# NAVAL POSTGRADUATE SCHOOL
## Monterey, California

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**PERFORMANCE MEASUREMENT FOR THE COMPANY OFFICER: AN EXAMINATION OF CURRENT METHODS USED AT THE UNITED STATES NAVAL ACADEMY**

by

James A. Belz

August 1999

Principal Advisor: Wally Owen

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# PERFORMANCE MEASUREMENT FOR THE COMPANY OFFICER: AN EXAMINATION OF CURRENT METHODS USED AT THE UNITED STATES NAVAL ACADEMY

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of the requirements for the degree of

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## ABSTRACT

This research will first examine the historical role of the United States Naval Academy in developing future naval leaders. The organization of the Naval Academy will be illustrated to provide an understanding of the framework in which the leadership abilities of the midshipmen are developed. The role of the company officer in developing midshipmen will then be introduced. Performance management with performance measurement as a tool for improvement will then be examined in terms of the mission of the academy and role of the company officer. This research will then examine the current performance measurement methods employed by Company Officers at the United States Naval Academy and how these methods factor into improved midshipman leadership development. Research will include conducting a detailed analysis of the role of the company officer in midshipman leadership development. Data will be collected and analyzed using a performance measurement approach. The results of this analysis will enable company officers to develop new measurement ideas with the focus on improving the midshipmen leadership development process.

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# I. INTRODUCTION

## A. BACKGROUND

The United States Naval Academy has evolved over one hundred and fifty-three years. It started as a Naval School whose primary function was to educate potential officers in the basics of contemporary subjects. These subjects included English, arithmetic, algebra, geometry, navigation, geography, nautical astronomy, French, Spanish, mechanics, magnetism, electricity, ordnance, gunnery, the use of steam, and history (Sturdy, 1935). Leadership was not taught as a subject. Midshipmen leadership skills were learned by example and through exposure to commissioned officers. The Naval Academy has evolved into a modern university where many majors are offered and leadership is consciously learned through study as a subject and practical application in the midshipmen run regiment.

Performance management and measurement in modern business began over fifty years ago. Recently local governments have been implementing both at an unprecedented rate. The federal government has also moved to implement mandatory performance measurement with the Government Performance and Results Act of 1993 (Public law 103-62). This law requires Federal agencies to develop strategic plans for how they deliver high quality goods and services to the American public. These strategic plans will be the starting point for each Federal agency to establish agency goals and objectives, define how it will achieve those goals, and then measure whether or not those goals were

met (National Public Review, 1997). The purpose behind this is using measurement feedback for process improvement.

## B. PURPOSE

The purpose of the Naval Academy is to develop the professional capabilities and leadership abilities of the midshipmen in preparation for the fleet. The impact that the company officer has upon this development is immeasurable. Developing leadership ability in midshipmen implies a process of evaluation, feedback and continuous improvement. Performance management and performance measurement provide the necessary framework for analyzing current performance with the goal of improvement. Developing midshipmen and junior officers in the practical application of performance measurement techniques provides a leadership and management tool that can be applied their entire career. The purpose of this study, titled *Performance measurement for the Company Officer: An examination of current methods used at the United States Naval Academy,* is to examine the measures currently being used by company officers to gauge company performance. Those measures will then be evaluated using Chang and De Young's Measuring organizational improvement impact (1995) as a performance measurement standard. This process of examining and evaluating the measures of current company officers could eventually lead to a basic system that complements the personal leadership style of the company officer.

## C. SCOPE AND METHODOLOGY

*Performance measurement for the Company Officer: An examination of current methods used at the United States Naval Academy* will begin with a historical review of the mission of the Naval Academy and company officer role in that mission. This will be accomplished by conducting a literature review of Naval Academy archives, books, magazines articles, and other library information resources. This historical review will examine the history behind the organization and mission statements of the Naval Academy. It will illustrate the evolution of professional and leadership development at the United States Naval Academy. A literature review of performance management and performance measurement including previous performance measurement research done in the military will follow. This literature review will also examine the use of performance measurement as a tool of leadership in leadership development. The performance measures used by Company Officers during the 1997-1998 academic year will be obtained through the use of a pre-interview questionnaire followed by personal interviews. Analysis of current performance measurement methods and tools used at the Naval Academy will use Chang and DeYoung's Measuring organizational impact (1995) as a performance measurement standard. An evaluation of these measures as well as tools for improving leadership development will follow the analysis. The thesis will conclude with a recommendation for implementing the successful performance monitoring techniques used by company officers.

## D. ORGANIZATION OF STUDY

*Performance measurement for the Company Officer: An examination of current methods used at the United States Naval Academy* is organized into seven chapters. This section will briefly outline the contents of each chapter.

### 1. Introduction

The introduction consists of a **background, purpose, scope and methodology,** and **organization of study**. The **background** briefly examines the mission of the Naval Academy and its evolution over one hundred and fifty-three years from a trade school to a university. It gives an overview of the effect of that evolution on the mission and on leadership development in the midshipmen. It also introduces performance management and measurement as a tool of good leaders and suggests its applicability to the mission of the Naval Academy.

The **purpose** will elaborate on the specific applicability of performance measurement to the company officers of the United States Naval Academy and introduce the topic of the study which is *Performance measurement for the Company Officer: An examination of current methods used at the United States Naval Academy*. It also suggests future benefits of this study, which could be a performance measurement system, based on the successful measures noted in this study.

The **scope and methodology** discusses the boundaries of the study and the process by which this report was completed. It illustrates the research method, the topics to be researched, and what is to be gained by conducting this research. The **organization**

**of study** outlines each chapter's applicability to the research and shows the contribution of each to the entire study.

### 2. Literature Review

The literature review will examine previous research on the topics of performance management and measurement; leadership and leadership development; and the history of the Naval Academy. Specific attention will be devoted to the effect of the Naval Academy's formation, purpose, and configuration on the evolution of the company officer and consequently how the leadership development of the midshipmen has progressed. The literature review will illustrate, using previous research, the connection between leadership development, performance measurement, and the United States Naval Academy. This will answer the following research questions: (1) what is the historical role of the Naval Academy in developing leadership in midshipmen? (2) How is the Naval Academy organized with respect to leadership development? (3) What is performance management? (4) What is performance measurement? (5) How does performance measurement contribute to leadership development? (6) What previous research has been done in the area of performance measurement as it relates to military academic environments?

### 3. Overview of Current Practices

This chapter is the result of interviews with current company officers and will illustrate the measures used by them during the 1997-1998 Academic year. The interviews are the result of a previous project that generated sixteen measures used by

company officers. The information from these early interviews was used to design a pre-interview sheet whose purpose was three-fold. The pre-interview sheet was designed to illustrate the purpose of the upcoming interview, provoke thought, and streamline the interview to maximize the number to be completed.

Each measure is explained in detail to provide an understanding of the potential usefulness as a measure. Data will be displayed in bar graph form illustrating the measures and how many company officers use them out of the total.

### 4. Analysis of Data

This chapter will expand on the findings presented in the previous chapter. It will discuss each performance measure in more detail and some of the ways the measures were actually used. It is one thing to monitor an actual measure, and it is entirely different to use that measure in a true performance management sense. This chapter uses Chang and DeYoung's Measuring organizational impact (1995) as a performance measurement standard.

Criteria are generated from the Measurement Linkage Model of Chang & DeYoung for use as a performance measurement standard. These criteria determine which, if any, of the sixteen measures currently used are valid key indicators. The measures determined to be valid key indicators will then be operationally analyzed to see if they are true performance measures being used in a performance management system.

### 5. Summary, Conclusions, and Recommendations

This chapter has three sequential parts: a summary, conclusion, and recommendations. Each part contributes to the chapter in the following way.

The **summary** reviews the literature review's historical evolution of the Company Officer and the need for performance measurement at the Naval Academy. It also summarizes the research findings and places them in perspective relative to the company officer mission of leadership development in midshipmen.

The **conclusion** attempts to explain the research findings. The results of the study are examined and reasons postulated for those results. Another study is referenced to support the conclusions drawn from this examination.

The **recommendations** are explained in two parts. There are recommendations specific to the Naval Academy and recommendations for further research. Recommendations for the Naval Academy uses the summary and the conclusions to suggest specific things to be done to improve the use of performance measurement at the Naval Academy.

Recommendations for further research highlight the limitations of the study and suggest new areas for further study. Examining performance measures used during one academic year, during the term of only one Commandant is one such limitation. Problems that arose during the thesis will be discussed as well as possible solutions to those problems for a future study. Performance measures have limitations which company officers need to remember. This chapter will briefly discuss them.

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# II. LITERATURE REVIEW

## A. HISTORICAL PERSPECTIVE

The United States Naval Academy has been producing Naval Officers for over one hundred and fifty years. The Naval Academy process of midshipman leadership development has evolved throughout a century and a half of changes. When the Naval School began, leadership was learned by example. The example was set by the Commandant and other officers. Today, it is acquired by academic and professional courses, and practical experience gained in the midshipmen run brigade.

As the size and complexity of the Naval Academy has grown the Commandant's role as direct mentor has been replaced by the Company Officer. This makes the Company Officer crucial to the growth of midshipmen into Naval Officers. The evolution of the Company Officer position has had a large impact on the development of future Naval Officers. To understand this impact it is necessary to examine the changing role of the Company Officer within the brigade.

### 1. United States Naval Academy

#### *a) Formation*

The necessity of a school to train naval officers was known long before the Naval Academy became a reality. In 1800, Alexander Hamilton, then the Inspector General of the Army, first proposed a military academy composed of four schools. The planned Military Academy would have a Fundamental School, School of Engineers and Artillerists, School of Cavalry and Infantry, and a School of the Navy (Marshall, 1862). In 1802, Congress passed an act which did organize a Military Academy at West Point, New York but failed to include the

Naval School and the School of Cavalry and Infantry. Naval Officers would continue to obtain a commission through examination from the ranks of self-taught, sea-assigned, politically appointed midshipmen.

Naval Regulations were issued in 1802, which assigned no real duties to the midshipmen. They were "to employ a due portion of their time in the study of naval tactics, and in acquiring a thorough and extensive knowledge of all the various duties to be performed on board of a ship of war" (Soley, 1876, p.8). These regulations left the schooling to "schoolmasters" who did not even exist in the Navy until 1813. This oversight seems to be the result of the influence of the English "Regulations and Instructions Relating to His Majesty's Service at Sea" (1734), which did provide for qualified-by-examination schoolmasters on English ships. Since there were no schoolmasters provided for in the original 1802 bill, the task of instructing future naval officers in writing, arithmetic, and navigation fell to the Chaplains. The Chaplains were anything but qualified to teach these subjects. There was no exam or other test of the Chaplain's ability to teach these subjects and "it was only in cases of fortunate accident that they knew anything about the subject before they were called to teach it" (Soley, 1876, p.10). The regard for the Navy at that time is illustrated by the fact that the country would pay a greater amount to the Barbary Powers in the form of tribute rather than spend a reasonable amount in the building of frigates.

Forty-two years later, then Secretary of the Navy George Bancroft realized what all the previous Navy Secretaries, Naval Officers, and Congressmen had not: that he had all the power and finances needed, without Congressional approval, to begin operation of a consolidated Naval School. It could be done by merely merging the teaching assets already available in the

Navy but dispersed in New York, Boston, Norfolk, Philadelphia and at sea. He obtained Fort Severn from the Secretary of War and the Naval School was born in 1845.

Bancroft's original Naval School was essentially a trade school, designed merely to improve the management of the assets available to the Navy at that time. Its purpose was to better concentrate the midshipmen focus on formal learning rather than informal sea training. Thus, midshipmen would be better educated through greater standardization in the training regimen prior to commissioning. The midshipmen still had to go to sea and obtain schooling as time ashore at the Naval School permitted. These problems are best illustrated in a letter of August 7th, 1845 from George Bancroft to the first Superintendent, Commander Franklin Buchanan which states:

> Thus the means for a good Naval School are abundant, though they have not yet been collected together and applied...One great difficulty remains to be considered. At our colleges and at West Point, young men are trained in a series of consecutive years; the laws of the United States do not sanction a preliminary school for the navy; they only provide for the instruction of officers who are already in the navy. The pupils of the naval school being, therefore, officers in the public service, will be liable at all times to be called from their studies, and sent on public duty. Midshipmen, too, on their return from the sea, at whatever season of the year, will be sent to the school. Under these circumstances, you will be obliged to arrange your classes in such a manner as will leave opportunity for those who arrive, to be attached to classes suited to the stage of their progress in their studies. (Marshall, 1862, pp.22-23)

In 1850 Congress authorized a regularly prescribed course of continuous instruction and changed the name to the Naval Academy (Sturdy, 1935). In 1851 the school curriculum was changed to four consecutive years at the Academy with summer practice cruises. In review, Officer training began after the Revolutionary War as pure technical, on-the-job, seamanship training with practical fleet leadership exposure. It then shifted to a hybrid of classroom training and fleet training in 1845. By 1851, the Naval Academy had completed the

evolution by going to college-like classroom instruction, for a standardized period of time, with less informal exposure to the fleet.

### *b) Purpose*

The current purpose of the United States Naval Academy is "To develop midshipmen morally, mentally and physically and to imbue them with the highest ideals of duty, honor and loyalty in order to provide graduates who have potential for future development in mind and character to assume the highest responsibilities of command, citizenship and government" (United States Naval Academy, 1996b, p.22). This is a much broader mission statement than was first proposed to the President or Congress in the early 1800s by proponents of a Naval Officer training school. The mission of the Naval Academy has evolved as technology and society have advanced. The Naval Academy has grown from a school that taught Naval Officers the basics in math, English, navigation, and steam propulsion into a fully accredited four-year degree granting college. The process of fostering leadership in midshipmen has evolved also. The process has changed from one in which leadership ability was gained through practical fleet experience to one where a deliberate attempt is made to develop those abilities during the midshipman's four-year stay at the Naval Academy.

### *c) Configuration*

The evolution of the structure and mission of the Naval Academy has had a corresponding effect upon the Brigade of Midshipmen and the development of future Naval Officers. The Brigade of Midshipmen was not always addressed as a brigade or even a regiment.

The Brigade has also undergone several changes throughout its history, which have included modifications in its purpose. The original class began on October 10, 1845 with 50

midshipmen. In 1848, Professor Lockwood introduced military drill. This is significant because drill would later become a means of instilling discipline and exercising midshipman leadership. By 1855 there were approximately 140 midshipmen at the Naval Academy organized into "gun crews." There were approximately 10 gun crews of no more than 16 men each. They were headed by a First Captain and a Second Captain "for the purpose of instruction in the use of arms, and in infantry tactics, and for effecting inspection or other parades, mess arrangements, etc" (Regulations for the Interior Police of the Naval Academy, 1858, p.5). The First Captain was denoted by two stripes on his uniform (2 striper) and the Second Captain had one stripe on his uniform (1 striper). This was the beginning of the midshipman rank structure.

In 1869, enrollment had increased to approximately 480 midshipmen. They were organized into four divisions of six gun crews each. The rank structure evolved further as the position of cadet Lieutenant Commander was created. The cadet Lieutenant Commander would have four cadet Lieutenants as junior officers, one for each division. The cadet Lieutenants had as assistants one cadet Ensign and one cadet Midshipman per division. The cadet Midshipman was an assistant to the cadet Ensign. The first and second captains of gun crews were still the most basic unit of the organization. The stated purpose was still for artillery and infantry drill although now the gun crews marched to class (or recitation). Two divisions formed a company and each ship's company constituted the complement of a sloop-of-war. Although no written reason for having two full complements of a sloop-of-war could be found, it might have been tied to the summer practice cruises. By 1876, the formal duty of the cadet Lieutenant Commander was "to function as the Executive Officer would onboard a ship." (Regulations of the United States Naval Academy, 1876, p.31).

In 1909, the basis of the Brigade organization changed from a sloop-of-war complement to a naval brigade with two battalions of six companies each. In addition to drill, the newly stated purpose of the midshipmen brigade was to maintain discipline within the brigade. This new responsibility resulted in the enlargement of the brigade staff and promotion of the cadet Lieutenant Commander to Commander. Adjutants were created to aid in brigade administration. The battalion heads were then given the rank of cadet Lieutenant Commander.

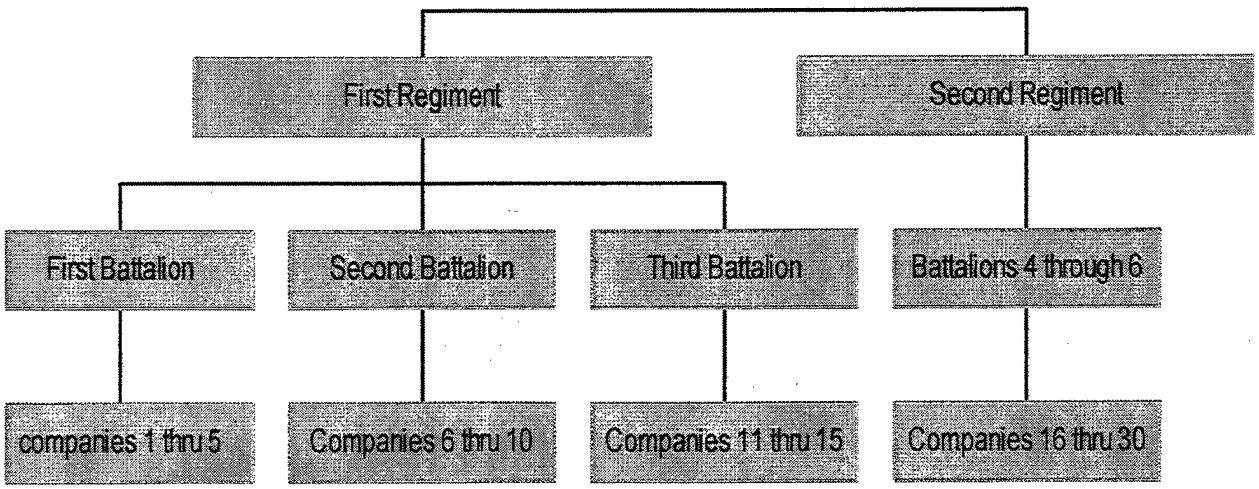
The Regulations of the United States Naval Academy formally changed the stated purpose of the cadet company staff. "Company Officers shall be quartered and messed with their companies. They are charged with good order, discipline, and drill of their respective companies. Their relations to those under their command are similar to those of divisional officers aboard ship. They shall lead, instruct, and advise their men." (Regulations of the United States Naval Academy, 1907, p.19). This does not refer to commissioned Company Officers, who did not yet exist, but rather the appointed cadet officers.

The 1907 regulation marked the first time midshipmen were leading other midshipmen for other than a parade or organizational purpose. It is a departure from the previous years because it formally suggests developing leadership capabilities in midshipmen through brigade administration. Because the regulation specified that the relationship "shall be similar to those of divisional officers onboard ship," it suggested that the new structure would aid in developing the experience base necessary to become an effective commissioned officer. This point is further clarified in 1916 when the regulation stipulated:

> Midshipman officers are expected to realize fully the increased responsibility placed on them and by their strict attention to duty show themselves worthy of the trust accorded, and thereby maintain the standard of discipline at the Academy, as well as prepare themselves for the greater responsibilities soon to be encountered in the service at large. (Regulations of the United States Naval Academy, 1916, p.93).

For the next 22 years the brigade organization and leadership challenges changed little, with the exception of manipulating the number of battalions and companies as enrollment varied. In 1938, the brigade organization appeared, as it is known today. It was set up as one naval regiment of four battalions with twelve companies, 3 per battalion. Today there are two regiments of three battalions each, with five companies per battalion. See below.

**Brigade of Midshipmen**
**(1999)**



### *d) Role of Company Officer*

When the Naval Academy initially formed, there were no Company Officers. Due to the low number of midshipmen and staff, the Superintendent or the Commandant, then known as the Executive Officer would inspect the mess and recitation halls, quarters and grounds (Regulations of the U.S. Naval Academy, 1853). The initial austerity of the Naval School required a high degree of staff efficiency. It was the duty of every officer, professor, and instructor attached to the Naval School who knew of any violation or improper conduct by a midshipman to report it to the Superintendent (Regulations of the U.S. Naval Academy, 1853). The professors and instructors were responsible for the "regular and orderly conduct" of their respective class.

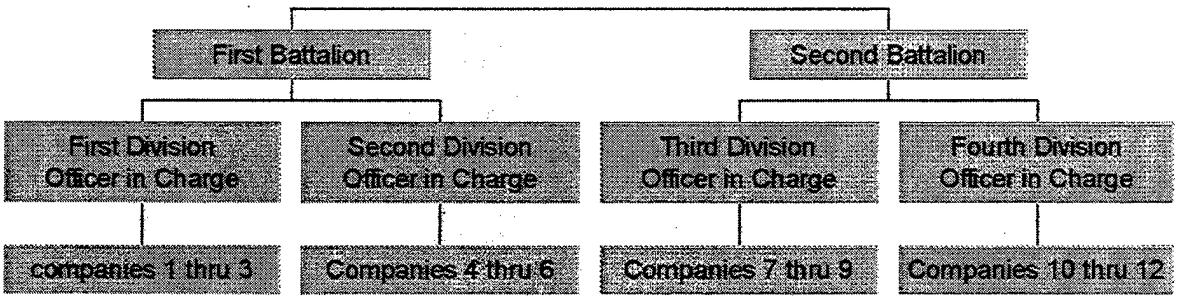
By 1858, the Commandant had three assistants, "each of whom occupy a rank not below that of Master" (Regulations of the U.S. Naval Academy, 1855, p.33). This was a practical requirement because the Commandant of the Naval Academy taught practical seamanship, naval gunnery, and naval tactics. It was from these three assistants that the Company Officer position would evolve. Their job was also "to perform those ... [duties]... of executing the regulations and order concerning police and discipline" (Regulations of the U.S. Naval Academy, 1855, p.33). These assistants stood a 24 hour watch called "officer in charge," similar to the Command Duty Officer (CDO) watch stood today by company officers.

There were only minor changes up until 1909, a year that marked the first appearance of the Department of Discipline. At that time each division had three companies, with two divisions per battalion. Each Officer-in-Charge led a division (there were four) and was

responsible for the general discipline, neatness, and good order of their companies. This was the beginning of the position we know today as the Battalion Officer.

By 1911, junior Officers were being assigned as assistants to the Officers-in-Charge. "The junior officers will act as assistants to the officers in charge of divisions and will be particularly charged with acquainting themselves with the members of the companies under their command, with a view to acting as advisers to the midshipmen" (Regulations of the United States Naval Academy, 1911, p.73). In 1916 the Officers in Charge of divisions were renamed Battalion Officers with the junior Officers as assistant Battalion Officers.

**Brigade of Midshipmen**
**(1909)**




The Brigade assumed the battalion system we see today with Company Officers and Battalion Officers by 1933. A key event in 1938 was the change in the duties of the commissioned Officers appointed over the midshipmen:

> ...In the performance of their duties these officers are charged with the development in midshipmen of the qualities of character and sound leadership necessary in the naval officer. They shall delegate to the midshipman officers and petty officers the administration and responsibility for the maintenance of good order and discipline within the battalion so far as the experience, ability and time of the midshipman concerned will permit. They shall act on the principle of supervision of midshipmen administration rather than on the principle of administration with midshipmen acting as their assistants. (Regulations of the United States Naval Academy, 1938, p.29)

It was now the responsibility of the commissioned Battalion Officer and Company Officer to ensure that the brigade operated with midshipman administration and officer supervision rather than officer administration with midshipman assistance. This clearly shows the intention that the midshipmen should be gaining leadership experience from occupying these positions. It also illustrates the changing role of the Company Officer from disciplinarian to adviser to leadership developer.

## B. LEADERSHIP

Leadership and management are not the same thing (Cronin, 1983; Kotter, 1990). "Management is about coping with complexity...Leadership, by contrast is about coping with change" (Kotter, 1990, p.104). Officers in the Navy must deal with both complexity and change. Kotter goes on to say that the real challenge is combining strong leadership and strong management, using each to balance the other (1990). If the Navy is to "do more with less" and be battle ready, naval officers must possess these skills.

Joint Vision 2010 echoes this sentiment. "The dynamic nature of joint operations in the 21st century battlespace will require a continued emphasis on developing strong leadership skills...In short, our leaders must demonstrate the very highest levels of skill and versatility in

ever more complex joint and multinational operations" (U.S. Department of Defense, Office of the Chairman of the Joint Chiefs of Staff, 1996, pp.28-29).

The Naval Academy must produce naval leaders of the future who possess the leadership and the management skills required in dealing with change and complexity. These skills must be learned, which is why we have for some time tried to teach them. However, new research shows that our traditional methods are not as effective as they could be. Peter Senge, in "The leader's new work: building learning organizations" states that people inherently want to learn. He further states that the current institutions of society are set up to control, rather than foster learning.

> Unfortunately, the primary institutions in our society are oriented predominantly toward controlling, rather than learning, rewarding individuals for performing for others rather than for cultivating their natural curiosity and impulse to learn ...Ironically, by focusing on performing for someone else's approval, corporations create the very conditions that predestine them to mediocre performance. Over the long run, superior performance depends on superior learning (1990, p.7).

The Naval Academy as a learning institution controls more aspects of a student's (midshipman) life than any other institution of higher learning. Midshipmen are forced to go to class. They are told when they can go out, for how long, and how to act. How can the Naval Academy take advantage of Peter Senge's ideas while providing the leaders required by Joint Vision 2010? How can the institution free people to learn without controlling them or teaching them to perform for others? Performance management provides one answer.

"The evolution of the concept of performance management as a new human resource management model reflects a change of emphasis in organizations away from command–and-control toward a facilitation model of leadership" (UCSD Human Resources Department, 1997). The facilitator in this case is the Company Officer.

Most practical midshipmen leadership and management experience is gained through operation of the regimental brigade. The Company Officer supervises the operation of the company while at the same time mentoring the midshipmen. Thus the Company Officer has a large effect on the immediate learning environment. The style and practices of the Company Officer will influence the acquired abilities of the midshipmen.

Company officers are involved in performance management whether they realize it or not. Company officers are also involved in performance management regardless of whether or not their practices work to encourage continuous improvement. According to the Human Resource Management Department of the University of California at San Diego, you are involved in performance management when you:

- write job descriptions...and apply performance standards
- discuss job performance with the employee [midshipmen]
- provide feedback on strengths and improvements
- conduct an annual performance evaluation. (UCSD, 1997, p.1)

Company Officers do all of these, which makes them "pivotal to the development of the leadership and professional capabilities of the midshipman" (Board of Visitors, 1997, p.22). Company Officers using performance management techniques can move away from the command–and-control model toward a facilitation model of leadership. Using effective performance measures in the proper framework can make Senges's learning environment possible and provide the Navy with superior officers.

## C. PERFORMANCE MANAGEMENT

Performance management has generated increasing interest since the end of the last decade. State and local municipalities, public and private institutions, and the federal government have all seen the need to implement performance management principles and performance measurement techniques (Kravchuk & Schack, 1996; Davis, 1995; National Performance Review, 1997; National Academy of Public Administration, 1994). Performance management involves using performance measurement information to:

- help set agreed upon performance goals
- allocate and prioritize resources
- inform managers to either confirm or change current policy or program directions to meet those goals
- report on the success in meeting those goals

(National Performance Review, 1997, p.31).

Nothing illustrates this more than the Government Performance and Results Act of 1993, hereafter referred to as GPRA.

GPRA requires every federal department and agency to participate in performance management. Each federal department and agency has had to develop five-year strategic plans since 1997. These strategic plans are linked to measurable outcomes by required annual performance plans. These performance plans consist of specific performance indicators and "objective, quantifiable, and measurable" goals for each activity in the department's budget. "Such plan shall--

1. establish performance goals to define the level of performance to be achieved by a program activity;

2. express such goals in an objective, quantifiable, and measurable form unless authorized to be in an alternative form under subsection (b);
3. briefly describe the operational processes, skills and technology, and the human, capital, information, or other resources required to meet the performance goals;
4. establish performance indicators to be used in measuring or assessing the relevant outputs, service levels, and outcomes of each program activity;
5. provide a basis for comparing actual program results with the established performance goals; and
6. Describe the means to be used to verify and validate measured values." (United States Congress, 1993, sec. 1115)

### 1. Performance Measurement in Education

Educational institutions have also implemented performance management techniques. Performance management in this setting is usually a human relations tool in the association between the institution's administration and its teachers (Davis, 1995; Down, Hogan, & Chadbourne, 1999). Hogan and Chadbourne discuss some of the problems associated with performance measurement in this setting (1999). In this situation, the measures indicate the performance of the teachers. To date, the use of performance management techniques to indicate improvements in student performance has not been documented.

The University of Arizona is one of the few educational institutions found to be implementing performance measures, although not the kind examined in this study. In a 1997 report, they generated seven goals for the institution with thirty-six measures to indicate progress towards those goals (University of Arizona, 1997). Some of the measures are listed below.

- Percentage of freshman returning their second year
- Percentage of full time freshman graduating in six years.
- Percentage of full-time lower-division transfer students graduating in five years.

- Average time taken by students entering as freshmen to complete a Baccalaureate degree.
- Percent of students satisfied with advising.
- Level of satisfaction of Arizona employers with recent graduates.
- Percent of recent graduates reporting adequate or better than adequate preparation for long term career goals (University of Arizona, 1997, pp.4 –13).

The University of Arizona was looking to improve as an institution, the service it provides in seven areas, not to necessarily improve the performance of the students. It is true that attributes of the Arizona students were used as indicators, but it was not with an intention of feeding their performance back to them for improvement. It was rather, as mentioned to improve the institution's providing of services to its customer base. This research of the Naval Academy Company Officers sought to examine measures used to indicate and improve midshipmen performance.

### 2. Performance Measurement in the Department of Defense

The Navy complies with the terms of GPRA through the Department of Defense. The Quadrennial Defense Review (QDR) serves as the department's overall strategic planning document, and fulfills the strategic planning requirements of GPRA (Office of the Secretary of Defense, 1997).

Within the military most of the performance measurement applications continue to deal with easily quantifiable goals, targets, and numbers. As a result performance management is most easily implemented within the DOD areas of budgeting, acquisition, and construction or repair (Air Force Systems Command, 1991; Gordon, 1997; Fuhs, 1998).

In 1996, Robert Smith conducted a study outside this norm. Smith explored how the Commander in Charge of the Atlantic Fleet (CINCLANTFLT) and its action agent the George Washington Battle Group (GWBG) developed a performance plan, performance metrics for the battle group, and a performance measurement system that supported the process of performance management. This was done as a Navy pilot project in support of GPRA.

The measurement and feedback mechanisms that performance management provides can help develop and improve future naval officers. "Performance management is a joint process that involves both the supervisor and the employee, who identify common goals, which correlate to the higher goals of the institution. This process results in the establishment of written performance expectations later used as measures for feedback and performance evaluation" (Davis, 1995, p.15).

This statement, although written by the leader of a public university about the relationship between supervisors and teachers, can also be applied to the relationship between the Company Officer and midshipman. The supervisor in this case is the Company Officer and the employee is the midshipman. It is the Company Officer's job to develop the leadership and management capabilities of his or her midshipmen to their fullest extent. Performance measurement can be a useful tool in this endeavor.

The closest thing to a performance measurement system at the Naval Academy is the annual Color Company Competition. It ranks all thirty companies based on how the company performed in such things as academics (GPA), drill, tactical exercises, ship handling skills, intramural results, and more (United States Naval Academy, 1996a). The Air Force has a similar competition called the Outstanding Squadron Award. It is also based on academics, physical fitness, and intramurals (United States Air Force Academy, 1997). West Point has a similar

award but it is not rank order based. Whereas the Naval Academy and Air Force Academy award their honor on only the top company, West Point sets a benchmark and any company that achieves that score receives the award (United States Military Academy, 1998).

### 3. Performance Measurement Approaches

Performance measurement should accomplish three things. First it should provide focus, direction, and a common understanding. Secondly, performance measurement should provide knowledge for making future decisions, and thirdly provide feedback on improvement efforts (Chang & DeYoung, 1997). The Training Resources and Data Exchange (TRADE) Group, a special project group for the Assistant Secretary of Defense and the Department of Energy, also adds that control is a goal. "If you cannot measure an activity, you cannot control it" (1995, p.1-7). This refers to controlling the outcomes, not necessarily the people performing the process.

To accomplish these goals an organization needs a clear and concise conceptual framework, a disciplined approach to the performance management and measurement system. All members of the organization should understand this framework. It should support the objectives of the organization and the collection of data (Chang & DeYoung, 1997; National Performance Review, 1997; TRADE, 1995).

Within the performance management field of research there are a number of approaches to performance measurement. Chang & DeYoung's Measurement Linkage Model, National Performance Review's study findings, the TRADE Group's three different approaches, and the U.S. Air Force's Metric Development Process are all examples of performance measurement systems. Each system leads to the design of a custom made organizational performance measurement tool. Each uses terms specific to that approach but with the same context. What is

called a performance measure in one system or framework, is a key indicator or metric in another. For the purposes of this research, a performance measure is a qualitative or quantitative measure of performance.

All of the performance measurement systems examined have a number of things in common. All have between six and ten steps designed to produce the same result. The basic performance measurement process begins with examining the organization's mission and the mission of each work group within the organization. The process then examines areas within the organizational mission that need improvement. The succeeding steps outline each specific work group's effect on those areas. The performance measure, which operationalizes the measurement of that area, is then constructed.

One of the most difficult aspects of this entire process is the selection and collection of good performance measures. The measured indicator must give good, "actionable" data (Chang & DeYoung, 1995). With good data one can establish a benchmark. The benchmark is a standard for measuring improvement as well as setting performance targets. A time period is then set during which the performance is measured. Feedback is generated by the performance manager from the knowledge of whether the performance targets were met in relation to the benchmark. Continuous improvement is derived from the use of feedback and re-examination of the performance measures (Chang & DeYoung, 1997; National Performance Review, 1997; TRADE, 1995).

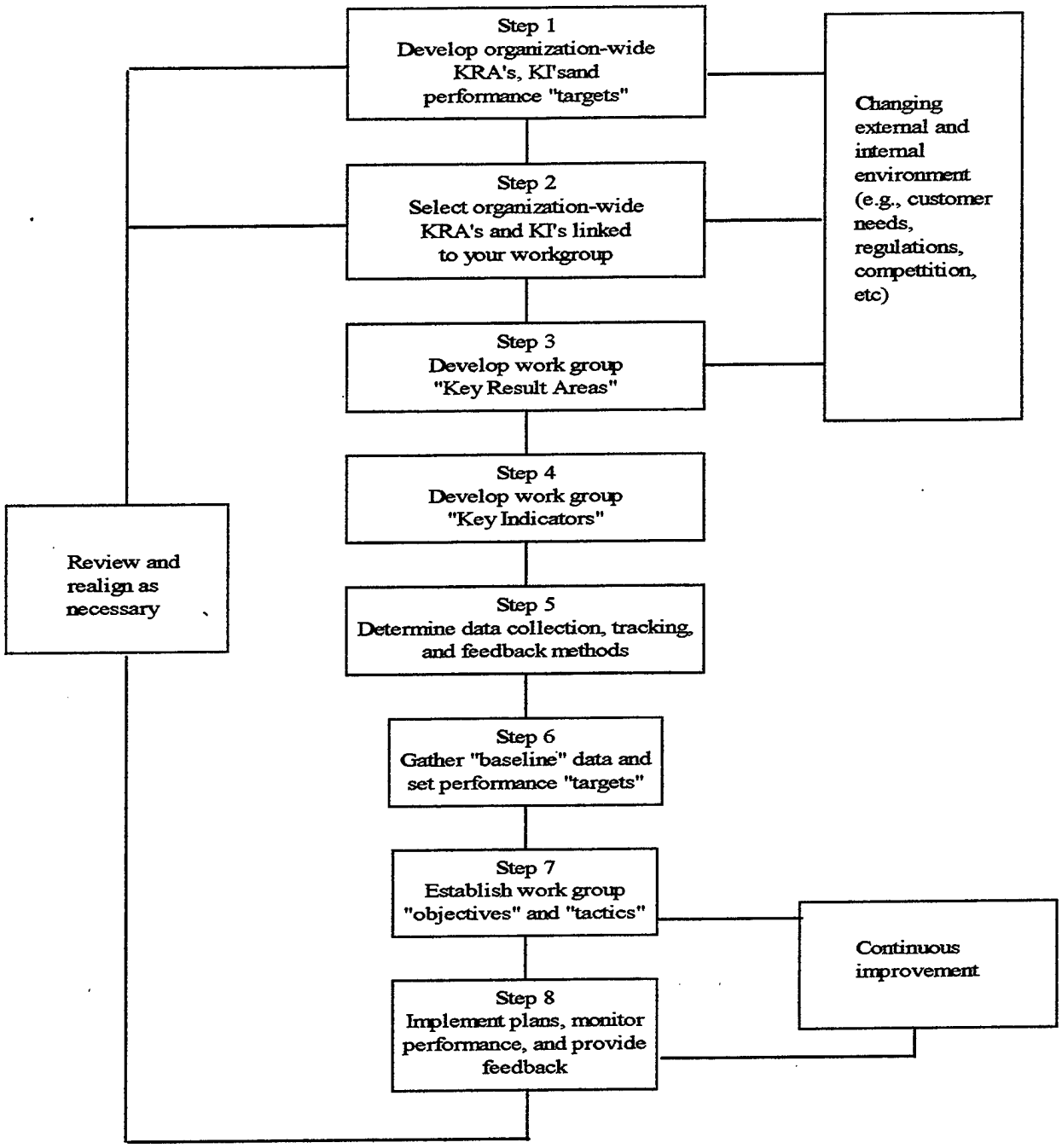
### 4. The Measurement Linkage Model

This research and analysis will use Chang & DeYoung's Measurement Linkage Model (MLM) (1997). Its simplicity and flexibility make it suitable for non-business organizations such

as the Naval Academy. The MLM is shown on the next page. There are eight basic steps to accomplish in the MLM. To maintain continuous improvement the measurement process requires a ninth step. This involves a review and possible realignment of key result areas (KRAs) and key indicators (KIs) as shown in the diagram.

The first step in the MLM is to develop organization-wide KRAs, KIs, and performance targets. A key result area, or KRA is a "critical, 'must achieve,' 'make-or-break' performance category for an organization" (Chang & DeYoung, 1995, p.17). A key indicator or KI is the actual performance measure. "A KI is the metric ... by which an organization can evaluate achievement toward its KRAs" (Chang & DeYoung, 1995, p.18). The organization's strategic

## Measurement Linkage Model
## (1995)



Plan, mission statement, and vision statement will be referenced in the process of generating organization-wide KRAs and KIs.

Typically an organization will have between four and ten KRAs. Performance targets are the specific goals set for a particular KI (Chang & DeYoung, 1995). For example, at the Naval Academy some organizational-wide KRAs might be moral, mental and physical development. Academic grade point average (GPA) might be a KI under the KRA of mental development. A performance target for the KI of grade point average might be 2.5.

In step two, organization-wide KRAs and KIs are selected that are linked to your work group. Not all organization-wide KRAs and KIs will apply to all work groups. To do this requires that the group:

- Understand the organization's vision and mission.
- Identify how the particular group functions as a system.
- Link to organizational KRAs and KIs (Chang & DeYoung, 1995, p.39).

Step three then makes the KRAs specific to the work group. The work groups KRAs are areas that the work group is held accountable for achieving (Chang & DeYoung, 1995). A work group KRA might be academic performance, as opposed to the organization-wide mental development. It is still within the same organizational KRA but is more specific to the work group. Step four continues with determining work group specific KIs. "KIs are measures that determine how well a work group is accomplishing a KRA" (Chang & DeYoung, 1995, p.63).

Determining data collection, tracking, and feedback methods is the next step. This involves asking and answering the following questions:

- Who will collect it
- How will it be collected

- Where will the data be accessibly stored so performance may be monitored
- Over what time period will it be collected and available (Chang & DeYoung, 1995, p.73)

Once the work group understands what it is responsible for, and how it will monitor its specific indicators, then goals must be set. These goals are called performance targets. To set a performance target one must know what is possible. "Many managers have unrealistic expectations of how much their work groups can improve, because they do not understand what their current processes... are capable of producing. With the best of intentions, they set targets that are not achievable while the processes are the same" (Chang & DeYoung, 1995, p.79). Monitoring a particular KI for a set time period will help establish a 'baseline' from which to set a performance target.

The remaining steps of the MLM first focus on establishing work group "objectives" and "tactics," to achieve the newly set performance targets. Those "objectives" and "tactics" are then consolidated into plans. Those plans are then implemented while monitoring performance and providing feedback.

The next chapter examines the performance measures that Company Officers currently use to assess midshipman and company performance. Chapter four will then analyze those measures against the MLM to evaluate whether they are good, "actionable" KIs used in accordance with the MLM of Chang & DeYoung.

# III. OVERVIEW OF CURRENT PRACTICES

This chapter will examine the measures of performance currently being used by Company Officers at the United States Naval Academy. They are measures of performance because they are used by Company Officers to gauge the performance of the company. They will be referred to as measures of performance until analysis shows in the next chapter whether they are performance measures in a performance management sense.

This thesis is the result of a class project in performance measurement. Eleven students were broken into four groups. The eleven students then surveyed eleven Naval Officers who were Company Officers during the 1997-98 academic year. The Company Officers were asked what they monitored to gauge company performance. The students then pooled their data within the respective groups and made a group presentation of their findings.

The data from the four groups formed the basis of a pre-interview questionnaire. This questionnaire was distributed to 15 Company Officers prior to their interview to (a) introduce the interview (b) help focus their thoughts (c) get them thinking about the topic before the interview and (d) make the interview more effective. The pre-interview sheet is included at the end of this chapter.

Fifteen Company Officers were interviewed, including 4 Marines, 3 Surface Warfare Officers, 5 Submarine Officers, 2 Aviators, and 1 SEAL (Sea-Air Land Special Forces). The Company Officers were spread out among all six Battalions.

## A. THE MEASURES

There were 16 measures of performance listed in the pre-interview sheet, which require explanation in order to understand the property to be measured. Many of the measures are factors

in the annual Color Company Competition (CCC). Color Company is that company which accumulates the most "color points" over a year. Some of the accomplishments listed below earn company color points. There are rewards for winning CCC. The Color Company picks a 'Color Girl or Boy' to march in the Color Parade during graduation week in the spring. The Color Company gets selective parking on the yard, which is much coveted (United States Naval Academy, 1996a). The Color Company can award more As and Bs in performance than any other company. Currently only up to 30% of the midshipmen in a particular company may receive As in military performance, and 40% Bs. (United States Naval Academy, 1998b)

Some Company Officers use the Physical Readiness Test (PRT) results as a measure of performance. The PRT is an endurance test given twice a year. It is given in the very beginning of the semester. The PRT is a graded physical test with grades ranging from A to F. It is the same test given to all sailors in the fleet with one exception; the minimum standards are higher. The PRT consists of:

- Maximum number of push-ups in two minutes, followed by
- Maximum number of sit-ups in two minutes, followed by
- A one and a half-mile run based on time.

There are many midshipmen who return from cruise on board a ship or summer leave and initially fail the PRT. They must then remediate. This entails taking it again and again until the midshipman passes with at least a D.

Physical education (PE) grades are also monitored by some Company Officers. PE grades are merely the grade the midshipman receives in physical education class. PE grades range from A to I (A, B, C, D, F, I) in whole letter increments. The midshipman's PRT score is also factored into the PE grade for that semester. PE grades are reported at the end of the

semester. They are the only academic grades not reported at each of the three 6-week marking periods.

The semester is divided into three marking periods with grades reported every six weeks during the semester. In this study, overall grade point average (GPA) as a measure of performance refers to both a midshipman's current semester grades (SQPR) and cumulative GPA (CGPA). Company Officers used both. Companies are academically ranked by SQPR at every marking period. Color points are awarded based on the company's academic rank in the brigade. Cumulative GPA is monitored for long term trends and eventual graduation. A 2.0 CGPA is necessary to graduate. Many of the Company Officers interviewed monitored GPA.

GPA delta refers to the difference between a midshipman's current GPA and his or her cumulative GPA. The midshipmen can earn extra liberty weekends by obtaining a GPA delta equal to, or greater than 0.3 (United States Naval Academy, 1998c).

Class absences are entered into a computer database by the professors after each class. This database can be accessed by the Company Officer to see who has been absent from class. Class absences are not permitted by Midshipmen Regulations (United States Naval Academy, 1998c). Midshipmen may be punished for unauthorized absences from class.

Midshipmen do not lie, cheat, or steal. They live by an honor concept (United States Naval Academy, 1994). This honor concept is run and enforced by the Brigade of Midshipmen. Each company has four honor representatives, one from each class. These representatives give periodic honor training, and answer questions from midshipmen about honor issues. Some Company Officers monitor the number of questions the honor representatives receive, either weekly or during the semester.

The Academic Board meets periodically during the semester and at the end of each semester to review the records of deficient midshipmen. The Board then decides whether to separate or retain that particular midshipman (United States Naval Academy, 1998a). Midshipmen can be referred to the Academic Board for a number of reasons, such as: a deficiency in PE, excessive failures on the PRT, GPA too low, and alcohol or other medical (United States Naval Academy, 1998a; United States Naval Academy, 1998d). Some Company Officers monitor the number of semester Academic Board (AC Board) cases.

The Naval Academy administers a weight control program to those midshipmen who fall outside the Navy's allowable limits for body fat and/or weight. This program consists of weekly weigh-ins and exercise. Category 5 (CAT 5) midshipmen are those who are outside the Navy limit for body fat. Category 6 (CAT 6) midshipmen are those who were CAT 5 and have lowered their body fat to within the limit (United States Naval Academy, 1998d). Some Company Officers monitor the number of CAT 5 and 6 midshipmen in their companies.

Sick-in-room (SIR) chits are recommendations from the Medical Department that a particular midshipman be excused from a variety of activities, including; class, drill, formations, or some other activity, due to illness. A SIR midshipman should be in his or her room recuperating. Some Company Officers track the number of SIR chits to particular midshipmen.

Attendance at company functions is another attribute monitored by some Company Officers. It is seen as an indicator of morale, or command climate. Company functions are things such as tailgaters, dining-in, dining-out, company athletic events, and barbecues or picnics. Morale was also an attribute directly measured by a few Company Officers. Company First Sergeants derive the measure on their own. It is a subjective measure of morale based on feedback to the first sergeant during the week, usually on a 4.0 scale.

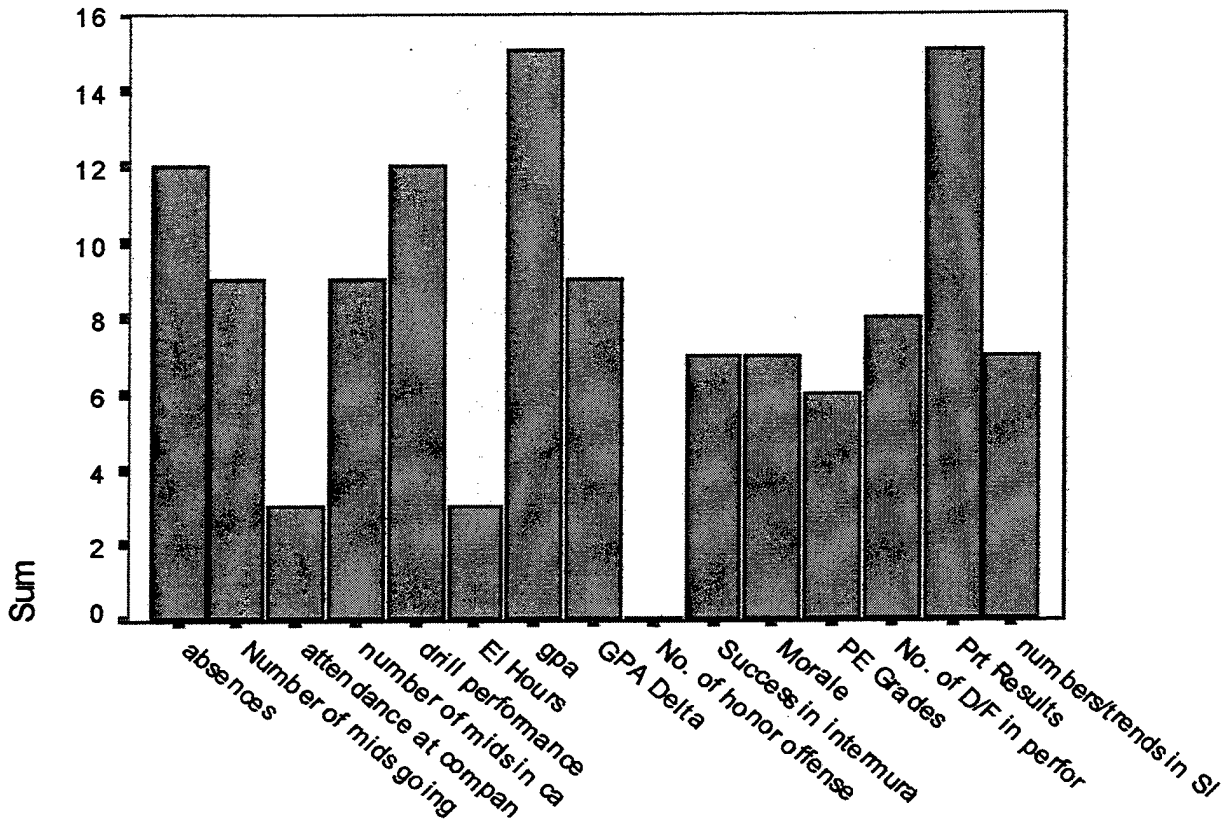
It is mandatory that midshipmen participate in at least one athletic team per season. Participation can be either on a varsity sport team, approved club sport, or intramural. Every company fields an intramural team in each of several sports, per semester. Companies earn points toward Color Company competition for wins or ties. They lose points if their company referees do not show up to referee their assigned games. Some Company Officers monitor the company's success in intramural sports.

Drill is another event that can earn a company color points. There are practice parades and real parades to honor dignitaries. They are all graded. Midshipman Drill Officers or Marines rank the performance of all thirty companies after each parade. The average of the company's drill grades is used to rank all 30 companies for that semester. Color points are awarded based on semester ranking. Company Officers track weekly and semester drill grades as an indicator of performance.

## B. THE DATA

Interviewing the Company Officers was a two step process. The pre-interview sheet on the last page of this chapter was dropped off one to two days prior to the interview. This allowed the Company Officers to complete it at their own pace, with the benefits previously mentioned. At the interview the pre-interview sheet served to answer the immediate question of which measures of performance were used. Questions would then probe the way the measures were monitored, tracked, and fed back to the midshipmen. This information is used in the next chapter to analyze if the measures of performance are true performance measures in a performance measurement system.

The data is displayed on the next page in bar graph format. It is the graphical result of the interviews. All measures are displayed out of the possible maximum of fifteen. The measures were used with the following frequencies by Company Officers: (15) PRT results, (6) PE grades, (15) Overall GPA, (9) GPA delta, (12) Absences, (0) Number of honor offenses, (0) number of questions to honor representatives, (3) EI hours, (8) number of Ds and Fs in military performance, (9) Number of Midshipmen going to academic boards, (9) Number of Midshipmen in weight control category 5 and 6, (7) Numbers of SIR chits, (3) Attendance at company functions, (7) Success in intramural sports, (12) Drill performance, and (7) morale.




The data from the interviews was tabulated and displayed using SPSS 7.5.

These measures are much more specifically focused on individual midshipman and company performance as opposed to those of the institution, as with the University of Arizona. The most frequently used measures were absences, GPA, PRT Results, and drill performance. However, most used does not necessarily mean properly used. The next chapter will examine each measure against criteria from the Measurement Linkage Model of Chang and DeYoung. The MLM criteria will determine if the measure is used as a true performance measure.

# Company Officer Interview

The purpose of this interview is to develop an understanding of the way in which company officers gauge the performance of the company. This interview is being done as part of an analysis of performance measures used by company officers for my Master's thesis. This is the first in a series of thesis work that will examine which aspects of company performance provide useful, measurable benchmarks. The end result will be performance measurement software tool to track company performance.

This interview will attempt to discover what things are important and deserve attention and which do not. It is not an opinion poll. I want to know what things you actively look at day-to-day, month-to-month, or semester-to-semester to determine how the company is performing and use to provide feedback to the midshipmen. The questions are designed to provoke thought, not to narrow the scope. If there are things you monitor that are not mentioned please feel free to add them. Key things to keep in mind as you go through this pre-interview sheet are: *What do I look at? How do I use the information I look at? How does it get fed back/not get fed back to the midshipmen so as to affect future performance?*

Some of the things listed below were noted in company officer interviews as being important or deserving attention. Which of them do you monitor? (circle)

PRT Results PE grades Overall grade point average

GPA delta absences

Number of honor offenses Number of questions to honor reps

EI hours Number of Ds/Fs in performance

Number of mids going to Academic boards

Number of mids in weight control category 5 & 6 Success in intramural sports

Numbers/trends in sick-in-room (SIR) chits Drill performance

Attendance at company functions Morale

For the things you circled above, How are they used? Or do you just monitor it for information? (In other words, how does the information get fed back to the mids? - form 2, counseling, performance grade, goal setting session, etc)

Were there any that you monitor that were not mentioned?

Are there any tools you have found useful? (By tools I mean either automated, i.e.: computer, or mechanical i.e.: bulletin boards, etc)

Are there any tools, methods, or systems that you feel pressured to use that you feel do not accomplish a useful purpose?

How do you see your role contributing to leadership development in the midshipmen?

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# IV. DATA ANALYSIS

This chapter analyzes the data presented in the previous chapter. Each measure of performance is discussed in detail, including how the measures were used. Data can be monitored without being an actual performance measure. "The challenge for most leaders is to examine all their data and weed out the inappropriate measures from the appropriate ones" (Chang & DeYoung, 1995, p.7). This analysis determines whether the measures of performance are merely data, or true performance measures. The MLM of Chang and DeYoung's Measuring organizational impact (1995) is used as the performance measurement standard.

Determining whether the measures of performance used by Company Officers are true performance measures is a two step process. First, criteria are generated from Chang & DeYoung's definition of a key indicator (KI). This criterion judges whether the individual measures used by Company Officers are valid KIs. The operational use of the KI is then examined to determine if the measure is used in accordance with Chang & DeYoung's MLM. The examination of operational use includes an examination of data collection, tracking, and feedback methods. This thesis requires that both of these conditions be met if the measure is to be called a true performance measure.

## A. GENERATION OF CRITERIA

The measurement linkage model (MLM) is an eight-step procedure for an organizational measurement system. Within the Naval Academy, the Company Officer and Senior Enlisted are the equivalent of a Chang & DeYoung workgroup. Generating criteria to determine whether a measure is a valid KI for a workgroup is found in step four of the MLM. According to Chang & DeYoung there are two questions to be answered when developing KIs.

- What concrete measure could be used to show how your work group is doing on each key result area (KRA)?
- What would you point to if your boss asked you how you are doing in each KRA?

The problem with these two questions is that there are no clear, formal KRAs generated for the Company Officers. The mission statement of the Naval Academy is used to generate the KRAs for this analysis.

The current purpose of the United States Naval Academy is "To develop midshipmen morally, mentally and physically and to imbue them with the highest ideals of duty, honor and loyalty in order to provide graduates who have potential for future development in mind and character to assume the highest responsibilities of command, citizenship and government" (United States Naval Academy, 1996b, p.22). Therefore, the assumed KRAs are mental, moral and physical development. Every Company Officer understood that their job was to contribute to the mental, moral, and physical development of the midshipmen. Subsequently, their work group KIs should operationally measure the company's progress in these areas.

The measures of performance used by Company Officers at the Naval Academy are evaluated against the following five criteria of Chang & DeYoung. The criteria are characteristics of effective KIs. KIs must:

1. Provide critical/important data.
2. Be easily understood.
3. Be controllable by your actions.
4. Track actual performance change.
5. Align with existing data or be clearly established.

6. Measure efficiency (timeliness, throughput, quantity, etc) or effectiveness (impact, quality, contribution, etc) (Chang & DeYoung, 1995, p.63).

All of the above criteria must be met for the measure to be considered a valid KI.

Once a determination has been made as to a measure's validity as a KI, the operational use of the KI is examined. Those measures determined in the previous step to be valid KIs are analyzed. Data collection and tracking, the use of performance targets, and feedback are the three operational aspects that are examined. This three-pronged examination will determine if the KIs are used in a performance measurement sense.

"Collecting and tracking the KI data is where 'the rubber meets the road' and many measurement attempts fail" (Chang & DeYoung, 1995, p.73). Tracking and monitoring the data is critical to the success of the performance measurement system. The following questions must be answered for the measurement data to be used effectively:

- Who will collect it?
- How will it be collected?
- Where will the data be stored and posted so that employees [Company Officers/Midshipmen] can monitor their performance?
- When will it be collected and posted?

(Chang & DeYoung, 1995, p.73).

Performance targets are KI goals based on knowledge of the KI "baseline." A baseline is defined as "the current level of performance at which an organization, process, or function is operating" (TRADE, 1995, p. A-2). Chang & DeYoung define a baseline as more of an average level of performance over time (1995). It is used to set realistic performance targets. The TRADE group's performance measurement process does not use a baseline in this way. It merely

directs the setting of attainable goals. Chang & DeYoung are much more specific. They ask, if you have not measured your baseline how can you set realistic performance targets? In keeping with the MLM, the baseline of Chang & DeYoung is used.

An example baseline for the KI of GPA would be the cumulative GPA. Semester GPA would be the value of the KI at a specific time, while the cumulative GPA is an average built up over a longer period of time. "Setting improvement goals without knowledge of how a process or system is performing is a prescription for disappointment...Gathering baseline data about the performance of work group processes and systems will help leaders set realistic performance targets" (Chang & DeYoung, 1995, p. 79). The operational examination of each KI analyzes whether performance targets and baselines were used.

Performance measurement as a tool of performance management is a process designed to produce continuous improvement. To obtain continuous improvement there must be feedback (TRADE, 1995; Chang & DeYoung, 1995). "Without the feedback loop, no performance measurement system will ever ensure an effective and efficient operation, and...conformance to customer requirements" (TRADE, 1995, p.1-8). Chang & DeYoung comment that "...you will monitor the performance of your work group continually. If you complete the process of establishing where and how you will post and report the data, you will have no problem doing this. Employees will appreciate the continual feedback and will use this information to improve their performance" (1995, p.99).

The key concepts are the continuous monitoring, reporting back whether performance targets were met or not, and by how much. In the case of Company Officer KIs, feedback can be accomplished via punishment, formal counseling, posting on bulletin board, e-mail, and verbal.

The KIs will be operationally evaluated based on accomplishment of continuous monitoring and effective feedback.

To summarize, the measures of performance used by Company Officers are examined in two steps. In step one, the measures are evaluated against six criteria from Chang & DeYoung to determine if they are valid KIs. This data is displayed in worksheet format, followed by a detailed explanation. In step two, the valid KIs are operationally examined to determine whether the KIs were used in a performance measurement fashion. This involves collecting and tracking the data, using baselines and performance targets, and feedback.

## B. KEY INDICATOR ANALYSIS

The results of the KI analysis are displayed in a table format with the measures listed down the left-hand column and the criteria number across the top. A detailed explanation of each measure follows the worksheet. This discussion elaborates on each measure's ability to meet the criteria of a valid KI. The assumed KRA that the particular measure operationally indicates is also listed across the top.

Some measures do not indicate performance in any of the three assumed KRAs. In that case the space in the worksheet is left blank. It is not unusual for a work group to have additional KRAs that do not link up directly to the organization-wide KRAs. KRAs can be developed for a specific work group, independent of the organization, if the work group produces value added major outputs that do not directly support the organization-wide KRAs (Chang & DeYoung, 1995). For instance, if Morale were a company KRA, attendance at company functions might be

a KI for that KRA. In this case, attendance at company functions is not a valid KI because it does not meet the six criteria.

**Key Indicator Worksheet**

| measure | C1 | C2 | C3 | C4 | C5 | C6 | KRA | KI ? |
|---|---|---|---|---|---|---|---|---|
| PRT Results | Yes | Yes | Yes | Yes | Yes | Yes | Physical | Yes |
| PE grades | Yes | Yes | Yes | Yes | Yes | Yes | Physical | Yes |
| GPA | Yes | Yes | Yes | Yes | Yes | Yes | Mental | Yes |
| GPA delta | No | Yes | Yes | Yes | Yes | Yes | Mental | No |
| Absences | Yes | Yes | Yes | Yes | Yes | Yes | Mental | Yes |
| Honor offend | No | Yes | Yes | No | Yes | Yes | Moral | No |
| Honor ques | No | Yes | Yes | No | Yes | No | Moral | No |
| EI hours | No | Yes | Yes | No | Yes | No | Mental | No |
| Perf. D/F | No | Yes | Yes | Yes | Yes | No | | No |
| Ac Boards | No | Yes | No | No | Yes | No | Mental | No |
| Cat 5/6 | No | Yes | Yes | Yes | Yes | No | Physical | No |
| SIR Chits | No | Yes | No | No | Yes | No | Physical | No |
| Co. functions | No | No | No | No | Yes | No | | No |
| Drill Perf. | Yes | Yes | Yes | Yes | Yes | Yes | Physical | Yes |
| Intramurals | No | Yes | No | No | Yes | No | Physical | No |
| Morale | No | Yes | No | No | No | No | | No |

The first measure of performance examined is PRT Results. PRT Results provide important data (C1) because it measures how well a midshipman performs on the physical readiness test. The data is also easily understood (C2). Each exercise repetition scores points for the individual. The individual scores one point per sit-up and push-up, for a maximum of 100 points in each exercise. A 1.5-mile run is then timed and points are given based on time. The shorter the time to run the 1.5 miles, the higher the points. The score is controllable by the midshipman's actions to the extent that he or she works out regularly and stays physically fit (C3). Improvements in the score track an actual performance change because it is impossible to do better if you are not more physically fit (C4). PRT Results align with existing data because the Physical Education Department already administers and scores the test. They also monitor the result (C5), regardless of whether Company Officers track the scores, because the PRT score is factored into the midshipman's PE grade. The test measures the quality of the midshipman's physical readiness, which is effectiveness (C6). PRT Results indicate a measure of performance in the KRA of physical development and according to the criteria, a valid KI.

PE Grades are another valid KI. Midshipmen take classes in boxing, swimming, volleyball, weight lifting, basketball, and others. A midshipman's physical education grade provides a critical measure of how well the midshipman is performing in the KRA of physical development (C1). Grades awarded are A, B, C, D, F and I (incomplete). These grades are easily understood (C2) and align with existing Physical Education Department data (C5). The instructor gives the midshipman a grade whether or not the Company Officer monitors it. The grade is controllable by the midshipman's action (C3) in that with increased effort and attention, a midshipman should be able to increase their grade. In effect, this would also track a performance

change, because a change in effort and attention should result in a change in PE grade (C4). PE grades also measure the quality of each student's effort and the result of that effort (C6).

GPA provides critical data and is almost self-explanatory. Grade point average is a total measure of the student's academic performance in all classes. Midshipman cannot graduate if the cumulative GPA is below 2.0. It also measures the current academic performance of the midshipmen in the company (C1). It is easily understood and tracks with existing data, as grades are assigned A, B, C, D, F, and I (incomplete) (C2/C5). The midshipman's effort, intelligence, and enthusiasm control GPA. An increase in any of those areas should result in a change in performance (C3/C4). GPA also measures the midshipman's effectiveness at obtaining a certain GPA (C6).

GPA delta is the difference between a midshipman's current GPA and his cumulative GPA. This does not provide critical data (C1). The other five criteria are met as with GPA. The data is easily understood (C2), controllable by the midshipmen actions (C3), and tracks an actual academic performance change (C4). GPA delta also aligns with existing data since GPA is computed by the Naval Academy every six weeks during the semester.

The problem with GPA delta is that GPA provides all the GPA data you would need. If GPA is used in a performance measurement fashion, as a KI, then GPA delta is already taken into account. It would be the difference between the baseline GPA and actual semester GPA. However, the difference between the performance target GPA and actual semester GPA would be more important in a performance measurement system. GPA delta is a piece of information, not a performance measure. There are a number of variables not taken into account, which relegate it to data status only. GPA delta does not take into account the number of credit hours taken, the course load for a particular semester, or anything else that might be going on in the

midshipman's semester. These factors would be taken into account by the GPA performance target for that semester. The sole purpose of GPA delta today is to indicate a trend in academic performance, either positive or negative. The midshipmen use it only to gain an extra weekend (United States Naval Academy, 1998c). GPA properly used as a KI, would take all of this into account. Any effort expended on GPA delta is then just duplicated effort. For these reasons, GPA delta is not a valid KI.

Absences provide critical data (C1) because midshipmen are not allowed to miss class. It is their duty to go to class. To support this requirement the Commandant's Staff did a study. A strong correlation was found in 1997 between company absences and company GPA. The companies with the highest absenteeism had the lowest grades.

Absences are easily understood (C2). The professor takes roll when class begins. He later enters the absent or tarde (late for class) midshipmen into a computer database. The Company Officers have access to this data via their office computers. The midshipmen then report a reason, which is entered into the computer. Available choices include unauthorized absence (UA), Medical/Dental, movement order/excusal, and Sup/Dant meeting. A movement order is an approved organized movement of midshipmen for some purpose, including varsity sporting events, community service, and class trips. A meeting with the Superintendent of the Naval Academy or Commandant is abbreviated Sup/Dant Meeting.

Midshipmen control absence (C3). They can choose to attend class or not, and face the consequences. Absences track a performance change (C4) when they begin to accrue. Unauthorized absences are the most tracked as they represent disobedience or laziness. Movement order (MO) absences become critical, in the case of athletes, when grades begin falling. Increased MO absences with falling grades might signal the need to have that athlete stay

behind and study, instead of missing class. Absences align easily with existing data because there is already a system in place to track them. The updated computer system, from a time sharing network to a web-based server with an ORACLE database, has made absences easier to track. Absences measure both the midshipman's efficiency at getting to class on time, as well the Company Officer's effectiveness at ensuring that the midshipmen attend class (C6). For all of these reasons Absences are determined to be a valid KI.

Honor offenses do not provide critical or important data at the company level (C1). The number of honor offenses is so small in any particular company that they are looked on as anomalies. This does not mean that an honor offense does not warrant Company Officer attention, but the number of honor offenses committed in a given company each year is not significant. The number of honor offenses is more significant on the Brigade level, where the numbers are higher. It would be more appropriate as an organization-wide KI for the Commandant's Staff than for a particular company.

The data is easily understood (C2) as only one or two honor offenses are committed per company per year. It is also controllable by midshipman action (C3). The midshipmen decide whether or not to lie, cheat or steal. The number of honor offenses does not track an actual performance change (C4). The number of honor offenses can be clearly established (C5), but as previously discussed, is of little significance. The number of honor offenses does not measure the efficiency or effectiveness of anything in the company. On the brigade level, however, it would indicate the effectiveness of the honor concept (C6). For these reasons the number of honor offenses is not a valid KI for the Company Officer.

The number of questions to honor representatives (reps) is also not a valid KI and contains no critical data (C1). A case might be made that it shows an interest in the honor

concept, but performance change (C4) has not been shown to result from a specific number of questions in a given time period. Although the data is easily understood (C2) as a straightforward number of questions, performance-related information is not present in that number. The midshipmen control the number of questions (C3). Although existing data is not available to Company Officers, the number of honor questions can be clearly established (C5). The company honor reps would have to keep track of how many questions they were asked over a period of time. The number of honor questions does not measure either efficiency or effectiveness (C6); the number of honor questions is not a valid KI.

Extra instruction (EI) hours are not a valid KI. Although EI hours provide useful information to the Company Officer, it is not critical data (C1) that indicates how the midshipman is performing in the KRA of mental development. Some Company Officers called the EI tracking sheets "the weekly honor offense," because if one mandates that midshipmen attend a certain amount of EI hours with their professor, their tracking sheets would have those exact hours. This is not meant to imply that all midshipmen lie weekly on their tracking sheets, but to illustrate the weekly potential for an honor offense. However, academic performance did not necessarily increase due to increased EI (C4). EI hours are easily understood (C2) and controllable by the midshipmen (C3). Midshipmen schedule extra instruction with the professor, attend the session and then record the EI hours on an academic tracking sheet for the week.

EI hours align with existing data (C5) as a measure. Many midshipmen are already required to submit these academic tracking sheets by their Company Officers. Most of those required to submit the tracking sheets were either a plebe or unsat. A midshipman is unsat if he or she meets any of the following conditions: GPA<2.0, 2 Ds, or one F in any grading period. EI hours do not measure either efficiency or effectiveness (C6); EI hours are not a valid KI.

The number of Ds and Fs in performance is also not a valid KI. The number of people in a company getting a D or F in military performance is insignificantly low (C1). It is maybe one or two people a year. Many companies do not give anyone a D or F in performance at all. Also, for someone to get a D or an F there are other indicators of the problem. The D or F is the result of failing to perform. There are other KIs that better indicate substandard performance. The number of Ds and Fs in performance would be a number that is easily understood (C2), controllable by the midshipmen (C3), and tracks an actual performance change (C4). It does not align with existing data, but could be clearly established (C5), if the measure was desired. The number of Ds and Fs in performance does not measure the efficiency or effectiveness (C6) of anything in the company. Because it does not satisfy the criteria the number of Ds or Fs in military performance is not a valid KI.

The number of midshipmen attending academic boards (Ac Boards) is also not a valid KI for Company Officers. Midshipmen are screened by the Ac Board if they are deficient in some area, including academics, physical qualification (medical), alcohol rehabilitation, and physical education (PE or PRT) (United States Naval Academy, 1998a). This applies to a very small number of midshipmen in each company (1-5 per year).

The number of Ac Board cases is redundant as a performance measure because a midshipman must already be deficient in some area to get screened by the Ac Board. Therefore, the number of midshipmen screened by the Ac Board does not provide critical data (C1). Although the data is easily understood (C2), it is not directly controllable (C3). Once the deficiency occurs (which is already indicated by another KI) the Ac Board will screen the case.

The number of midshipmen being screened by an Ac Board does not necessarily track a performance change (C4). The midshipman could have been unsat for one to two semesters

before the Ac Board reviews his case. A midshipman could have been failing PRTs since arriving at the Naval Academy (consistent performance), but will not be reviewed by the Ac Board until the third failure (United States Naval Academy, 1998e). There is no existing data at the Company level for the number of midshipmen who are screened for an Ac Board, but a number could easily be established (C5). It could be argued that the number of midshipmen screened for Ac Boards measures the effectiveness (C6) of the company academic program, however there are too many reasons for attending an Ac Board for the measure to directly relate. There are better measures that have already been discussed. It would be a redundant measure. Therefore, the number of midshipmen screened for an Academic Board is not a valid KI.

All midshipmen are weighed once each semester. The midshipman's weight is checked against height to verify compliance with the Navy's height-weight standards. Midshipmen determined to be outside the Navy's height-weight standards are immediately measured for percent body fat and classified into one of five categories (United States Naval Academy, 1998d). These categories are shown below.

I. Satisfactory, i.e., within weight standards.

II. Satisfactory, outside of weight standards but within body fat standards 22% for males, 33% for females).

III. Satisfactory during an interim period because of varsity athletic requirements. All midshipmen on the team roster are eligible for category III waivers regardless of in-season or out-of-season status. The Deputy Commandant must approve waiver requests.

IV. No longer used.

V. Unsatisfactory (weight and body fat percentage exceed maximum standards).

VI. Satisfactory, but in a special monitoring program after removal from category V or VII.

VII. Unsatisfactory (underweight, with a minor or major problem).

(United States Naval Academy, 1998d, p.2).

The number of midshipmen in Cat5 per company is typically between zero and five. There are too many variables that factor into a person being overweight to use such a small number as an accurate measure of company performance. A number that small can not accurately measure the effectiveness of the company's physical development (C6). This does not diminish the importance of someone remediating out of Cat 5 but it also does not provide critical information (C1) about company performance in the Physical KRA. Because the number of affected midshipmen per company is small, Company Officers are individually aware of everyone that is in Cat5 or 6. This means the data is both easily understood (C2) and clearly established (C5).

According to the Naval Academy "...weight problems are caused by improper diet in relation to physical activity...[and] ...midshipmen will be held accountable for remaining within weight standards" (United States Naval Academy, 1998d, p.1). Therefore, the Naval Academy's position is that weight control is controllable by midshipmen actions (C3). Going from category 5 to category 6 requires a change in physical activity and dietary habits (United States Naval Academy, 1998d). Therefore a change in the number of midshipmen in Category 5 does indicate a change in performance (C4) of those midshipmen.

The number of midshipmen in weight control category 5 & 6 (Cat 5/6) is not a valid Company Officer KI. The number of midshipmen in weight control category 5 & 6 might be a valid organizational KI for either the Naval Academy as a whole, or the P.E. Department's weight control program. Over the entire Brigade the number of affected midshipmen in Cat 5/6 would be large enough to provide meaningful data (C1) and measure the effectiveness of the weight control program (C6).

Midshipmen get injured, sick, and undergo surgery while at the Naval Academy. Either the Physician or the Corpsman, whoever treated them, will write out a "chit" to the Company Officer. This chit is a recommendation from the medical department regarding the care of the midshipman, and explaining the extent to which the midshipman may exert himself. The recommendation may include anything from total bed rest (SIR) to excusal from drill. It can inform the Company Officer that the midshipman has the flu and requires bed rest or that the midshipman underwent shoulder surgery and can only wear "white works." White works is a loose fitting, white jumper, similar to the Naval enlisted white jumper. It is only a recommendation though; the Company officer ultimately decides the extent of the midshipman's participation in the daily routine.

The number of Sick–in-Room (SIR) chits represents the number of company chits written that excuse a midshipman from all activities, including class. This is only done in case of illness or surgery. The number of SIR chits is usually a memorably low number, unless there is an outbreak of sickness. This means the data would be easily understood (C2). The number of SIR chits provides no critical performance data (C1) to the Company Officer. The number of SIR chits is as uncontrollable as illness (C3). Contracting an illness does not involve either positive or negative performance, so there is no performance to track (C4). The Company Officer must sign

approval of all Medical chits, therefore the number of SIRs are easily established (C5).. The number of SIR chits does not measure either the efficiency or effectiveness (C6) of any company run program. For all these reasons the number of SIR chits is not a valid KI.

Midshipmen attendance at company functions is also not a valid KI for the Company Officer. Although not falling under any of the three assumed KRAs, there could be another KRA at the company level for Morale. This measure however, could only serve as a gross indicator of Morale. If a large percentage of the company was consistently not attending company functions, it could signal a morale issue. It could also mean the specific event was poorly planned on a busy weekend. Midshipmen have a lot of competing interests, so getting all of them together on their own liberty time is a tough accomplishment. To use the fact that they might have other things to do on their own liberty time as a measure of morale would not be an accurate measure.

Only one of the criteria for a valid KI is satisfied. The attendance at company functions can be clearly established (C5). A muster could be taken which would fulfill the requirement for measuring attendance, but this would probably produce a negative effect. The company would get the impression that it was "mandatory fun." Attendance at company functions does not provide critical data about the company's performance (C1). If all of the midshipmen were present on their own liberty time at a voluntary event it probably means that morale is good. To infer any relationship from this has no basis.

The number of competing interests and possible excuses would make the data very hard to understand (C2). Priorities would have to be examined and weighed against attendance at the company function for all of those who did not attend. Company attendance at voluntary events is not controllable (C3) by anyone. It is based on each individual's priorities for that day. Attendance at company functions does not track an actual performance change (C4). Because a

relationship does not exist from full attendance to zero, attendance would not track an actual performance change in Morale. Where would the line be drawn? How does 90 percent of the company showing up at a company function compare to 75 percent? Did morale decrease by 15 percent? If attendance was consistently low it might indicate a gross morale problem, but it will not track a morale problem. Attendance at company functions also does not measure the efficiency or effectiveness of anything (C6). For all of these reasons attendance at company functions is not a valid KI.

Drill performance is a valid KI for the Company Officer. It provides critical or important data to the Company Officer about the company's performance in drill (C1). The company's performance is scored on a scale of 100 and then ranked against the other companies in the Brigade. This makes the data easily understood (C2), aligned with existing data (C5), and tracked as an actual performance change (C4). A case could be made that week to week the rankings done by the midshipmen are not that accurate. Some Company Officers referred to drill rankings done by the midshipmen as a "crapshoot." Company Officers compensated for this by getting the raw data from the graders to see the actual mistakes. In reality, since the graders are the same for the entire semester and rotate through different companies, the differences in graders should balance out.

The drill grade is controllable by midshipmen actions (C3). If the midshipmen practice, or even focus more while drilling, their performance grade will increase. Drill performance measures the effectiveness of the company (C6) at drill because it measures the quality of their performance. Drill performance satisfies all six criteria and is a valid KI.

It is mandatory that midshipmen participate in at least one athletic team per season. Participation can be on a varsity sport team, approved club sport, or an intramural sport. There is

a difference between monitoring midshipmen intramural success and tracking it as a performance measure. Company Officers should track how the company teams are performing by attending as many intramural games as possible. Intramural success however provides no critical data (C1) about the physical development KRA.

A win-loss record is easy to understand (C2) as data, but it says nothing about how the midshipmen are developing physically. The fact that the midshipmen show up and compete does more for their physical development than the team's record. How midshipmen perform as a team is controllable by their actions, but the overall outcome is not (C3). If they play a better team, they get defeated so intramural success does not track an actual performance change (C4). The team can work and practice harder and still is beaten. They are not professional athletes. They are midshipmen who did not go out for any other sport.

Intramural success aligns with existing data (C5) because all intramural game results are published the next day in e-mail to all staff. The data however, does not measure the efficiency or effectiveness of any physical development. For all of these reasons, the success of company intramural teams is not a valid KI.

Morale is a poor key indicator. It satisfies only one of the criteria from Chang & DeYoung's MLM. The morale measurement is easily understood (C2) because it is on a 4.0 scale. The Company First Sergeant derives the measure on his or her own. It is a subjective measure of morale based on feedback to the first sergeant during the week. This is not a company poll of everyone in the company, but a number that the First Sergeant generates. It is based on impressions of where he or she thinks morale is on the scale. This measurement does not provide critical or important data (C1). The feedback that accompanies the assessment of morale is more important because it contains specific midshipmen concerns. These concerns can

then be assessed and acted on. The measurement of morale was not controllable by anyone's action (C3) because no specific criteria are assigned. The measurement does not track a performance change (C4) or align with existing data (C5). The measurement of morale did not measure the efficiency of effectiveness of anything (C6). With only one of the criteria met the measurement of morale is not a valid KI.

## C. OPERATIONAL USE

The previous analysis determined that five Company Officer measures of performance are valid KIs. The measures that met all six criteria are PRT Results, PE grades, GPA, Absences, and Drill performance. Because a measure is determined to be a valid KI does not mean that it was used as a KI. These five KIs must be examined to see if and how they were used in a performance measurement sense. This examination is termed an operational analysis.

The operational analysis of the KI determines if the measure is used in accordance with Chang & DeYoung's MLM. Data collection, tracking, the use of baselines and performance targets, and feedback methods are all examined as part of this analysis. It begins with an examination of the data collection and tracking methods of each KI. The following questions must be answered for the measurement data to be used effectively:

- Who will collect it?
- How will it be collected?
- Where will the data be stored and posted so employees [Company Officers/Midshipmen] can monitor their performance?
- When will it be collected and posted?

(Chang & DeYoung, 1995, p.73).

Once those questions have been answered satisfactorily the use of baselines and performance targets are examined. Were baselines and performance targets used? How were they used? How often were they used? These questions are answered for each of the five valid KIs. Next, the use of feedback is examined. Questions such as "was feedback utilized? How was it utilized? And was it effective" are answered.

The operational analysis shows whether Company Officers have used performance measurement principles in the conduct of their duties. It is not meant to be a critical analysis of the Company Officers. Every Company Officer interviewed was forthright, helpful, and did his or her best to ensure that I understood how each particular measure was used. This analysis illustrates whether the measures were used in an effective performance measurement system.

The first KI to be examined is PRT Results. The Physical Education department collects PRT Results following the administration of the test. Proctors use muster sheets with the names of those examined. Midshipmen report their scores to the proctors after each phase of the exam. The scores are then kept by the P.E. department until it is time for grades to be assigned at the end of the semester. Company Officers do not get a report of the scores from the P.E. department. The PRT scores are not "posted" as Chang & DeYoung would term it. The scores are available only to the PE department at that time. The PE department enters the grades into the Naval Academy time-sharing (NATS) computer network, a system that is currently being replaced.

Company Officers are immediately concerned about who in the company has failed the PRT. They determine who has failed via two methods. The first method has the midshipmen report their scores to the company P.E. Officer, a midshipman. The second method is to wait for the weekly Company Deficiency Report (Codefrep) from the PE department. This lists all PE

deficiencies for the company on one sheet. The Codefrep lists only P.E. deficiencies. The Company Officer's concern is due to the fact that midshipmen who fail the PRT have their liberty restricted. They cannot take weekends off if they received less than a C on the PRT. The Company Officer is held accountable for enforcing this.

Midshipmen who fail begin a period of remediation. They muster at 0530 four days a week for "conditioning squad" workouts until they pass the PRT. The Company Officers then track daily the attendance at those workouts. A list is e-mailed out daily to all Commandants' Staff, from the PE department, with the names of any midshipmen not present at assigned conditioning squad. Company Officers are responsible for holding midshipmen accountable for unauthorized absences from conditioning squad.

Not one Company Officer interviewed used baselines for PRT results. The only performance target mentioned was to pass the PRT on the first time. This is due in part to the nature of the system. The PRT is given right at the beginning of each semester (United States Naval Academy, 1998e). This makes it logistically impossible for the Company Officer to compute a baseline, and together with each of his 132 midshipman, set individual performance targets prior to the PRT. The default performance target for the midshipmen becomes passing the PRT since the Company Officer cannot meet with all the midshipmen prior to the test and because there are penalties when the midshipman fail the PRT.

The Company Officers utilized a few different methods of performance feedback to the midshipmen. There are also some methods of feedback inherent in the system. Some Company Officers would factor the PRT grade into the midshipmen's military performance grade to either reward or penalize the midshipmen for PRT performance. Others would only penalize poor performers either by withholding key positions in the company or not awarding good military

performance grades. Most Company Officers would track the conditioning squad attendance list. Feedback was via a form 2 (punishment) for not attending the daily workout.

The Naval Academy system mandates both rewards for good performance and punishment for poor performance on the PRT. This is feedback inherent in the system. Midshipmen who score less than a C on the PRT cannot take weekend liberty. They may take town liberty until taps (usually 0100). Midshipmen who fail the PRT may not even take town liberty (United States Naval Academy, 1998c). Midshipmen who improve their score by 10 points or more, or score an 'A' on the PRT earn an extra weekend during the semester. Also midshipmen who get an 'A' on the first semester PRT do not have to take the second semester one. To qualify for the Superintendent's List or the Commandant's List a midshipman must have scored at least a 'B' on the PRT (United States Naval Academy, 1998c).

Feedback to the midshipmen regarding PRT results is incomplete. It does not involve all the midshipmen. If you do well enough, you are recognized and rewarded for it. If you do poorly, you are likewise recognized and rewarded for that. If you perform in the middle you are not recognized. This is not performance measurement feedback. The best method of feedback found, that was equally applied to all midshipmen in a company, was the factoring in of the PRT score into the military performance grade.

PRT Results are not operationally used as a KI. The lack of use of baselines and performance targets, coupled with the incomplete feedback are the main reasons for this determination. Data collection and tracking could be better accomplished if the Company Officers had better access to the PRT data. In a true performance measurement system each and every midshipman is counseled regarding his or her performance on the PRT. This counseling

includes the computation of a baseline and the setting of a goal (performance target) for that semester. This did not happen completely enough across the spectrum of Company Officers.

PE grades are the next valid KI examined. The instructors generate PE grades at the end of the semester. The PE department collects the data and stores it in the NATS system. PE grades are issued when final grades are issued. The grades are not necessarily "posted" anywhere. If a midshipman has failed P.E. he or she will appear as a deficiency on the weekly codefrep the following Monday. No Company Officer actively tracked PE grades because there is nothing to track. The grades come out only at the end of the semester.

This does not prohibit the use of PE grades as a KI. It sets the "time for tracking" discussed by Chang & DeYoung. "...Each KI may have its own natural 'time for tracking.' For example, some KIs are tracked quarterly...and others may be tracked monthly. Use this natural timing to help determine when the data will be collected and posted" (Chang &DeYoung, 1995, p.75).

No baselines or performance targets were used by any Company Officers with regard to the KI of PE grades. PE grades were examined for the previous semester if at all. There were no Company Officers interviewed that mentioned setting goals for PE class or providing feedback after the semester ended.

Feedback was utilized in only a negative sense by Company Officers. As with PRT results, there is some system feedback also. Company Officers focused on the PE deficient midshipmen. The midshipmen appearing on the weekly codefrep receive all the feedback. Swim failures get to go to 'sub squad' and practice swimming three days a week. Attendance is mandatory and Company Officers are responsible for ensuring their midshipmen attend.

The Naval Academy system rewards outstanding performance as well as punishes poor performance. A minimum of a 'C' is needed in PE to take weekend liberty. A minimum of a 'B' is needed to make either the Superintendent's or Commandant's List (United States Naval Academy, 1998c). Both of these honors earn extra weekends.

PE grades have not been used operationally as a KI. Data collection and tracking methods are satisfactory. The periodicity of PE grades sets a natural tracking time for this KI. This is acceptable. The fact that no baselines or performance targets were used for PE grades operationally disqualifies it as a KI.

The registrar collects GPA from all the academic departments using the NATS system. Instructors input their grades into the system where they become available for Company Officers to review. The NATS system is slow, cumbersome, and not user friendly. EMC (SS) Canfield, one of the company senior enlisted advisers, has designed new software using a PARADOX database. This software installs on the Company Officer computer and is much more user friendly than the NATS system. The PARADOX software still uses the NATS system as its source and the Chief must download the data manually for all thirty Company Officers and Senior Enlisted at every marking period. This personal effort notwithstanding, it is an incredible advantage for the Company Officers.

The software, named BRIGREAD PLUS, displays all grades for all classes, automatically computes weekend eligibility, shows PE grades when complete, midshipman personal information, and has room for Company Officer notes. It is called BRIGREAD PLUS because of the NATS program called BRIGREAD, which it accesses for all the data. This software is almost unanimously favored by Company Officers.

Baselines and performance targets were used for GPA. At the simplest level baselines and performance targets were used during the mandatory counseling that each midshipman has with either the Company Officer or Senior Enlisted. Most Company Officers would examine the midshipman's past academic performance during counseling and generate an academic semester goal with the midshipman. This was usually done once a semester with each midshipman.

Feedback is conducted with each midshipman during counseling. The Company Officers would look at the previous semester's GPA as part of counseling and discuss the plans for the future. This was done once a semester for most midshipmen. Academically weaker or unsat midshipmen would get constant attention and feedback throughout the semester.

Feedback from the Naval Academy system again occurs in the form of both rewards and punishments. These rewards and punishments are based on academic performance. Midshipmen may earn extra weekends by attaining either the Superintendent's (semester GPA at least 3.4) or Commandant's List (semester GPA at least 2.9) (United States Naval Academy, 1998c). Midshipmen may also earn extra weekends if their semester GPA is greater than 0.3 above their cumulative GPA (United States Naval Academy, 1998c). Midshipmen may not take weekend liberty if they are unsat. This means that either their GPA is less than 2.0, they have 2 Ds or one F (United States Naval Academy, 1998c).

GPA operationally satisfies the criteria as a KI. The data is collected and tracked satisfactorily. The upgrading of the computer system at the Naval Academy to an ORACLE database will only improve this function. Baselines and performance targets were utilized. The efficiency and effectiveness vary with the counseling techniques of the Company Officer, but the methods are sound. Feedback is conducted by counseling, rewards, and punishment.

Absences are collected by the NATS system. Professors input their class absences after each day. The program is called ABSENCE ***. Company Officers can access this program to check absences but it is not user friendly. Most Company Officers felt forced to monitor absences and take action on midshipmen who were unauthorized absences (UA) from class. A weekly absent report was generated both at the company level by the company academic officer (a midshipman) and at the Commandant's Staff level by one of the Company Officers. The Staff report went out to all Company Officers, Battalion Officers, the Commandant and Deputy Commandant. The midshipmen did not see the report, as it was never posted.

Baselines and performance targets were not specifically used for absences because the default target was zero. That is a Naval Academy system requirement. No unauthorized absences (UAs) are permitted United States Naval Academy, 1998f). Feedback was typically via punishment but some Company Officers factored absences into the military performance grade. All UAs are punished in some manner. The method varied depending on the Company Officer and Battalion the company was in. Punishment for absences ranged from a few demerits or extra duty to restriction and loss of privileges. No one rewarded midshipmen for going to class. Performance measurement does not say that midshipmen should be rewarded for going to class either, only that there should be some feedback on the performance.

Absences are operationally a valid KI also. Even with the lack of flexibility in the performance target of zero absences, it was always a stated goal to the midshipmen. The data is collected satisfactorily, albeit not user friendly. The new computer system upgrade will revolutionize the way this data is collected and tracked. There is direct feedback to offenders in the form of punishment, and also the delayed effect of a reduced performance grade. There was no evidence of any other form of feedback to the midshipmen who attend class flawlessly.

The Battalion And Company Drill Officers (midshipmen) collect drill performance data. The data is collected and compiled after every drill practice or parade. The scores and rankings are sent out via e-mail to all midshipmen and Commandant's Staff following the drill period.

Baselines and performance targets were not mentioned by any Company Officers with respect to drill. More important to the Company Officers were attendance and a proper muster at drill. This is due in part because the Company Officers were directly held responsible for midshipmen attendance at drill. No Company Officer interviewed hinted that there was a goal for drill or that a certain amount of improvement was desired that semester.

The only feedback for the KI of drill was the e-mail sent out to the Brigade with the results of the particular drill period. At the end of the semester e-mail is sent out announcing the semester drill champion and Brigade rankings. This satisfies the bare minimum of feedback. The e-mail sent to all midshipmen fulfills the same task as posting it in the passageway, but the feedback could be done more effectively.

Although drill performance is a valid KI, in this examination it was not operationally used as a KI. The lack of baseline data and performance targets disqualified the measure from this use. Drill performance remains a valid KI and could be better utilized.

To summarize then, there were sixteen measures that Company Officers monitored in tracking the performance of their companies. Five of those sixteen were determined to be valid key indicators (KIs), that is, indicators of performance in a certain key result area (KRA). Those five valid KIs were then operationally evaluated to determine whether they were used as valid KIs in a performance measurement sense. Two of those five met the operational criteria of valid KIs in a performance measurement context. The next chapter will summarize these findings,

draw conclusions from them, and make recommendations to maximize the effectiveness of their use.

# V. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

## A. SUMMARY

This study began with a historical look at the leadership development of midshipmen at the United States Naval Academy. The evolution of the Company Officer position was examined to illustrate the changing leadership role. Company Officers have progressed from disciplinarian to adviser to leadership developer over the course of their one hundred and forty-one year existence.

Today's Navy has become increasingly technical and complex, but the requirement for strong leadership in combat situations has not changed. Cronin and Kotter remind us that leadership and management are not the same (1983; 1990). Joint Vision 2010 agrees with Kotter, who said that the real challenge is combining strong leadership and strong management, using each to balance the other (1990). Naval Academy graduates must possess the leadership and management skills required in dealing with change and complexity. New research has shown that our traditional methods of teaching these skills are not as effective as they could be (Senge, 1990).

The concepts of Performance Management and Measurement were introduced as a means of effectively capitalizing on the resources at the Naval Academy to develop leadership qualities in the midshipmen of today. Other research has shown that because of the nature of the position, Company Officers are already involved in performance measurement. (University of California at San Diego, 1997). The purpose of this study was to examine the extent to which Company Officers are using performance measurement techniques.

The analysis began with a pre-interview questionnaire and interview. The purpose of the interview was to examine the methods that Company Officers use to measure the performance of their respective companies. These interviews produced sixteen measures of performance. Performance measurement research generated criteria based on a system known as the measurement Linkage Model (MLM) of Chang & DeYoung. The sixteen measures of performance were evaluated against the six criteria of Chang & DeYoung to determine whether they were valid Key Indicators (KIs). Five of the original sixteen measures were determined to be valid KIs: PRT results, PE grades, GPA, Absences, and Drill.

A measure determined to be a valid KI is not always used as a KI. Chang & DeYoung's MLM was used in the generation of further criteria to satisfy the operational requirement. The five valid KIs were then analyzed against these criteria to determine if they were used in the context of performance measurement. This included utilizing the key aspects of any performance measurement system, which are data collection and tracking, baselines and performance targets, and effective feedback. The operational analysis determined that GPA and Absences were the two valid KIs actually used in a performance measurement sense.

All of the measures determined to be valid KIs remain good indicators of performance in their particular Key Result Area (KRA). They need to be used in a performance measurement system to obtain the maximum effectiveness.

## B. CONCLUSION

The results were not that surprising. Performance measurement takes time, which Company Officers do not currently have. The Report of the Special Committee to the Board of Visitors identified the same time conflict in June of 1997. The Committee, chaired by retired

Admiral Stansfield Turner and Dr. Judy Mohraz, generated a report on the ability of the Naval Academy to fulfill its mission. In that five months the Committee researched, investigated and analyzed data from focus groups across the Naval Academy. These focus groups included Faculty and Staff of all ranks, communities, and departments. It also included midshipmen from the classes of 1997 through 2000. The Committee found that "The problem is the nature of the job itself [Company Officer], which includes competing responsibilities to counsel, teach, train, discipline and evaluate midshipmen" (1997, p.22). The report called for the Academy to "redesign the Company Officer responsibilities, placing particular emphasis on increased contact time with the midshipmen" (1997, p.22).

Increased contact time with the midshipmen is needed for performance measurement to be successfully implemented at the Naval Academy. Collecting and tracking performance data, generating baselines and performance targets with the midshipmen and feedback all require an investment of time. All Company Officers that were interviewed discussed the shortage of time available for effective counseling and feedback.

The Report of the Special Committee, also known as the Turner report, indirectly calls for performance measurement to be implemented at the Naval Academy. The report recommended "establishing a clear job description supported by agreed-upon measures of success," for the Company Officer (Board of Visitors, 1997, p.23). The report also indirectly discusses the use of performance measurement in leadership development. It recommends the following immediate steps:

- Identifying explicit leadership and professional development objectives for each component and ensuring alignment of these objectives and components.
- Establishing measures of effectiveness for each component.

- Periodically capturing, analyzing, and disseminating data from relevant constituencies on the strengths and weaknesses and overall impact of the program (Board of Visitors, 1997, p.21).

The most effective method of accomplishing these objectives is with performance measurement. In the first recommendation, performance measurement aligns organization-wide improvement efforts by "...ensuring that individual work group Key Result Areas and Key Indicators are linked with the organization's vision, mission, and strategic plans" (Chang & DeYoung, 1995, p.30). The 'measures of effectiveness' spoken of in the second recommendation are really measures of performance in each of those components [Key Result Areas]. Feedback and continuous improvement are emphasized in the third recommendation.

This study is not suggesting that the Naval Academy has ignored the Turner report. There have been improvements in the structuring of the Company Officer position. The most significant is the Masters Program, which gives Company Officers a year to earn their Masters degree before they take on the responsibilities of that position. Performance measurement is one of the required courses that incoming Company Officers take in the pursuit of their degree. This should make them more likely to incorporate performance measurement techniques into the operation of the company, if given the time.

This study is suggesting that the Naval Academy has not gone far enough in eliminating duties and responsibilities that do not contribute to the leadership development of the midshipmen in company. Contrary to the Turner report recommendation, Company Officers are still required to teach a leadership course each semester. A clear job description supported by agreed upon measures of success have not been promulgated nearly two years after the Turner report was published.

## C. RECOMMENDATIONS

### 1. For the Naval Academy

Assuming time constraints on Company Officers do not change, what can be done to effectively implement performance measurement techniques? There are several recommendations below outlining how to better use Company Officer time to effectively employ the valid key indicators. Most of the recommendations deal with streamlining processes to increase efficiency or the collection and tracking of data.

PRT results could better utilize performance measurement techniques if the test were given later in the semester so that counseling could take place prior to the event. If that cannot be implemented, Company officers need to make efficient use of post-PRT counseling. For the majority of Company Officers, this is the beginning of semester counseling and focuses mostly on academics and post-PRT failures. This counseling should involve computing a baseline, setting a performance target for that semester, and generating a strategy to accomplish that target or goal. It is also necessary to follow up with feedback after the next PRT to obtain the full effect. The problem with this alternative is the long time between counseling sessions, coupled with a break over either Christmas or the summer. This tends to water down the counseling sessions since they have frequently happened months prior to the exam.

To realize the full benefits of performance measurement the PRT data should be more accessible to Company Officers. Currently the data is hidden in the PE grade, which comes out at the end of the semester. The new P.E. module for the Midshipmen Information Data System (MIDS) is due online in the summer of 1999. This should greatly effect the ease of data collection and tracking.

The deficiency in the use of PE grades was the lack of baseline and performance target use. Incorporating PE grades into early semester counseling however, will alleviate this discrepancy. The PE module on the new computer system should also make data collection easier.

The method of Drill performance feedback was satisfactory. E-mail to the Brigade and Staff directly informs all the midshipmen how they performed relative to the rest of the Brigade. Drill performance was not an operational KI due to the lack of baseline and performance target use. Effective counseling with the Drill Officer and an active interest in the company's drill performance will satisfy the operational requirement of a KI.

Company Officer time restrictions not-withstanding, the implementation of these techniques will go a long way toward maximizing the effectiveness of Company Officer counseling and mentoring, which are two important tools of leadership development. This implementation will be made easier by the Company Officers in the Masters Program and the upgrading of the Naval Academy's computer system.

### 2. For further research

This research touched on many topics such as: leadership, adult development, performance management, and the Naval Academy. Many potential thesis topics were cast aside during the narrowing down of the research question. In addition, limitations were discovered in this study as it progressed. The result is that there are many future theses lying latent in this text. A few are described below.

This study only examined Company Officer measures from one academic year. There was only one Commandant in office during the study. The Commandant has a tremendous

influence on what the Company Officers consider important and worth tracking. In addition, the interviews were done after the academic year had ended, in the summer of 1998. If the interviews had been conducted during the academic year "in the heat of battle," some different answers might have been obtained. The Company Officers would not have had to rely on only their memory.

One of the topics that surfaced in the research discussed the effects of performance measurement systems on leadership decisions. Both rational-actor and cybernetic modes of decision making were examined. Kravchuk and Schack argued that increased reliance on formal measurement approaches, at the expense of hands-on management and evaluation, would place leaders in a more cybernetic mode of decision-making (1996). This means that using the measures as numbers, without understanding the relative importance of each or how the process functions, can lead to faulty decision-making. A study could be done on this at the company officer level. Does the quest for Color Company lead to a more cybernetic mode of decision making? Do decisions get made on the basis of Color Company Points and not leadership development of the midshipmen at the Company Officer level? Has the color competition led to more of a cybernetic mode of decision making at the Naval Academy? Any one of these could be a thesis.

The Color Company Competition itself could also be examined. The Color Company Competition assigns weights to various company endeavors, such as academics, drill performance, intramurals, tactical games, and physical contests. An examination of the color company competition as a performance measurement system could be conducted to answer the question, "Is the CCC a valid performance measurement system?"

Another study could look at other potential measures that might be more critical to midshipman development into Naval Officers. This thesis could also be done on implementing the MLM from the ground up. KRAs and KIs could be hypothesized that are not used today. The literature review could research educational topics, adult development topics, and military topics applicable to developing future Officers.

A more basic study should include a follow-on examination of Company Officer measures of performance in one to two years. At that time all Company Officers will be Masters graduates and the new computer system (MIDS) will have been functioning for a while. A follow-up study could ask the same questions and examine any changes.

## REFERENCES


A Brief History of the U.S. Naval Academy. Naval Academy Homepage. 1995. Online. Available HTTP: http://www.nadn.navy.mil./virtualtour/150years/briefhis.html

Board of Visitors of United States Naval Academy, Report of the Special Committee. The higher standard: Assessing the United States Naval Academy. Annapolis: USNA, June 1997.

Cave, M., Kogan, M.& Smith, R. eds. 1990. Output and Performance measurement in government: The state of the art. London: Jessica Kingsley.

Chang, Richard and DeYoung, Paul, Measuring Organizational Improvement Impact, Richard Chang Associates Inc., 1995.

Cronin, T.E. (1983). Reflections on leadership. In R. L. Taylor & W.E. Rosenbach (Ed.), Military leadership (5-23). Boulder: Westview Press.

Davis, R. (1995). Choosing performance management: A holistic approach, CUPA Journal, 46, 13-18.

Down, B., Hogan, C., & Chadbourne, R. (1999). Making sense of performance management: official rhetoric and teachers' reality. Asia-Pacific Journal of Teacher Education, 27, 11-24.

Fuhs, J.W. (1998). How the implementation of performance based contracting has affected program management within the department of defense. Monterey, CA: Naval Postgraduate School.

Gordon, K. (1997). A metric evaluation approach for the defense acquisition workforce improvement act. Monterey, CA: Naval Postgraduate School.

Kotter, J.P. (1990). What leaders really do. Harvard Business Review, 68, 103-111.

Marshall, E.C. (1862). History of the United States Naval Academy. New York: Van Nostrand

National Academy of Public Administration, 1994. Toward useful performance measurement: Lessons learned from initial pilot performance plans prepared under the government performance and results act. Washington D.C. (November).

National Performance Review, 1997. Serving the American Public: Best Practices in Performance Measurement. Available HTTP: http://www.npr.gov/library/papers/benchmark/nprbook.html

Office of the Secretary of Defense. Quadrennial defense review. 1997. Online. Available HTTP: http://www.defenselink.mil/pubs/qdr/sec1.html

Performance Management. Organization for Economic Co-operation and Development. 1997. Online. Available HTTP: http://www.OECD.ORG/puma/mgmtres/pac/index.html/ OECD Online (October 1997).

"Profile of the U.S. Naval Academy. Naval Academy Homepage. 1995. Online. Available HTTP: http://www.nadn.navy.mil./virtualtour/150years/profile.html

Regulations of the U.S. Naval Academy 1855. (1858). Baltimore: John Murphy and Co.

Regulations of the United States Naval Academy 1876. (1876). Washington: Government Printing Office.

Regulations of the United States Naval Academy October 18, 1887. (1887). Washington: Government Printing Office.

Regulations for Interior Discipline and Government of the U.S. Naval Academy 1895. (1895). Washington: Government Printing Office.

Regulations of the United States Naval Academy 1907. (1907). Washington: Government Printing Office.

Regulations of the United States Naval Academy 1911. (1911). Washington: Government Printing Office.

Regulations of the United States Naval Academy 1916. (1916). Washington: Government Printing Office.

Regulations of thè United States Naval Academy 1928. (1928). Washington: Government Printing Office.

Regulations of the United States Naval Academy 1938. (1938). Washington: Government Printing Office.

Regulations of the United States Naval Academy 1950. (1950). Washington: Government Printing Office.

Schack, R.W. & Kravchuk, R.S. Designing effective performance-measurement systems under the Government Performance and Results Act of 1993. Public Administration Review, 56, 348-368.

Smith, R.L. (1996). Performance measurement of a carrier battle group: a case study of the Commander in Chief, U.S. Atlantic Fleet's participation as a performance planning and reporting pilot project for fiscal year 1996. Monterey, CA: Naval Postgraduate School.

Soley, J.R. (1876). Historical sketch of the United States Naval Academy. Washington: Government Printing Office.

Sturdy, H.F. (1935). The founding of the Naval Academy by Bancroft and Buchanan. United States Naval Institute Proceedings, 61, 1367-1415.

Training Resources and Data Exchange (TRADE) Performance-Based Management Special Interest Group, 1995. How to measure performance A handbook of techniques and tools. Online. Available HTTP: http://www.lini.gov/PBM/handbook

UCSD Human Resources Department, Guide to performance management. 1997. Online. Available HTTP: http://www-hr.ucsd.edu/~staneducation/guide.html

United States Air Force Academy. (1997). USAF academy cadet awards program UASAFA INSTRUCTION 36-2809. United States Air Force Academy: Colorado Springs.

United States Air Force Systems Command, Andrews AFB. (1991). The metrics handbook. Andrews Air Force Base, MD.

United States Congress, 1993. Government Performance and Results Act of 1993. Public Law 103-62 (August 3). 107 STAT.285.

United States Military Academy. (1998). Criteria for the Superintendant's award Training memorandum No.3. United States Military Academy: West Point.

United States Naval Academy. (1994). Honor concept of the brigade of midshipmen USNAINST 1610.3F CH-1. United States Naval Academy: Annapolis.

United States Naval Academy, (1996a). Color company competition CCOMDTMIDNINST 3590.2. United States Naval Academy: Annapolis.

United States Naval Academy, (1996b). Reef Points, the annual handbook of the brigade of midshipmen. United States Naval Academy: Annapolis.

United States Naval Academy. (1998a) Academic board procedures COMDTMIDNNOTE 5420. United States Naval Academy: Annapolis.

United States Naval Academy. (1998b). Midshipman performance and evaluation system COMDTMIDNINST 1610.3. United States Naval Academy: Annapolis.

United States Naval Academy. (1998c) Midshipmen regulations manual COMDTMIDNINST 5400.6A CH-2. United States Naval Academy: Annapolis.

United States Naval Academy. (1998d). Midshipman weight control program COMDTMIDNINST 1610.1S. United States Naval Academy: Annapolis.

United States Naval Academy. (1998e). Midshipman physical readiness test procedures COMDTMIDNINST 1610.2. United States Naval Academy: Annapolis.

United States Naval Academy. (1998f). Administrative conduct manual COMDTMIDNINST 1610.2A. United States Naval Academy: Annapolis.

University of Arizona, UA undergraduate education (Hurwitz) goals report. 1997. Online. Available HTTP: http://DAPS.arizona.edu/daps/pubrec...urwitz_Report/hurwitz_report97.html

U.S. Department of Defense, Office of the Chairman of the Joint Chiefs of Staff. (1996). Joint Vision 2010. Washington, D.C.: U.S. Government Printing Office.

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