter, it is frequently possible to solve that problem by aggregating for semiannual or annual time periods.

### Sources of Information

Most, if not all, of the required information will be found at the following sources:

- . the Standard Installation/Division Personnel System (SIDPERS)
- . Division/Installation SJA (Staff Judge Advocate).
- . the Post or Installation Personnel Transfer Point.
- . the Education Center.
- . Post and/or Installation Equal Opportunity Office.
- . the Major Command Equal Opportunity Office.
- . Battalion PSNCO (personnel NCO). Information can also be found in Affirmative Actions Reports prepared at various levels of command.

In certain instances data may not be available at these places. This could occur when a commander wants to track a dimension not previously included or when the system is first set up. When no data are currently available, several steps should be initiated.

First, determine what information with respect to minority group membership is forwarded either from organic units to installation or division command, or from installation/division to higher headquarters.

A good place to start is with the PSNCO.

A further step involves determining whether or not informal records with the kind of information needed are kept somewhere. For instance, the commander may have been recording the race of soldiers in the unit as they were promoted. Such data can be used if they were systematically and regularly collected.

Finally, if the required data cannot be found anywhere in the unit or on post, then separate actions appropriate for collecting this information should be initiated in the unit. These should include:

- . Identifying the specific information which must be collected.
- . Identifying the unit level at which that information will be collected.
- . Identifying the office or person responsible for collecting and tabulating the information.
- . Identifying the office or person to whom that information should be sent.

Calculating the D.I.

The Difference Indicator formula is:

$$D.I. = \frac{\text{Actual Number}}{\text{Expected Number}} \times 100 - 100$$

The purpose of multiplying by 100 is simply to put the results in percentage form which is generally an easily understood number. The purpose of subtracting 100 is so that the indicator will be zero whenever the actual and expected number are the same, negative when the actual number is smaller than the expected number, and positive when the actual number

is larger than the expected number.

Basically, the D.I. is a measure of the difference between whites and non-whites on some dimension. If the indicator is a zero, there is no difference between whites and non-whites on that dimension. If the indicator is a positive value, it means that minorities are overrepresented on that dimension by that percent. If the indicator is a negative value, it means minorities are underrepresented on that dimension by that percent.

A data recording and calculating form has been designed for users of the D.I. system. A sample data form taken from Appendix B is shown in Figure 1. This particular form is for the dimension, Promotion to E4 with Waiver. Illustrative data for a brigade-size unit for the first

quarter of the fiscal years is shown. Assume that the data to be entered on Lines 1, 2, 4 and 6 have been collected. Then, proceeding down the page from Line 1 to Line 7, the D.I. is easily calculated.

In this example, there were 30 percent fewer non-whites promoted to E4 with waiver in the first quarter in this brigade than would be expected if eligible whites and non-whites had been promoted equally.

As data become available for succeeding quarters, the same procedure is followed. When all four quarters are available, Lines 1, 2, 4, and 6 can be summed across the four quarters and the D.I. calculated for the total year.

#### The Upper and Lower Limits of the D.I.

The lower limit of a D.I. is -100 which occurs whenever the actual number of minority members in the category is zero. D.I. values may,

Figure 1

Example of a Completed  
Difference Index Calculation Form

INFORMATION REQUIRED	QUARTERS			TOTAL
	Oct. Nov. Dec			
1. Number of minority persons eligible = for category	17			Oct. 77 - Sept. 78
2. Number of all persons eligible = for category	89			
3. Proportion of eligibles = $\frac{\text{Line 1}}{\text{Line 2}}$ who are minorities	.19			
4. Actual number of all persons in category	52			
5. Expected number of minority persons = Line 3 X Line 4 =	10			
6. Actual number of minority persons =	7			
7. Difference Indicator = $\left[ \frac{\text{Line 6}}{\text{Line 5}} \times 100 \right] - 100$ =	-30%			

DIMENSION: #4 Promotion to E4 with Waiver

UNIT: X Brigade

however, exceed +100. If the expected number of minority members equals zero the value of the D.I. is indeterminate since division by zero is arithmetically impossible. This rarely presents a problem since the expected number is zero only when there are no minority personnel in the group eligible to be in the category. When such a situation is found, simply do not calculate a D.I. for that category for that unit. Do, however, retain the data for aggregation purposes.

#### The Importance of Expected Number Size

The influence of chance factors upon the difference index is large when the expected number is small. Consequently, when D.I. values are to be interpreted the expected number must be taken into consideration. This means that when many D.I.s are considered not only will few be exactly equal to zero, but some values, which can be quite large, may be due entirely to chance factors. The commander's problem is to determine which D.I. values are reflecting actual mechanisms of institutional discrimination and which are merely transient values which are unlikely to be reproduced either in other time periods or with other people.

Two rules are offered to aid the commander in making the required judgments.

1. D.I. values based upon small expected numbers are more likely to be influenced by chance factors.
2. Large D.I. values (positive or negative) are more likely than small values to reflect other than chance factors.

Perhaps several examples will help in clarifying how these rules can be applied. Suppose a commander finds a D.I. value for a quarter

for Company Grade Article 15s of +20 percent. If the value is based on data from a battalion, it might only represent chance differences. However, if the value were calculated from data for an entire division it would very probably represent some factor or factors other than chance, possibly institutional discrimination.

A commander has two D.I. values of -40 percent. One is for Awards based upon an expected number of 10. The other is for Promotion to E4 with Waiver based upon an expected number of 25. The latter case should receive the commander's attention first since it probably is less influenced by chance factors.

Suppose a division commander has D.I. values for two dimensions each based upon an expected number of 50. One D.I. has a value of +10 and the other a value of -30. The latter value is less likely to be the result of chance influences.

A good strategy is to explore the reasons behind the largest of a set of D.I. values first. Then, as time and resources permit, examine the possible factors behind the less prominent values next. However, when the expected number is very small, say under six, even for very large D.I. values (e.g., -80, +120) it is a good strategy to await the collection of more data or the aggregation with other organizations since the influence of chance factors is likely to be great.

#### Graphically Displaying the Difference Indicators

Many times it will be useful to graphically display the D.I.s in order to facilitate interpretation and communication of overall results.

There are three different types of graphic displays that can be used:

- Type I Display                    A bar graph comparing all 27 D.I.s for a given unit for a single time period.  
(See Figure 2.)
- Type II Display            -    A bar graph comparing all units in the command on a single dimension.  
(See Figure 3.)
- Type III Display           -    A graph comparing D.I.s for the same dimension on the same unit at different times. (See Figure 4.)

The different types of displays are used for different purposes. Once the D.I.s for a given quarter are calculated for a particular unit, it is convenient to graph them in a Type I display as shown in Figure 2. A blank form is included in Appendix B for this purpose. For graphing purposes, the upper limit of the graph stops at +100. If a D.I. exceeds that number, the bar is drawn to the limit and the actual D.I. is written at the end of the bar as illustrated in Figure 2.

This type of display is useful in revealing the dimensions on which large minority-majority discrepancies exist in the unit. Other things being equal, the largest differences should receive attention first. How the commander should proceed to interpret such a display and plan appropriate action is discussed in the next chapter.

A Type II display is useful for division or brigade commanders to compare the subordinate units in their commands on particular dimensions. Figure 3 shows an example of this where the D.I.s for one dimension for



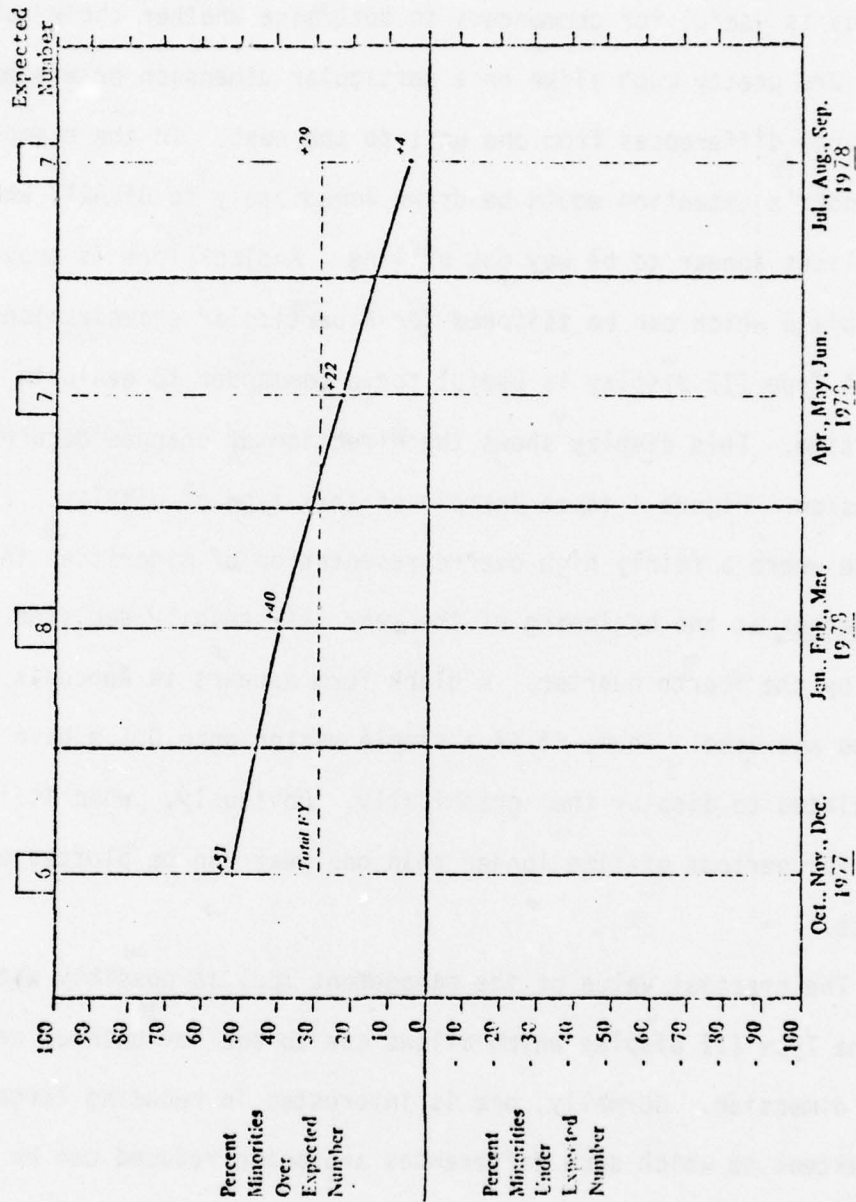


Figure 4  
 Illustrative Example of Type III Graphic Display

D.I. TREND LINES

Dimension: 22. Expeditions Discharges

Unit: X Brigade



NOTE: When the D.I. for the total fiscal year is calculated, draw it in as a horizontal dashed line across all four quarters.

the battalions and brigades in a TO&E division are shown. This type of display is useful for commanders to determine whether their subordinate units are pretty much alike on a particular dimension or whether there are large differences from one unit to the next. In the example, the commander's attention would be drawn immediately to DIVARTY where two battalions appear to be way out of line. A blank form is provided in Appendix B which can be tailored for a particular organization.

A Type III display is useful for a commander to evaluate trends over time. This display shows the direction of changes occurring on any dimension. Figure 4 is an example of this type of display. It illustrates a case where a fairly high overrepresentation of minorities in Expeditious Discharges at the beginning of the year has steadily declined to essentially zero by the fourth quarter. A blank form appears in Appendix B to be copied and used. Thus, it is a simple matter once D.I.s have been calculated to display them graphically. Obviously, when it is available, data for periods of time longer than one year can be plotted on similar charts.

The greatest value of the management tool is possibly with the use of the Type III display which allows one to see how changes are occurring on a dimension. Normally, one is interested in reducing large differences. The extent to which such differences are being reduced can be determined by observing the trend lines on Type III graphic displays.

Another factor that can only be evaluated from the over time display is the consistency of differences. If a D.I. for some dimension fluctuates around zero, +34 percent the first quarter, -10 percent the

second quarter, +5 percent the third quarter, and -12 percent the fourth quarter, one should probably conclude that the D.I. is essentially zero and is just showing random fluctuation from one time to the next. However, if one observed a D.I. which varied between +10 percent and +20 percent, even though those are relatively small discrepancies, the consistency over time means that the D.I. for that dimension is probably not zero and that one or more factors are responsible for producing the consistent difference. In general, the larger the number of points in a trend line and the larger the expected number of minorities the more confidence one can have in the consistency of the trend.

Once a set of D.I.s is calculated, the next task is for the commander to decide what those D.I.s are saying about the command. Interpretation of the D.I.s is discussed in the next chapter.

## CHAPTER V

### HOW TO INTERPRET RESULTS AND PLAN APPROPRIATE ACTION

The Difference Indicator System can show where a commander's efforts might reasonably be directed. It can also indicate how effective prior efforts have been at reducing large differences when they have been found. It can alert a commander to possible trouble spots within the command and it can provide objective documentation where no discrimination, in fact, exists.

There are basically two ways to use the indicators:

- to look at the results of an organization's functioning at a particular time.

- to look at trends in those results over time.

The system is set up to facilitate taking a "snapshot" of the set of indicators for every three-month period. Looking at successive indicators for any one dimension, one can see if the indicator is moving toward zero, or away from zero.

In examining any set of indicators, there are a number of considerations which commanders need to take into account as they attempt to interpret them and plan appropriate courses of action. First to be considered will be the situation where the commander is looking at the 27 D.I.s for one three-month period. It is assumed that this is the first set of D.I.s calculated for the unit.

#### Interpreting a Single Set of D.I.s

How might a commander go about examining and interpreting a set of

D.I.s which has just been obtained on his or her unit for a three-month period? Assume that all the D.I.s have been calculated and transferred to a Type I graphic display form with the result shown in Figure 5. The

following are a hypothetical brigade commander's thought processes as he or she examines the D.I.s in Figure 5.

First, the commander notes that in terms of minority distribution (Dimension 1, Figure 5), the brigade has slightly fewer minority personnel than the Army as a whole. But this is only ten percent less, so the brigade is not considered very different from the Army average on this dimension.

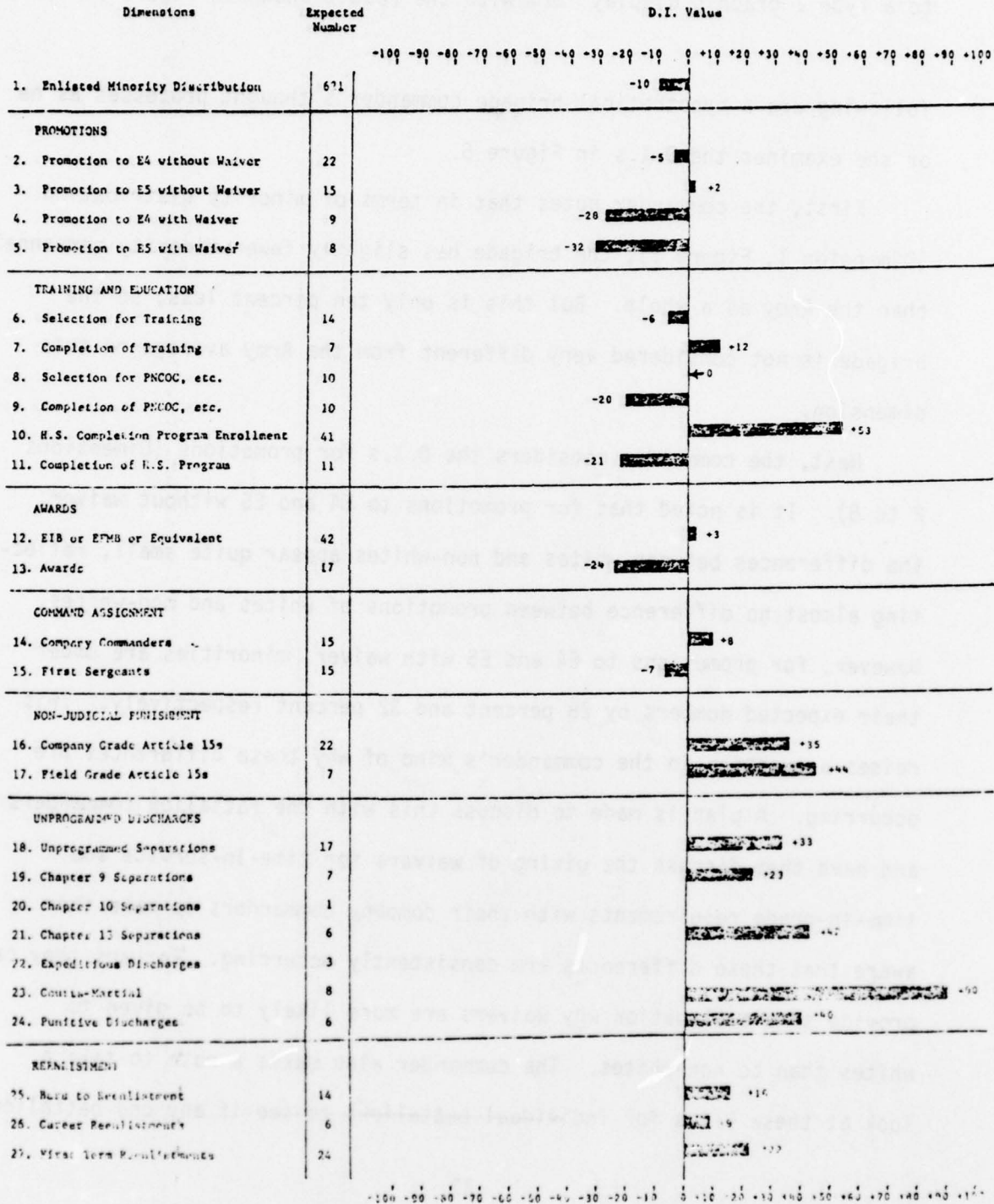
Next, the commander considers the D.I.s for promotions (Dimensions 2 to 5). It is noted that for promotions to E4 and E5 without waiver, the differences between whites and non-whites appear quite small, reflecting almost no difference between promotions of whites and non-whites. However, for promotions to E4 and E5 with waiver, minorities are under their expected numbers by 28 percent and 32 percent respectively. This raises a question in the commander's mind of why these differences are occurring. A plan is made to discuss this with the battalion commanders and have them discuss the giving of waivers for time-in-service and time-in-grade requirements with their company commanders to make them aware that these differences are consistently occurring. Perhaps they can provide some explanation why waivers are more likely to be given to whites than to non-whites. The commander also makes a note to take a look at these D.I.s for individual battalions to see if any one battalion

Figure 5

Total D.I.s for Unit for One-Time Period  
(Illustrative Example)

Time Period: Oct, Nov, Dec 78

Unit: YYY Brigade



is particularly out of line from the others or whether they are all showing the same general trend. Further, he or she wants to be sure to examine those D.I.s for the next quarter to see how consistent this phenomenon is.

Next, the commander looks at the D.I.s for training and education (Dimensions 6-11, Figure 5). The D.I.s for Selection for Career Enhancing Training and Completion of Career Enhancing Training are small and not indicative of large white-non-white differences. Concern arises, however, that while minorities are being selected for NCO Academy at a rate similar to whites, they clearly are not completing NCO Academy at the same rate as whites. This might mean that non-whites are failing at a higher rate than whites. The commander decides to discuss this result with the personnel running the NCO Academy to see if a better understanding can be gained.

A similar phenomenon is observed for the dimensions High School Completion Program Enrollment and Completion of the High School Program. Minorities are highly overrepresented among those attending such programs (D.I. = +53), but again, they are underrepresented among those who complete them (D.I. = -21). The commander does not understand why this difference should be occurring. He or she is pleased to see that minorities, who in general tend to have less education than whites, are indeed enrolling in these programs. However, they are much less likely than whites to complete them and in order to realize the benefits from such programs, they must be completed. The commander wonders if there is anything about the programs which make them more difficult for minorities

than for whites to complete. A plan is made to discuss this with those responsible for the programs and ask them to suggest steps which could be taken that might lead to an increase in the number of minorities who complete the programs.

The commander next considers the area of awards (Dimensions 12 and 13). With respect to receipt of the Expert Infantry Badge and the Expert Field Medic Badge, there appears little difference (D.I. = +3), so it does not seem to be a potential problem area. However, when Awards Received is examined, (Good Conduct, Meritorious Service Medals, Army Commendation, etc.), minorities are again underrepresented (D.I. = -24). The commander reflects on whether this is a true indication of differences in performance between whites and non-whites, or whether it might be a problem with the "eyes of the beholder." Is there any chance that the standards for receiving such awards are inadvertently white-oriented? Is there a possibility that commanders may perceive the performance and qualities of minorities in different ways than they perceive those of whites? He or she is aware that this can occur even quite unintentionally. The commander's own awareness was broadened on that subject in equal opportunity seminars. However, are all subordinate leaders--both officers and NCOs--also sensitive to that fact? He or she resolves to take a look at what training they are currently receiving related to the subject and to insure that all leaders receive training on how to guard against making unintentionally biased personnel judgments.

Next, the commander notes that with respect to command assignments (Dimensions 14 and 15), minority company commanders are slightly over-represented and minority first sergeants are slightly underrepresented,

but the D.I.s are quite small (D.I.s = +8 and -7). The conclusion is reached that there is no indication of a potential problem in this area.

The commander is concerned about the next area non-judicial punishment (Dimensions 16 and 17), which shows that minorities are overrepresented among those receiving Article 15s--both company grade and field grade. This is always a troublesome area which the commander has heard debated long and heatedly before. The unresolved issue is whether or not minorities commit more punishable offenses than whites and therefore deserve to receive a disproportionate share of punishments meted out or whether there is something about the non-judicial punishment process itself which makes punishment more likely for minorities. He or she realizes this issue is sufficiently complex that a definitive resolution is unlikely within the command, but suspects that the truth lies somewhere between the two extremes.

The commander also suspects that many of the same factors which result in minorities receiving a disproportionate share of non-judicial punishments also are related to the phenomenon which he observes in the next area he reviews, unprogrammed discharges (Dimensions 18 to 24). While D.I.s have not been calculated for two dimension because of very small expected numbers, clearly, minorities are more likely than whites to be administratively separated from the Army (D.I. = +33). They are also far more likely than whites to receive a court-martial (D.I. = +90), and more likely than whites to receive a punitive discharge (D.I. = +40).

With respect to the areas of non-judicial punishment and unprogrammed discharges, the commander decides to base an equal opportunity Executive

Seminar for the battalion commanders and their command sergeants major on these areas with the intent of sensitizing leadership to some of the ways in which justice and equity can be miscarried, sometimes quite unintentionally. He or she will require the battalion commanders to subsequently conduct similar meetings for their company commanders and first sergeants. The commander decides to monitor these areas closely.

Finally, the commander examines the reenlistment area (Dimensions 25 to 27). The observed D.I. for Bars to Reenlistment is +16 which may not be too large a difference, especially if it varied around zero from quarter to quarter. He or she decides to discuss career and first term reenlistments with personnel at the reenlistment section to see what can be done to encourage minority personnel to stay in the Army. These D.I.s will be carefully watched next quarter.

The attempt has been made to illustrate how a commander might think about the results obtained by applying the Difference Indicator System to his or her command. This hypothetical commander identified a number of potential problem areas. A variety of courses of action were initiated based on the findings. For some other pattern of results, other courses of action would be appropriate, but perhaps this is sufficient to illustrate how a commander can use this management tool. It should be clear that it is not a tool which automatically tells the commander what to do, the results must be combined with other knowledge and used intelligently. Creativity, sensitivity, and insight of the commander and his staff are the force behind the system.

But, it should also be clear that the D.I.s can help to identify

specific potential problem areas. This allows a commander to focus efforts more effectively and avoid dissipation of resources across broad, general, and ill-defined programs. D.I.s serve, in addition, to identify areas in which there is little or no difference between minorities and whites. This objective could be useful to the commander if the need arises to respond to charges of discrimination in these areas.

#### Comparing Subordinate Units

Continuing with this illustrative example, the same brigade commander will be followed as comparisons on the various dimensions are made between battalions within the brigade. To do this, he or she would prepare a Type II graphic display for any dimension of interest (see Figure 3 as example). Chances are, however, that for most dimensions there is likely to be very little difference among the different battalions. One way for a commander to compare units is to select some guideline difference value such as  $\pm 15$  percent difference between the D.I.s for the battalions and the brigade. Alternatively, the commander may want to employ a somewhat more formal procedure.

When the commander observes one D.I. value that appears way out of line from the others, the first question that must be asked is, "Is this a real difference, or one which has occurred by chance?" A simple test based on the figures already at hand on the calculation sheet can assist the commander in making this judgment.

First, from the two Expected Numbers used to calculate the two D.I. values being compared, select the smaller and call it the Minimum Expected Number, MEN. Next, for each D.I. calculate the Minority Incidence Rate,

MIR, which equals the Actual Number of Minority individuals in the category divided by the Total Number of individuals in the category. Now, subtract the smaller MIR from the larger MIR to obtain the difference between the values, MIRD. Finally, locate the value in Table 1 which is nearest to the obtained MEN. If the MIRD is greater than the value in the table, the difference between the D.I. values is probably due to some factor(s) other than chance.

TABLE 1  
Differences Between Two D.I. Values

<u>MEN</u>	<u>MIRD</u>
10	.20
20	.18
30	.16
40	.14
50	.12
75	.09
100	.07

If a commander determines that a particular D.I. value is different from another or others the important question is why. Are biased decisions being made by the leadership or is there some other factor or combination of factors which is responsible? Only a careful local analysis can answer the question. The commander should be aware that for any given dimension there can be legitimate, nondiscriminatory reasons for the existence of an extraordinary D.I. value. However, if there are such

reasons, then it should be possible to specify what they are. A suggested ground rule is, if one cannot specify the legitimate reasons why an exceptional D.I. should exist in a particular case, one should assume that institutional discrimination exists and continue to take appropriate actions designed to deal with the specific situation.

A commander should avoid using the Difference Indicator System in a punitive way. The purpose of the system is to diagnose potential problem areas and assess the success of actions aimed at producing desired changes in those areas. If subordinates perceive that a commander plans to use the D.I.s as the basis for punitive action, it becomes less likely that the system can be effectively used to facilitate change. All need to understand that the Difference Indicator System is intended to benefit the entire organization.

#### Examining Trends Over Time

So far, how the commander interprets a single set of D.I.s has been discussed. This is always the first step in applying the D.I. system. Its greatest usefulness, however, comes from repeated applications whereby trend lines can be established. It is only in this way that a continuous picture of what is happening with respect to the equal opportunity dimensions under consideration within a unit can be obtained.

There are three primary uses of trend line data:

- . Assessing the consistency of a D.I.;
- . Assessing success of change efforts;
- . Diagnosing growing problem areas.

Proceeding with an example, it is assumed that data for all 27 indicators

have been collected for four quarters, and the D.I.s calculated and plotted on the Type III graphic displayed. The three uses above will be discussed using illustrative examples.

#### Assessing the Consistency of a D.I.

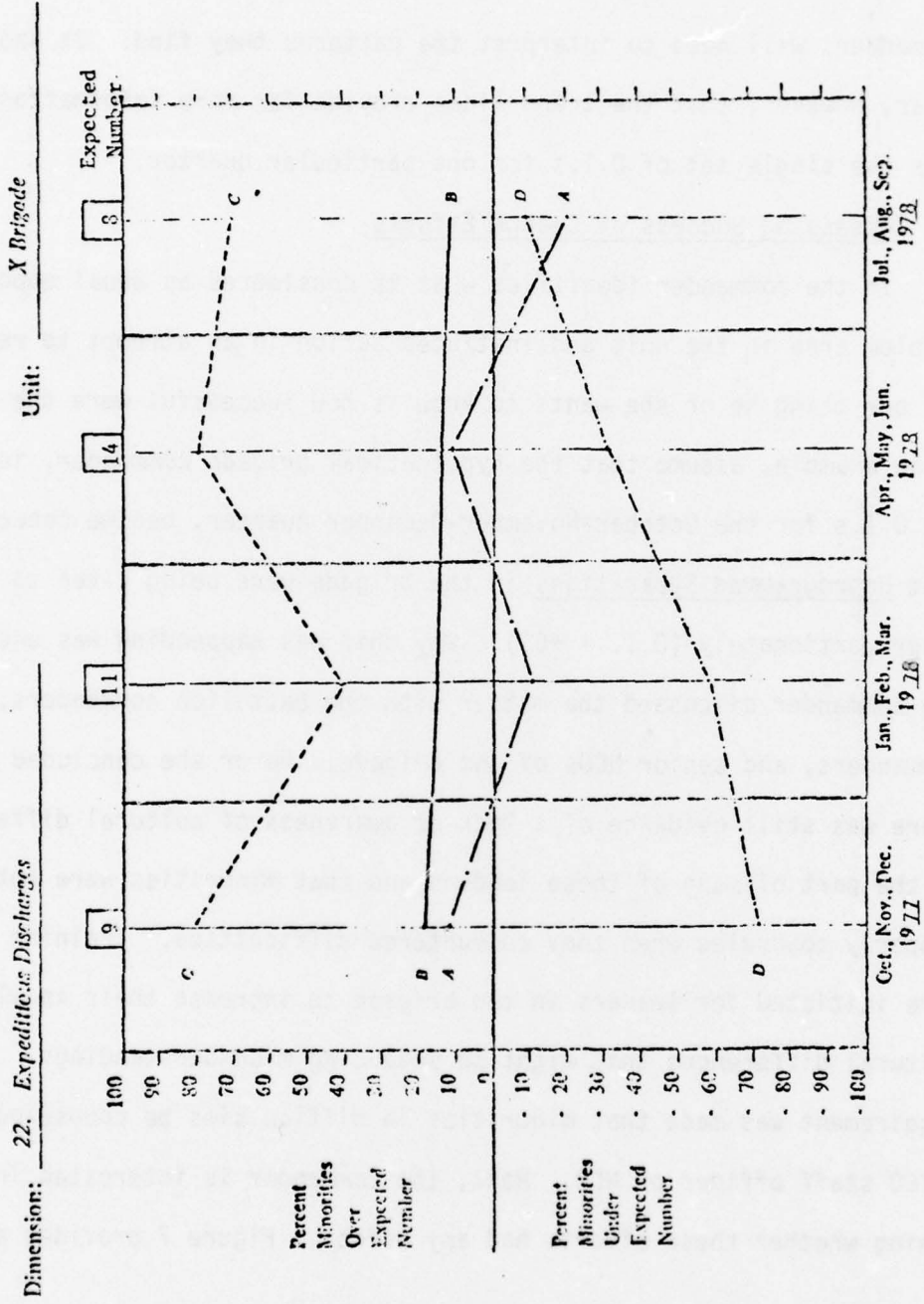
In Figure 6 are illustrated four different examples of D.I. trend

lines that one might find for a given dimension. Each one would indicate quite different things to the commander. Line A fluctuates around zero; in no quarter is the D.I. actually zero, but the average appears to be about zero. One would conclude from Line A that it essentially is reflecting a zero D.I.

Line B shows relatively small discrepancies from zero just like Line A but with the important difference that D.I.s on Line B are all positive and highly consistent. One would conclude from Line B that minorities are being consistently overrepresented in Expeditious Discharges by about ten percent and that there has been no change in this phenomenon in the course of the year. Line C again is fairly erratic and similar to Line A but with the difference that it appears to be fluctuating around +65 percent instead of around zero. One would conclude that although the D.I. varies a lot from quarter to quarter, the trend line is reflecting a consistent overrepresentation of about 65 percent.

Line D shows a clearcut change over time occurring as reflected in a fairly smooth curve declining from an initial -76 percent to -6 percent. One would conclude from Line D that at the beginning of the year, minorities were highly underrepresented on this dimension. However, by the end of

Figure 6  
 Illustrative Examples of Four Different Types of D.I. Trend Lines



NOTE: When the D.I. for the total fiscal year is calculated, draw it in as a horizontal line across all four quarters.

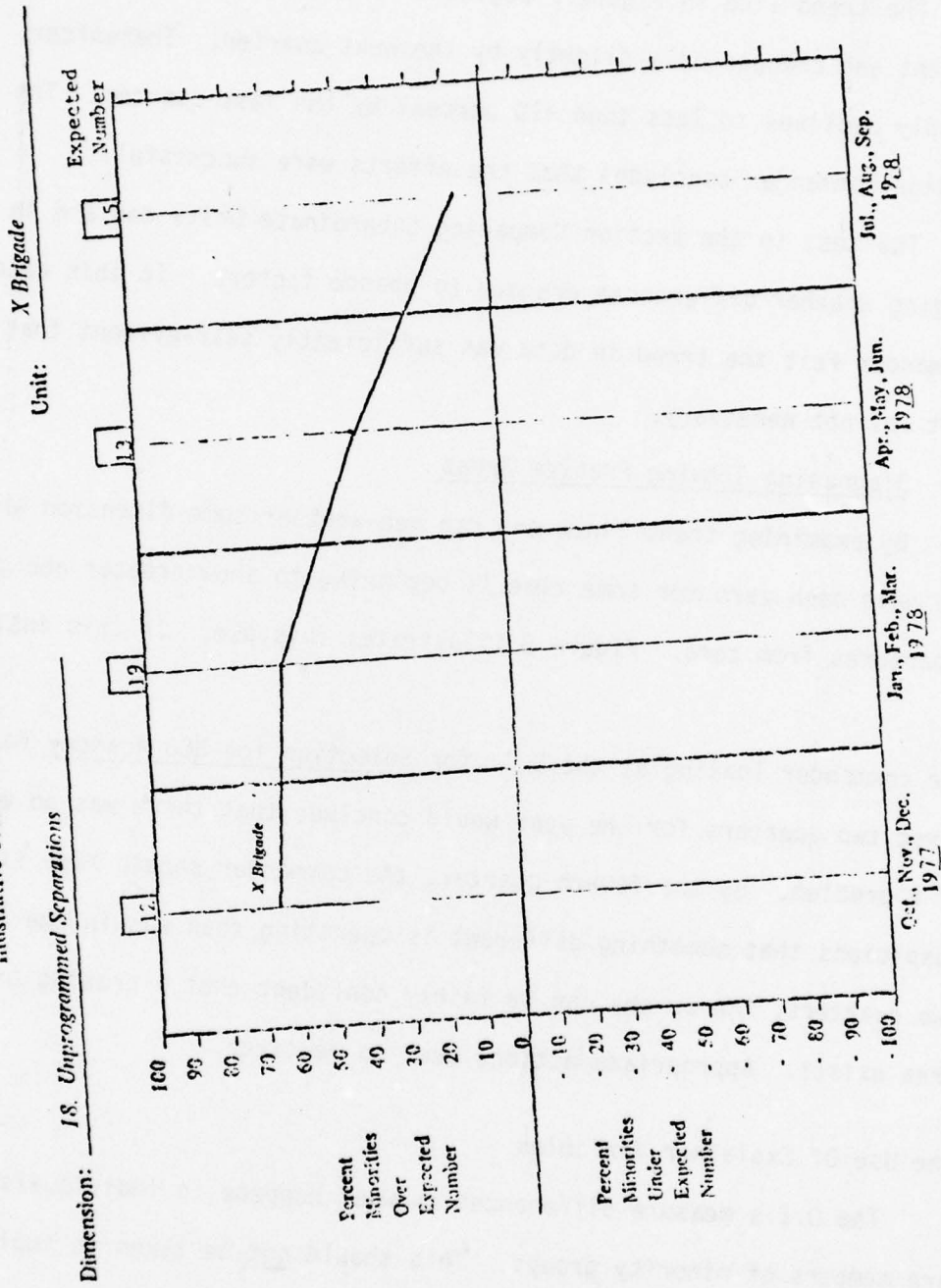
the year they were not appreciably different from whites on it.

These are obviously just some of the variations which can occur and commanders will need to interpret the patterns they find. It should be clear, however, that the trend lines provide far more information than does the single set of D.I.s for one particular quarter.

#### Assessing Success of Change Efforts

If the commander identifies what is considered an equal opportunity problem area in the unit and initiates action in an attempt to resolve it, one thing he or she wants to know is how successful were the efforts. As an example, assume that the hypothetical brigade commander, in reviewing the D.I.s for the October-November-December quarter, became concerned that Unprogrammed Separations in the brigade were being given to minorities disproportionately (D.I. = +61). Why this was happening was unclear so the commander discussed the matter with the battalion commanders, company commanders, and senior NCOs of the brigade. He or she concluded that there was still evidence of a lack of awareness of cultural differences on the part of many of these leaders and that minorities were not being properly counseled when they encountered difficulties. Training seminars were initiated for leaders in the brigade to increase their knowledge of cultural differences that might be producing misunderstandings. The requirement was made that minorities in difficulties be counseled by the RR/EO staff officer or NCO. Next, the commander is interested in determining whether these efforts had any effect. Figure 7 provides an illustrative trend line of what might be found.

Figure 7  
 Illustrative Trend Line Assessing Success of Change Efforts



NOTE: When the D.I. for the total fiscal year is calculated, draw it in as a horizontal line across all four quarters.

The trend line in Figure 7 begins in the first quarter at +61 percent and changes only slightly by the next quarter. Thereafter, it sharply declines to less than +10 percent by the last quarter. The brigade commander concludes that the efforts were successful.

The test in the section Comparing Subordinate Units can aid in judging whether differences are due to chance factors. In this case the commander felt the trend in data was sufficiently self-evident that the test was not necessary.

#### Diagnosing Growing Problem Areas

By examining trend lines one can see whether some dimension which may have been zero for some time is beginning to show greater and greater departures from zero. Figure 8 illustrates this use. In this instance,

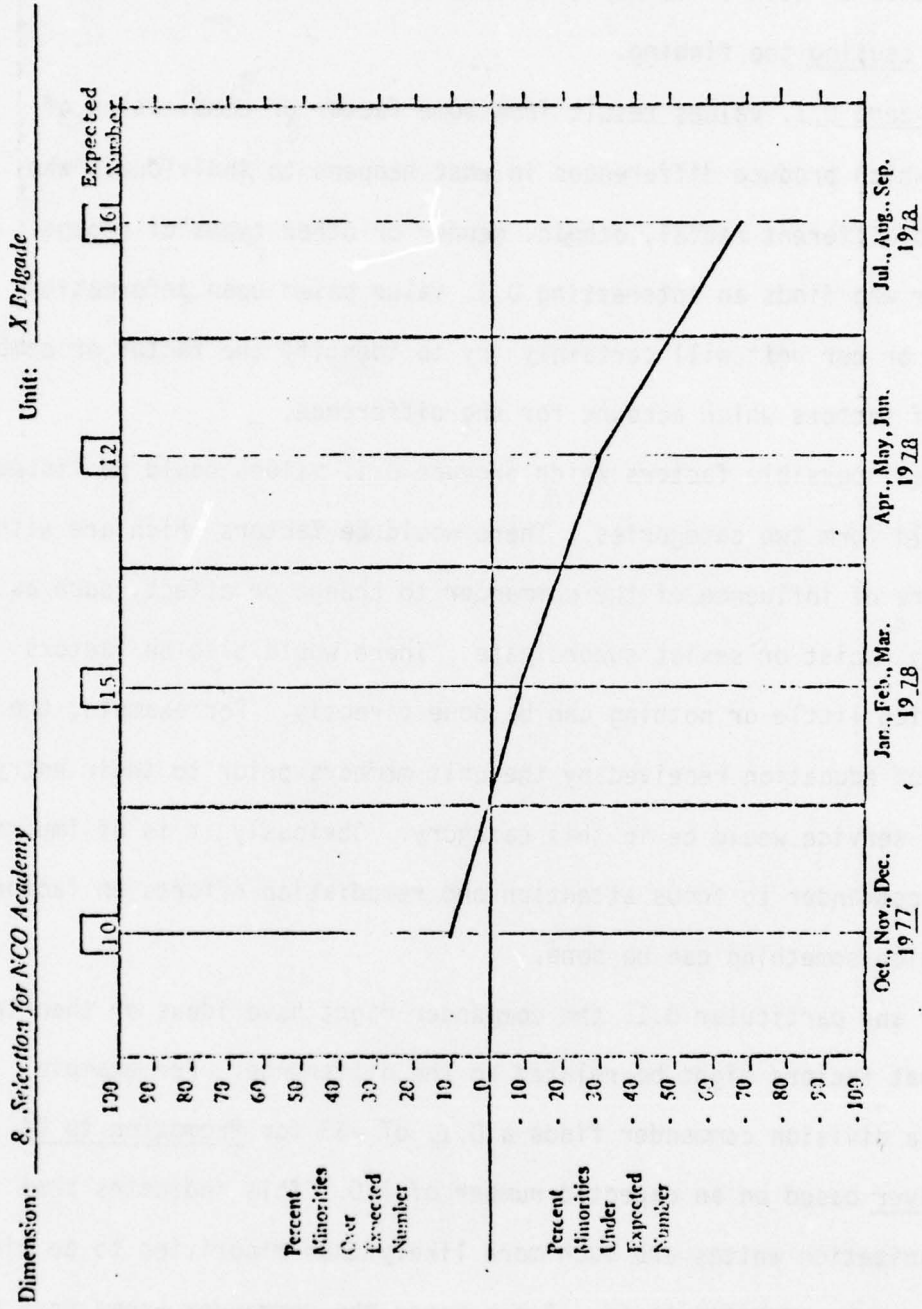
the commander looking at the D.I. for Selection for NCO Academy for the first two quarters for the year would conclude that there was no evidence of a problem. By the fourth quarter, the commander should have strong suspicions that something different is operating than was in the first two quarters. He or she can be fairly confident that a growing problem area exists. Appropriate actions need to be taken.

#### The Use Of Explainer Variables

The D.I.s measure differences in what happens to individuals who are members of minority groups. This should not be taken to imply that minority group membership itself produces differences which are found. For example, if the likelihood of a person having received an Article 15

Figure 8

Illustrative Example of Using D.I. Trend Lines for Growing Problem Areas



NOTE: When the D.I. for the total fiscal year is calculated, draw it in as a horizontal line across all four quarters.

in a particular quarter it would be a serious mistake to think of skin color as causing the finding.

Non-zero D.I. values result from some factor or combination of factors which produce differences in what happens to individuals who belong to different racial, ethnic, gender or other types of groups. A commander who finds an interesting D.I. value based upon information from his or her unit will certainly try to identify the factor or combination of factors which account for the difference.

If all possible factors which produce D.I. values could be listed, they would form two categories. There would be factors which are within the sphere of influence of the commander to change or affect, such as a blatantly racist or sexist subordinate. There would also be factors about which little or nothing can be done directly. For example, the quality of education received by the unit members prior to their entry into the service would be in this category. Obviously it is of importance for the commander to focus attention and remediation efforts on factors about which something can be done.

For any particular D.I. the commander might have ideas or theories about what factors might be related to the difference. For example, suppose a division commander finds a D.I. of -33 for Promotion to E4 with Waiver based on an expected number of 120. This indicates that in the organization whites are much more likely than minorities to be given waivers and be promoted to E4. But suppose the commander knows most of the people involved in the promotion process and feels confident that no conscious discrimination against minorities is occurring. To the best

of his or her knowledge the promotion process is being applied impartially. Still, why are minorities 33 percent underrepresented among those receiving waivers? In considering this question, the possibility occurs to the commander that the amount of education one has may be related to how fast the person is promoted. If whites, on the average, have more education than minorities, then it is possible that differences in the amount of education may be a factor accounting for the difference. In other words, the commander has a hypothesis that something other than discrimination against minorities is producing the difference.

One of the values of the Difference Indicator System is that it allows one to test such a hypothesis to see the extent to which it is true. It may be that, in the example above, it is really the amount of education that is accounting for the difference and that there is nothing in the promotion process itself which is actually discriminating against minorities. If waivers are given to individuals with higher education levels and if in the particular unit, minority group members have fewer years of education on the average than majority group members, the result would be apparent discrimination against minorities.

It is not difficult to test a hypothesis such as the commander in this example has concerning an explainer variable. The procedure is to group the persons used in the D.I. calculation into two or more categories based upon their characteristics with regard to the hypothesized factor. The number in each group should be approximately equal. Then, all persons with the same educational level are placed in the same category. The commander decided to use these three categories of educational level:

1. less than high school graduate
2. high school graduate or equivalent
3. one or more semesters of college

Next, a separate D.I. value is calculated for each of the three category groups. In the example, the result will be three new D.I. values. One for each of the three educational level categories. In this way, the effect of the factor used to form the categories is substantially removed from the new D.I. values. This can be seen in the example where all of the persons included in one category--majority and minority group members--will have similar educational levels. If the factor upon which the categories are based is solely responsible for the original D.I., then the new D.I. values should all be near zero. If the hypothesized factor does not account for the D.I., the new D.I. values will be about the same as the original. In the latter case the conclusion is warranted that some other factor or combination of factors must be responsible for the apparent difference evidenced in the original D.I. Another possible result, of course, is that the new D.I. values will be somewhat nearer to zero than the original D.I., but not much. Such a result would imply that although the hypothesized factor accounted for some of the original misrepresentation of minorities, one or more additional factors is also responsible.

In the example given above, suppose the three D.I. values were calculated as shown in Case A. (Appendix C provides the detailed calculations for Cases A & B).

Case A

<u>Original D.I.</u>	<u>D.I. values based on Educational Level</u>		
	<u>High</u>	<u>Medium</u>	<u>Low</u>
-33	-5	-6	0

Since all of the new D.I.'s are near zero, it would be appropriate for the commander to conclude that education level did account for all of the underrepresentation of minorities measured by the original D.I. value. In other words, what the commander learns from this group of D.I. values is that people with the same educational level are being promoted in the same way, regardless of minority or majority group membership. While it may still be argued that because of educational inequities in society at large, institutional discrimination against minority group members is being perpetuated in this situation--minorities are 33 percent underrepresented for Promotion to E4 with Waiver--the commander has established that within his or her realm of jurisdiction individuals with equivalent qualifications are being treated the same.

Having identified an explainer variable and gained a greater awareness of the situation, the commander in the example would next examine the educational requirements for promotion to E4. The purpose being to determine if the specific educational requirements make sense, have validity, and are being correctly applied. If not, the educational requirements themselves could be serving as an instrument of institutional discrimination against minorities.

Now, examine Case B.

Case B

<u>Original D.I.</u>	<u>D.I. values based on Educational Level</u>		
	<u>High</u>	<u>Medium</u>	<u>Low</u>
-33	-31	-33	-41

Whereas in Case A Educational Level did largely account for the original D.I., this is not true for Case B. Here, even when Education Level is considered, minorities are underrepresented. This suggests that there may be differences in treatment of minorities and whites, specifically, that whites with the same education as minorities are more likely to be promoted at every educational level. In this instance the commander would continue to investigate the situation. Other explainer variables might be examined. The situation might be discussed with those involved in the promotion process to see if they have any insights or theories concerning the apparent discrepant treatment of minority-compared to majority-group personnel. The commander would continue searching into the matter until completely satisfied that principles of equal opportunity and treatment are being consistently guaranteed to all personnel in his or her unit.

The use of explainer variables is intended to aid in the clarification of the origin of a D.I., not merely in explaining it away. They, like the difference indices themselves, are merely management tools. However, they can contribute substantially to the commander's understanding of the dynamics of the organization. They will help the commander toward a more objective understanding of the organizational reality of his or her command.

### Concluding Comment

To explain the Difference Indicator System is a lengthy task but the basic concept is quite simple and direct. Once grasped it provides a readily understood and easily applied means for examining objective differences between what happens to majority and minority personnel in the Army. It can help a commander chart a responsible course of action based on facts and knowledge in an area which has too often been characterized by emotionalism and rhetoric.

## APPENDIXES

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Appendix		Page
A.	Operational Definitions and Notes	59
B.	Sample Forms	66
C.	How to Calculate D.I.s When Using Explainer Variables	71

## APPENDIX A

### OPERATIONAL DEFINITIONS AND NOTES

For each dimension, information is provided concerning (1) suggestions for defining the dimension, (2) recommendations for defining the persons eligible, (3) possible sources for obtaining the information, and (4) possible explainer variables (nonexhaustive). The last two items are keyed to the respective lists appearing at the end of this Appendix.

Circumstances vary between installations. What is found feasible and appropriate at one location may not be elsewhere. Personnel charged with the task of implementing the Difference Indicator System should feel free to modify definitions, even the list of dimensions, as appropriate to the local circumstances consistent with its objectives and purpose.

	<u>Possible Data Sources</u>
1. <u>Enlisted Minority Distribution</u>	
Actual = Total unit strength	2, 4, 7
Eligible = Total Army strength	1, 5
Possible Explainer Variables: A	
2. <u>Promotion to E4 Without Waiver</u>	
Actual = Persons promoted to E4 without TIG or TIS waiver	2, 3, 4, 6, 7
Eligible = Soldiers meeting TIG and TIS requirements for promotion to E4	2, 3, 4, 6, 7
Possible Explainer Variables: A, B, C	

APPENDIX A (continued)

<u>3. Promotion to E5 Without Waiver</u>	<u>Possible Data Sources</u>
Actual = Persons promoted to E5 without waiver	2, 3, 4, 6, 7
Eligible = Persons requiring no waiver for promotion to E5	2, 3, 4, 6, 7
Possible Explaner Variables: A, B, C	
<u>4. Promotion to E4 With Waiver</u>	
Actual = Persons promoted to E4 with TIS and/or TIG waiver	2, 3, 4, 6, 7
Eligible = Persons who could be promoted to E4 with TIS and/or TIG waiver	2, 3, 4, 6, 7
Possible Explaner Variables: A, C	
<u>5. Promotion to E5 With Waiver</u>	
Actual = Persons promoted to E5 with any waiver	2, 3, 4, 6, 7
Eligible = Persons who could be promoted to E5 with any waiver	2, 3, 4, 6, 7
Possible Explaner Variables: A, D	
<u>6. Selection for Career Enhancing Training</u>	
Actual = Persons selected for Airborne, Ranger, Special Forces, MOS upgrade or any locally conducted course	4, 7, 8, 9, 10
Eligible = Persons eligible by paygrade, MOS, and other qualification for specific course	2, 4, 7, 9
Possible Explaner Variables: A, B, C, E	

APPENDIX A (continued)

<u>7. Completion of Career Enhancing Training</u>	<u>Possible Data Sources</u>
Actual = Persons completing locally conducted courses	4, 7, 8, 9, 10
Eligible = Persons enrolled in locally conducted courses	4, 7, 8, 9, 10
Possible Explainer Variables: A, B, C, E	
<u>8. Selection for PNCOC, BNCOC, PLC OR BLC</u>	
Actual = Persons selected for enrollment	4, 7, 8, 9
Eligible = Persons eligible according to current regulations	2, 4, 7, 9
Possible Explainer Variables: A, B, E, F, G	
<u>9. Completion of PNCOC, BNCOC, PLC or BLC</u>	
Actual = Persons completing courses	4, 7, 8, 9
Eligible = Persons enrolled	4, 7, 8, 9
Possible Explainer Variables: A, B, E, F, G	
<u>10. Enrollment in High School Completion or BSEP Program</u>	
Actual = Persons enrolled with High School completion as their objective	3, 4, 7, 8, 10
Eligible = Persons with High School education or equivalent	2, 3, 4, 7, 10
Possible Explainer Variables: H, I	
<u>11. Completion of High School Program</u>	
Actual = Persons completing	4, 7, 8, 10
Eligible = Persons enrolled with High School completion as their objective	4, 7, 8, 10
Possible Explainer Variables: E, I, J	

APPENDIX A (continued)

12.	<u>Expert Infantry Badge (EIB) or Expert Field Medic Badge (EMB) or other Similar Award</u>	<u>Possible Data Sources</u>
	Actual = Persons awarded the badge	4, 7, 9, 11
	Eligible = Persons with appropriate MOSs	2, 4, 7, 9, 11
	Possible Explainer Variables = B, E, I, K	
13.	<u>Awards</u>	
	Actual = Persons recommended for Meritorious Service, Good Conduct, Army Commendation, or other medals	3, 4, 7, 12
	Eligible = Total persons in unit	2, 4, 7
	Possible Explainer Variables = A, E, F	
14.	<u>Company Commanders</u>	
	Actual = Persons commanding a company	1, 2, 3, 7
	Eligible = All o3s at installation	2, 4, 7
	Possible Explainer Variables: A	
15.	<u>First Sergeants</u>	
	Actual = All company First Sergeants	1, 2, 3, 7
	Eligible = All E8s at installation	2, 4, 7
	Possible Explainer Variables: A	
16.	<u>Company Grade Article 15s</u>	
	Actual = Enlisted personnel receiving company grade Article 15s	4, 7, 13
	Eligible = All enlisted personnel	2, 4, 7
	Possible Explainer Variables: L	

APPENDIX A (continued)

<u>17. Field Grade Article 15s</u>	<u>Possible Data Sources</u>
Actual = Enlisted personnel receiving field grade Article 15s	4, 7, 13
Eligible = All enlisted personnel	2, 4, 7
Possible Explainer Variables: F, L, M	
<u>18. Unprogrammed Separations (Total of all EDP, Chapter 9, 10, 13 separations)</u>	
Actual = Persons receiving unprogrammed discharges	4, 7, 13, 14
Eligible = All personnel in unit	2, 4, 7
Possible Explainer Variables: F, I, N	
<u>19. Chapter 9 Separations</u>	
Actual = Persons separated under Chapter 9 proceedings	4, 7, 13, 14
Eligible = Persons receiving unprogrammed separations	4, 7, 13, 14
Possible Explainer Variables: 0	
<u>20. Chapter 10 Separations</u>	
Actual = Persons receiving discharge under Chapter 10 proceedings	4, 7, 13, 14
Eligible: Persons receiving unprogrammed separations	4, 7, 13, 14
Possible Explainer Variables: N, 0	
<u>21. Chapter 13 Separations</u>	
Actual = Persons receiving discharge under Chapter 13 proceedings	4, 7, 13, 14
Eligible = Persons receiving unprogrammed separations	4, 7, 13, 14
Possible Explainer Variables: 0	

APPENDIX A (continued)

<u>27. First Term Reenlistments</u>	<u>Possible Data Sources</u>
Actual = Persons reenlisting for first time	2, 4, 7, 15
Eligible = Persons serving first term of service	2, 4, 7, 15
Possible Explainer Variables: A, B, I, Q	

KEY TO POSSIBLE INFORMATION SOURCES

1. Equal Opportunity Office
2. AG, SIDPERS
3. Affirmative Actions Report (e.g., FORSCOM 331 Report)
4. Unit Personnel Office (e.g., BN PAC)
5. Installation Library
6. AG, Enlisted Promotions
7. PSNCO
8. Course Rosters or Instructors
9. Directorate of Plans and Training (DPT)
10. Education Center
11. Division Surgeon
12. AG, Awards Section
13. SJA
14. AG, Administrative Discharge Section
15. G1, Reenlistment

APPENDIX A (continued)

KEY TO POSSIBLE EXPLAINER VARIABLES

- A. MOS
- B. Education level
- C. EERWA
- D. Unit strength in particular MOS categories
- E. Paygrade
- F. Time in service
- G. Time in grade
- H. Home of record
- I. Age
- J. Number of years of civilian education
- K. Years in service in particular MOS
- L. Type of offense
- M. Number of offenses
- N. Prior civilian conduct
- O. Specific nature of circumstance
- P. History of military justice actions
- Q. Number of dependents

KEY TO POSSIBLE EXPLANER VARIABLES

**APPENDIX B**

**SAMPLE FORMS**

A.	MOB
B.	Education level
C.	ERRA
D.	Unit strength in particular MIZ categories
E.	Paygrade
F.	Time in service
G.	Time in grade
H.	Home of record
I.	Age
J.	Number of years of civilian education
K.	Years in service in particular MIZ
L.	Type of offense
M.	Number of offenses
N.	Prior civilian conduct
O.	Specific nature of circumstance
P.	History of military justice actions
Q.	Number of dependents

Difference Index Calculation Form

DIMENSION:

UNIT:

INFORMATION REQUIRED	QUARTERS			TOTAL
1. Number of minority persons eligible = for category				
2. Number of all persons eligible = for category				
3. Proportion of eligibles = $\frac{\text{Line 1}}{\text{Line 2}}$ who are minorities				
4. Actual number of all persons in category				
5. Expected number of = Line 3 X Line 4 = minority persons				
6. Actual number of minority persons				
7. Difference = $\left[ \frac{\text{Line 6}}{\text{Line 5}} \times 100 \right] - 100$ Indicator				

Time Period:

Unit:

Dimensions

Expected Number

D.I. Value

-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50 +60 +70 +80 +90 +100

1. Enlisted Minority Distribution

PROMOTIONS

2. Promotion to E4 without Waiver

3. Promotion to E5 without Waiver

4. Promotion to E4 with Waiver

5. Promotion to E5 with Waiver

TRAINING AND EDUCATION

6. Selection for Training

7. Completion of Training

8. Selection for PNCOC, etc.

9. Completion of PNCOC, etc.

10. H.S. Completion Program Enrollment

11. Completion of H.S. Program

AWARDS

12. EIB or EFMB or Equivalent

13. Awards

COMMAND ASSIGNMENT

14. Company Commanders

15. First Sergeants

NON-JUDICIAL PUNISHMENT

16. Company Grade Article 15s

17. Field Grade Article 15s

UNPROGRAMMED DISCHARGES

18. Unprogrammed Separations

19. Chapter 9 Separations

20. Chapter 10 Separations

21. Chapter 13 Separations

22. Expeditious Discharges

23. Courts-Martial

24. Punitive Discharges

REENLISTMENT

25. Bars to Reenlistment

26. Career Reenlistments

27. First Term Reenlistments

-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50 +60 +70 +80 +90 +100

Time Period:

Dimension:

Units

Expected  
Number

D.I. Value

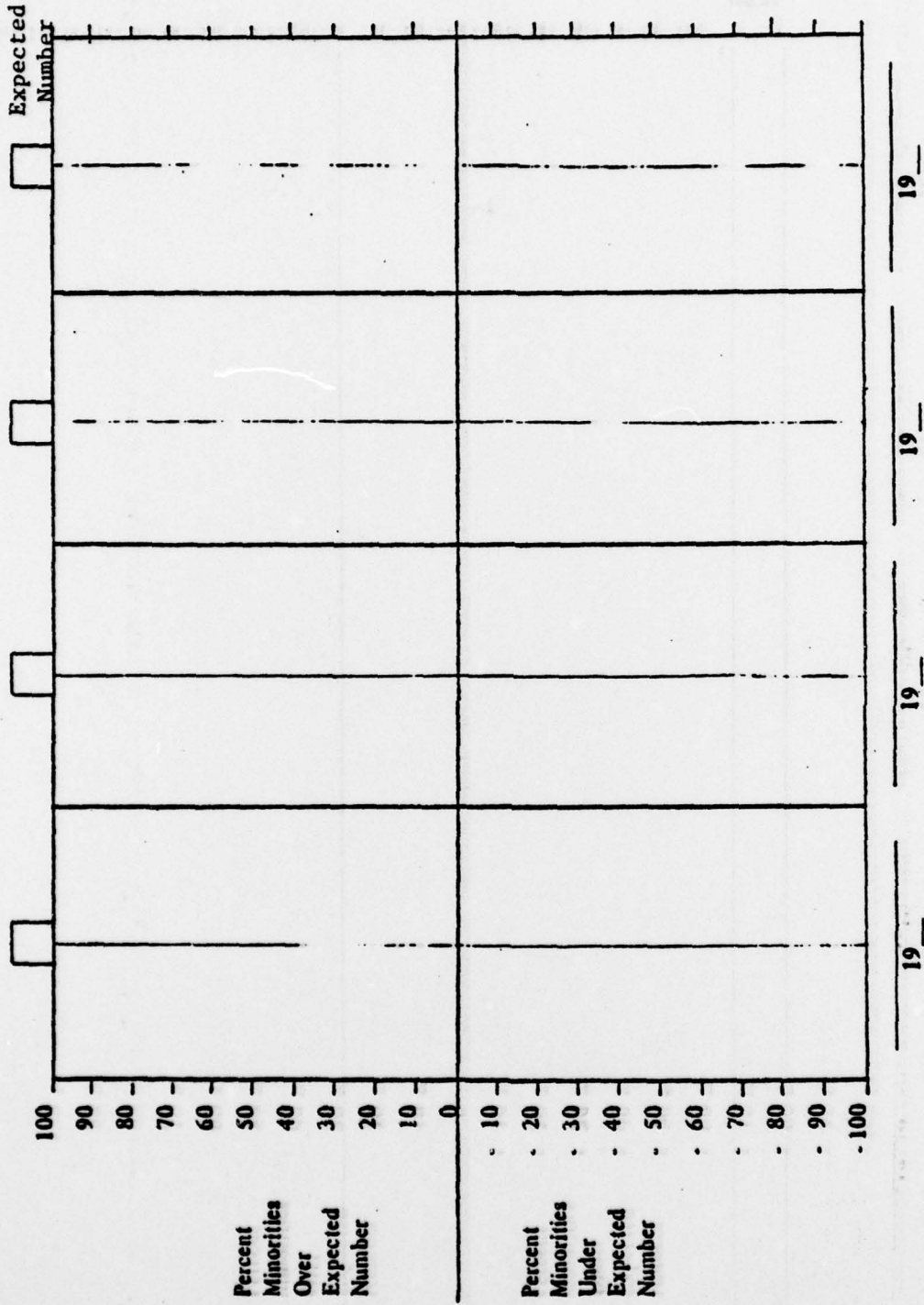
-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50 +60 +70 +80 +90 +100



-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50 +60 +70 +80 +90 +100

Dimension: \_\_\_\_\_

Unit: \_\_\_\_\_



NOTE: When the D.I. for the total fiscal year is calculated, draw it in as a horizontal line across all four quarters.

## APPENDIX C

### HOW TO CALCULATE D.I.s WHEN USING EXPLAINER VARIABLES

This approach illustrates how to proceed to calculate D.I.s when testing the effects of an explainer variable. The procedure is demonstrated using the example cited in Chapter V in the discussion of explainer variables.

In the example, a division commander looked at the D.I. for Promotion to E4 With Waiver and found a D.I. = 33 percent. First a review is presented of the way in which the original D.I. was calculated. The source data for that D.I. were:

	White	Minority	Total
Number of Persons Eligible for Promotion to E4 With Waiver	800	200	1000
Number of Persons Promoted to E4 With Waiver	520	80	600

The D.I. was calculated using these data in the seven steps in the Difference Index Calculation Form. The seven steps are repeated below.

#### INFORMATION REQUIRED

1. Number of Minority persons who could be promoted to E4 with TIS and/or TIG waiver		200
2. Number of all persons who could be promoted to E4 with waiver for TIS and/or TIG		1000
3. Proportion of Minorities = $\frac{\text{Line 1}}{\text{Line 2}}$ =		.20
4. Number of all persons promoted with waiver for TIS and/or TIG to E4		600

- |    |                         |   |      |
|----|-------------------------|---|------|
| 5. | Expected<br>Number      | = Line 3 X Line 4 =   | 120  |
| 6. | Actual Number           | = non-whites promoted with<br>waiver for TIS and/or TIG to E4 | 80   |
| 7. | Difference<br>Indicator | = $\frac{\text{Line 6}}{\text{Line 5}} \times 100 - 100 =$    | -33% |

Now the -33 percent is the original D.I. calculated from the original raw data. The commander thinks that the -33 percent does not really reflect discrimination in the promotion process but is really associated with another factor. He or she suspects that there is a greater likelihood for E4s with higher educational level to receive waivers than those with lower educational levels. And since the commander believes that minorities tend to have a lower educational level, the hypothesis seems reasonable that the -33 percent is really reflecting a difference in education level which happens also to be correlated with minority group membership. Using D.I.s this hypothesis can be investigated.

First, more information must be collected about those E4s who were eligible for promotion. Needed is the educational level of each person. Suppose three categories of educational level were used:

- |        |   |  |
|--------|---|--|
| High   | = | High school graduate plus some college |
| Medium | = | High school graduate                   |
| Low    | = | Less than high school graduate         |

Records provide the information to determine into which category each of the E4s eligible for promotion falls. Assume the numbers are as follows:

	Eligible		
	White	Minority	Total
High	350	40	390
Medium	250	60	310
Low	<u>200</u>	<u>100</u>	<u>300</u>
Total (original)	800	200	1000

Also necessary are the numbers of persons actually promoted in each educational category. Suppose those data are found to be the following:

	Promoted-Case A		
	White	Minority	Total
High	350	37	388
Medium	150	34	186
Low	<u>20</u>	<u>9</u>	<u>26</u>
Total (original)	520	80	600

Now, a D.I. is calculated for each educational level separately in exactly the same way as with the original data. Thus, to calculate the D.I. for the low education category, only the data for the low education rows are used. Below are the calculations for that educational level.

#### INFORMATION REQUIRED

- |    |  |     |
|----|--|-----|
| 1. | Number of minority persons who could be promoted to E4 with waiver | 100 |
| 2. | Number of all persons who could be promoted with waiver            | 300 |
| 3. | Proportion of Minorities = $\frac{\text{Line 1}}{\text{Line 2}}$ = | .33 |

4. Number of all persons promoted with waiver 26
5. Expected Number = Line 3 X Line 4 =  
(rounded to whole number) 9
6. Actual Number = minorities promoted with waiver 9
7. Difference Indicator =  $\frac{\text{Line 6}}{\text{Line 5}} \times 100 - 100 =$  0%

This same procedure would then be repeated for the data from the medium education category and from the high education category. The results of these calculations are as follows:

High Education	Medium Education	Low Education
D.I. = -5	D.I. = -6	D.I. = 0

In this instance, one would conclude that within each educational category, there was little or no difference between whites and minorities. It appears that education and not group membership is accounting for most of the original D.I. value.

Looking now at Case B, assume that when the commander went back to get educational data, it was found that data for those eligible for promotion was identical with that for Case A but that the actual data was as follows:

	Promoted-Case B		
	White	Minority	Total
High	150	11	161
Medium	220	33	253
Low	<u>150</u>	<u>36</u>	<u>186</u>
Total (original)	520	80	600

Following the same procedure described above, the D.I.s calculated for the different educational levels here are as follows:

High-	D.I. =	-31
Medium-	D.I. =	-33
Low-	D.I. =	-41

In this case, the commander would have to conclude that educational level did not have much effect. At every level of education, minorities were underrepresented among those promoted with any waivers.

This same procedure can be followed to calculate D.I.s for testing any other explainer variables. As a practical matter it is sometimes difficult or even impossible to collect the necessary data for past time intervals. An alternative approach is to begin collection of the explainer variable information for the next time period. When this approach is taken, it is appropriate to compare the D.I.s for various levels of the explainer variable to the new D.I. value for the category rather to the one from the past time period, even though it generated the explainer variable hypothesis.