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January 7, 2000

I hereby certify that John W. Mishler, III has passed the Final Examination for the degree of Doctor of Philosophy on October 27, 1999 and that this is the final and approved form of the dissertation.

Christopher H. Sterling
Associate Dean for Graduate Affairs

Dissertation Research Committee:

Robert P. Stoker, Associate Professor of Political Science, Director
Joseph John Cordes, Professor of Economics and International Affairs, Reader
Lance Joel Hoffman, Professor of Engineering and Applied Science, Reader

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RE-ORGANIZING THE NAVAL AIR SYSTEMS COMMAND

By

John W. Mishler, III

B.A. May 1972, Macalester College
M.S. May 1985, University of Southern California
M.Phil. January 1998, The George Washington University

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Dissertation directed by

Robert P. Stoker,
Associate Professor of Political Science

Dedication

This dissertation is dedicated to the people of the Naval Air Systems Command, and to the men and women of naval aviation, Navy and Marine Corps, who serve our country, "twenty-four by seven," around the clock, around the world.

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Abstract

This is a case study of a policy implementation, to adopt a virtual team form of organization within the Naval Air Systems Command (NAVAIR) during the 1990's. NAVAIR adopted this policy in 1993, in response to extraordinary changes in its external environment. While many of these changes were threatening (declining budgets, closing facilities), the organization's leadership was able to view them as opportunities for guided change, through a conscious policy decision to reorganize. NAVAIR's previous structure, a matrix organization with distributed business units, was transformed into an integrated product team focus supported by core competencies. NAVAIR's military form of organization impeded the implementation of reorganization as originally designed, which runs counter to classical assumptions about military organizations: that they are rigid hierarchies that implement direction from the top down without change. The study confirms that policies are transformed through the implementation process, discusses these transformations from the viewpoint of multiple theoretical constructs, and describes the adaptive strategies employed by various parties throughout the

implementation process. Final assessment of this policy implementation is that the original policy design was only partially implemented, but overall, the resulting organization meets most of the goals of the original design. This success is due to a number of factors including, the magnitude of the external threats to the organization, the detailed policy design and implementation plan that was developed, the relatively short implementation period, the involvement of multiple layers of the organization in the implementation process, and the focus of senior leadership over an extended period of time.

Disclaimer

The views expressed in this dissertation are solely those of the author and his informants and do not reflect the official views of the Naval Air Systems Command or the Department of the Navy.

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Chapter 1. Introduction

Problem Statement

This dissertation describes the implementation of a reorganization of the Naval Air Systems Command (NAVAIR). The purpose of this chapter is to describe the research topic, establish why the topic is relevant within the context of national security policy, define the research tasks, and describe the methods by which the tasks have been accomplished.

The research topic of this dissertation is a case study of a policy implementation, to adopt a virtual team form of organization within the NAVAIR during the 1990's. As a case study, the purpose of this research is to describe the organization, the changes its leadership faced, and how it addressed them by implementing a policy change. The purpose of the research is not to conduct a formal evaluation of the NAVAIR policy, although some of the methods of evaluation research have been used. The

purpose of the dissertation is to describe how the implementation occurred and changed from its original design, not to evaluate what consequences resulted from the implementation.

NAVAIR's reorganization was stimulated by a reduction in its resource base at the end of the Cold War. In response to this change in its environment, in 1993, the organization's leadership planned to deploy personnel into "virtual teams," forming a "competency-aligned organization." This decision reflected the leaders' desire for flexibility in meeting the changing demands placed upon the organization, their desire to integrate and coordinate the activities of numerous, geographically-dispersed employees and contractors; and, their faith in information technology.

That NAVAIR's leadership chose an approach that was firmly grounded in commercial best practices is not surprising, given certain themes in public administration and public policy which reemerged in the late 1980's and early 1990's. These themes reflect a yearning for reform, which is a recurring theme in public administration throughout our history. Most recently, the reform movement manifested itself during the Clinton Administration, as exemplified by its focus on "reinventing government" to

make it more efficient and more responsive to citizens. Recent legislative initiatives have also reflected the trend to adopt business management models to government. The Chief Financial Officer Act, which stipulates that government accounting practices and balance sheets should meet commercial audit standards, and the Clinger-Cohen Act, which requires information management investments to be tied to corporate goals and managed in portfolios (similar to mutual fund investment portfolios), are both examples of this theme.

Within the Department of Defense (DOD), a similar business emphasis has followed adjustments in force requirements. Observers have referred to the changes in United States military doctrine instigated by the end of the Cold War as a "Revolution in Military Affairs." These modifications in approach have fostered a parallel change in the military's support structure, referred to by some within DOD as a "Revolution in Business Affairs" or RBA. Current DOD policy requires the department's components to embrace RBA through adopting best commercial business practices. Contracting for non-core services (Commercial Activities or CA studies, based on Office of Management and Budget Circular A-76); purchasing business financial and human resources software, rather than developing custom

packages to meet peculiar DOD business processes (Enterprise Resource Planning or ERP); and, developing cost models based on function, rather than organization (Activity-Based Costing or ABC) to give enterprise-wide views of process costs are three examples of this theme.

Although NAVAIR's adoption of best commercial practices by focussing on core competencies in 1993 presaged these initiatives by about 3-5 years, it was firmly grounded in the same tradition of "reforming government by making it more like business." As such, the NAVAIR case was a harbinger of things to come. In its reorganization plan, NAVAIR adopted a team form of organizing on a scale which had not been attempted previously in the Department of Defense. NAVAIR's existing military hierarchical structure may actually have served to impede the implementation of the reorganization. This outcome runs counter to classical assumptions that military organizations are rigid hierarchies that implement direction from the top down without change.

The dissertation attempts to explain why and how the new policy was implemented and what conditions may have affected the implementation process. Key research tasks which this dissertation has accomplished include describing:

1. NAVAIR's organization, including its relationships with contractors and key political officials;

2. the changing context in which NAVAIR functions, placing particular emphasis on the changing security environment for the United States following the end of the Cold War and the demands this placed upon the organization;

3. the origins and development of the reorganization plan, particularly its theoretical foundation and the process by which the theory was accepted and adapted to NAVAIR by the organization's leadership; and,

4. evaluating the implementation of the reorganization plan, by identifying the steps in the implementation process and explaining the difficulties and barriers encountered at each step, and emphasizing the factors which affected translating the initial plan into new routines and relationships within a hierarchical military organization.

To accomplish these research tasks, this research has drawn upon the literature of organization theory, evaluation research, and policy implementation to contribute to our understanding of how the national security establishment has responded to the end of the Cold War; to our understanding of the difficulties of reorganizing complex, public organizations (and specifically, how these changes have been implemented in a

military organization); and, to our understanding of the role information technology may play in improving organizational performance under the team form of organization. This information may be of use to other organizations with similar structures and constraints that are considering adopting the virtual team approach of organization.

Public Policy Implications

The reorganization of NAVAIR has implications beyond the organization itself. The products and efforts of NAVAIR are important to national security. This section will describe how changes in national security policy relate to NAVAIR's workload, and conversely, how NAVAIR's work supports the operating forces. Establishing this linkage enables the assertion that NAVAIR policies and specifically its continued ability to do its job, is a pertinent topic for discussion within the overall context of the national security establishment.

Due to its inherent flexibility and ability to project power, the aircraft carrier battle group has been involved in almost every U.S. foreign policy action since World War II. Carrier-based aviation has formed a key part of the Navy's strategy for the past 50 years, including the "Maritime Strategy" of the past decade, and its successor, "From the Sea" (Navy 1992, Navy 1997). Both of these naval doctrines include important roles for naval aviation.

However, the overall goals of naval doctrine have been revised to reflect recent changes in the larger political and social context. One example of this shift in thinking

is cited in a description how the Bush administration built consensus for the Gulf War.

To build support for its actions, the administration did not appeal to the classic international affairs definition of "acting in the national interest," which might have been stated summarily as, "preserve access to oil." Rather, building the coalition of support for intervention in the Persian Gulf by the U.S. and its allies was couched in appeals to internationalist norms of what kind of behavior is acceptable by nation-states.

For example, violation of Kuwaiti sovereignty, human rights abuses, and world order were cited as primary reasons for the U.S. and the allied coalition to intervene in the Gulf (Rhodes 1999, p.36). This signaled a potential shift in determining under what conditions American force should be used in future conflicts.

Desert Storm, coupled with the previous demise of the Iron Curtain and the budget implications of a reduced military establishment, provided impetus for the Navy to rethink its goals in light of a transformed world situation. The Navy's "From the Sea" doctrine served to shift from the "centrality of war-fighting" as the justification for naval power, to an assertion that naval forces (especially carrier-based aviation) are uniquely

valuable to the nation's decision-makers for their potential contribution to peacetime stability, deterrence, and crisis control.

Combined, the Navy and Marine Corps assert that they contribute flexibility and focus across a wide range of missions. As expressed in the "From the Sea" doctrine:

> ". . .the Navy and Marine Corps operate forward to project a positive American image, build formations for viable coalitions, enhance diplomatic contacts, reassure friends, and demonstrate U.S. power and resolve. Naval Forces will be prepared to fight promptly and effectively, but they will serve in an equally valuable way by engaging day-to-day as peacekeepers in the defense of American interests. Naval Forces are unique in offering this form of international cooperation" (O'Keefe 1992).

One reason for the purported singularity of naval forces expressed in this quotation is that the Navy and Marine Corps deploy routinely, and do not require permission to garrison troops or support aircraft with landing field rights to accomplish their mission.

In Desert Storm, NAVAIR-developed cruise missiles, launched from ships and submarines offshore, played an important role in the opening stages of the conflict; and, Navy and Marine Corps aircraft developed and supported by NAVAIR flew thousands of sorties.

Even today, naval aviation is enforcing the "no-fly zone" over southern Iraq. Carrier-based Navy and Marine

Corps aviators are flying sorties 24 hours a day to maintain the uneasy status quo in the Persian Gulf. This occurs without the need for permission from host nations to stage and support missions.

Whether the Navy will be successful in its attempt to redefine its mission to complement changing national policy remains to be seen (Rhodes 1999, p.52). The larger set of questions, such as under what conditions it is appropriate to commit American forces to battle, have been debated throughout our history, and without doubt, will continue to be debated well in to the foreseeable future. A detailed discussion of these issues may be better left for another forum. However, the point to be made here is that almost all of the systems employed by these aviators are NAVAIR products. This supports the assertion that the work of NAVAIR is directly related to execution of the national military strategy. Changes in policy which effect the ability of NAVAIR to complete its mission, by extension, have direct effects on the ability of the Navy and Marine Corps to carry out their missions.

Another implication of the policy decision under study involves the notoriety of NAVAIR's ability to be innovative in the face of challenges. The agency has been recognized for excellence on many occasions (Presidential and Malcolm

Baldridge Quality Awards in the 1990's), and was the first organization to win two Presidential Quality Awards (Hunt 1994, p.1). NAVAIR has also won numerous other environmental and quality awards (Navy 1993, p.44). As the Navy's second largest systems command (next to the Naval Sea Systems Command or NAVSEA), NAVAIR's influence in the Navy is significant.

NAVAIR's reputation as an innovative organization has drawn attention itself. As one informant in this research described Congressional opinion of the Navy's approach to downsizing in the 1990's: "You see things where they (representatives and their staffs) say that they think the Navy has gone out ahead of the Army and the Air Force with regard to downsizing and consolidating and all of that" (Informant_12 1998, para.6).[1]

NAVAIR has established itself as an organization that is willing to readily adopt new techniques and approaches. This makes this particular case interesting and relevant for study because the NAVAIR case may be an archetype of

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[1] Informant interviews were transcribed verbatim. When cited in the text of this document, informant quotations are cited by paragraph number as they appear in the transcript of the interview with that particular informant. A full description of the interview methodology is provided in the section of this chapter titled, "Research Tasks and Methods," and in the Appendices.

this form of organizational response in the Federal sector. (Hunt 1994, Informant_04 1998, para.293).

Creative response to environmental change is often cited in the literature of organizational development as necessary for organizations to survive and adapt. However, being on the "bleeding edge," or stated more conventionally, the "leading edge," of any new, innovative approach carries with it concomitant risks. This is expressed in the following quotation in the form of "what have you done for me lately?":

> "NAVAIR is always put up as the example of going in the right direction, making the right changes and that type of thing. We've always been up ahead of all of that. I think in some aspects, it's kind of hurt us. . . because we got too far ahead and then when they start talking about further reductions, they fail to take a look at what NAVAIR did before everyone started really taking serious looks at organizations of consolidating and streamlining or whatever. They kind of started at a baseline where we had done a majority of our work already. So, you know, to cut us any further could hurt us" (Informant_12 1998, paras.138-142).

The comment makes the point that NAVAIR's progress in executing its policy decisions has a direct affect on its ability to defend and sustain its budget and workload, especially in an environment constrained by scarce resources.

Entering the decade of the 1990's, there was a strong perception that naval aviation would not survive the Tailhook scandal, and other well-publicized program failures such as the cancellation of the A-12 program (Bowes 1992, para.51). This perception was a compelling impetus for change, or "reinvention" in the popular lexicon. But, NAVAIR appears to have been at least partially successful in turning its internal policy changes to its advantage in dealing with its external environment. For instance, the agency has already successfully cited its progress in implementing its policy of reorganization as justification to be exempt from the requirement for further studies to outsource functions to the private sector. By this crude measure, the new policy has been successful fending off potential threats to the organization.

On the other hand, a review of policy implementation literature indicates that carefully designed policies are transformed during the implementation process, oftentimes into results that do not meet the goals of the original policy design. It would be expected that a military organization, with its traditional hierarchy and emphasis on chain of command, would facilitate a new policy being implemented as designed. However, in this case, the policy appears to have been implemented with mixed results.

One contributing factor, which resulted in only partial success of the implementation effort, may be the federated nature of the NAVAIR organization, in which multiple subordinate commanders have been delegated responsibility and manage resources to accomplish their goals. In this respect, NAVAIR is not much different from other large organizations, such as large aerospace corporations, which pursue complex tasks with a number of dispersed locations.

The manner in which the overall NAVAIR policy was implemented within its federated structure created tension between the existing military hierarchical foundation of the organization and the distributed team form of organizing which has been laid on top of it. The result of this tension was that personnel at various levels in the organization employed adaptive strategies to resolve conflicting demands of the roles they must adopt under the new form of organizing. These adaptive strategies contributed to the transformation of the policy design; and thus, directly effected the implementation of the policy. Similar behaviors have been found to exist in other organizations and thus, this description of the NAVAIR case may validate these findings.

A factor which may have contributed to the success of the organization is the use of information technology tools such as electronic mail and document transfer. These technologies enable teams whose members are widely separated by geography and time zones to overcome barriers through communication. As large organizations continue to exploit information technology, they also grow more dependent upon it. An understanding of the role that technology played in helping to implement this policy change may have broader application.

Research Tasks and Methods

This section describes the research strategy which has been followed for each of the four research tasks described previously, and details the sources of information and methods that have been used to complete each task. The first three research tasks accomplished by this dissertation are to describe NAVAIR, the changes in its environment over time, and the reorganization plan which its leadership put in place in response to those changes. The dissertation concludes by completing the final research task, to assess the implementation of this policy, with particular emphasis on the role of the military structure on its accomplishment.

This dissertation is a case study which relies upon interview data from a set of individuals who have unique knowledge of the policy formation and implementation process. Before discussing the case study approach further, it is necessary to describe the how the informants for this study were selected to be interviewed. The 13 interviewees were chosen for their specialized knowledge of the NAVAIR policy formulation and its subsequent implementation. They represent a broad cross section of experience and viewpoints within the NAVAIR organization.

All but one were personally known by the author before the interviews were requested, so access was easily gained. All gave freely of their time, approximately 1 hour per interview, and none declined to be interviewed or to be tape-recorded. Nine of the thirteen had recent (within the past five years) experience in field assignments, three at depots, three at warfare centers, and three at other field commands. Ten had recent experience at the headquarters level, in a variety of program office, staff, and competency assignments. Four had recent military experience, including command, at the Colonel/Captain rank (0-6 in military jargon). Of the thirteen, four were Senior Executive Service civilians, and seven were top level General Schedule employees (GS-15 in Federal Civil Service jargon). Three have worked as both government contractors and as organic government employees. Six were either members of the original CAO study team or directly supported the team, and all of the thirteen were involved in implementation of the policy. In this manner, key constituencies or stakeholders in the NAVAIR organization were represented in the interview process.

The overall research strategy which has been executed takes advantage of multiple sources of information including documents, elite perceptions, attitudes and

experiences of NAVAIR employees and contractors, and the experiences of the author (who is a participant observer). Having multiple sources of information is significant to the research effort because it affords the author the ability to cross-reference or "triangulate" the information that is the basis for the conclusions. This has helped to minimize potential bias.

The first research task is to describe NAVAIR. This task has been accomplished using document analysis (organizational history, the official record and report of accomplishments published annually and formal mission statements), elite interviews (with NAVAIR officials, corporate contractors, and political elites), and participant observation.

The second research task is to describe the changing environment in which NAVAIR functions. The research strategy used to accomplish this task included document analysis, elite interviews, participant observation, and data analysis over time of key indicators of organizational resources and output. Several research questions have been addressed. By addressing these questions and those presented in the first set, a picture of the problems confronting NAVAIR's leadership has emerged.

The first two research tasks serve to identify the problem, and lead to the third research task: to present a detailed description of the solution proposed by NAVAIR's leadership. To accomplish this task, document analysis (focusing on the preliminary development of the reorganization proposal), elite interviews (with those who were involved in the development of the initial proposal), and participant observation strategies have been used.

The fourth research task is to assess implementation of the reorganization. This task has been accomplished by document analysis (focusing on details of the reorganization plans and the proposed changes in NAVAIR's routines), elite interviews (with those responsible for implementing the reorganization), and participant observation.

Fundamentally, this examination is a case study of policy implementation. The methods employed to gather the information needed to satisfy the research tasks have been traditional case study methods. The case study approach inherently relies on a wide variety of evidence, and thus allows the researcher to address a broad range of issues as indicated in the outline of the research tasks (Patton 1987) cited in Robert K. Yin's treatise on the case study method (Yin 1994). The careful case researcher uses a technique called, "triangulation," which uses multiple sources to

provide plausible explanations for phenomena which can to some extent neutralize the biases of "method-bound" approaches. Converging lines of evidence and inquiry can be used to enable the study to be more convincing and accurate by following a corroboratory method, much as trial prosecutor introduces evidence to convince a jury.

In adopting this "pluralistic evaluation" approach (Palfrey 1992), it is granted that in policy analysis of this kind, there is no one best approach, since each has limitations and biases. What is presented is a framework that combines a number of approaches in such a way that a particular evaluation method is appropriate to the particular policy and context to be examined.

To describe the context in which the program was implemented, interviews of personnel have been conducted to identify factors affecting implementation of the policy whether there were barriers to implementation and what techniques were used to overcome these barriers. This part of the study follows on research conducted at the Naval Postgraduate School (NPS) (Bayer 1995).

In the NPS study, several techniques were used to assess critical factors affecting implementation of NAVAIR telecommunications project which was in work about the same time as the NAVAIR reorganization. Among the techniques

used were stakeholder analysis, and while this research did not use process analysis *per se*, it used some of the findings of the NPS study to guide formulation of interview questions to identify key implementation factors such as barriers to implementing the policy and how they were overcome.

Another source which has been used to guide the research is Erik Andriessen's valuable methodological discussion on how to evaluate interactive technology in organizational settings (Andriessen 1996). This approach recommends evaluation of the effects of the technology on several dimensions, including inputs, outcomes, and interaction processes (organizational performance issues).

This pluralistic evaluation approach is more likely to reveal a complicated, but realistic picture in which both successes and failures can be identified, and is superior to using just one method of collecting evidence (Palfrey 1992). By using elite interviews, surveys, and primary source documents (policy documents, meeting notes, etc.) this case study has followed the multiple source of evidence approach.

Another principle recommended in Yin's work is to separate data or evidentiary base from the report itself. This is essential to allow for critical inspection of the

data, independent of the researcher's analysis. The data used in this study have been kept separate from the analysis, to enable critical inspection.

A third recommendation made by Yin is to maintain a chain of evidence. By this, he means that an external observer (the reader of the case study, for example) should be able to follow "the derivation of any evidence from initial research questions to ultimate case study questions" (Yin 1994). In this way, an observer should be able to trace the steps in either direction, from conclusions back to initial research questions or from questions to conclusions. By being able to move from one portion of the case study to another, with clear cross-referencing to methodological procedures and to the resulting evidence, a "chain of evidence" is maintained, and increased reliability of the study is the result.

The approach used to gather and analyze primary and secondary sources used in this dissertation takes these methodological issues raised by Yin into account. To support this assertion, the next paragraphs describe the process followed during the analysis phase of the research.

Each informant interview followed a standard set of questions (see Appendix 1). Interviews were tape-recorded (with the informants' permission) and transcribed verbatim

by a professional transcriptionist. (During this process, file names were disguised to attempt to preserve the anonymity of the informants.) The author reviewed each transcription to clean-up errors, especially in acronyms and peculiar or unfamiliar language usage.

After the interview text had been corrected, the data file for each interview was exported into an off-the-shelf database software program specifically designed for analyzing non-numerical and unstructured qualitative data, such as interviews. This tool is called, "Non-numerical Unstructured Data Indexing Searching and Theorizing (NUD*IST)," and was developed by an Australian firm, Quality Solutions and Research Party, Ltd. (QSR).

Using the QSR NUD*IST data base permitted each paragraph of each interview to be analyzed and sorted according to a scheme of categories developed by the researcher. A list of these categories includes:

(1) Reorganization Causes

(2) Reorganization Successes

(3) Reorganization Failures

(4) Integrated Program Team

(5) Reorganization Lessons

(6) Implementation

(7) Former Matrix Organization

(8) Chain of Command

(9) CAO Start-Up

(10 Adaptive Mechanisms

(11) Customer/Stakeholder Issues

(12) Focus of the Reorganization

(13) The NAVAIR Organization

Within each of these larger categories, sub-categories emerged from the analysis. For instance, "Reorganization Successes" included the following subtopics:

(2 1) Checks

(2 2) Program Mgt

(2 3) Measures

(2 4) Teaming

(2 5) Reducing Conflict

(2 6) Empowerment

(2 7) Common Processes

(2 8) More Efficient

(2 9) Resource Visibility

(2 10) Flexibility

Each of these sub-categories was defined. For example, the sub-category of "Program Management" under the "Reorganization Successes" category was defined as, "Examples of programs or program management approaches which have succeeded under the new organization." (A

complete list of the categories and sub-categories used is presented in Appendix 2.) The data base approach also allowed the researcher to list and view sub-categories across interview files. Appendix 3, "Representative Report from Interview Database: Program Management Examples of Reorganization Successes" provides an example of how a cross-interview report for a particular category of information can be generated. This capability allowed the researcher to triangulate or cross-reference data across sources such as multiple interviews, text documents, meeting notes, etc. Triangulation is the first of Yin's prescriptions for the case study method.

Use of the data base approach allowed the research to follow Yin's other two case study guidelines, as well. For instance, the research process separated the data from the primary and secondary sources from the researcher-developed analysis categories. But the original data has not been altered. So, there is a traceable relationship and supporting rationale between the categories to the data from which they were developed.

Finally, it is important to note the researcher is a participant observer in this study. As such, he must be aware of the potential for bias that exists due to his own experience and interest in the reorganization effort.

While participation in events can be a valuable source of insights, it can also be a source of bias. It is hoped that using multiple sources, and maintaining the chain of evidence as described previously, has assured an unbiased analysis.

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Chapter 2. Implementation Literature Review

The NAVAIR reorganization is a case in which the leadership of a large, complex public organization attempted to implement a significant policy change. The proposed change was profound in the sense that it would affect every member of a 50,000 person organization along with every supplier with which it did business and the "consumers" of its goods and services, Navy and Marine Corps aviators. A review of implementation literature indicates that the problems of implementing complex initiatives on a large scale are daunting. This is especially true when there are numerous implementation participants (Pressman 1979), who have conflicting interests (Bardach 1977), who must cooperate in a complicated policy environment (Stoker 1991), and for whom the scope of change is significant or threatens core values of the implementing organization (Mazmanian 1983). All of these conditions are present in the NAVAIR case. The following discussion will relate examples from

the NAVAIR case to illustrate the points made in the implementation literature.

Pressman and Wildavsky in their classic, *Implementation* (1973), describe what they refer to as the "complexity of joint action." Their basic thesis is, as the complexity of the implementation process increases, so does the likelihood that the policy will not be implemented as designed. One of the key points made by Pressman and Wildavsky is why participants may agree with the substantive ends of a proposal and still oppose (or merely fail to facilitate) the means for effectuating it. They list several of these conditions: direct incompatibility with other commitments; no direct incompatibility, but a preference for other programs; simultaneous commitments to other projects; dependence on others who lack a sense of urgency in the project; differences of opinion on leadership and proper leadership roles; legal and procedural differences; and, agreement coupled with lack of power (Pressman 1979).

The NAVAIR reorganization seems to have comparable conditions of complexity described in the Pressman and Wildavsky example in that the overall organization was large (over 50,000 people at the time the policy implementation began), and key organizations responsible for implementing the change were widely dispersed (over ten geographic locations) comprising numerous layers of management, project

teams, and military commands. All of these different NAVAIR organizations participated in the reorganization in different ways. Implementation participants were dispersed at several levels and throughout the different sites which comprised the organization.

At the senior level, at the Headquarters, membership of the Executive Steering Committee included the key executive leadership of the organization representing the major programs and functional areas, but not the geographic sites or individual commands. Individual commands represented themselves directly to the commander. Combined, both of these groups comprised about 15-20 participants.

At each site, similar executive steering groups were typically organized, also comprising about 15-20 members at each of 10-12 sites. In total, there were between 150-200 managers involved in implementation of the new organizational structure at senior levels. Naturally, implementation also occurred at lower levels in the organization as employees became trained in the new structure and teams were formed and began to work. The point is, this particular implementation by any frame of reference was complex; and therefore, because of its complexity, according to the implementation literature, it had reduced probability of success.

The policy environment in which the NAVAIR organization operates is multifaceted. Any professional discipline or competency in the Naval Air Systems Command has numerous stakeholders within the Department of the Navy and the Department of Defense. For example, within the professional discipline of logistics, any given organizational unit in the logistics competency must respond to (sometimes conflicting) guidance and direction from a number of sources.

The customary hierarchy or command structure which distributes policy within the given organizational unit is only one source of policy direction. Other outside policy makers may include sponsors from within NAVAIR who specify and fund work to be done. For example, one of NAVAIR's competencies, in-service engineering and logistics support, is subject to numerous outside activities and influences. Logistics must follow the policies set by organizations within the Chief of Naval Operations, which may include several offices specializing in Logistics (N4) or Air Warfare planning (N88); Department of Defense program offices such as the Joint Logistics Systems Center or the Joint Computer Aided Logistics System; Department of Defense policy offices such as the Assistant Secretary of Defense for Logistics; coordinating bodies such as the Joint Logistics Commanders Conference; as well as, other

initiatives from other services and DOD Components. Other competencies within NAVAIR such as engineering or industrial operations also must operate in a policy environment with similar competing demands.

What this complexity translates to is at any given period of time, elements of the organization are responding to multiple policy sources, each of which has the capability of providing guidance which may conflict with another policy source. There are various mechanisms for reducing this dissonance, but the point of this example is not to describe how this gets accomplished, but rather the fact that there are multiple sources which may conflict in their expectations.

Given challenges such as these, it should not come as a surprise that there are few implementation stories in the literature which were unqualified successes. In part, this reflects the lack of consensus among researchers about what constitutes implementation success. The implementation literature has developed two contrasting views of the implementation process. One view, referred to as the "top-down" approach emphasizes the importance of coherent, hierarchical organization in which subordinates are to follow the directions of superiors (Pressman 1979, Sabatier 1986, Stoker 1991). From this perspective, implementation effectiveness is associated with efficiency and fidelity.

The more efficiently or the greater conformance to policy design in the implementation of the policy, the more successful it is.

However, implementation may also be viewed from the "bottom-up" perspective. From this perspective, implementation is a bargaining process. The participants are assumed to pursue their self-interest (Bardach 1977), and to be concerned about the political support they enjoy among constituencies other than those who designed the policy (Stoker 1991). Implementation effectiveness is not found in the directions of those who design policy, but rather through the interaction of those who implement it.

Numerous cleavages already existed within the NAVAIR organization before the reorganization began, such as competition among sites for workload, and the customary stress between a headquarters organization and its geographically-dispersed subordinate organizations. New tensions were created between the new national organizations and the local, site organizations and the reorganization progressed. Various strategies were adopted by policy actors throughout the implementation process to adapt to these tensions.

A recurring theme in the implementation literature is that the linkage between policy design and policy implementation breaks down (Stone 1980). What begins as a

grand design is necessarily transformed through the implementation process. These difficulties contrast with the "classical model" of program administration which assumes that the implementation process is a technical, non-political activity that proceeds in response to directives from the top. Policy makers provided concise instructions and neutral implementers carried out these instructions faithfully (Nakamura 1980). However, this classical, mechanistic model does not reflect the rough and tumble politics and bargaining which characterizes many implementation efforts. The implementation literature points out that political processes and stakeholder interests are key to understanding the challenges of implementation (Derthick 1972, Pressman 1975). The policy process is seen as inherently political, but the distinction which some draw between policy and politics is artificial (Stone 1988). Policy implementation affords the opportunity for numerous political actors to play various "games" (Bardach 1977), to bargain to address the competing demands of various interests (Pressman 1975), and to advance their own agendas (Kingdon 1995). In these and other ways, the linkage between design and implementation can be transformed so that policy "as implemented" may not always resemble policy "as designed."

Elmore states that policy makers frame solutions to problems with resources over which they have the greatest control. At any given level, the content of the policy is a function of the implements people control at that level and the effects they are trying to achieve at other levels. In this construct, policy outcomes are determined by how well the implements at different levels mesh together to produce a result. However, there is no guarantee that this outcome has any particular relationship to the policy as designed (Elmore 1985).

But this claim is controversial in the implementation literature. When a program is not implemented as anticipated by those who designed it, is the policy a failure? From the bottom-up perspective, conflict and bargaining are natural, legitimate aspects of the implementation process (Elmore 1982, Stoker 1991). As a consequence of bargaining, policy is likely to evolve as it moves through the implementation process. This is likely to lead to transformation of the policy and partial achievement of program objectives (Stone 1980).

The NAVAIR case appears to conform to aspects of both the top-down and bottom-up models of the implementation process. The policy was devised by those at the top of the organization. Thus, NAVAIR's leadership was responsible for characterizing the problem and proposing a solution. It is

significant to ask: To what extent were the plans of NAVAIR's leadership realized?

Analysis suggests that the policy objectives were only partially achieved. A "top-down" view of the NAVAIR policy design process can offer fruitful information, which can add to our understanding of why a particular policy was chosen. This discussion can be illuminated by an understanding of the policy designer's premises about the causes the problem that the policy is intended to address; including, the values underlying the appraisals of various means to achieve the policy, and the factors which were considered to determine why some alternatives were considered and others were not (Linder 1990).

In this case study, the NAVAIR policy design process is examined to determine how a policy implementation method was chosen, how policy instruments were developed, and what kinds of judgment went into their emergence as viable policy alternatives. But this is not be the only research approach employed in this analysis.

This research also examines the implementation process from the bottom-up to explain the reasons why some of the program objectives were achieved while others were not. To accomplish this, the case study will focus on the implementation process as described by Richard Elmore: the "backward-mapping" model of implementation (Elmore 1982).

This model differs from the classical approach with its implied structure of centralized control and formal organizations. In contrast to the classical approach, the "backward-mapping" model assumes dispersal of control, and concentrates on factors that can be influenced only indirectly by policy makers--knowledge and problem-solving ability of lower level administrators, incentive structures that operate on the subjects of policy, bargaining relationships among political actors at various levels of the implementation process, and strategic use of funds to affect discretionary spending (Elmore 1982).

The "bottom-up" research approach is particularly useful in examining the effect of the military hierarchy on the reorganization plan. The team structure in the new organization overlays the military command structure. In the NAVAIR case, as suggested by the literature, it appears that roles conflict when national or team goals are not in strict congruence with local or command priorities. This may be especially evident in cases in which policy implementation resources are not centrally controlled, but rather depend to some degree on discretionary compliance by those responsible for implementation. When the environment is one of mutual trust, and there is a high degree of congruence between command goals and program goals, one would expect that policy would be implemented largely as

designed. In the NAVAIR case, it appears that role conflicts in implementing the new organization were the rule, rather than the exception.

In Elmore's terms, one potential explanation for this is that the command structure in NAVAIR, through local resource control and the "incentive structure" of the chain of command, strongly affects the implementation of central policies. Bargaining between and among political actors at various levels transforms the original policy. These issues are examined by describing the adaptive strategies used by employees to manage conflicts. In so doing, our understanding of how policies are transformed through implementation is enhanced.

Adopting this strategy of using both bottom-up and top-down models of implementation conforms to recommendations made by some researchers (Palfrey 1992, Smith 1985), who advocate the advantages of applying multiple models to policy evaluation. Indeed, some scholars of implementation take the position that the controversy between bottom-up and top-down points of view has been positive, not only because it stimulated a lively debate and additional research efforts, but also because through the debate, it has become commonly accepted that the approaches are really complementary, rather than mutually exclusive (Wittrock 1985). Policy implementation includes informal networks and

processes, but these cannot exist in isolation from more formal administrative and organizational structures and processes. In adopting the "pluralistic" approach, this case study will employ several models, process as well as outcome, and examine them from several perspectives.

There is evidence to suggest that what happened in the NAVAIR case was that only partial benefits were realized—not necessarily because of the command structure itself, nor because of supposedly rigid military personality types (indeed the military members of the organization may be more flexible and adaptive than the civilians because of the their training and experience in the dynamic shipboard environment when deployed), but because the policy was transformed through the implementation process to the benefit of some constituencies at the expense of others, and at the expense of complete realization of the entire plan as envisioned originally.

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Chapter 3. Overview of the Naval Air Systems Command

Introduction

The key issue being examined by this dissertation is the implementation of a policy change to employ a new form of organizing within a military organization. To understand the policy decision and how the change implementation plan was developed and carried out, it is important to understand the context of the NAVAIR organization. An understanding of the NAVAIR's products and efforts is key to realizing how NAVAIR fits into the overall national security policy structure; and thereby, how NAVAIR policies relate to the overall ability of the Navy and Marine Corps to perform their missions. To provide this background, this chapter will describe NAVAIR's mission and relationship to the Navy and Marine Corps' operating forces, its organization and management structure

and its leadership. The discussion will highlight areas of organizational conflict which provided the impetus for the agency's leadership to consider change. NAVAIR's workforce is also described, along with the agency's customers, suppliers, sponsors and political relationships and rivals.

Mission and Scope of Activity

NAVAIR's activities and products directly support Navy and Marine Corps aviation. This section will describe how NAVAIR's products are used by the operating forces in support of the national military strategy.

Due to its inherent flexibility and ability to project power, the aircraft carrier battle group has been involved in almost every U.S. foreign policy action since World War II. As President Bill Clinton said just after taking office in 1993, "When word of a crisis breaks out in Washington, it's no accident that the first question on everyone's lips is: 'Where is the nearest carrier?'" (Navy 1994a). Carrier-based aviation has formed a key part of the Navy's strategy for the past 40 years, including the "Maritime Strategy" of the recent past, and its successors, "From the Sea" and "Forward from the Sea." Both of these naval doctrines assume important, albeit different roles for naval aviation. "From the Sea" redefined the purpose and goal of the Navy and Marine Corps as expeditionary forces. The "Navy and Marine Corps team" is charged with the mission of serving as the "enabling force" to provide forward presence to preclude conflict and preserve peace. However, when necessary, these

forces provide the "forcible entry" which allows the Army and the Air Force access for sustained operations. The centerpiece of this doctrine is the aircraft carrier (Bennitt 1994).

In the Desert Shield example, Navy and Marine aircraft and Marine expeditionary ground forces formed the first and only significant line of allied defense against further Iraqi incursion into Saudi Arabia for several weeks, until Army and Air Force units could deploy to the theater of operations from bases in Europe and the Continental United States. Navy and Marine Corps aviation units were already embarked on carrier battle groups and amphibious ready groups in the Persian Gulf. Marine Corps supplies and equipment (enough to sustain 30-45 days of combat) were already pre-positioned in the theater and were available for use within days of the conflict breaking out. Cruise missiles and Navy electronic jammer aircraft (both systems developed and supported by NAVAIR) were the first offensive wave in Desert Storm.

In the recent Balkans conflict, it took the Army several weeks to deploy 24 Apache helicopters to the theater of operations, something the Marine Corps could have done overnight. These examples are not given with a spirit of parochialism, but rather to point out that naval forces are

constituted by their nature, through training, exercise and practice, to be forward-deployed and be able to sustain autonomous operations for extended periods of time.

Aircraft carrier and amphibious ready group deployments are planned years in advance. Deployments result from a complex process which includes training, logistics support, and equipment availability, in all of which, NAVAIR has significant responsibilities. In these ways, the mission of NAVAIR is directly related to execution of the national military strategy.

The overall objectives of the Naval Air Systems Command (NAVAIR) and its affiliated organizations are to design, test, maintain, and sustain all aircraft and aviation systems for the United States Navy and Marine Corps.

> "So you want to understand an aircraft carrier? Well, just imagine that it's a busy day, and you shrink San Francisco Airport to only one short runway and one ramp and gate. Make planes take off and land at the same time, at half the present time interval, rock the runway from side to side, and require that everyone who leaves in the morning returns that same day. Make sure the equipment is so close to the edge of the envelope that it's fragile. Then turn off the radar to avoid detection, impose strict controls on radios, fuel the aircraft in place with their engines running, put an enemy in the air, and scatter live bombs and rockets around. Now wet the whole thing down with salt water and oil, and man it with 20-year-olds, half of whom have never seen an

airplane close-up. Oh, and by the way, try not to kill anyone" (Rochlin 1987).

This quotation describes the environment in which NAVAIR products must operate. It is a daunting task to field, maintain, and support high performance aircraft which operate in a harsh, salt-water environment, around the world, around-the-clock, seven days a week. The requirement to operate aircraft from ships adds unique design requirements and challenges (Balderson 1995, p.8). For example, aircraft wings which can fold to conserve precious deck and hangar space, robust undercarriages and structural designs to accommodate the stress of carrier operations, specialized landing aids to assist in recovering aircraft at night and or in stormy weather are singular design features not required by any other air force in the world.[1] Salt-water corrosion control and management of a dense radio frequency environment on the carrier deck are two other examples of the singular aspects of aircraft operations at sea. Maintaining these aircraft and their systems 24 hours a day, far away from any shore-based infrastructure is another challenge in and of itself.

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[1] No other air force operates fixed wing aircraft from carrier decks in the manner of the U.S., except for France, which operates only 1 carrier. The French Navy uses NAVAIR test facilities at Lakehurst, New Jersey to conduct arrestment and catapult tests. All other aircraft carriers, Russian, Indian, British, etc., use ski jumps or vertical take-off and landing aircraft.

Getting a critical spare part from the United States to a ship or Marine Expeditionary Force operating thousands of miles from land, halfway around the world in the Indian Ocean is not a trivial task. These are only a few of the requirements of naval aviation which make NAVAIR's mission unique and complicated.

This mission translates into wide-ranging and complex activities. NAVAIR manages development and production of complete aircraft systems such as the F/A-18 Hornet strike fighter, the V-22 Osprey tilt-rotor aircraft, and the F-14 Tomcat fighter of "Top Gun" fame; weapons systems such as the Tomahawk cruise missile and air-launched "smart" ordnance which gained notoriety during the Gulf War, and are proving themselves once again in the recent Balkans conflict. NAVAIR also manages development and production of many other systems installed on aircraft, such as engines and avionics equipment; and on ships, such as the catapults which help accelerate aircraft from dead stop to over 100 knots in less than 200 feet, and arresting cables which carrier-based aircraft "hook" in order to land on the ship's deck, this time decelerating from over 125 knots to dead stop in an equally short distance.

The command provides logistics and engineering support to over 4,000 aircraft deployed around the world, and provides major overhaul and repair facilities to all naval aircraft. NAVAIR and its affiliate, the Naval Supply Systems Command's Inventory Control Point at Philadelphia, Pennsylvania, order and manage inventory numbering tens of thousands of end-items representing billions of dollars in taxpayer investment (Navy 1997).

Long before a system is delivered to the Fleet or Naval Reserve user, NAVAIR's complex support role begins and continues through the useful life of the aircraft or system. Supportability and maintainability considerations are included in designs. A complex network of maintenance locations is established to repair or refurbish systems. In-service engineering capability is maintained to improve or correct deficiencies in systems which have already been fielded. Spare parts are ordered, stocked, and made available to users. System designs, maintenance procedures, and publications are kept current. Rigorous configuration management is applied to systems that have been put in service.

Training documentation and simulators are updated to reflect changes in tactical doctrine and improvements in

maintenance procedures. Accident and safety data is collected and analyzed carefully to explain problems and prevent them from happening in the future. Maintenance and supply data is analyzed by engineering and logistics experts to improve readiness and to decrease life-cycle system support costs.

In Fiscal Year 1992, around the time of the policy decision to move to a competency-aligned organization, NAVAIR delivered the following products:

169 New Aircraft	437 Major Aircraft Overhauls	683 Technical Bulletins
3,199 Missiles	1,541 Engine Overhauls	5,104 Contract Actions
1,446 Targets	173,505 Component Repairs	

Figure 1. Naval Air Systems Command Products Delivered, Fiscal Year 1992 (Bowes 1992, p.19).

This example indicates the scope and volume of work performed by NAVAIR.

In addition to these important functions, NAVAIR manages several aircraft test ranges and fulfills a training responsibility ranging from designing, building and supporting simulators to maintaining instrumented test ranges which are often used to support operational launches which fulfill both training and test objectives. Oversight

of foreign military sales of U.S. naval aircraft is another extensive effort.

This section has described the mission of NAVAIR, how it supports the operating forces of naval aviation, and, by extension, how NAVAIR supports the overall national security strategy of the United States. The next section describes how NAVAIR was organized in 1993, and the many products and services produced by the agency.

Organization

NAVAIR's leadership realized that the agency's existing structure would not be able to meet the challenges facing it. Before discussing the conflicts in the existing structure which provided the impetus for change, it is important to understand how the agency has been organized, and the extent of the changes it has recently undergone. This section describes NAVAIR's organization in 1993, highlighting the scope and breadth of the various functions performed throughout the agency.

At the time the competency-aligned reorganization plan was adopted, NAVAIR employed about 52,000 people at 19 different locations in the United States, Europe, and Japan (Bowes 1992, pp.11-13). The customers of NAVAIR products (U.S. Navy and Marine Corps aviators) were even more widely dispersed--at over 300 sites around the world, including aircraft carriers and other ships at sea. Based on gross revenues, NAVAIR's annual budget of $16 Billion (1997) would place it in the top 50 of "Fortune 500" businesses. When the reorganization was initiated (in late 1993), the Naval Aviation Systems Team (TEAM) was comprised of six principal groups: the Naval Air Systems Command (NAVAIR) Headquarters (NAVAIRHQ), three Naval Aviation Program Executive Offices

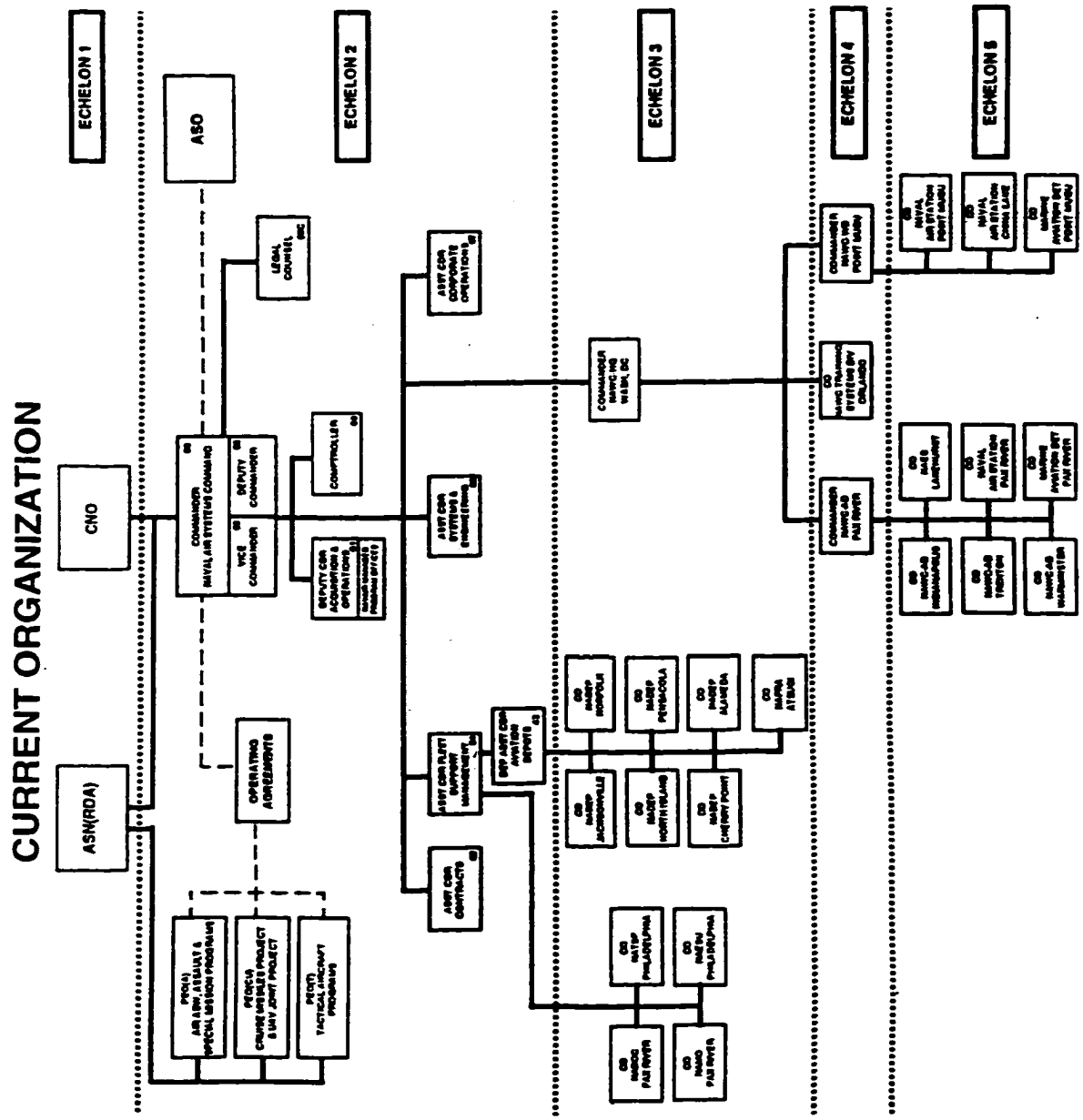

Figure 2. Current Organization, 1993 (Navy 1994b, p.7).

(PEO's), the Aviation Supply Office (ASO), and NAVAIR field activities. Figure 2. displays the overall NAVAIR organization in 1993. This chart shows over 20 field activity commands at numerous locations around the world.

Today, after the reorganization has been completed, and BRAC actions are finished, NAVAIR employs about 32,000 personnel and operates seven major facilities. The number of field activity commands has shrunk to 13, as displayed in the following figure.

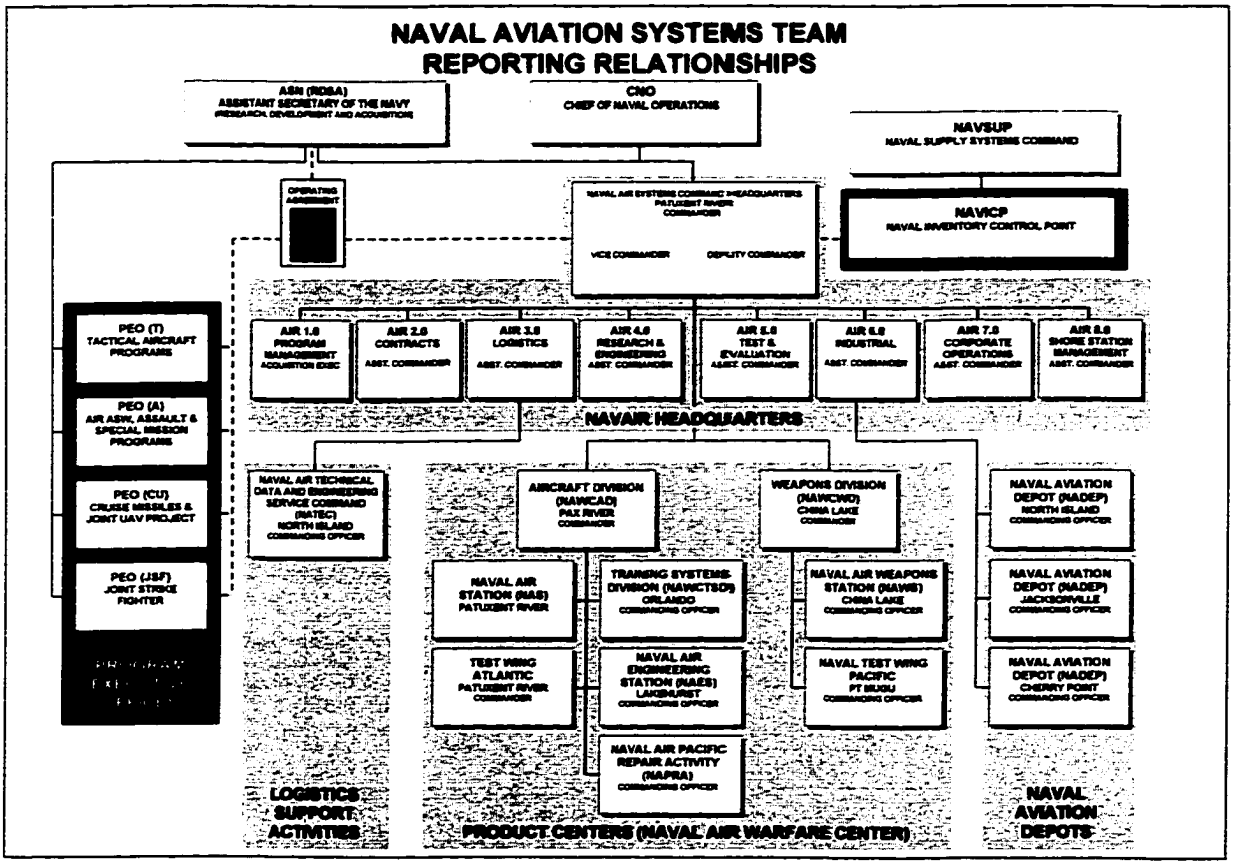

Figure 3. Naval Aviation Systems TEAM Reporting Relationships (Navy, 1999).

Note that the Headquarters organization reflects the addition of the eight core competencies, such as program management (AIR-1.0), contracts (AIR-2.0), etc. The number of depots has shrunk to three, and a number of other commands have disappeared altogether as a result of consolidation and BRAC actions. The impact that these actions had on the number of military command billets will be addressed later in this document. The figures illustrate the magnitude of change that the organization underwent in just a few years.

Major functions of NAVAIR as shown in the figure are the Warfare Centers, comprising three divisions, Aircraft, Weapons, and Training Systems, at five locations. Aircraft Division locations include Lakehurst, New Jersey (design and testing of catapults, arresting gear, and other aircraft-ship interface equipment) and Patuxent River, Maryland (system engineering and testing of airframes, ordnance separation testing, and other systems integration tests). Weapons Division locations in California include Pt. Mugu (tactical system software development and instrumented open ocean test ranges) and China Lake (design and test of air-launched weapons such as bombs, missiles, and guided missiles. Between them, both of these divisions are responsible for

overall systems engineering of new platforms and of enhancements or changes to existing platforms.

For example, adding a kit which enables a gravity bomb to become "smart", that is, accept position data from satellites and steer toward a target illuminated by a laser designator, seems straightforward when seen on the nightly news. The ordnance technician merely unscrews the cap of the bomb, and then screws on the new system, hangs the bomb on the plane's wing, and off we go. What is not seen is the engineering effort to design and test the new system to ensure that it will endure the shock of take off and landing from a ship's deck (and thus be subject to more rigorous stress than a normal landing ashore), interact with the aircraft's navigation and guidance systems, not degrade the aircraft's flight performance throughout its entire flight regime, arm itself and separate cleanly when controlled to do so, and find its way accurately to the intended target. Nor is the planning, acquisition, management, and logistics effort seen which is able to supply the kit at the right place and time where and when it is needed. These (and even more) individual tasks for this one system are all designed and tested either by NAVAIR itself or its contractors.

The Training Systems Division in Orlando, Florida designs, acquires, and maintains trainers for aviation systems. A recent NAVAIR Annual Report listed the following training products delivered to the Fleet: two SH-2G Flight Instrument trainers, six TOPSCENE mission rehearsal systems, three Mission Avionics Systems Trainers for the EP-3 and ES-3 aircraft, 26 countermeasure training aids, two TC-18F trainer aircraft for EA-6 training, a CH-53 COMNAV instrumentation trainer, a control display and navigation unit trainer and computer based trainers for the H-1 Block upgrade, an E-2C Group II weapons system trainer and maintenance trainer, 216 Captive and Dummy Launched missiles, as well as major upgrades to the S-3 Weapons System Trainer and two flight trainers and three maintenance trainers for the EA-6B (Navy 1996, p.13).

Three depot-level repair facilities at Cherry Point, North Carolina; Jacksonville, Florida; and San Diego, California perform complex analyses and scheduled maintenance on aircraft. Additional facilities at Atsugi, Japan and in Europe perform similar work. Each is assigned as particular set of aircraft, engines, and components, since each item to be repaired may require specific skills, experience, tooling, and equipment to make it ready for service again. For

example, the Depot in San Diego, California, located on Coronado Island, is responsible for the following aircraft: E-2, F/A-18, C-2, and S-3; the LM2500 engine, and instruments, communication and navigation equipment, and radar assemblies. In Fiscal Year 1997, these depot repair facilities combined to complete rework and repair on 237 aircraft, 702 engines, and 111,649 components (Navy 1997, p.10). Components include parts of assemblies such as instruments, racks and launchers, rotor blades, propellers, etc.

The preceding discussion outlined the organization and the many products and services it provides. The next section describes NAVAIR's management structure and how issues within this structure became catalysts for change.

Management Structure

NAVAIR's authority structure is complicated. This section will describe the overall management and decision-making structure, and NAVAIR's employment of the matrix form of management which (like all forms of management structure) has positive and negative features. In the NAVAIR case, it appears that conflicts already existing within the matrix structure provided reasons for leadership to want to change it in 1993. The relationship of military command within the structure is also described, and the inherent cost of these layers of hierarchy is discussed.

After various acquisition reform acts were passed in the late 1980's and early 1990's including the Goldwater-Nichols Act, program management accountability within the acquisition systems commands changed. This is relevant, because as discussed earlier, NAVAIR' mission is to *acquire* and support systems. Understanding the program management responsibility and lines of authority within NAVAIR are key to understanding the some of the rationale for beginning the competency-aligned organization.

Acquisition systems commands in the Navy include, of course, the Naval Air Systems Command (NAVAIR) for aircraft and air launched weapons; the Naval Sea Systems Command

(NAVSEA) for ships and submarines, and ship's weapons including missiles and guns; the Naval Space and Warfare Command (SPAWAR) for command, control, and computer systems; the Naval Facilities Command (NAVFAC) for base construction and renovation; and the Naval Supply Systems Command (NAVSUP) for contracting and supply support. Together these various shore-based commands acquire and support the systems and facilities used by the operating forces of the Navy.

Formerly, before the acquisition reform initiatives, program managers for major programs (those with development costs of over $100 million, so-called ACAT ONE or Acquisition Category One programs) reported to and through the leadership of the systems command to which the program was assigned, during all phases of the program's life. After acquisition reform, this responsibility became more complex. Let us build to an understanding of this complexity and its impact on the NAVAIR reorganization, by first describing NAVAIR's leadership structure.

Within the NAVAIR organization, the overall Chief Executive Officer is a three-star flag officer whose title is, "Commander, Naval Air Systems Command." This position reports to the Chief of Naval Operations, who is of course a member of the Joint Chiefs of Staff. In this sense, NAVAIR

is a second-echelon activity, as are the Navy's other major shore-based support commands, the Supply, Space and Warfare, and Sea Systems Commands.

The major programs assigned to these commands are headed by senior one- and two-star flag officers who are titled "Program Executive Officer" for a given area, such as tactical aircraft (Bowes 1992, p.12). Within the large area of responsibility assigned to a program executive officer, different program offices are established and headed by a senior military officer at the captain or colonel rank (0-6). For instance, within the Program Executive Office for tactical aircraft, numerous program managers have been established for different aircraft platforms, one for the F/A-18, one for the F-14, and so on. These program managers develop, defend and execute budgets in support of their assigned objectives. They are accountable to the Program Executive Officer to which they have been assigned.

While a program is in the development phase, these officials report to the Assistant Secretary of the Navy for Research, Development and Acquisition, and not to the systems command with which they are affiliated (Bowes 1992, p.12). This administrative structure was put in place as a result of acquisition reform initiatives in April, 1990, when the

Program Executive Officer organization replaced the Systems Commander as the centralized acquisition authority (Navy 1991b, p. 13, Navy 1991a, p. 1). However, the systems command still has a role in the research and development phase, since the majority of personnel, facilities and support, which these program officials receive, comes from their supporting systems command, even though that systems command does not have direct responsibility for program execution.

In the case of the Navy's aviation programs, support to a given program during development is the responsibility of the NAVAIR Commander. For example, all the personnel supporting a given Program Executive Office, or Program Manager, are on the NAVAIR payroll. Most of facilities which support their efforts (including office space) are supplied by NAVAIR through its overhead budget.

Responsibility for aviation readiness and safety are shared among NAVAIR and the operators of the aircraft, the various Fleet, Marine, Training, and Reserve Commands. All of these positions report to the Chief of Naval Operations, a military officer. The acquisition chain of command (the program management responsibilities described earlier) reports to the Secretary of the Navy, a civilian official.

Thus a check and balance is presumably established between operations and support responsibility and program development and management responsibility. The following figure illustrates these responsibilities:

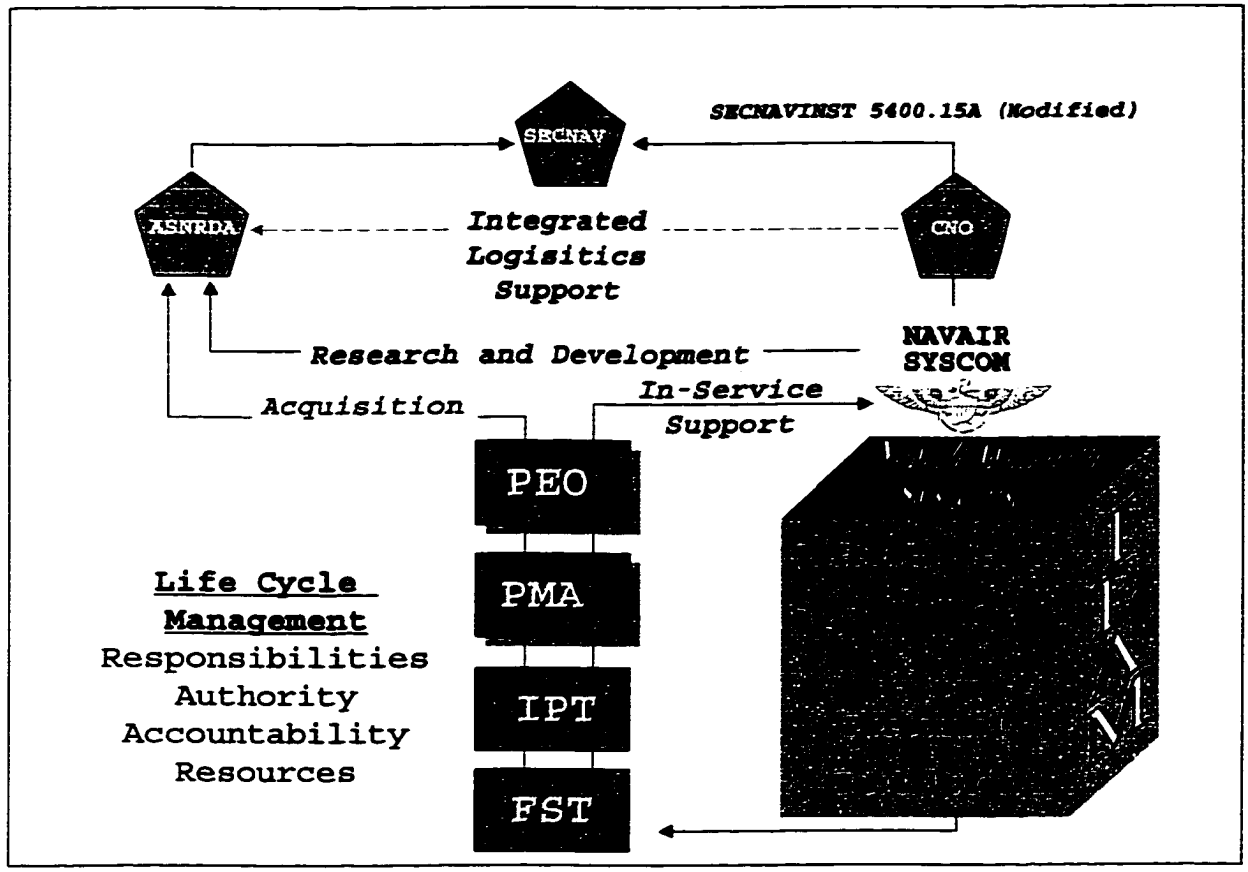

Figure 4. Program Acquisition Reporting Responsibilities (Wenke 1999).

At any given time, a program manager may have multiple teams working on his project, including Fleet Support Teams (FST) and Integrated Product Teams (IPT). These teams are accountable to the Program Manager, Aviation (PMA) for performance of tasks assigned to them. Responsibility for

the overall program rests with the PMA, as shown under the heading of "Life-Cycle Management." In turn, the PMA is responsible to a Program Executive Officer. During the acquisition phase of the program, the PEO reports to the Assistant Secretary of the Navy. When the product developed by the PMA enters service, the PMA/PEO structure is still responsible for the program, but the reporting chain of command shifts to the systems command (NAVAIR in this case), and the operational chain of command (Chief of Naval Operations).

As previously stated, responsibility for follow-on support of a program rests with the acquisition command leadership, once the program transitions from development to operation. So, once a program enters service, NAVAIR is responsible to support and sustain the aircraft throughout its planned life, which can range over 20 years or more.

The Program Managers, who report through the Secretary of the Navy chain of command often have their own program funding appropriated by Congress and are given latitude to make business decisions which affect program execution. The NAVAIR Commander, who is responsible to the Chief of Naval Operations for overall force supportability and readiness, is

charged with providing personnel and other forms of support to the programs.

This form of organizing results in an inherent tension between the "parent" systems command and the program office. The program office is responsible to ensure that its particular platform is developed and supported. The program office reports through an acquisition chain of command to the Navy Secretariat, the Navy's Chief Executive Officer to use the commercial analogy. The systems command is responsible to provide this support but is also accountable for overall optimization of the total aircraft inventory (encompassing all platforms) on such parameters as cost, readiness, etc. The systems command reports through an operational chain of command to the Chief of Naval Operations, the Navy's Chief Operating Officer. Thus, tensions arise when a program decision is made which may be best for the program, but is not optimized from the standpoint of total force sustainment. In some cases in the past, this has lead to the proliferation of stand-alone, or "stovepipe" systems (as they are sometimes called), which meet requirements of a particular program, but cannot inter-operate with other systems.

Although in the NAVAIR case, this has not been prevalent in the recent past. In the view of one informant,

> "I think that the Goldwater-Nichols separation of NAVAIR has not been as traumatic as others have been. And I think that the Assistant Secretary of the Navy for Research, Development and Acquisition has emphatically emphasized that Systems Command (editor's note: NAVAIR in this case) role in advising and having insight on programs." (Informant_10 1998, para.162).

This opinion was echoed by another informant who stated:

> " . . . we gave the program manager full life cycle responsibility, cradle to grave, and I really think its interesting that when you look at the SECNAV (Secretary of the Navy) instruction (on) life-cycle program management, when you look at this comparison between what happens during the acquisition phase of the weapons system and in-service; during acquisition, he is accountable to the acquisition executive, which is the Assistant Secretary of the Navy for Research Development and Acquisition for meeting his acquisition milestones and all the things that are associated with the acquisition business.
>
> "But once you go into in-service, the Program Executive Officer is accountable to Admiral Lockard (the Commander, NAVAIR) for the in-service operation of that platform (Informant_02 1997, paras.388-389).

The intent was that the responsibility for ensuring that decisions are made with a view toward optimizing resources over the entire fleet of aircraft is given to an official who does not have a vested interest in one platform or system, since he has responsibility for supporting all the systems after they enter service.

Recent initiatives such as NAVAIR's affordable readiness program make this point more apparent, and also

illustrate another example of NAVAIR's previously-discussed innovative approach to problem solving. In an effort to free up more funds for modernization and re-capitalization, the Navy is attempting to reduce support costs. As an incentive to cutting sustainment costs for systems over their life cycle, NAVAIR has established a process which taxes all programs (for a combined total of $180 Million over the last two fiscal years) and reallocates these funds to projects which can demonstrate savings through investment. The projects are reviewed and ranked by a board comprised of representatives from the various NAVAIR constituencies: the program executive office, the competency with cognizance over the proposal, the resource sponsor, and the Fleet customer according to an agreed upon set of criteria. Once approved, projects are accountable to spend the money given to them for the purpose it was intended and to meet the goals they proposed. The savings are tracked over several years according to a fixed formula. Most proposals come from program offices who report through the acquisition executive administrative channels.

As an incentive to achieving the goals, the proposed savings are taken from the winning programs in future budget years. This particular approach, called the "affordable

readiness initiative," has served as a model for other Department of Defense components to follow (Wenke 1999). This example also provides an excellent illustration of how a systems command can act effectively and without bias toward one particular program over another to reallocate resources and improve support to the sustainment of an entire fleet of aircraft.

The NAVAIR organization had adopted the matrix form of organization in the late 1970's. This formation combines functional and product forms of organizing into the same structure, and is common in engineering and research and development organizations (Koontz 1984, p.271).

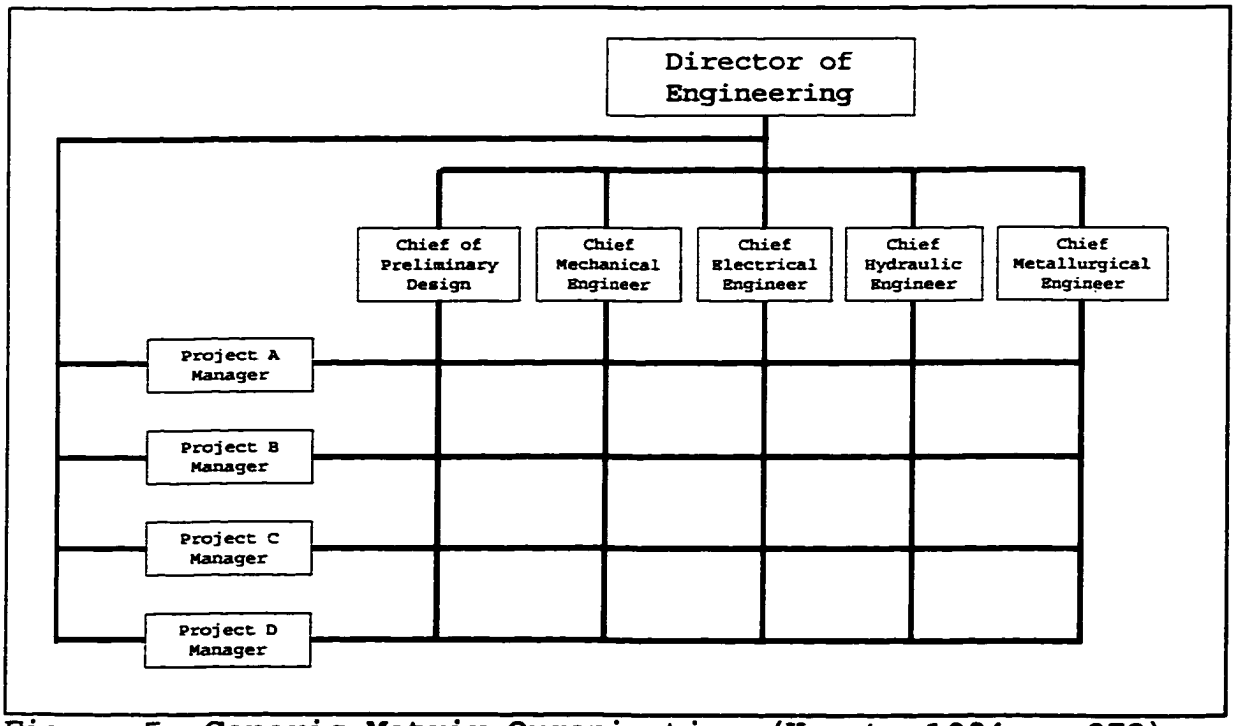

Figure 5. Generic Matrix Organization (Koontz 1984, p.272).

In the matrix organization depicted in Figure 5., each project manager receives assistance as needed from functional managers in charge of engineering functions. The project managers are responsible for the end product, but rely on the functional managers to provide support as needed. This particular form of organizing allows multiple projects to share scarce expertise which alone, an individual project may not have required full time.

In NAVAIR's implementation, functional experts were given approval authority over projects for their particular area of expertise. In the view of many project managers in the NAVAIR organization, this authority had grown too broad and was causing unnecessary delays in program execution. As one informant stated,

> ". . . On the program side having to deal with the matrix as it was called, the functional matrix, and fiefdoms throughout Headquarters that had to approve this or that. As the Program Manager you couldn't do it without . . . you couldn't get flight clearance without 530 for this or that and 411 for this or that" (Informant_09 1998, para.10).

Another informant expressed the same thought a little differently, in terms of risk-aversion:

> "Our biggest thing was that people used to use their technical power to dictate technical solutions to problems to the point where they were over-designed. Over-design is probably the wrong

> word. We would go for a zero-risk approach. In other words, they would do whatever they could to make sure that whatever solution they come up with was zero-risk, minimum risk. That meant a lot more of what I call non-engineering thinking and . . . costs associated with making that work also went up. So, if I wanted to build a perfect airplane, I would make sure I had about 25 prototypes, and I had all kinds of structural tests, and I took forever to do it. And I wasn't ready, willing to look at was there some compromise?" (Informant_01 1997, para.45).

One of the reasons for adopting the matrix organization in the first place is to ensure accountability and focus on the end product. There is a necessary balance which needs to be struck between the project manager, who is focused on only the end product, and the functional manager, who should have a broader, system perspective. This tension is one area of potential conflict in any matrix organization. When the lines of authority between the functional expert and the project manager are not clear or are perceived to be weighted too heavily in favor or one over the other, the situation is ripe for change.

From the project manager's perspective, it appears that the matrix organization in NAVAIR in the late 1980's and early 1990's had vested too much authority in the functional side of the equation for the project management side to be

able to execute programs efficiently. NAVAIR senior leaders typically come from a project management background. Their perspective was key to setting the stage for the new policy to come.

Decision making in the NAVAIR organization is dispersed. The seven organizations mentioned previously are separate commands and have fiduciary responsibility to accept and disperse funds appropriately and to meet budget controls. Therefore, within the scope of their mission, these organizations are given latitude to make decisions regarding their business execution. They have adopted their own individual decision-making methods, often taking into account their site's traditions and customs.

As a result of the competency-aligned organizational structure, NAVAIR is also charged with developing standard processes, which are to be used throughout the organization, across site boundaries. One outcome expected from the reorganization was that significant savings would result from implementing these standard processes. The responsibility for implementing these processes resides with the competency leadership, not the sites. This is another point of contention within the new structure, and this expectation was

only partially met, as will be discussed elsewhere in this dissertation.

At the enterprise level, the forum for corporate decision-making is the Executive Steering Committee, or ESC (Navy 1992, pp.7-8). As in many organizations, a small elite group may make decisions behind closed doors, but most decisions which have wide scope such as those that affect multiple competencies, are discussed and at least, informally ratified by the ESC. In this way, the Headquarters organization makes its decisions in a environment which gives the appearance of democratic process.

One additional factor, which warrants discussion in the NAVAIR case, is the added dimension of military organization, the command structure. Perhaps one of the most distinguishing characteristics of the organization under scrutiny in this case study is the structure of command. Command is a unique responsibility in that in terms of military tradition and legal sanctions, the commander is totally responsible for the morale, safety, discipline, readiness, efficiency of the personnel assigned to the organization and the proper execution of operational and employment orders assigned to it. This includes fiduciary responsibility for net operating results of an

annual appropriated budget. Command authority may be delegated, but command responsibility cannot. This responsibility is binding in the sense of tradition, and also in a legal sense from the standpoint of the military justice system. Legally, then the concept of command is implemented differently under the Uniform Code of Military Justice than authority would be implemented through organizational units in any other large organization. In a military organization, members are held to a higher standard of performance and legal sanctions can be applied over and above the expectations of the civil court system. In this way, command carries with it unique responsibilities.

To meet the responsibilities of command, organizations typically have subordinate functional advisors, such as a financial (comptroller), legal, safety, personnel, as well as others. These functions may be found in any administrative or business organization. What is different about them in the case of command is that they are *required* for each command. This means that each individual command must have its appropriate staff offices to support the responsibilities of the commander. The command requires a certain minimum staff to properly execute its functions.

From the standpoint of efficiency and economy in use of personnel, this is not necessarily the most parsimonious form of organizing. The more subordinate commands and organization has, the more support staffs they in turn must maintain. At the time that the implementation began, NAVAIR had approximately 20 subordinate commands headed by flag officers or senior field grade commanders. At the end of the consolidations and the Base Realignment and Closure Commission (BRAC) actions, NAVAIR had seven subordinate commands.

Understanding the tension created by the implementation of the policy to reorganize between the existing command structure and certain elements of the new organization is key to understanding the challenges faced by the reorganization. This point will be addressed in more detail in the implementation chapter of this dissertation.

Leadership and Workforce

The leadership of Naval Air Systems Command is a combination of senior military and civilian officials. Most of the senior military officers are aviators, air engineering duty officers, or aviation maintenance officers. At the commander/lieutenant colonel (0-5) and captain/colonel (0-6) levels, and rear admiral (0-7,0-8) many have earned masters' degrees in fields such as aeronautical engineering or operations research, and most have fifteen years or more of service, which usually has included at least two assignments aboard ship. These tours typically involve at least one deployment of 6-9 months duration. Most selected to fill program management positions have completed a rigorous 6-month program management course. Some have completed the world-class curriculum of the U.S. Naval Test Pilot School at Patuxent River, Maryland.

Civilians in leadership positions at the GS-14, GS-15, and those in the Senior Executive Service typically have at least 15-20 years of service, and many have earned advanced degrees in management or technical fields. In NAVAIR, many have completed internships or a senior executive management development program, which combines work assignments with a

proscribed program of academic seminars in such areas as international relations, Congressional affairs, contemporary management approaches, leadership development, and other pertinent areas. Some have completed programs at the Naval War College or the Naval Post-Graduate School.

In general, the NAVAIR civil service workforce is well-educated, with 64% of the workforce having earned at least some college credits. As of the end of 1998, thirty-six percent of the NAVAIR workforce held a bachelor's degree or higher (Navy 1998, p.13). This is slightly lower than the national average of about 40% (FEND 1999, p.382). Many of these employees are recognized experts in technical fields such as engineering, logistics, and operations research. This emphasis on technical proficiency is reflected by the fact that the NAVAIR workforce holds higher civil service grades on the average (mean pay grade of 10.9)(Navy 1998, p.1), as compared with the national civil service workforce (mean pay grade of 9.5)(FEND 1999, p.387).

The working level at NAVAIR comprises a wide variety of technical skills and occupations, from artisans in depot activities such as aircraft electricians, metal workers and welders, to computer programmers and network engineers, to radar operators on test ranges. Forty-two percent of the

workforce is employed at a Naval Aviation Depot, reflecting the emphasis on in-service support in the mission of the command.

	Per Cent					Years	
	Male	Female	Minority	White Collar	Blue Collar	Length of Service	Age
NAVAIR	75.5	24.5	22.7	72	28	17.6	45.2
All Federal Agencies	55.3	44.7	29.7	86.6	13.4	16.4	42

Figure 6. Demographics Comparison between NAVAIR and All Federal Agencies Nationwide, 1998 (FEND 1999, Navy 1998).

In general, the NAVAIR workforce is skilled, well-educated, and experienced. It comprises markedly more males than the national average, perhaps because of its emphasis on technical and in-service support functions, which typically have been closed to females in the past. NAVAIR has a higher percentage of blue collar workers in its workforce when compared with the overall Federal workforce. This may also help explain a higher percentage of male employees than the national average. NAVAIR employs fewer minorities than the civil service workforce, nationwide, but NAVAIR's total reflects a higher ratio than exists in the

population as a whole (estimated at by the U.S. Bureau of the Census at 20.9% in 1998)(WorldAlmanac 1998, p.379). The overall length of service at NAVAIR is over seventeen years, which indicates an experienced workforce.

It should be noted that while NAVAIR in some respects can be described as a traditional bureaucracy with clear lines of authority, most of the senior military leaders come from an aviation background and have served aboard aircraft carriers. Anyone who has ever seen the incredible ballet of people and machines that characterizes flight operations on an aircraft carrier cannot fail to be impressed that such complex actions can be carried on safely with a high degree of reliability.

The structure that enables these actions to occur aboard ship is unique and contradicts preconceived notions about military organizations. Consider this passage quoted from a study of aircraft carrier operations:

> ". . . As with many organizations of similar size and complexity, tasks are broken down internally into smaller and more homogeneous units as well as task-oriented work groups. In the case of the Navy, the decomposition rules are often ad hoc and circumstantial: some tasks are organized by technical function (navigation, weapons), some by unit (squadron), some by activity (handler, tower), and some by mission (combat, strike). Men may belong to and be evaluated by one unit (e.g.,

> one of the squadrons), yet be assigned to another (e.g., aircraft maintenance).
>
> "In order to keep this network alive and coordinated, it must be kept connected and integrated horizontally (e.g., across squadrons), vertically (from maintenance and fuel up through operations), and across command structures (battle group, ship, air wing). As in all large organizations, the responsible officer or chief petty officer has to know what to do in each case, how to get it done, whom to report to and why, and how to coordinate with all units that he depends upon or that depend upon him. This is complicated in the Navy case by the requirement for many personnel, particularly the more senior officers, to interact on a regular basis with those from several separate organizational hierarchies. Each has several different roles to play depending upon which of the structures is in effect at any given time.
>
> "Furthermore, these organizational structures also shift in time to adapt to varying circumstances. The evolution of the separate units (e.g., ship, air wing, command structures) and their integration during workup into a fully coordinated operational team, for example, have few, if any, applicable counterparts in civilian organizations. There is also no civilian counterpart for the requirement to adapt to rapid shifts in role and authority in response to changing tactical circumstances during deployment" (Rochlin 1987, p.97).

The flexibility required to integrate the complexity of roles required in the aircraft carrier environment does not fit the stereotype of a "traditional" military organization. Yet it may be an ideal training ground for the kinds of complex structures and roles required by current organizations such as "competency-aligned integrated product

team" forms of organizing. Numerous parallels can be drawn between the structure just described and the NAVAIR organization. One such example was given by an informant who talked about the parallels between shipboard assignments and the new competency-aligned organization:

> ". . . once you transition the language barrier . . . you could almost just kind of see the lights coming on. Oh, okay, so now you've got knowledge, skills and ability with the competency and you perform work on teams. You've got Division Officers training you and you go work on the flight deck. I mean they were able to make that connection" (Informant_11 1998, para.68).

The salient point to be made is that personnel who have performed in the shipboard environment have already performed in a high stress environment which demands flexibility, so it is not too much of a stretch to imagine that military personnel can adapt to a civilian organization which requires similar roles of them, but under much less demanding circumstances in which incorrect decisions are not likely to result in accidents or loss of life.

Sponsorship and Customers

As a subordinate command under the Chief of Naval Operations, NAVAIR's prime resource sponsor is the Vice Chief of Naval Operations for Air Warfare. NAVAIR field activities enjoy project sponsorship from a variety of sources, both governmental and commercial. In view of the unique facilities and capabilities maintained by the command, many "special project" customers take advantage of NAVAIR capabilities. For instance, the Patuxent River facility often hosts Air Force aircraft for anechoic chamber radar testing and Presidential aircraft for antennae testing.

Other significant Navy and Marine Corps stakeholders are the actual operators of the systems and equipment fielded by NAVAIR at over 300 locations around the world. In the Navy, primary centers of influence are the two major Fleet commands, Atlantic and Pacific. These two commands employ the most personnel, use the most resources, and operate the most equipment. It follows that they are also the biggest NAVAIR customers. Through various mechanisms, such as customer focus groups called "operational advisory groups" program managers ensure that system they are developing to meet an operational requirement is still valid.

In the same manner, logistics and maintenance personnel convene working groups such as the "naval aviation maintenance policy committee" and the "naval aviation weapons maintenance policy committee" which include voting representatives from operating forces, reserves, and training commands, as well as the Chief of Naval Operations sponsoring office. In this manner, there is a formal process to develop and change policy governing use and support of systems once they have been fielded to the Fleet customer. Senior leadership of NAVAIR is represented at Department of the Navy and Department of Defense executive level boards, such as the Aviation Board, where major program and funding issues are decided.

NAVAIR's role in Fleet support is pervasive. An engineering change affecting flight safety can ground an entire fleet of aircraft literally at a moment's notice, with resulting affect on readiness and mission capability. Typically, such engineering changes result in modifications or the installation of repair kits which can be installed at planned maintenance intervals. Nonetheless, configuration management and maintaining safe procedures for over 4,000 aircraft is an ongoing challenge.

Commercial Contractors

Industry is an important stakeholder in NAVAIR affairs. Prime contractors, typically large aerospace companies, do billions of dollars of business with NAVAIR each year. The percentage of funds sent to private industry has been continuously rising over time. This is viewed as a positive indicator to Congress and other outside agencies in that it is a crude measure of efficiency. Funding has been decreasing, budgets have been reduced (less input) yet more has been contracted out (more output).

Over the five Fiscal Years from 1993-1997, NAVAIR increased the percentage of funds given to private industry from 69% to 80%, while it funding was reduced from $17.3 Billion to $16.4 Billion during the same period (Navy 1997, p.44). In Fiscal Year 1999, NAVAIR will spend over $14 Billion dollars in the private sector, for a total of 82% of total funding spent in the private sector (Steidle 1999, p.5). This business represents significant revenues to companies such as Raytheon, General Electric, Boeing, United Technologies, and Texas Instruments, to name a few. Many other smaller companies provide significant amounts of

engineering, logistics, and other support services to the organization.

Complex contracts spanning multiple fiscal years and different Congressional budget appropriation types of funding are required to execute a major system acquisition program. Program officials must maintain "arm's length" from contractors according to strict ethics guidelines to minimize the potential for conflicts of interest which could jeopardize government officials' objectivity and ability to get the best value for taxpayer dollars from the contractor.

Most of NAVAIR's acquisitions are transacted with large corporations for initial purchase and support of major aircraft and weapons. For instance, the F/A-18 is manufactured in St. Louis, Missouri by Boeing Corporation (formerly McDonnell-Douglas). Engines for the aircraft are manufactured by General Electric and other equipment, such as radar, by Raytheon. Integration of these systems may be supported by other contractors. Large-scale acquisition programs like the F/A-18 are subject to continuous oversight by Department of the Navy acquisition officials and Congressional committees. One of NAVAIR's competencies, the program management competency referred to as, "AIR 1.0" (Air one point "oh"), maintains a workforce trained in program

management to oversee and manage large-scale programs. Another NAVAIR competency, the contracts competency, AIR-2.0, comprises personnel trained in writing, negotiating, and managing government contracts with commercial industry.

Political Relationships and Rivals

Congressional oversight of NAVAIR programs is on-going, since at any given time, NAVAIR maintains over thirty program offices, spends billions of taxpayer dollars, does business in many Congressional districts, and employs over 30,000 people at numerous sites across the United States. The primary Senate committees that affect NAVAIR are the Senate Armed Services Committee and the Senate Appropriations Committee on Defense. In the House of Representatives, the House National Security Committee and the House Appropriations National Security Subcommittee are the most influential. In addition to normal acquisition program oversight roles performed by Congress, the location of facilities and their appropriate utilization has recently been on the Congressional agenda through the Base Realignment and Closure Commission (BRAC).

The political bases of support for NAVAIR as an agency have not changed significantly during the 1990's. But the old saying, "where you stand depends on where you sit" seems to apply in some cases. For example, Congressman Ron Dellums, who had been a severe critic of Defense programs, suddenly became more supportive of Defense issues when BRAC

action threatened, and eventually closed, the Alameda Naval Air Station in his Oakland California district (Informant_12 1998, para.54).

This example supports the assertion that political support for NAVAIR, specifically, appears to be related more to traditional constituent issues than to party lines or liberal/conservative issues, and has been fairly constant over time. Criticisms of NAVAIR programs seems to have been related more toward failures (real and perceived) in program management, than for strictly partisan reasons.

For example, the official who cancelled the A-12 program for poor management, Defense Secretary Dick Cheney, was a Republican serving in the Bush administration and had previously represented his home state, conservative Wyoming, in the U.S. Senate. The A-12 was to have been a carrier-based, stealthy, attack aircraft which was to have replaced the venerable A-6 Intruder. Cost and schedule overruns which were alleged to have been concealed from DOD and Congressional officials resulted in cancellation of the program.

Officials who routinely support NAVAIR in Congress today are liberal Democrats Steny Hoyer (whose district encompasses several large Defense installations, including

NAVAIR and Patuxent River), and Barbara Mikulski, who counts Aberdeen Proving Ground, Indian Head Naval Ordnance Station, Patuxent Naval Air Station, and Ft. Meade, including NSA Headquarters, among her Defense-related constituents.

Other representatives with NAVAIR sites (equating to jobs) in their district have been strong supporters, including Rep. Fowler from the Jacksonville, Florida district that includes Jacksonville Naval Air Station and the NAVAIR Naval Aviation Depot there, and Rep. Smith from the Lakehurst, New Jersey district that encompasses NAVAIR's Naval Air Warfare Center Aircraft Division facility there (Informant_12 1998, paras.34-46).

NAVAIR, and the defense establishment in general, have recently been through a period of turbulent change: downsizing, the end of the Cold War, the cut back on the shore establishment, and reduction or elimination of many programs. But when asked whether there had been a significant change in relations with Congress over the period from 1990 until now, a seasoned observer answered: "It's been pretty much the same" (Informant_12 1998, para.112).

Rather than inherent interest in the agency itself, perhaps a more important factor in determining the level of Congressional interest in NAVAIR is the programs that it is

managing at any given time. In addition to support by Congress related to specific districts which host NAVAIR facilities, interest from members from Congressional districts and states which host businesses which have significant contracts with NAVAIR is also evident.

For example, the F/A-18 program has enjoyed steady support as outlined here:

> ". . . two Congressmen from Missouri . . . are big advocates for the F-18 and, of course, that is the Navy's #1 priority. If there are any reductions or changes or anything in the F-18 program for the last two years, that has always been the Navy's number one priority to get that changed around and get the programs going back and they have been very successful. Last year they ended up with a 25 million dollar cut in their R&D program and that would have severely caused certain things to not be executable and they were very instrumental in getting that turned around" (Informant_12 1998, para.78).

The continuation of the V-22 program by Congress several years ago over Defense Department objections also illustrates the point. Congressional support from Texas and Pennsylvania (states with districts which stood to lose significantly if the program were to be cut) was instrumental in getting the program restored. One informant summarized the issue succinctly:

> "You know, people aren't just going to mess with them. They want the V-22 and they're just not going to mess with them. They want the V-22

> and they're just not going to give it up" (Informant_12 1998, para.182).

These two examples illustrate the point that program support from Congressional delegations is often more important to an acquisition organization like NAVAIR than support for or criticism of the agency itself.

Another issue which tends to support this claim was the infamous Tailhook scandal. For several years, it was difficult to pick up a copy of the Washington Post without an article referring to "Tailhook." This annual reunion of naval aviators was held in Las Vegas, Nevada each year for many years, and was, at times, characterized by excessive consumption of alcohol and other immoderate behavior.

After the 1993 Tailhook convention, charges of abusive and harassing behavior were brought forth. The first female to allege harassment was assigned to NAVAIR at the time of her allegations, and her supervisor, a one-star admiral, was abruptly reassigned out of a command position at a NAVAIR field activity because of his handling of her complaint. Yet as the story unfolded, not just NAVAIR, but all of naval aviation and, indeed, the Navy as a whole, came under intense Congressional criticism.

During the ensuing outcry, Congressional critics (notably Representative Pat Schroeder, Democrat from Colorado) by extension characterized the culture of the Navy as fostering an atmosphere conducive to sexual harassment. Although NAVAIR as an organization was not under attack during this time, the behavior of a limited number of naval aviators was under close scrutiny, and since the organization was largely comprised of naval aviators, the effect of Tailhook on the morale of the organization cannot be overestimated. Especially since all promotions for all aviators were held up until individuals passed a "Tailhook" test, meaning that they were required to account for their time during the time the convention was occurring whether they attended or not.

The agency itself, however was not criticized so much as a larger macho, military culture which allegedly fostered an environment which was conducive to harassment. The taint, however, remains:

> ". . . if you read anything. Any type of scandal that happened whether it's the Army or the Air Force or Marine Corps or whatever it is. Tailhook is still mentioned in all of those articles. It is still in the back of every one's mind. As a matter of fact, promotions. Guys who are up for promotions and confirmation by the Senate Armed Services Committee. Their names are still flagged as being participants in Tailhook

> and that type of thing. So, no. I mean. I think we have renewed our image, but yet they haven't let us off the hook" (Informant_12 1998, para.106).

It could be said that the United States Navy's Naval Sea Systems Command is one of NAVAIR's biggest rivals in competition for Department of the Navy program funding in that shipbuilding, repair, and modernization represents a large budget item which competes with aviation program funding.

Another political rival is the United States Air Force which performs analogous mission and functions for land-based aircraft as those performed by NAVAIR for sea-based aircraft. Mission area conflicts between the Navy and the Air Force can be traced back to the creation of the Department of Defense immediately following World War II. Over the years, many attempts have been made to consolidate functions and programs, most without success. For example, the TFX program in the 1970's began as an attempt to meet cross service requirements with a single aircraft. It resulted in separate development of the Air Force F-111 and the Navy F-14. Recently, systems such as the Cruise Missile and the Joint Strike Fighter seem to have met with more success.

Areas which have received close scrutiny over the years as candidates for consolidation between naval aviation and the Air Force have included depot maintenance facilities and test range facilities. Some consolidation of workload has occurred, especially as a result of BRAC actions. For instance NAVAIR's jet engine testing facility was closed in October, 1998 and the workload has been transferred to the Air Force's Arnold Air Engineering Center.

During 1998, Secretary of Defense Cohen lobbied hard for follow on BRAC reviews of what he perceives as an expensive and redundant infrastructure. The off-year elections in the Fall of 1998 made the initiative to convene another BRAC unsuccessful, since Congress appeared to have no stomach for discussion of more base closures during an election campaign. However, Secretary Cohen is persistent in his appeal for a new BRAC (Cohen 1999), and it is possible that another BRAC round will be convened. It is expected that discussion will commence once again on the potential for further consolidation of Navy and Air Force aircraft depot maintenance facilities and test range facilities.

And the Navy has never seemed to fair well in competition with the Air Force for appropriations. One informant bluntly stated that in general, the Navy's

relationship with Congress has not been as advantageous as that of the Air Force:

> "It's never been good. I mean it's one of those things that we are not, we don't play Congress as well as the Air Force does. Navy has never been good and that's because they don't like to share. The Air Force for some reason or another, they could just schmooze better than the Navy. The Navy does not know how to schmooze Capitol Hill. Never has. I don't think they ever will. I just don't think it's in their nature. The Air Force is just, they're the crème de la crème for that type of thing and that's why they have always, I mean, you know. C-17 and all that. The Air Force never went through the same problems that NAVAIR did. They should have killed C-17 the same time they killed the A-12" (Informant_12 1998, para.186).

It is likely that this rivalry will continue into the future, due to the potential for more base closings, the ongoing discussion of the appropriate role of defense in U.S. foreign policy, and the inevitable discussion of which missions should be performed by which armed service.

Conclusion

NAVAIR plays an important role in national defense as the primary acquisition and support agency for naval aviation, a key component of the nation's ability to project power. NAVAIR's mission is wide-ranging and complex. Its workforce is skilled and well-educated. Its organization is dispersed widely over the United States. Reductions in budgets, Base Realignment and Closure Commission actions, allegations of a corporate culture which fostered sexual harassment, and program management failures were strong incentives to change. One condition which led to the formation of the policy to reorganize was that conflicts arose between business and project units in the matrix organization. Subsequent chapters of this dissertation will describe and analyze the effect of this structure on implementation of the new organization.

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Chapter 4. The NAVAIR Environment

Introduction

Changes in NAVAIR's environment stimulated the agency's leadership to respond. Among the most salient of these was the end of the Cold War. The reduction in the external military threat to the United States, and the curtailment of defense budgets which followed, has resulted in a diminished requirement for NAVAIR's products and services. This, in turn, resulted in excess capacity and infrastructure, and culminated with the consolidation or closure of numerous NAVAIR facilities.

These numerous outside pressures set the stage for change. The NAVAIR leadership perceived that the agency's survival was at stake, along with decades of naval aviation heritage and tradition. Understanding these pressures is key to understanding their response. This chapter will describe the how the end of the Cold War affected NAVAIR, discuss its resource trends, and the effects of the Base Realignment and Closure Commission on its facilities.

The Fall of the Wall and its Impact on NAVAIR

The breakup of the Soviet Union was one of the most significant events in U.S. foreign policy in the last half of the twentieth century. As one informant characterized it:

> "The biggest impact I think I've ever seen was when about seven or eight years ago, a bunch of Soviet Union sailors went to Washington, D.C. and sang 'God Bless America'. . . I think that was the turning point. When that happened, the whole world changed" (Informant_05 1998, para.206).

The Commander of NAVAIR in 1992 also commented on the geopolitical shift: "We can look proudly on the successes of the past and stand tall for the virtual annihilation of communism as a threat to world peace." However, he added a telling caveat: "But with this success comes change, and change is always difficult to face" (Navy 1992c, p.2).

Along with this radical change in the world politics, U.S. naval military doctrine also had to undergo a fundamental reexamination of basic principles, since it had been focused on containment of communism, and specifically, countering the threat posed by the Soviet military since the end of World War II. These doctrine changes begot changes in operational requirements.

The overall NAVAIR mission has not changed significantly over time: to acquire and support naval aircraft, weapons, and support equipment to meet operational requirements. However, when operational requirements change, systems must be adapted or created to meet the changed requirements.

With reduced funding for new start programs, changes in operational requirements must be met through enhancements to existing programs or weapons systems. So a change in the world political environment does not necessarily mandate a change in the fundamental mission of NAVAIR, but it may mean a change in the programs that NAVAIR manages.

The following discussion illustrates this point using the example drawn from the Soviet breakup. During the early 1980's, at the cusp of the Cold War, Navy doctrine was embodied in the "Maritime Strategy" as voiced by John Lehman who was then Secretary of the Navy. This strategy called for a large blue-water Navy (the so-called "600-ship Navy") which could control the sea lanes, counter the threat posed by Admiral Gorshkov's Soviet fleet, deter conflict though the presence of forward-deployed forces, and if conflict were to break out, escalate the war to include carrier-aviation attacks on the Soviet homeland. The aviation

portion of this doctrine called for long-range interception of threats to the carrier battle group, and especially the carrier itself. One such threat was the Backfire bomber, a capable, land-based, long-range bomber. The counter to this threat was the development of the F-14 fighter with its powerful long-range search radar (AWG-9) coupled with a long-range missile (Phoenix AIM-54) capable of interdicting the bomber threat at distance far away from the battle group. NAVAIR was responsible for fielding the aircraft, its radar, and its missiles in support of this doctrine.

The F-14 was designed and built for this mission: barrier combat air patrol to detect and interdict airborne threats to the battle group. With the downfall of the Soviet Union, this long-range airborne threat diminished.

At the same time, the need for a carrier-based all-weather attack capability, which could employ "smart" ordnance, was growing, due to the retirement of the aging A-6 fleet of attack aircraft. The intended replacement for this aircraft, the planned deep interdiction, carrier-based stealth aircraft, the A-12, was cancelled. An interim replacement was needed until other systems could be fielded.

To meet this requirement, NAVAIR has evolved the F-14 platform into an all-weather ground attack capability which

can employ laser-guided precision munitions (Navy 1994, p.10). This was accomplished by integrating improved targeting capability and existing systems such as the Air Force-developed Maverick missile into the F-14 mission software and fire control regime. All of these engineering changes were managed by NAVAIR and will extend the useful life of the Tomcat into the first decade of the next century (Navy 1994, p.10).

Another example from the Navy which illustrates this kind of change in weapon system development comes from another acquisition command. The Naval Sea Systems Command, or NAVSEA, performs functions for the surface and submarine fleets in much the same fashion as NAVAIR performs for the Navy's aviation community. NAVSEA acquires and supports surface and undersea platforms and weapons such as ships, submarines, and torpedoes. One of the systems developed by NAVSEA is the AEGIS radar system which was originally designed to provide long-range, early warning for air and missile attacks on the carrier battle group.

The USS TICONDEROGA class of AEGIS cruisers was built to detect and counter threats to the carrier battle group, by using missiles, jamming, decoys and gunfire. A very powerful phased-array radar was developed for this purpose.

When the Soviet blue water threat diminished, it became difficult to justify building more AEGIS cruisers, since the need for them had diminished.

At about the same time, the Army was voicing a requirement for theater high altitude air defense (THAAD, in military jargon) which could detect and destroy incoming missile attacks on friendly forces in a theater of operations. Iraqi use of ballistic missiles during the Gulf War helped to give impetus to this requirement.

The Navy already had a highly capable, early warning mobile radar system in the AEGIS platform which could deploy and operate in forward areas (albeit littoral areas). Combined with the STANDARD air-to-surface missile, the AEGIS radar was a potent system, which could be deployed quickly to anywhere in the world in support of ground forces within range of a coast.

Thus, NAVSEA planners recast the AEGIS cruiser platform as not just a capable ocean-going combatant to counter the air and missile threat to the aircraft carrier battle group, but also as a worthy addition to the littoral battlefield of the future in support of ground forces ashore. In so doing, the Navy was able to preserve funding for the AEGIS program. These examples demonstrate how changing doctrine can affect

the uses to which systems procured by a major acquisition command like NAVAIR (in the case of the F-14) or NAVSEA (in the case of the AEGIS cruiser)are put.

So, one particular effect of the post-Soviet change in world politics was a change in U.S. naval doctrine, which in turn revised operational requirements, and caused a redirection of Navy systems command program priorities, including NAVAIR, to meet these changed requirements.

The previous examples illustrate one way in which NAVAIR met these changes--through a decreased emphasis on development and an increased emphasis on changes to existing systems, as well as sustainment to prolong the life of existing systems. Fewer resources are available for development of new systems, but regardless of politics, changes continue to occur in weapons capability, such as seeker technology, and other areas of electronics such as radar and communications, so the requirements also change. The practical solution is for existing platforms continue to be modified to accommodate these improvements.

The change in overall service doctrine was also accompanied by a realization that the reduction in the threat caused by the downfall of the Iron Curtain required fewer standing troops in Europe and elsewhere. The so-

called "tooth to tail" ratio, that is the amount of support (tail) needed to support the fighting force (tooth) was too high. According to the Secretary of Defense, since the height of the Cold War, the overall defense budget has been reduced by 40%; the size of the armed forces by 36%; and, U.S. military presence overseas by 58%.

Yet the large (and in some cases, redundant) infrastructure built to support a much larger force during the Cold War has only been reduced by 21% over the same period. The Department of Defense considers that this excess capacity is no longer needed in the post-Soviet world (Cohen 1999).

Resource Trends

Changes in the outside environment caused NAVAIR to face a number of resource-related issues in the early 1990's. Shrinking budgets, facility closings, reductions in personnel, and program management failures and cancellations all came together during this time. The agency was faced with an unprecedented set of challenges, not only to maintain or improve levels of service to Fleet customers during this period, but even to maintain its very existence. The question facing the NAVAIR leadership was how to respond to the challenges facing the organization.

The overall budget for NAVAIR has followed the downward trend in Defense spending throughout the 1990's. For example, NAVAIR's obligation authority in Fiscal Year 1991 was $16.4 Billion. By Fiscal Year 1993, it had been reduced to $12.8 Billion (Bowes 1992, p.11). This trend actually began under Reagan's second term, and meant a reduction in spending of 39% over the period from 1989-1999 (Hunt 1994, p.30). One informant described the trend in these terms:

> "It was even before that, you know with the Reagan budget. If you look at the budget I think it started heading south in '85/'86/'87, and the inertia flywheel effect was there without DOD build-up, and the Berlin Wall came down and it was sort of ... starting to move to the south from the

budget standpoint . . ." (Informant_13 1998, paras.48-51).

The numbers of NAVAIR employees were also reduced over the ten-year period from 1989-1999:civilian (-44%) and military personnel(- 34%)(Hunt 1994, p.30).

Overall budget reductions also had other effects, and when combined with poor NAVAIR program management and oversight, a series of vertical program cuts and cancellations resulted. Two NAVAIR programs which were terminated were a future maritime patrol aircraft program, the P-7, which was to have replaced the venerable P-3, and a new stealth deep-strike attack program, the A-12, which was to have replaced the aging A-6 (Earner 1992, p.14). These were major program management gaffes costing billions of taxpayer dollars, as one informant put it:

> "Yeah, and let me just put that in a broader context. When you look at where NAVAIR was from an external view, we didn't have a good track record. Also at the same time, Tailhook had just happened. From any benefit of the doubt, naval aviation was gonna lose because of the political side. Really, you had Tailhook which was just kind of in the background. But then you had--we failed on a bunch of programs, we failed on the A-12, we had tremendous cost increases on a lot of programs. P-7, A-12, we canceled the A6F. . . Altogether, (and I think this is the right number) we had spent about $12 Billion and we had nothing to show for it. Nothing tangible, we had a some

prototypes, or half-prototypes, but that's about it" (Informant_01 1997, p.12).

The effect that the A-12 cancellation had on NAVAIR was profound, causing an abrupt change of leadership at the level of the commander, and other senior positions (Navy, 1992a, p.1). The process also drew a lot of senior management attention to the command, including an overall review of NAVAIR compliance with the Department of Defense Review direction on program management (Navy 1991, p.5).

One informant characterized the event as a "wake-up call":

> ". . . P-7 and A-12 were a wake-up call for everyone, you know. I think we were still in the era where there's a lot of money going around and we can do whatever we want to with it and I don't think there was scrutiny or whatever. Maybe we just "got too big" type of thing and they couldn't keep their hands around it. So, I think, you know, it was bad enough it happened with P-7, but then, when A-12 went. I think it just really knocked us in the head. We've got to wake up here. It ruined a lot of people's careers, A-12 did. Unfortunately, good men, you know. They were good leaders, but they just let themselves get burned" (Informant_12 1998, p.162).

The effect was to inject a large dose of "risk aversion" into every program manager's veins for several years to come. No one wanted to be the next victim of or newspaper story about "poor program management" in the Navy.

In addition to the effects of the A-12 cancellation, other factors in the NAVAIR environment were changing. The number of aircraft carriers was reduced from 15 in Fiscal Year 1992 to 12 beginning in Fiscal Year 1994 (Navy 1994, p.5). Another part of the story was the increasing age of the aircraft in the naval aviation inventory. Over the 20-year period from 1973-1992 the average age of an aircraft in service grew from a little over 8 years to more than 14.7 years (Bowes, 1992, p.23). Additionally, deployment schedules did not change significantly, so high levels of service to NAVAIR's Fleet customer needed to be maintained.

Fewer aircraft to support, and reductions in program development funds meant that fewer engineers and technicians would be required to develop new systems. Fewer research and development laboratories and test range facilities would be required to test the systems. With a smaller fleet of aircraft in service, fewer repair facilities such as aviation maintenance depots would be required to conduct aircraft overhauls. This reduced requirement for infrastructure meant that facilities could be closed, and the mechanism to accomplish this was the a Defense Department-wide reduction in infrastructure: the Base

Realignment and Closure Commission, or "BRAC" as it came to be called (Johnson 1992).

Base Realignment and Closure

The Base Realignment and Closure Commission (BRAC) had important implications to NAVAIR, since a number of NAVAIR facilities were consolidated or closed as a result of BRAC actions. The process also proved to be an important part of the NAVAIR leadership's decision set, since it enabled politically difficult decisions like closing facilities to go forward with the support of Congress. In fact one informant characterized BRAC as presenting an opportunity, as well as a challenge, because it allowed downsizing without the customary Congressional required approvals (both formal and informal):

> ". . . it would have been much harder to have done these consolidations, the closures and that type of thing. Because you would have had to have gotten individual approval from Capitol Hill to do that. Well, it's never been successful, you've never been successful in closing a base until BRAC came along. So, you know. BRAC kind of helped us do what we needed to do in order to consolidate. That was the one involvement that Congress did have that, I think, was beneficial to us and allowed us to do that. But, they didn't meddle in how we did it. They didn't" (Informant_12 1998, para.298).

NAVAIR activities were subject to two rounds of BRAC, in 1991, and in 1993; the result: five major facilities

closed, one relocated and one privatized. The trend in reducing NAVAIR infrastructure actually began with the Defense Management Review in 1991. This initiative focused on the Department of Defense's research facilities with a goal of streamlining and consolidating them (Johnson 1992, p.25; Navy, 1992b). As a result, functions were consolidated, and many laboratories across the Navy came under different management. The Naval Weapons Center, China Lake, California, and the Naval Air Development Center, Warminster, Pennsylvania transferred into the NAVAIR organization.

As described earlier, Base Realignment and Closure Commission actions closed the following NAVAIR facilities: a small weapons development activity at Albuquerque, New Mexico in Fiscal Year 1993; three aviation depots: Pensacola, Florida in Fiscal Year 1995, and Alameda, California and Norfolk, Virginia in Fiscal Year 1996; two engineering laboratories: one for engines at Trenton, New Jersey, and the air development center at Warminster, Pennsylvania in Fiscal Year 1997.

Also in Fiscal Year 1997, the Headquarters in Arlington Virginia moved to Patuxent River, Maryland. During the same period of time, the Naval Avionics Center at Indianapolis,

Indiana, was contracted out, "privatized," in the popular parlance. Any unbiased observer would acknowledge that this was a major reallocation of assets. Certainly, its scale was not unprecedented in the private sector, but it was nonetheless a challenge to implement.

Most observers admit that before BRAC, and given the reduction in resources which occurred over several Fiscal Years, there was an oversupply of infrastructure (note the layering of command staff redundancies referred to earlier in this document). As one informant put it: "Absolutely. I know at one time in the Depot Corporation we had redundant capability. We were dual-sited for a lot of our repair capabilities ...through the BRAC process that was eliminated" (Informant_06 1998, para.5).

Excess capacity, combined with the consideration that the BRAC process afforded an opportunity to shed facilities without the customary Congressional scrutiny were considerations in the overall base closure decision matrix. There was a feeling among the NAVAIR leadership that it needed to control its own destiny as much as possible during this period. As one informant put it:

> "... we looked at what we could. I mean, when we looked at and did the analysis of what activities were beneficial to the Navy and what

> they weren't and they passed different scenarios to us . . . if we consolidated it here in accordance with what we're thinking about with our competency aligned organization we could get these types of cost benefits and so it might sway one way or another as to what went on the list and what didn't although I do have to say I think NADEP Norfolk was a shock to a good many people that that ended up on the BRAC list and stayed on the BRAC list. I think that was a big shocker. I don't know how much of a shock it was to our senior management. They probably knew it was going to be there. I don't know if they thought it would stay there, but, you know. We really, you know, BRAC helped us, I think" (Informant_12, 1998, paras.294-298).

Another informant stated more emphatically that BRAC presented an opportunity for change:

> ". . . BRAC came about, so what we tried to do was to take the opportunity to take a negative thing and turn it into a positive. Look for how to create an organization that could meet our customer needs as far as . . .how to do program management better" (Informant_01 1997, para.14).

It is apparent that BRAC decisions had a wide reaching impact on NAVAIR. The decision to close a facility had a number of ancillary effects. For instance, even though depot workload was projected to decrease over a number of years, existing workload at six depots had to be absorbed into the capacity of the surviving three depots or be out-sourced to other DOD organic depots or contractors.

Conclusion

Naval aviation leadership was faced with a dilemma. A reduced threat caused program cuts and resource reductions. The deployment schedule did not significantly change; the effect of this operational tempo on the remaining, aging fleet of aircraft would make them more expensive to maintain over time. There would be no money for new start programs, so in-service engineering changes would become more frequent. The infrastructure was mandated to shrink.

The NAVAIR leadership was facing a daunting set of circumstances. How would it respond?:

> "And I got to tell you we were under a threat. There were several major parallel studies that went on. Single Syscom, I can't remember the name of it, but it was giving up our mission to the Air Force; a DOD study, regionalization of (Test and Evaluation) activities, that kind of stuff. All those things were somebody else out for a grab or something. So we sort of took the bull by the horns, and said this is what we're going to do. Told people what we're going to do and did it" (Informant_10 1998, para.190).

Indeed, the issue was organizational survival, and there was a great deal of pressure for constructive change. One writer summarized the challenge this way:

> "The message to this command, driven home by the Navy's decreasing budget and strategy to

> remain a viable fighting force is unequivocal. We must become smaller and change the way we do business. . . Even with the closures and relocations, it is clear that our current organizational structure and operations cannot be sustained with the extent of this drawdown. It is also clear that if we are going to survive, we must radically change the way we do business!" (Hunt 1994, p.24).

The response to these changes in the environment was to develop and implement a policy to reorganize. The next chapter will describe how this plan evolved and was put in place.

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Chapter 5. The NAVAIR Reorganization

Introduction

Changes in world politics led to reductions in NAVAIR's resource base. Senior leadership perceived that a radical restructuring of the agency was necessary for the organization to survive during the 1990's and beyond.

> "Admiral Bowes felt that he had to take advantage of the moment. Buy ourselves a future. If we didn't do it, somebody else would do it for us. So that's when he stood up this team and said I want a clean sheet of paper--come up with a new concept of operations for NAVAIR. How're we going to operate. What we do, why we do it, how should we do it, how should we organize to do it" (Informant_09 1998, para.12).

NAVAIR's policy decision for a new concept of operations and a reorganization to implement it was grounded in theory, and in the organization's experience with process control methods that had been applied in NAVAIR's industrial

production environments in Norfolk, San Diego, and Indianapolis. This chapter will describe the theoretical basis for the reorganization plan, and then describe the plan itself.

The policy to reorganize NAVAIR, including the initial reorganization plan, evolved from three independent threads of change already ongoing in the organization. In NAVAIR at that time, there were six aviation depots whose work is described in Chapter 3. At two of these depots, initiatives had begun (as a result of numerous total quality initiatives (commonly referred to as, "TQM," or "TQL" for Total Quality Management or Leadership, respectively) which had been underway for some time. One of the by-products of this methodology was to create organizational structures centered around teams. In the words of one manager who worked at an aviation depot in the early 1990's:

> ". . . the Depots had always I think had been light-years ahead in the world of TQM. . . I think that's why a lot of the quality awards that we won over the years as a NAVAIR team came out of the Depots, because of the process work that we had done down there" (Informant_06 1998, para.375).

Another informant described the depot environment with respect to quality management initiatives:

> "it varied by depot . . . there were huge cultural issues between the six that we had at the

> time. Now you look at individual Depots, some of them are a little bit more enlightened than the others. Norfolk seemed to have had a tradition where they really gotten into TQM under Garland Skinner, (a former commanding officer of the Depot) . . . he was basically the inspiration behind Admiral Kelso and the Navy getting into TQL or TQM . . ." (Informant_13 1998, para.18).

In another Naval Aviation Depot, the recurring threat of Base Realignment and Closure (BRAC) over several years served to as an impetus to change:

> "So that (BRAC) was a big wake up call and said something had to change and it had to change quick because there would be more BRAC's. So we streamlined our organization at that time and really moved to teaming at that point in time. So when competency-aligned came along, the aspect of competency-aligned organization that said we were going to have a team-based organization--we were there" (Informant_03 1998, para.388).

These comments illustrate that in one major part of the organization, industrial depots, teams had already been formed around major product lines, and had been functioning for some time before the overall corporate competency-aligned organization was implemented (Informant_06 1998, paras.361-362).

Another NAVAIR field activity, the Naval Avionics Center in Indianapolis, Indiana, is often cited as being pivotal in the early stages of formulation of the policy to reorganize (Informant_08 1998, Informant_13 1998). Until recently, this location was part of the Naval Air Warfare

Center Aircraft Division. It underwent privatization in the mid-1990's and is now a contractor facility. The work of the center was to design and manufacture avionics sets for naval aircraft. Due to its mission, the Indianapolis location employed an interesting workforce mix of white collar engineers and computer scientists, as well as skilled blue collar technicians and assembly line personnel.

> " . . . the NAWC (Naval Air Warfare Center) and specifically the NAWC-AD (Naval Air Warfare Center Aircraft Division) crowd was really sort of the leading edge of some of the things that took place in IPT-CAO (Integrated Product Team Competency-Aligned Organization), and probably the leading edge of all those, that I've come to find out, is NAWC-Indy (the Indiana location). . ." (Informant_13 1998, para.18).

Policy developed at this NAVAIR site played a key role in the eventual NAVAIR-wide policy which was adopted throughout the organization. The role of the Indianapolis site will be described in more detail later in this chapter.

However, before discussing the details of the reorganization, it may be helpful to provide the theoretical background for the NAVAIR reorganization, so that the policy development and the plan for reorganizing can be put in the context of some of the larger themes of organizational development which have evolved since World War II. Where

did the concepts put in place at Norfolk, San Diego, and Indianapolis originate?

Organizational theory is mentioned often by informants interviewed during this research as guiding the development of the NAVAIR competency-aligned organization. Since at least the mid-1980's, concepts such as Total Quality Leadership (TQL) or Total Quality Management (TQM) had been in use in the NAVAIR organization. These approaches emerged from the industrial engineering field, and were popularized by W. Edwards Deming and his followers. Deming gained notoriety for his work in post-World War II reconstruction of the Japanese industrial base.

Concepts such as organizational "core competency" and "reengineering" which emerged from the business and organizational development literature of the late 1980's and early 1990's had begun to be popular (ironically in response to the perceived inability of American firms to compete with the Japanese in the global marketplace), and various authors had published books and articles expounding these notions.

Both of these clusters of ideas had a direct affect on the startup of the NAVAIR reorganization. This assertion is not simply an inference. Participants in the original

reorganization study team were conversant with the some of the organizational theory authors as evidenced by the following quotation from one of the original implementation team members:

> ". . . and the group, I will tell you when you first got involved, the first thing they did is they made you read the book *Re-engineering The Corporation*. So we were probably one of the first groups I think to really take this and do something with it. And if you look through *Re-engineering The Corporation* and you notice it has a vintage of about 1993, so we may have actually been one of the first groups to use it" (Informant_05 1998, para.52).

This particular informant contrasted the two theoretical themes of TQM and reengineering in this fashion:

> ". . . And they were looking for something because they knew that unlike prior reorganizations, this had to be fundamental, radical, all of those things. If you look at the actual book, you will find that it uses almost all of those terms, fundamental, radical approach; *not a TQM* (emphasis added) approach where you do incremental process improvements, but a much more radical approach" (Informant_05 1998, paras.66-72).

This comment illustrates not only that the participants in planning the change were familiar with the theoretical basis for the reorganization, but could also compare and contrast differences between them. These themes will be explored more fully in the next section.

Theoretical Basis for the Reorganization

This section which will provide an overview of the management and organizational literature on the concepts of "integrated product teams" and "competency," which became important notions in the new NAVAIR organization. The interplay between hierarchy and more horizontal forms of organizing, as well as and the information technology capability required to implement the new policy will also be discussed.

Corporate organizations in the 1990's were very different from the model of hierarchical, authoritarian bureaucracy which was characteristic of leading firms at the turn of the last century (Koehler 1996). "Global competition requires corporations to replace obsolete, top-heavy management structures with lean, energetic, and flexible organizations, and IT (information technology) will play a major role in that change. To achieve this, forward-thinking corporations are simplifying their capital structures and decentralizing decision-making. Information technology makes new forms of capital and organizational management possible" (Vincent 1990).

Like their corporate counterparts, governmental organizations are also undergoing fundamental changes. Vice President Gore's initiative to "reinvent government" and the development of new public management strategies to "do more with less" are characteristic of the challenges which confronted public organizations in the 1990's. In addition to the broad emphasis placed upon reinvention of government, national security agencies, in particular, have been targets for change due to the end of the Cold War. This assertion is born out by the downsizing trends in Federal employment in the Washington area during the last decade of this century (Causey, 1997).

Department of Defense agencies, large aerospace corporations, and others have adopted a method of organizing which is to group employees into semi-autonomous teams to accomplish their work. Typically, these teams are expected to produce a particular result, or product, and hence are often referred to as "integrated product teams." In some organizations of this type, the employees who comprise the product teams are employed by a number of different subordinate, related elements, widely dispersed across geography. In fact, one author states that: "Unlike

conventional teams, a virtual team works across space, time, and organizational boundaries with links strengthened by webs of communications technologies" (Lippnack 1997).

In these cases, it is assumed that a communications infrastructure is necessary to enable employees working in the team environment to communicate across the boundaries of time and distance (Mankin 1996). This assumption is relevant to the NAVAIR case because, as part of the implementation of the reorganization, an improved communications capability (the Naval Aviation Systems Team Wide Area Network, NAVWAN) was installed to accelerate change and to enable the reorganization of personnel and functions.

Paradoxically, in this case, the team organization construct, which tends to emphasize distributed communications over more hierarchical forms of interaction, is being implemented within a hierarchical, military organization with well-understood chains of command. Some have argued that this does not necessarily inhibit the adoption of the team form of organization (Lippnack 1993, Lippnack 1994). Organizations, like individuals, can and often do adapt their structures to meet operational

requirements. In fact, one study of operations aboard aircraft carriers states:

> "Our team noted with some surprise the adaptability and flexibility of which is, after all, a military organization in the day-to-day performance of its tasks. On paper, the ship is formally organized in a steep hierarchy by rank with clear chains of command, and means to enforce authority far beyond those of a civilian organization. We supposed it to be run by the book, with a constant series of formal orders, salutes, and yes-sirs. Often it is, but flight operations are not conducted that way" (Rochlin, 1987).

This example is important to the case under study because many of the military personnel in the NAVAIR organization worked within this environment at some point in their career. So, the NAVAIR case may possess some unique characteristics, because it is possible that the training and experience of its particular military personnel (naval aviators, engineers and maintainers) enable them to more readily adapt to teaming and assuming different roles dynamically. This tension between these two potentially conflicting paradigms, hierarchy and teaming, will be described and examined as part of the larger discussion of the challenges of implementing change within the NAVAIR organization in Chapter 6.

Why do organizations adopt the team form of organization? NAVAIR's previous organization form was a modified matrix organization. Various authors have commented on the difficulty of managing in this form of organization (Kolodny 1981, Koontz 1984). Reasons cited for adopting this form or organization are outside pressure for a dual functional and product focus, a need to process large amounts of information simultaneously, and pressure for shared resources (Kolodny 1981). All of these factors have been present in the NAVAIR environment for some period of time, and continue to be present today. The matrix is seen as a compromise between functional and departmental departmentation. However, this compromise is not easily achieved. So the question may be one of how was the matrix form of organization working for NAVAIR? If it was not working, what led NAVAIR to change from the matrix to the product team form of organization at this particular time?

Answers to these questions are relevant to the research tasks because they may help explain why NAVAIR adopted the team form of organization that may have increased the political power and influence of some organizational components with respect to others. Chapter 3 provided a

description of NAVAIR's matrix organization. The discussion revealed that informants believed that the functional management side of the matrix organization had grown too powerful. To correct the situation, the project management side of the matrix needed to become more in control of the factors which affected its ability to deliver its products on time and within budget. The conflict introduced uncertainty into the organizational environment.

One author posits that organizations reduce uncertainty of this kind by selecting alternatives from a limited set of options. NAVAIR apparently adopted one of these approaches from a set proposed by J. R. Galbraith: to provide more information required to make decisions to different levels in the system. In his terms, the option chosen by NAVAIR was to develop "lateral relations which in turn create selective forms of joint decision making that push the decision-making process down the organization to where information is available." Examples of these types of implementation include direct contact between people who share a problem, use of liaison and coordinator roles, task forces, teams, and matrix organizations. "These strategies . . . ease the ability of organizations to handle non-

routine problems for which they cannot plan" (Galbraith 1974, quoted in Morgan 1989). Thus in these terms, NAVAIR elected to adopt the team form of organization as a means to shift responsibility for decision making to different levels in the organization.

On a more limited scale, one of the depots which had experimented with teaming found this to be a successful consequence of accomplishing work through teams:

> "The major thing is we put all the folks together that could control the process and we weren't stovepiped like we were before where production controllers worked in an organization and reported through a production controlling organization and direct labor, the workers, worked for another organization, and our industrial support worked in another organization. As we put all those elements in a team and gave the team the objectives, then they went after them. And, it took a long time. It's not something that happens like magic overnight. Once you start making improvements and start doing it, they start interrelating themselves, and wanting more and more control. As long as we can get the proper metrics in place, they can have all the control they can take. We don't fight it anymore. We try to push more and more control to the teams, as long as we can get the metrics in place first. Then they can take the control so we can measure results. . ." (Informant_03 1998, para.416).

This example illustrates how one component of the new organization uses teaming successfully, and as a consequence, has distributed decision-making to lower levels in the

organization and with greater autonomy than had been done previously.

As alluded to in earlier chapters, another key part of the explanation for developing new policies, and adopting new structures is as a response to changes in an organization's environment. Post-industrial organizations are faced with increased complexity, increasing amounts of information which must be processed, and increased turbulence (Huber 1984, quoted in Cashman 1989). Thus one of the critical challenges to organizations in this environment is to manage complexity. Huber suggests that quicker decision-making and innovation, coupled with using teams, as some of the strategies that might be employed to address these challenges. Another author lists major issues for contemporary organization theory. Among these are the impact of information technology and the strategic role of "knowledge workers" (Reed 1993). Clearly, the adoption of a team-based organization has implications for both of these areas. Management literature seems to indicate that team-based organizations have positive impact on employee motivation and productivity, and are able to adapt to change readily (Boylett 1991, Davidow 1992).

The particular culture of naval aviation gives credence to the notion that team-based organizations are able to adapt to change readily. As one study states:

> "Flight operations and planning are usually conducted as if the organization were relatively "flat" and collegial. This contributes greatly to the ability to seek the proper, immediate balance between the drive for safety and reliability and that for combat effectiveness. Events on the flight deck, for example, can happen too quickly to allow for appeals through a chain of command. Even the lowest rating on the deck has not only the authority but the obligation to suspend flight operations immediately, under the proper circumstances, without first clearing it with superiors. Although his judgment may later be reviewed or even criticized, he will not be penalized for being wrong and will often be public congratulated if he is right" (Rochlin 1987).

The comment illustrates two concepts: the ability to adapt to change, overlaid with the ability of the team structure to be accommodated within the military hierarchy.

In the NAVAIR adoption of this new form of organization, employees are grouped based on their skills, and are made available to work on product teams based on these groupings of individual competency groupings, appropriately dubbed, "competencies," in the NAVAIR case. "Flexible, fast, loaded with talent, the small-team model is the most popular and widespread alternative to bureaucratic organization" (Naisbett 1985). In the NAVAIR case, this

form of organization is called a "competency-aligned organization." This concept comes from the notion that corporations should determine what their mission and goals are, and focus on the core competencies which support these strategic objectives (Prahalad 1990). The concept of "competency" as it has been employed in NAVAIR will be described in more detail later in this chapter. In Prahalad's use of the term, NAVAIR uses the concept of organizing into teams to produce core products using core skills to accomplish its objectives.

In many cases, these teams become semi-autonomous (referred to as "self-directed" in the literature) (Peters 1987, Dyer 1994, Koehler 1996), and are subject to much less management control than under a traditional hierarchical management mode. Management change author Michael Hammer describes this effect: "When a whole process becomes the work of a team, process management becomes part of the team's job. Decisions and interdepartmental issues that use to require meetings of managers and managers' managers now get made and resolved by teams during the course of their normal work" (Hammer 1993). In the NAVAIR case, this

assertion is confirmed as evidenced by the following excerpt from an interview:

> "Q: . . . What you are saying is turn-around times or cycle times to do this particular process are reduced or costs are less than they used to be?
>
> A: Yeah and give them the tools. I mean we're pushing budgets. Budget formulation used to start in the budget shop; it starts in the teams now. They have control over their budget, development, execution, the whole works. It's really incredible. Some of the things that are going on" (Informant_03 1998, paras.430-433).

One consequence of implementing this approach is that layers of middle management are reduced, resulting in a "flatter" organization structure. Naisbett characterizes this result: "We are witnessing the beginnings of a tremendous whittling away of middle management, a flattening out of those hierarchies that were the norm in industrial America" (Naisbett 1985).

What is the purpose of middle management? One management theorist summarizes the value of middle management by stating that it plays three key roles: knowledge repositories for front-line and operational units, specialized expertise for making the difficult decisions often avoided by front-line units, and decentralizing decision-making responsibilities. Appropriate implementation

of information technology can fulfill many of these functions in a service organization. The result: accountability is pushed lower in the organization, decisions are made more quickly, and fewer costly personnel are required (Heygate 1991).

David Vincent agrees: "The industrial age required large numbers of middle managers to interpret and relay information. Today, they are being squeezed out of the organization. Senior management is pushing accountability and authority down the organizational ladder. The result is smaller, highly responsive, and flexible entrepreneurial units." Vincent describes these units as small (fewer than 30-person) teams which are mobile and communications-efficient. In his opinion, corporate infrastructure is required to integrate and align team efforts with overall direction of the corporation. Information technology makes this integration possible (Vincent 1990).

The literature suggests that one of the common outcomes of a "reengineering" effort is to do work through organizing into teams (Denton 1991, Johansen 1989, Koehler 1996, Peters 1987, Simon, 1996). However, NAVAIR did not undergo extensive "reengineering" efforts across the entire

organization before the reorganization, so its implementation may not have been done entirely according to the methodology. As one informant stated:

> "Another implementation issue that's yet to be done. So we're working on that, so we're not fully implemented because we don't have all of our processes defined. And, especially processes that cross multiple boundaries. The engineering-logistics processes and all that. Some people will yeah, say that the engineers have got their processes defined. But, they 're very narrowly defined. And we're taking on the issue of joint process definition and all that to go do that. We had a process team to do that and it didn't do that, it didn't work . . ." (Informant_02 1997, para.260).

This may account for mixed results and NAVAIR realizing only part of the expected benefits of the reorganization. However, with a complex effort, this may have been necessary. In fact, another informant stated that the decision to forgo reengineering and process redesign work until a subsequent phase of the plan was a conscious one, and based on a rational assessment of what could be realistically accomplished:

> " . . . Now, we also, I think, will be the first to admit the thing we didn't do enough on was processes. We organized around processes and competencies, but then we had to close bases. Then we had to move headquarters to Pax River, then we had to downsize. We had to take budget cuts. We still were getting through A-12. We were drained over so many things that whether we

> consciously did or not, we moved processes down the road a little bit and shifted it to the right. And as you know, we are just now getting back and focused on a lot of that today with Admiral Lockard, he's pretty well dedicated that for the rest of his time period at NAVAIR, he's got us focused on processes, doing the things we probably should have done early on. I don't know how we'd have been able to do all this early on quite frankly" (Informant_05 1998, para.116).

The work on processes is ongoing within NAVAIR. A new round of "business process reengineering" or BPR studies is underway at present (Steidle 1999). These studies are taking place at least a year past the "official" end date of the reorganization policy, October 1997.

In the NAVAIR case, the new organization form is overlaid atop a traditional military hierarchy. In a military hierarchy, "middle management," does not serve the role of "interpreting" information in the same way that it does in a business organization. However, it may serve similar functions with respect to management of information flow and serving as in the role of custodian of institutional knowledge. Indeed some research suggests that (to wit the old adages about non-commissioned officers: "the chiefs run the Navy" and "master sergeants run the Air Force"). Indeed as one article suggests:

> "Behavioral and cultural norms, SOPs, and regulations are necessary, but they are far from sufficient to preserve operational structure and the character of the service. Our research team noted three mechanisms that act to maintain and transmit operational factors in the face of rapid turnover. First, and in some ways most important, is the pool of chief petty officers, many of whom have long service in their specialty and circulate around similar ships in the fleet. Second, many of the officers and some of the crew will have at some time served on other carriers, albeit in other jobs, and bring to the ship some of the shared experience of the entire force. Third, the process of continual rotation and replacement, even while on deployment, maintains a continuity that is broken only during a major refit. These mechanisms are realized by an uninterrupted process of on-board training and retraining that makes the ship one huge, continuing school for its officers and men" (Rochlin 1987).

A military organization shares many similarities with other hierarchies such as government and business bureaucracies. But it also may have some important differences, such as sanctions for not complying with directions from authority.

In this case the military hierarchy affected the implementation of the proposed organization changes, but not necessarily as might be at first expected. New team and competency organizations were overlaid on top of existing command structures. For instance, most civilian employees at a given site no longer had a direct supervisory

relationship with the commanding officer at the site. Under the reorganization, their "chain of command" now runs through the site competency leader to the national competency leader. In the case of senior civilians at a site, the site commanding officer may make comments which will be given consideration during the employees' annual performance appraisal, but the commanding officer is no longer the supervisor of record, that responsibility now resides with the national competency leader.

However, existing command structures have been delegated authority for completing certain missions. They also have been given resources to carry out these assignments. The local command has responsibility to maintain operating costs within authorized budgets and must manage to the "bottom line" or "Net Operating Result" ("NOR" in the jargon of the Defense Department Base Operating Fund). Employees maintain a business relationship with the local commander to meet these goals. These responsibilities are discussed further in Chapter 6 during the description of the implementation of the new organization.

This separation of supervisory control from responsibility for business results can cause conflict.

Corporate priorities may not always be in complete alignment with local priorities. In these cases, employees are faced with conflicting goals. Which takes precedence, local or national objectives? Some research suggests that interorganizational policy implementation carries with it concomitant "loyalty" to the policy and not to the organization (O'Toole 1985). Many of the informants in this research would dispute the assertion that policy "loyalty" necessarily takes precedence over "local loyalty" as exemplified in this quote:

> "I think in practice you find that the higher you go up in management the more dual allegiance you have, that you have both a Commanding Officer that's right there close to you that's trying to direct you and you're trying to do things for them, as well as you have a national influence that you're trying to abide by and salute, and do what they say, and it causes you to have a dual allegiance and no one seems to care, they don't want to buy any part of that problem, they just say, they just overlook it.
>
> Q: Locally they overlook it or nationally they overlook it?
>
> A: Both.
>
> Q: Both. So how do you make decisions?
>
> A: It makes it very difficult. I think you become . . . and sometimes you make national decisions but yet you'll do local implementations, your heart is in one decision nationally, what's good for the corporation, but yet you know back at . . .

> your own site you have to do what's good for the site, so you just maintain dual allegiances" (Informant_04 1998, paras.141-149).

This statement illustrates the kind of role conflict that results as perhaps, an unintended consequence of the new organizational structure.

It could be argued that the military form of organization because of its federated nature (subordinate commands), operated in this case like other large hierarchical bureaucracies and had no particular influence. What seems to have happened is that the military structure in and of itself was not a critical component in making the implementation effective. However, leadership elites (both military and civilian) acted in their self interest to preserve the status quo of positional power in the new structure. As one informant states:

> "Command structure and whoever never had the stones to change that. Well, no, we need all these Captains just like they say that with SES. When a SES job becomes vacant and they say, oh, well we need to fill it. Well maybe you ought to think about not filling it, but not them. Well, anyway. So they have X-number of billets and they're not going to give any up, the same thing with the Admiral slots" (Informant_08 1998, para.205).

Another echoes the same sentiment:

> "Why did you need an area command in there? (hushed) Why we need an area command in there is to give the . . . guys command. And it's because it's close to the way we have always have done business, and we weren't able or willing to cast aside the way we have always done business, and go after the most efficient organization. Now there's probably a lot of reasons I don't know about why we did it, the way we did it" (Informant_02 1997, paras.101-103).

This issue is important since it appears that this factor may account for mixed results and NAVAIR realizing only part of the expected benefits of the reorganization. Subsequent discussion will address the imposition of certain new structures on the organization which, in the view of many informants, add unnecessary layers of management, but due serve the function of preserving senior positions (military and civilian).

To summarize this part of the discussion, the reorganization took place within the context of potential tension between the military hierarchical organization and the new distributed team construct. The effect of the traditional hierarchy on implementing the new structure will be discussed in the next chapter.

In NAVAIR's reorganization, employees were categorized and assigned to teams according to the core skills and

competencies which they possessed. As needed, teams are formed around specific tasks and employees were assigned to work on teams for the duration of the task. An individual employee may be assigned to several teams and may have several work supervisors depending on the work currently being performed. One effect of this condition is to increase the complexity of an individual employee's work environment. Multiple roles, multiple responsibilities, multiple accountabilities, and frequent changes in assignments, are all aspects of reorganizing which affect the individual team member and team leadership (Pennhallurick 1995). One could assume that employees in this environment have evolved adaptive strategies to cope with this complexity and dynamic change. Whether these adaptations are consonant with the goals of the reorganization is one key aspect which will be examined in the discussion of the implementation of the policy. This issue is key to understanding implementation of the policy and will be used to illuminate what is often referred to as the "bottom up" approach to describing implementation.

What are the communications requirements of this method of organizing? Due to the reduction in management layers, executive management communicates further down than previously into organization. Less extensive interpretation of policy (by middle management) is required (Vincent 1990). Team leaders determine the priority of work to be performed and evaluate employee performance.

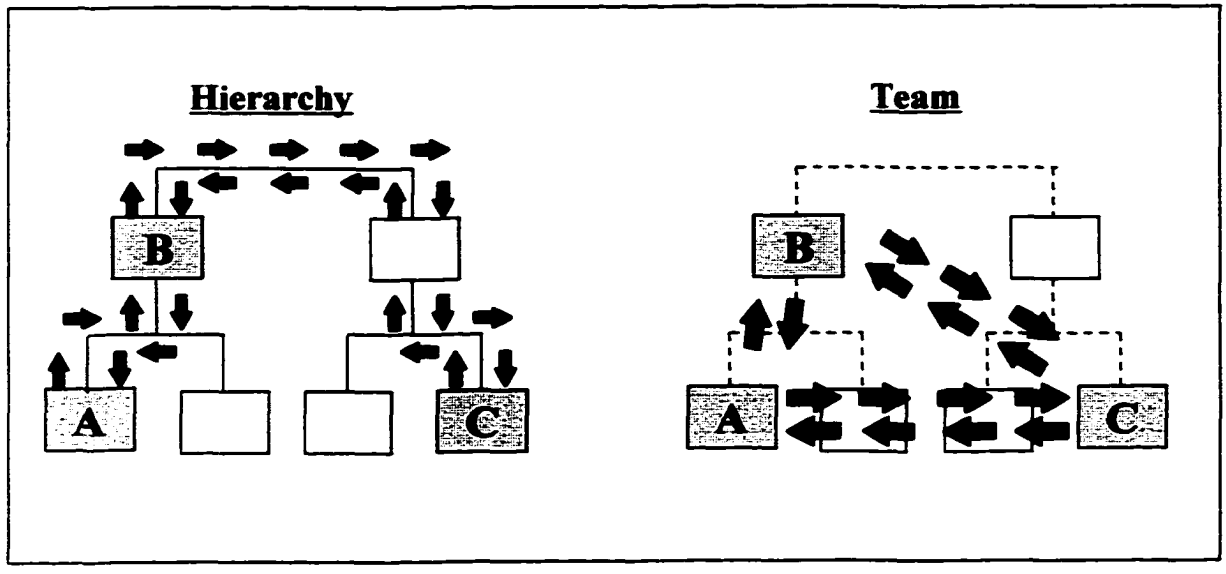

Figure 7. Information Flow Compared Between Two Types of Organizations

Figure 7. illustrates how information flows horizontally among team members from node to node, rather than up one hierarchical path across a layer of middle management and down another hierarchical path to the information's recipient.

This formulation is validated in the words of one informant which speaks volumes about the extent of change which has occurred (even in the alleged inflexible "military hierarchy") and about information empowering individuals and teams to make change a reality:

> "A: Communications, yeah, it gets real funny because you don't have the standard hierarchical line any more. I mean information. I think it's complicated too, by the information age. There's so damn much information out there. Everybody's got access to everything. The old communication pipe just wouldn't work anymore anyway.
>
> Q: If you look at the old way, it's sort of . . . you mentioned the hierarchy. You'd go up through the chain of command and so on. Would you say there's more horizontal communications now than there used to be, sort of diagonal instead of just up and down?
>
> A: Probably I would say there's more horizontal and diagonal both than just straight up and down. We're not really as threatened anymore with somebody going around, you know the old chain of command thing. Don't talk to him unless you talk to me. You know, we're not really as threatened now when people talk to anybody (Laughter).
>
> Q: Because there's a need to get the information out?
>
> A: Well there's a need to get the information out and the other thing is that why keep information from people? If the information will allow them to do their job then let them have it" (Informant_03 1998, paras.511-520).

Management theorists assert that this type of organization is more flexible and can adapt more quickly to changes in the environment since it can pass critical information more efficiently (Marshall 1995, quoted in Denton 1991; Galbraith 1974; Simon 1996). Peter Drucker posits that each additional management layer cuts in half the possibility that information is correctly transmitted and doubles the noise (Tomasko 1990). Elimination of the layers of middle management thus enhances organizational efficiency and effectiveness.

It follows that a less hierarchical organization will be a more efficient organization (from the standpoint of amount of resources applied to produce a given unit of output.) As Hammer puts it:

> "With fewer layers of organization, it (the organization) also requires less overhead to maintain. Consequently, whatever organizational structure remains after reengineering tends to be flat, as work is performed in teams of essentially coequal people operating with great autonomy and supported by few managers--few because while a manager can typically supervise only about seven people, he or she can coach close to thirty. At a one-to-seven manager-to-worker ratio, an organization is of necessity hierarchical. At one-to-thirty, it is much less so" (Hammer 1993).

However in the case of NAVAIR, this kind of result may have been only partially realized. Part of the

implementation process allowed new organizations to be established, and the power of certain constituencies was enhanced at the expense of others. One interview seems to indicate that self-interest is still a powerful motivator:

> "The other thing is that we may have given up one stovepipe organization for another, when it's all said and done. The power brokers in NAVAIR are still power brokers. There still seems to be issues of making sure you have a hell of a lot of people in your competency. Making sure the other guy loses before you do. It seems to be some of that going on which is typical of any very large organization. It hasn't affected, you know, the front line" (Informant_03 1998, para.471).

To summarize the discussion, thus far, the literature shows that organizations respond to environmental changes in various ways, one of which is to reorganize. Environmental pressures, along with the theoretical foundation of the business process reengineering movement, served as the basis for the NAVAIR decision to reorganize into a competency-aligned organization using teams to accomplish work. However, NAVAIR's design was selective in that the organization did not undergo a complete process reengineering effort before the implementation of the new policy. One of the expected benefits of such a change is a flatter organization, which is more efficient and more

adaptive to a complex, dynamic environment, but which also requires improved communications to be effective. The remainder of this chapter will describe how the policy decision to reorganize came about, and how the implementation was developed.

The Reorganization Process

The reorganization policy was put in motion by the NAVAIR Commander in 1993, Vice Admiral William Bowes. This section will describe how the process to develop a new concept of operations was begun, and describe the details of the plan that resulted from this new policy. Bowes had broad experience as a naval aviator and as a program manager for both the F-14 and Cruise Missile programs. He assumed command of NAVAIR in the early 1990's in the midst of turmoil. The previous commander, Vice Admiral Gentz retired abruptly as a result of the cancellation of the A-12 program. During this time, the Tailhook scandal was daily fodder for the tabloids and had tarnished the image of naval aviation. The end of the Cold War had already foreshadowed reductions in infrastructure and shore commands like NAVAIR. Navy laboratories were poised to undergo consolidation. To implement other changes in the Department of Defense infrastructure, Congress created a Base Realignment and Closure Commission which was tasked with determining which bases to consolidate or to close. So, the beginning of Bowes' NAVAIR Command tour in 1991 began in an atmosphere of

controversy and conflict. Bowes decided that radical reorganization might be needed to meet these challenges. As one informant put it: "He as the Commander was looking for a visionary concept as to how we would operate in the future. He pulsed the environment and saw that big change was needed to deal with a drastically different world" (Informant_07 1998, para.23). This confirms the statement made by most informants that Bowes is the acknowledged leader and champion of the NAVAIR reorganization, along with the head civilian in the organization, Dr. Alan R. Somoroff, who has provided the intellectual direction and leadership continuity to the policy over the past six years (Informant_13, 1998, paras.114 and 254).

Earlier in this document, the comments of several informants linked the concept of opportunity to the concept of change. In this way the need for change for survival also became an opportunity for guided change, change which could benefit the organization by making it more flexible and adaptable for the challenges of the future. The degree of change that was needed probably could not have been accomplished without the BRAC process, even though the BRAC

process was not focused on internal reorganization (Informant_12 1998).

As previously discussed, the origins of the broad themes of the reorganization effort, the focus on teams and competencies, lay in the organizational theory literature of the period, as well as in the various local efforts that had already begun within the NAVAIR organization, itself.

The Indianapolis site had developed and experimented with some of what would become the key concepts in the plan to reorganize NAVAIR. During laboratory consolidation which resulted in the formation of the Warfare Centers in the Navy Research and Development community (Navy 1992, p.1), the concepts developed at Indianapolis were examined for broader application, within the Aircraft Division (Informant_02 1997, para.127). Instrumental in the stand up of this group were two key individuals: the Director of the Engineering Group (a civilian) and the Commander of the Flight Test and Evaluation Group (a naval officer). As a result of some prototype work done at the Naval Avionics Center, Indianapolis, where the concept of product team organization had demonstrated initial success, in an industrial environment, a study group was convened to "reengineer"

processes across the Aircraft Division (Informant_08 1998, para.19). The group met for over a year at Patuxent River, Maryland, and included representatives from all sites. This group looked at consolidation of functions and actually adopted the competency approach across a region (Informant_08 1998, paras.19-23). One of the participants again echoed the theme of guided change when describing the purpose of the study:

> "Ok, so you know, we got into the warfare center concept, really at the Navy level as a way to try to get our arms around the infrastructure, protect the infrastructure actually, and to stay in control of its down-sizing. So, we all created these warfare centers and had these great debates over what missions, and mission purification" (Informant_09 1998, para.1).

When a key member of the group left for an assignment in Washington, the results of the process became more widely known due to his sponsorship, and got a hearing with senior leadership. As one informant stated:

> ". . . they were really, a lot of the things that were being developed at Indianapolis in the early 90's, late 80's-early 90's, were exported to NAWC-AD. Admiral Bart Strong was NAWC-AD, extrapolated forward from that, Lakehurst got involved, Warminster got involved. All of a sudden this NAWC-AD thing gained momentum. Dr. Somoroff heard about it, Bowes got enchanted, convened the board, they had this group that set up and really a lot of these things came through that channel" (Informant_13 1998, para.18).

The overall corporate reorganization process actually began at this time (1993), and the Aircraft Division process, as well as the individual Depot efforts, became subsumed by what was first called the national Concept of Operations. It is interesting to note that all three of these independent initiatives, at the two depots and the avionics center, grew out of subordinate parts of the NAVAIR organization which had an industrial, production-line focus. Several informants in this study remarked that organizational initiatives designed to operate in a production-line, industrial environment do not necessarily translate cleanly into a bureaucracy (Informant_04 1998, para.273), or a managerial, white-collar research and development environment (Informant_08 1998, para.19). These opinions were not necessarily backed up by concrete example. Opinions such as these, if voiced at the time, must have been in the minority, or overridden by the leadership, since eventually the decision was made to evolve into the team and competency structure across the entire NAVAIR organization.

Two fundamental tenets of the Concept of Operations emerged from the team's efforts in the Fall of 1993:

> "Integrated program team, lead by a program manager, multidisciplinary and responsible for all aspects of the weapons system from concept to disposal—"where the work is done" program management, clear program team leadership and extended responsibility and influence," and
>
> "Competency leadership responsible to provide the skills, knowledge, facilities and processes to satisfy program and other demands. Design the new organization to support this way of doing business" (Miller 1993a, p.8).

The NAVAIR Command History for 1993 also cites the same two key elements for the reorganization: "Integrated Program Teams as the primary avenue for developing, acquiring, and supporting products for naval aviation and the realignment from a program functional matrix organization to a competency-based organization" (Navy 1994a, p.9). The following discussion will outline how the original study team came to articulate and focus on these themes of teaming and grouping by competency in its deliberations.

Along with many other NAVAIR sites, the Headquarters organization, had adopted the principles of "Total Quality Management." This approach influenced the focus on the role of program teams in the emerging policy. In the years immediately preceding the establishment of the reorganization study team (1991-1992), a number of "quality

management boards" had been established under the leadership of the NAVAIR's Deputy Commander, Senior Executive Service member Robert Johnson. These boards focused on key areas of the organization, including program management, technical support, logistics support, etc. (Johnson 1992a, p.4). Their purpose was to identify areas of improvement and implement solutions to address the deficiencies identified. Interestingly enough, the categories of these boards mirror the eventual definitions of competencies that the reorganization study team would eventually develop.

One of the key TQM focus areas was program management. The purpose of this focus was to address the challenge of implementing the acquisition reform initiatives within NAVAIR as directed by the Department of the Navy (Johnson 1992b). These initiatives called for program managers to provide total life cycle support to systems they developed, in the so-called "cradle to grave" life cycle, "with the ability to direct the entire resources of (NAVAIR) devoted to that program" (Navy 1993, p.6). Specifically, the cradle to grave concept gave:

> ". . . a single program manager . . . full authority, accountability, and program dedicated fiscal resources or the execution of all aspects of the program from milestone 0 or program

> inception to disposal. The program manager leads a team of headquarters and field activity people focused on the program requirements/priorities which were established by the fleet and the Navy staff" (Navy 1993, p.9).

The focus on program management was a natural outgrowth of the command's mission as an acquisition organization, as well as the focus placed on the command's management structure after the A-12 cancellation. It also presages the emphasis that would be put on the role of program management and program teams in the vision organization as the reorganization plan began to evolve.

The leader of the program management quality management board in 1993 was the Program Executive Officer for Tactical Aircraft Programs, RADM John Lockard (Johnson 1992b, p.5). Lockard would later advance to become Commander, NAVAIR and has continued the strategic direction of integrated product teams and process improvement during his tenure in that position.

The NAVAIR reorganization study group was convened in April 1993, to ". . . define total NAVAIR organization and its structure . . .in light of BRAC 93" (Miller 1993a, p.2). The reorganization study group membership was selected carefully:

". . . Admiral Bowes personally, as I understand it, reviewed the list and purposely put younger, sounds like age-bias, but younger people involved because he didn't have to deal with the dinosaur perspectives, and so he picked the crowd as well as Doc Somoroff and then they basically spent all summer . . ." putting together the plan" (Informant_13 1998, paras.62-66).

The members of the original team and their organizational affiliation are depicted in the following figure:

Team Member	Official Organization	Constituency
Dr. Al Somoroff	AIR-03	HQ Corporate
Mr. D. Distler	NAWC-AD & AIR-05A	Aircraft Division & Engineering
Capt. J. Dyer	NAWC-AD	Aircraft Division & Engineering
Capt. F. Braman	N881	CNO Sponsor
Capt. G. Higgins	PMA-258	Program Offices
Mr. L. Lundberg	NAWC-01	Naval Air Warfare Center Headquarters
Mr. B. Milan	AIR-07	HQ Corporate & Logistics
Mr. K. Miller	DPEO(T)	Program Executive Office
Ms. D. Richbourg	DPEO(A)	Program Executive Office
Mr. S. Haaland	NAWC-WD	Weapons Division
Capt. W. Smith	AIR-43	Depots
Mr. S. Carberry	AIR-02A	Contracts

Figure 8. Membership of the Original Concept of Operations Study Team (Miller 1993a, p.3).

The team numbered 12 people, and had representation from the Headquarters, three directly from program offices, and most had program office experience. Interestingly enough, the individual subordinate field commands were not directly represented. For instance, the admiral with the

title of Deputy Commander for Depot Operations, (AIR-43) represented all 6 aviation depots (Miller 1993a, p.4). It is possible that some of the eventual resistance to implementation within the Depots and elsewhere may have come from the feeling of disenfranchisement garnered by the restricted composition of the original study group. For instance, the comptrollers were not directly represented, and, in the opinion of this informant, this lack of representation affected the pace of implementation:

> "In retrospect, if we would have had two more people on that team, we had to step back a couple of times. And I think that if we had had two more people on board we would not have had to do that-step back. And that was if we had brought the comptrollers in" (Informant_01 1997, para.99).

On the other hand, if all NAVAIR commands had been represented on the panel, it would have grown to more than 20 members, potentially too large a group size to be effective.

The overall plan called for a first draft concept of operations and top level organizational structure to be completed in July, with a review of the first draft with stakeholders and solicit feedback in August. By September, 1993, the group was to incorporate feedback and modify and complete the concept of operations and organization.

The original purpose statement of the reorganization team cited reductions the Navy budget and the need to become more efficient to deliver "more product to the user per dollar (spent)." The purpose statement also cited the BRAC process as providing a "wider range of opportunity to accelerate our ongoing effort and to become smaller and more efficient" (Miller 1993a, p.3). There was no specific charter given to the group, rather general guidance was given to come up with the best solution. As one informant described the tasking: "So, he didn't really give them (a charter) . . . He gave them general directions saying we need to change, and I'm empowering you to go out and recommend to me the best way to change" (Informant_07, 1998, para.23). The team developed its own guiding principles which included developing a plan that addressed team integration, to make the organization as "seamless" as possible, with fewer partitions. The group incorporated the cradle to grave concept or life cycle management in its plan. The resulting organization was to be able to perform the organizational mission at reduced size and cost while sustaining core capabilities. "Core capabilities" were defined as "distinctive capabilities" which were to be

"required for viability and effectiveness to execute the business, as well as those enabling activities required to execute the business" (Miller, 1993a, p.6).

The team's approach was to take a "reengineering" view and examine business areas, and customers, products, and competencies to satisfy demand. The process included, benchmarking major corporations and the Air Force; discussions with stakeholders, including the Chief of Naval Operations requirements officers and at the Secretary of the Navy staff for Research, Development, and Acquisition; reviews of current literature on organizational structure; and, surveys of Program Executive Officers and Program Managers across the Department of Defense (Miller, 1993a, p.7).

One informant described the process in these terms:

> "I mean he (VADM Bowes) didn't lay out any criteria. That was more or less the team's job and what they did is that they went out and they benchmarked organizations. They did their environmental scans, they had people that they respected in terms of their ability to predict the future so to speak. They came them their view of what the world would look like and as a result of that, they came up with . . . They looked at contemporary management theory and thinking. So, it was a combination of things, looking at other industries, other organizations and industry, other organizations in government and industry to benchmark themselves against . . .

> They surveyed the environment and they looked at contemporary management means and issues" (Informant_07 1998, paras.25-27).

The process required commitment on the part of the team members, all of whom had wide responsibilities in their regular assignments as senior executives and managers in the existing organization. According to several informants, described the team study process was grueling; in one team member's words:

> " . . . we went there in the morning and didn't leave until the nighttime, three days a week. And worked on, first we did a lot of data gathering. Had industry come in that was going through consolidations, and changes and you're absolutely right. There were people who changed stuff, got smaller, but nothing really changed. The politics and the maneuvering were still the same, so they didn't get as much bang out of their change as they might have. And they were very open with us, I mean these corporate executives were very open with us about what expectations they had, what they didn't get, and what the barriers were to getting there" (Informant_10 1998, paras.9-10).

This statement makes an important point about the benchmarking effort, which included visits to four aerospace contractors: Boeing, McDonnell-Douglas, Hughes Missile Division, and General Electric (Miller, 1993b). The discussions apparently were able to go beyond the superficial level of corporate public relations. The

discussions focused on details, and there was an open dialogue with private industry on problems they had encountered in their efforts to establish new organizational structures. So, the NAVAIR group used benchmarking not only to assist in defining the vision for the new organization, but also to identify potential barriers to implementation of the new plan.

One such list of barriers were identified as a result of the benchmarking included these categories:

> ". . . natural resistance to change, multiple organizational cultures and ways of doing things, rice bowls, building effective communication systems, and lack of understanding. The leaders of the TEAM fell that these barriers can be overcome with communication and understanding" (Navy 1993, p.16).

The implementation plans (which will be discussed in detail in Chapter 6) for the new policy attempted to address these barriers.

Early on, there was a realization that by putting the focus on the program manager as the keystone of the new organization, the exiting matrix structure would have to change. The discussion in Chapter 3 pointed out that the power in the matrix had shifted toward the functional management side of the organization. A 1991 independent

audit report commend on this topic by stating that the matrix was moving away from giving the program manager "what he wants" to "double-check the soundness of his program approach" (Navy 1991, p.13). The report observed that this may provide a constructive review of "technical integrity" and "soundness of business approaches," but needs to be managed actively. The report concluded that while there were mixed opinions about this topic, there "seems to be a tendency towards consensus management in the matrix that can routinely 'stop progress.'" (Navy 1991, p.14).

This observation by an independent review, combined with constructive self-criticism, and the results of the benchmarking efforts led the group to examine alternatives which would support the program manager, who would assume the role of team leader, rather than impede his efforts at product delivery. This construct was consistent with the successful experiences of industry that were noted during the benchmarking process. Organizations which adopted the project team concept and empowered the team leaders with resources and authority to complete their tasking were deemed successful more often than not (Informant_01, 1997). Thus the group arrived at a concept of "integrated product

teams" which would be the core organizational unit to accomplish work in the organization which was envisioned.

The concept of competency began to emerge from this process, as well. A participant in the original study group described how the concept of competency evolved from the benchmarking efforts:

> "And that's what we embarked on and we did the classical process of doing it. We went out and interviewed stakeholders, we did a lot of benchmarking. We went out and we found out that, hey, yeah, there are ways to do that. The key common thread turned out to be a better understanding of your process ownership and accountability . . . driven from concepts of centers of excellence . . . which led us to the concept of competency management" (Informant_01 1997, para.14).

The team took a bottom up approach by first examining what the core products of the organization were by asking the question: "What business are we in?". Then, it began to examine existing functions to enable the vision organization to be articulated. One informant described the process by which the existing functions were organized into competencies:

> ". . . we basically did the nominal group technique, and we wrote down all of the things that NAVAIR had to do in terms of functions or whatever. They were all over the gamut, I guess, and we wrote maybe 90-100 cards, put 'em on a wall, and they sat there I think Saturday night,

> and we waited for Admiral Bowes to come in the next morning. He gave us his vision of where we wanted to go, we asked him a couple of questions, and right after he left, we just started walking to the wall and everyone started say, okay now, if we were to group these, where would they go? And so we just started doing groupings, we got 'em down to maybe like ten, and we got 'em down to around seven.
>
> "I will tell you, the last group we had, we had a whole bunch of things off to the side, that was what some people referred to as the blue collar-type of work, and we packaged about seven competencies. We didn't even call them competencies, they were just seven groupings, and then the stuff that was on the right was things like Depot Maintenance and Industrial Support, and all that, and we said, well that's kind of industrial stuff, so that became the Industrial Competency. And actually on that wall, that day, we created the eight competencies. As far as I remember, I don't think we ever changed after that other than we changed a couple of names for the overall titles" (Informant_05 1998, para.324).

The eight competencies which were listed were: 1.Program Management, 2.Contracts, 3.Logistics, 4.Engineering, 5.Test and Evaluation, 6.Industrial Operations, 7.Corporate Operations, and 8.Shore Station Management, and became the eventual "competency" titles in the new organization.

The group wrestled with the purpose of competency, but settled on a process-based approach, rather than a functional approach. This is consistent with the advice of the reengineering theorists who advise that organizational structures should be designed to fit processes and not the

other way around. One informant described some of the initial discussions when the concept of "competency" began to be articulated:

> "They were just looking at how they were going to be organized. There were a lot of questions for a long time. We thought about organizing where you would have an acquisition process, and then another group does in-service. And we talked about that a lot. That means that in-service, you would have engineering, logistics, and all that together, so that was one of the big things. In fact, one of the biggest dilemmas I think we had was to decide which way to go. And when we focused more on competencies, we found out that we should probably be much more closely related to a discipline, so we organized around logistics, meaning all the way from the design, all the way down to the sustaining phase. But there were a lot of early on discussions that could have gone other ways.
>
> Q: One way to characterize that might be to say you took the process approach rather than a functional one.
>
> A: Absolutely. Yeah. And I think we all started going in and competing somewhat from where we came from, but as we started looking at this, we saw it was really fundamentally different; and we started looking at processes, and a lot of our arguments, you couldn't hold any water because they weren't processes, they weren't even what we called competencies at the time. Even from the very beginning, they were much different than that. And once we started getting into, we needed a part of the organization to train and develop the people. You need to be able to clearly break out things so that competency could in fact be organized to do that" (Informant_05 1998, paras.80-84).

Eventually, the concept of competency came to mean "people (skills and experience) and facilities/equipment and processes by which people are applied to produce a product" (Miller 1993a, p.16). In the Concept of Operations Team's final report, the terms, "competency" and competency-aligned organization" are defined specifically along with other terms related to the implementation of the policy, such as "competency transition plan" (Navy 1994b, p.A1). In this instance, competency is defined as "A major organizational element that includes the people with knowledge, skills, and experience in particular disciplines, technical facilities, and equipment and processes to satisfy program and other demands in one of the following eight areas . . ." and the plan continues by listing the eight areas described previously in this document.

However, this particular construct, "competency" seems to be unprecedented. In the words of one informant:

> ". . . I think the IPT thing was pretty well documented. I know that the team that met in 1993 that basically put IPT-CAO in place did a lot of work. They went to Chrysler and all these other places, and they could really get their arms around the IPT concepts, but there was never, that I'm aware of, any kind of a CAO that has ever been done anywhere. As a matter of fact, I remember calling (a professor) from the University of Virginia Darden School of Business. He had spoken

> at the Commander's Conference at Pensacola like in '93 or '94 so I called him up and I asked him about this very thing and he says, "This is unprecedented." He says, "I don't know," and I think he'd had some intellectual discussions with Dr. Somoroff along these particular lines, and as a matter of fact, I think that he sort of thought this wasn't exactly the best way to do business. But, it had had no precedent . . . I was trying to give myself an anchor to make sure we weren't going down a pig path and I was trying to get the academia out of the house to give me some insights as to whether this might have been done before, kind of classic scientific method if you will. And the silence was deafening and I am not aware . . . now, so I guess the jury, I don't know. I've been away from this (a while), but I'm not aware of a precedent" (Informant_13, 1998, para. 7).

Another informant echoed this perception:

> " . . . TQM was kind a universal contract in that no matter where you went it was talked about, and I think it was even in some of the language of the Congressional legislation but I don't think I've ever seen CAO mentioned beyond the NAVAIR activity.
>
> Q: So that part of the effort (CAO being widely applied in the Navy) never was realized.
>
> A: I don't think so, or I've never seen any other portions of the Navy attempt CAO as it is implemented in NAVAIR" (Informant_04 1998, paras.302-305).

Perhaps the reason for this is that other organizations were not willing to undergo effects of a massive reorganization which adoption of the concept entailed, not the least of which is confusion. To this day, there are those who believe that the current organization structure is

incomprehensible. One observer grants this point, but counters by stating that the previous organization was even more convoluted because it had the additional complexity of multiple site organizations in the mix:

> "Part of it, but there were just so many things coming together. I mean, just all kinds of things. One of the biggest problems we had . . . A lot of people today will say that competency organization is real complex and they don't understand it, that it is hard to make it work. You should try to go back and understand the old organization we had. It *was impossible* (emphasis added) to understand. The only way you could ever figure out what we as a corporation were doing, was to go to every site and talk to them, spend a week or two, and look at how they were uniquely organized and try to figure out what they were doing with that organization.
>
> "If nothing else, today you can walk around our sites and there is something common about every site now. It is the competency structure, if nothing else. The teams are left to be organized the way they need to be organized. . . The way I view it is it is like walking into a squadron where you have the naval aviation maintenance program that says pretty much you walk into a squadron and you see certain things in every squadron. Every squadron is different, almost like a person is different, but there are certain things common. And until this structure came out from NAVAIR, there was almost nothing common in our sites. There really wasn't. So that's helped at least from certain standpoints. That was part of an outgrowth of this original analysis" (Informant_05 1998, para.112).

The point made about commonality among sites is key to understanding the concept of competency. As envisioned by

the original study team, the new organization would be "siteless," meaning that site orientation would not be as important as allegiance to one's professional association, "competency" or team assignment. The eventual concept of competency which emerged from the team included putting national competency leaders in charge of their respective personnel without regard to which site employed them. These personnel would use common approaches to problem solving and common processes that would be published by the national competency leadership. This was approach was described the NAVAIR Strategic Plan published in 1992, which foreshadowed the notion of cross site competencies using common processes:

> ". . . members of the systems engineering team (from whatever site) will be expected to represent their functional specialty on a day-to-day basis without routine need for additional technical specialty review. This amplifies the need for the importance of our functional leadership relationships that will establish common practices and standards for our technical community" (Navy 1993, p.23).

The actual implementation of this policy will be addressed in more detail in Chapter 6. However, it would appear that this vision was only partially realized. As could be expected with an organization as large and complex different

sites still use different processes, and different competencies have varying degrees of compliance with the standard of "siteless and seamless" operations.

The team reported out in the Fall of 1993, and its findings were presented to the annual Commanders' Conference held in October of that year (Navy 1994b, pp.3-4). This annual meeting gathers all senior leaders in the command to review organizational performance for the past year, to set goals for the coming year, and to discuss key issues facing the command. The 1993 meeting endorsed the CONOPS plan for the new organization (Navy 1994a). In its account of this action, the NAVAIR annual command history also gives a brief summary of the new organization:

> "The CAO will link people with like capabilities across all NAVAIRSYSCOM sites into competencies. This will provide organization-wide pools of talent and the leadership opportunity to unite people doing work by common processes. This will move the Naval Aviation Systems Team from an organization based on a program-functional matrix this is site oriented to one based on pools of organization-wide talent and the leadership opportunity to unite people doing similar work by common processes" (Navy 1994a, p.10).

In the view of some observers, as this vision eventually came to be implemented, it was transformed and only partially realized. However, one observer commented that

even though his initial assessment was that the new policy gave program teams too much power, the overall result had the potential for success:

> "The more I looked at it though, I felt, if implemented properly, it could be a way to achieve the objectives of the organization we wanted to go after. Especially because, and the reason I believe that, is because, uh, having uh, visibility, this was the first time in my career, that we had visibility on what was going on across all the NAVAIR activities, and that that visibility was aligned in some kind of rational sense. We would be able to align, here's all the logistics stuff we're doing, we could say, we know "Here's all the Research and Engineering, here's all the contracting work, here's all the . . ."
>
> "From a competency standpoint, we now had visibility on all the things that were happening, and we could then attribute the infrastructure necessary to deliver those products and services. And the competency would be responsible for the development of the processes, tools, the knowledge, skills and abilities to perform the work and the facilities necessary to perform the work. And then the program teams would come to the competencies to get that work. So now we had visibility across the corporation. So we could identify if there were redundant pockets of capability or, uh, we could move work--in theory now--we could move work around an organization where it was necessary. And which should lead to a more efficient organization" (Informant_02 1997, para.50).

This comment presages some of the discussions which would occur later in the implementation process.

The policy for the reorganization was officially issued in January, 1994. It included a description of the process

by which the new policy was decided, an overview of description of the new organization, a phased implementation approach, and a section on roles for various organizations to fill. Specific functions for each competency, along with key personnel leadership assignments was also provided. A key aspect of the implementation was awareness and training sessions for all employees (Navy 1994a).

In the forward to the document, VADM Bowes stated that the plan communicated what had been accomplished to date and what was planned for the near future. He described it as a "phased approach to change," and stated emphatically that the success of the implementation would depend on the NAVAIR's people. Vice Admiral Bowes was able to articulate a vision for the future that the original planning could translate in to concepts and plans which could be implemented. He was personally involved in this process as the following anecdote describes:

> " . . . it says to pull off re-engineering, you have to have certain groups and I think it defines them as a leader, a process owner, a re-engineering team, a steering committee, and a re-engineering czar, and I could almost put a name with each one of those people as we were going through this, but absolutely, the leader at the time was Admiral Bowes. And basically it says that the leader is a senior executive who

authorizes and motivates the overall re-engineering effort.

". . .the most vivid thing to me at the time, was that Admiral Bowes sat down with us a couple of times; but one in particular I remember, he gave us his vision. Literally, I think more than anything else that was important to us. We had struggled at Solomon's Island, we started on a Friday night. We did work on Saturday. We were trying to grapple with how to do logistics and engineering and R&D, science and technology. Had a lot of questions on our plate. We knew a lot of the things we were gonna propose were gonna upset some people. And that evening, he invited us over to Solomon's to his house for dinner, and then we asked him would he mind coming in to talk with us the next morning.

"So on Sunday morning around 7:00, he comes in, you know, in his leisure clothes, and basically all he comes in to tell us is, he says, I've looked at what you've done, and I will authorize what you're saying. If you want us to implement it, I will do it, but let me make sure that it fits my vision; and he literally walked through his vision of what he wanted this final organization to look like and to do, and all that, and it was probably the most vivid vision I'd ever heard of we're gonna go. Even including about what will happen when Headquarters leaves Washington and moves to Pax River. He even described in his vision literally driving into the base, seeing airplanes, and feeling like you're at the heart of Naval Aviation, and that's how he drew his picture.

"And when he left that morning, at least for me, I don't know about everybody else in the group, I sensed that number one, he was going to back us 100% as long as we could get to the vision he had for the organization" (Informant_05 1998, para.236).

The plan began by discussing the process by which the new concept of operations had been determined. The study team

process (already discussed) was described, and its output, the new concept of operations was discussed in detail. This discussion emphasized the key role of the product teams in the new organization in these terms, "The heart of the new concept of operations will be the formation and operation of IPT's (Integrated Program Teams) under the direction of the PMA's (Aviation Program Managers)" (Navy 1994b, p.4). The part to be played by the competencies was described as:

> "The CAO (Competency-Aligned Organization) will link people with like capabilities across all NAVAIR sites into competencies. This will provide us with both organization-wide pools of talent and the leadership opportunity to unite people doing similar work by common processes. Instead of only thinking of a specific site's personnel and capital resources to solve a problem, we will be able to use the strength of the total TEAM (shorthand for the entire NAVAIR organization and its affiliates, such as the Aviation Supply Office). The central functions of the CAO will be to develop and nurture processes, prepare and train out people, and provide facilities to support the success of our IPT's and other teams aimed at satisfying customer demand" (Navy 1994b, p.4).

Remarkably, the document did not mention local sites or local commands in this section, other than to refer to them in passing as organizational elements which must prepare transition plans (Navy 1994b, p.9).

Overview descriptions of each competency were included in the plan. For each of the eight competencies, the plan also provided a preliminary organizations chart and a identified a competency planning leader, responsible for the transition of that particular competency. The plan also provided a detailed description of a phased implementation approach to achieve its vision (Navy 1994b).

Conclusion

The policy decision to reorganize NAVAIR grew out of a need to respond to a changed environment, as well as to the perceived inadequacies of the existing organization. Its origins and basic themes, to organize around teams and competencies spanning multiple sites, evolved from initiatives that were already existing within the organization. It was guided by senior leadership who served to both set the original vision and guided the implementation of the policy. Initial planning was done by a small group, who articulated the vision and established a plan by which it could be implemented.

The published plan set forth a phased implementation process, emphasizing the roles of teams and competencies, and de-emphasizing the roles of sites and local commands. The next section will describe and assess this implementation effort in detail, including the ways in which the original policy became transformed through the implementation process.

Chapter 5 References

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Chapter 6. Top-Down Implementation

Introduction

Two approaches to the NAVAIR policy implementation will be discussed in the next two chapters: the top-down approach which emphasizes structure as a key concept in policy implementation, and the bottom-up approach which focuses on the processes which occur, such as bargaining, as an implementation plan unfolds. In the NAVAIR case, an important structural consideration is the military hierarchy. According to the top-down approach, within this structure, the efficiency and effectiveness of policy implementation would be measured through adherence to rules carried out by the hierarchy.

In contrast, the "bottom-up" approach, which is the focus of the next chapter, emphasizes processes, such as bargaining and negotiation, which are natural political transactions. According to this approach, policy transformation through such processes is to be expected.

The challenge to the policy designer is to structure the implementation process so that the incentive for policy actors will be to remain true to the spirit, if not the letter of the policy design. Thus, when political processes such as bargaining and negotiation occur in the implementation, the outcome will more closely resemble the original design, than if consideration of these factors had not been made in the first place. The key to understanding what happened in the NAVAIR case is to examine the case from both top-down and bottom-up perspectives.

The NAVAIR approach to implementation began as a top-down effort. The reorganization process took place over three and one half years between January, 1994 and October 1997, according to a detailed, phased plan which included specific exit criteria for each step. Senior leadership was directly involved throughout the implementation process. Each competency convened a representative team to plan specific actions according to a template provided by the senior leadership. The implementation process defined the steps by which the previous matrix organization, with geographically-distributed business units, would be transformed into an integrated product team focus, supported by core competencies. This process resulted in a diminished focus on sites, in favor of the new national

organization, and as a by-product, resulted in some constituencies gaining at the expense of others.

One of the groups losing power was the military community, which lost influence, both in terms of the overall number of local command slots, and also in terms of the discretion and authority of the local commanders to manage the commands which remained. This threatened the customary role of the commander within the military hierarchy, and resulted in conflict. This conflict actually impeded the implementation of the new central policy, which is contrary to classical assumptions about military organizations: that they are rigid hierarchies that implement direction from the top down without change.

However, compromises were achieved which allowed the policy implementation process to continue. Consistent with the bottom-up perspective, these compromises may have been the result of adaptive strategies which were employed by various parties throughout the implementation process, to change the policy from its original design. These strategies will be described in Chapter 7.

The following areas will be addressed in this chapter: an outline of the overall plan, senior leadership involvement in the process, communicating the plan to the workforce, including an interim assessment of the plan

during the implementation, the new structures and processes put in place at the macro level to formalize and support the policy, and how these new processes changed the relationship of the workforce at sites to the overall organization, especially with respect to the military command structure.

The Implementation Plan

The NAVAIR reorganization plan, released officially in January, 1994, detailed a schedule for the implementation of the policy to reorganize the agency (Navy 1994f). This section will describe this plan in detail and in so doing, present the top-down perspective of the organization's leadership with respect to the plan. As outlined previously, the new plan, when released officially for the first time in January, 1994, was developed by the Concept of Operations study team, and had been endorsed by the NAVAIR Commanders' Conference the preceding autumn (Navy 1994a). Various implementation efforts began within the new competencies immediately after that time (Miller 1993). However, January, 1994, was the first official release of the plan which detailed specifics about how the implementation would proceed.

The plan called for a three-phased implementation approach over three and one-half years. Phase I was to move and align organizational elements into competencies. Phase II was to define core competencies, forecast and document competency workload, budget and allocate resources, and manage and allocate facilities and

equipment resources. Phase III was to involve process definition and completion of the competency linkages across the various elements. The following figure displays the various stages of the implementation plan and what actions were to occur in each phase:

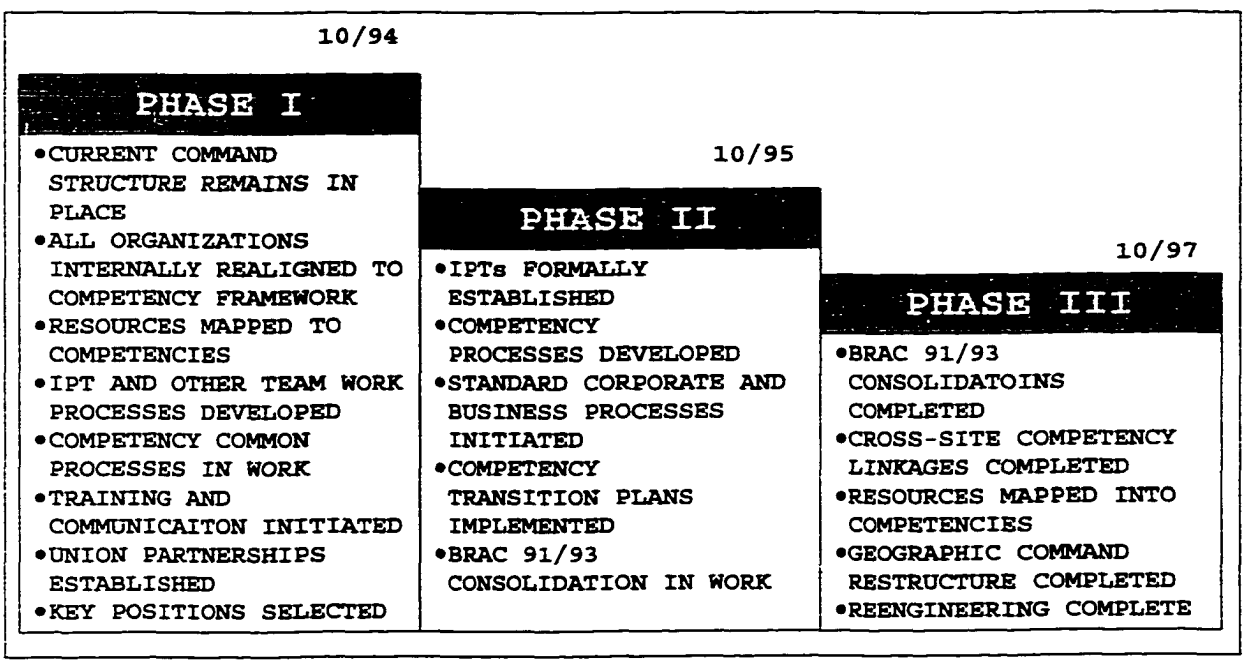

Figure 9. Progression to Competency-Aligned Organization (Navy 1994f, p.24).

The beginning of Fiscal Year 1998, October, 1997, would mark the end of the policy implementation period.

The three phases of the plan were synchronized to coincide with the ongoing BRAC actions, and to attempt to provide a smooth transition to the final organization structure. BRAC was closing Aviation Depots in Alameda (near Oakland), California, Norfolk, Virginia, and,

Pensacola, Florida. Also, BRAC actions closed research, development, and test laboratories in Trenton, New Jersey, and Warminster (near Philadelphia), Pennsylvania, and, directed that NAVAIR's Headquarters move from Crystal City, Arlington (near the Pentagon), Virginia, seventy-five miles to the southeast to Patuxent River, Maryland. All organizations in the command were to plan the transition to the vision organization according to the template laid out in the planning guidance. This documentation included several different, but related documents published at the beginning of the implementation process. Included were an implementation plan, which described the overall approach (Navy 1994f); an organization element transition plan, which described in detail roles and responsibilities, as well as schedules, for various organizations and officials to implement the new structure (Navy 1994c); and, an integrated program team manual which described how teams would operate in the new organization (Navy 1994b).

By autumn, 1994, each competency had published specific transition plans which outlined how they would organize (down to several layers deep in the organization), identified key individuals responsible for various parts of the implementation, specified exit criteria by which leadership could judge where a particular implementation

step was complete, and published a schedule for standup of the new organization (for example, Navy 1994d, Navy 1994e, as well as others. The competency teams which drafted these transition plans, typically included a member of the original transition study team, which represented that particular constituency during the original transition study process

Later, a business operating guide was published (Navy 1995), as well as updates to some of the other overall organization plans (Navy 1996a, Navy 1996b). All of these plans were published by the corporate strategic planning office. However, individual constituencies such as commands and competencies had an opportunity to comment on them before publication.

Notable points about this approach are the fact key members of the original study team were involved with each competency's implementation. This helped to ensure adherence to the policy design. The entire process was well-defined in advance, with clearly articulated and well-documented goals which were achievable in most cases. One outstanding exception to this statement is the expressed goal that reengineering would be complete by the end of the implementation period in October, 1997. The schedule for attaining this goal proved to be too optimistic, given the

extent of all of the change going on during this period. In fact several informants commented that the postponement of process work was a conscious decision by senior management. Because of the amount of change the organization was undergoing, process reengineering needed to be postponed until some of the compelling actions with fixed deadlines such as BRAC moves had been accomplished (Informant_02 1997, paras.260-270; Informant_05 1998, paras.114-116; Informant_13 1998, para.234.)

Organizational elements, such as competency leadership teams and program leadership teams, were charged with implementing the new policy, and were also ordered to develop their own charters and operating procedures, following templates and general procedures provided by the original study team. Senior leadership was engaged in the process, at the sites, within the national competencies and the product teams, and at the most senior levels of the organization. Other management levels within the organizations and sites were also absorbed in drafting the new procedures. Whether these processes actually allowed local participation to influence the overall policy is questionable, as following informant comment points out:

> "At the local level, it was more implementation of policies that were handed down. At the corporate level, even though we were asked

> to provide input into ConOps, it appeared very much to us that the decision had already been made. We weren't really providing any input to change anything. We were putting input so we could be convinced that this was the right way to go" (Informant_03 1998, para.28).

This provides one viewpoint on the top-down policy implementation approach. Building consensus was the objective, and perhaps this was not achieved in all cases, but another goal, to raise awareness, was achieved at all levels. The next section will describe how senior leadership monitored implementation of the plan.

Implementation Monitoring

An important area in understating any implementation plan from the top down perspective is to understand how the plan's progress is monitored by those responsible for its success or failure. This section will describe how the NAVAIR leadership monitored progress of implementation of the new policy.

A special office, the "Office of the Transition Executive" was established to guide the implementation effort. Two individuals held this position between 1994 and 1997. The original appointee was a two-star admiral, RADM William Newman, who had experience in project and warfare center management. His successor was Capt. Bruce Pieper, whose most recent prior experience had been in Depot management. Both of these officers reported directly to the senior leader of the organization, the Commander, VADM William Bowes, and then, to VADM John Lockard, who succeeded VADM Bowes in that capacity. Most informants agree that another key official who guided the policy to reorganize was NAVAIR's senior civilian, Dr. Alan R. Somoroff. Dr. Somoroff provided continuity to the effort and served to keep it on track (Informant_03 1998).

In this role, Dr. Somoroff and the Transition Executive, acted not unlike the "fixer" described in Eugene Bardach's case study on policy implementation, *The Implementation Game* (Bardach 1977). Bardach describes the heart of the "implementation problem" as controlling and directing the complexity of the number of activities engaged in implementation of a policy at the national level. He argues that the most important approach to ameliorate this problem is to design policies and programs that can "withstand the buffeting by a constantly shifting set of political and social pressures during the implementation phase." Since the environment in which a large-scale policy is intended to be implemented is complex, it is also is inherently unpredictable, and "even the most robust policy. . . will tend to go awry." When this happens, someone or some group must be willing to set the policy back on course. In Bardach's case study, a charismatic leader emerged who assumed the role of a "fixer" to "fix the implementation game" (Bardach 1977, pp.5-6).

The Organization Transition Executive chaired weekly meetings along with other senior leaders to track progress toward the goals that had been established. In the words of one informant:

> "And then we had a forum by which the 'A' codes (deputies in each of the major organizational elements) of the various competencies, once we stood it up, would meet to keep it on track and be a forcing function for change . . . We had entrance-exit criteria. So that helped a lot, I think" (Informant_09 1998, para.90).

These routine and frequent meetings served to resolve conflicts and arrive at consensus (when possible) before reporting status to the NAVAIR Commander. One informant described the process of conflict resolution in these terms: ". . . 99% of it (conflict) was finally worked out, but there was a lot of blood letting, a lot of blood letting. The whole issue of how IPTs would be run was a contentious issue" (Informant_13 1998, para.122).

This role of the IPT leader in the new organization was controversial, since it removed power from two other groups, the competencies (or functional managers as they were referred to in the previous former matrix organization) and the site organizations (represented by the commanding officers). The Transition Team meetings gave these groups the opportunity to vent their dissatisfaction with the new policy, in a forum among peers, with perhaps less risk, and more candor than if they had to argue out differences in front of the Commander. It

also gave the Transition Executive the opportunity to keep the discussion focussed and the implementation on schedule.

The Organizational Transition Team briefed its topics to the NAVAIR Commander. Under VADM Lockard's tenure as NAVAIR Commander, these reports became part of a larger process providing status on a number of issues. These reports were called "Focus Groups", the topic of each of which was deemed to merit the attention of senior leadership. Their purpose, outlined in a transition plan update, was to "allow (the Commander) to focus on a particular topic important to the Command, encourage frank and open dialogue with the primary interested parties, and provide immediate feedback to all concerned" (Navy 1996b, p.14). The updated plan detailed that Focus Groups were to be formed and disestablished as issues dictate. Following a Focus Group meeting, Focus Group leaders would brief the Executive Steering Committee (ESC) (the NAVAIR Board of Directors) on key points, decisions, approvals, and action items at its next meeting. The ESC would then provide feedback to the entire workforce (Navy 1996b, pp.14-15). During the implementation period, this was the process used to resolve conflicts (the Organizational Transition Team), raise issues and get decisions on them (the Focus Group),

and then ratify (the ESC meeting) and communicate those decisions to the workforce (through the ESC membership).

The CAO policy is no longer part of this process. In the view of several informants, this lack of continued attention is a problem:

> ". . . (over the past year or more) we sort of took our eye off the ball here because there really hasn't been a focus on this stuff, but now that we've gotten settled in here in Pax, it's time to review this, review the bidding here and maybe rekindle these things, but there really hasn't been a focus. For IPT-CAO, it sort of is an end in itself to keep that focus going. . ." Informant_13, 1998 #15]218.

However, it may be said that this lack of attention be taken as a sign of success, as well. As of this writing in 1999, transition to the new organization is complete, and perhaps this set of issues no longer warrants regular senior leadership attention. The next section will describe how the NAVAIR leadership communicated the implementation plan to the organization.

Communication and Assessing Progress

The issue of communication of organizational policy issues decomposes into informing the workforce of the policy decision, soliciting their support, and training personnel on implementing the new organization. It is also important to provide feedback while the plan is being implemented, so that leadership can assess progress and take corrective action if necessary to ensure that the policy design is carried out. This section will delineate how the NAVAIR policy was communicated to NAVAIR employees and describe an interim progress report made by the Transition Executive midway during the implementation process.

Early on, there was a realization that employee support would be key to the success of the policy to reorganize. This is reflected in the senior leaders' messages when various parts of the plan were released. Phrases such as, "I need to understand your concerns, and I want to answer your questions" (VADM Bowes, quoted in Navy, 1994f, p.1), and, "I encourage each of you to become familiar with the transition decisions to date, and to embrace this updated plan as TEAM policy," (VADM Lockard, quoted in Navy 1996b, p.1.) are examples of the attention

senior leadership paid to these issues. A comprehensive set of training sessions was created, and all employees were required to attend them. As one informant related:

> "There was a lot of training . . . We had different courses. There was change management training . . . there were four or five canned presentations, if you will, that had structured overhead transparencies and text and so forth, and most of those were given to the leadership, the logistics leadership team and then it was the field activity's responsibility to take that same training down to the work force. I know within (my organization) we had a very rigid training schedule where each employee was required to go through all those different training tracks, and one of them specifically provided the explanation as far as what was behind, you know, what was driving CAO, what was the concept, what was the theory, and then gave the work force the background information for him or her, hopefully, to better understand what the transition was about and why we were going through that" Informant_11 1998, para.42).

This training was viewed as extremely important to the success of the new transition, and attendance was taken at these courses. Employees were forced to make up missed sessions. This emphasis has diminished over time. As of this writing, over a year since the new policy has been officially implemented, organization training is no longer given to new employees or military transfers. In the view of one informant:

> "we. . .initially started training the whole work force on the concept, and I think we've slacked off as a corporation here recently. Now we have new people coming in who don't even get

> trained on how we're organized . . ." (Informant_05 1998, para.132) and,
>
> "I think we need courses that "teach our culture" or our doctrine. . . I think that's one thing we ought to be doing right now. And I think it also needs to be a personal level where you're going out on site. . . I think we've been remiss to new people. . . (we used to keep) track of every person when they came in, and in fact, the CO wrote 'em a nasty - gram if they didn't actually get this indoctrination" (Informant_05, 1998, para.215).

So one criticism of the post-implementation process is that training has not continued. This may be a key point, when one considers that the overall workforce is about 20% military (Navy 1997, p.39; Navy 1998, p.1) and, therefore, rotates approximately every three years.

How well did the implementation effort do in meeting the deadlines set forth in its formal plan? According to official documentation, very well. Matching up the original plan issued in 1994 with the official status report issued in 1996, all major milestones had been achieved or were in work.

In a presentation dated October, 1995, RADM Newman, then the NAVAIR Transition Executive listed among the goals of the policy to:

> "Retain minimum essential organic capabilities, greater reliance on the private sector (complementary not competitive relationships), a mission-focused versus site-centered organization (a smaller, flatter organization free of geographical boundaries; and,

> life cycle support of systems through the program manager-led integrated program teams, responsive to the user" (Newman 1995, p.14).

He continued to discuss how the two basic elements of the policy, Integrated Product Teams and Competencies, were to contribute to the overall policy goals, by stating that the "Integrated program teams translate fleet requirements into delivered systems, and support the systems in service with a resulting sharply strengthened program/product focus." The purpose of the Competencies was to "ensure our people and processes enable program teams to succeed, ensure this for the long term. The result: organization wide talent pools match supply to demand, manage competencies as cost centers, with customer-driven deliberate allocation of resources" (Newman 1995, p.15). He characterized the effort as successful, citing benefits such as "collaborative planning efforts across all sites" which had produced a "much stronger sense of professional communities, better understanding of our capabilities, capacity, and deployment of resources". He pointed out that recent experience had shown that "organizational structure is important, but just as piece of the total system. Processes, relationships, culture are just as important, financial management structure is an integral consideration." The scale of what was being attempted was

large, but he believed that the "phased approach" was appropriate and it was important to "communicate and share ideas throughout the organization," and provide enough "time to allow participation throughout multiple levels of the organization, and draw upon knowledge and build ownership." Another key element cited was "Top leadership must embrace and drive the vision" (Newman 1995, p.25).

Several points made in this report should be emphasized: the policy implementation effort was successful over its first 18 months; processes, especially financial processes, were integral to the organization (more on this later); a phased approach which allowed enough time to build consensus at different management levels was important; and, top leadership needed to be engaged. And, so it was, declaring "victory" on the topic of reorganization at the Commanders' Conference in October, 1995. During the meeting, the NAVAIR commander, VADM John Lockard, focused the conference on external customers, stating that NAVAIR had finally completed its reorganization and needed to redirect its focus on the internal organization to providing services to its Fleet customers.

This theme as followed up in February, 1996, when approximately midway through the overall implementation

process, VADM Lockard said, "Organizationally, CAO is in place," and his goal was now to "focus on the needs of our customers, determine our mission essential capabilities, then meet those requirements highly motivated, well-trained people utilizing efficient processes" (Navy 1996b, p.1). His assessment was that the competency structures were defined to the lowest level and all employees should know their competency assignments. Competency-wide managers had been identified for levels one and two, the two top levels in each competency, and, in his words, "the supervisory chain of command is in place." Several hundred teams in different categories had been defined and put in place, including 262 Integrated Product Teams. Documentation of team processes was underway, and the "Command Structure, Decision Making Process, and Business Operating Structure" had all been determined. He pointed out that one of the purposes of issuing the 1996 update was to communicate these things to the workforce (Navy 1996b, p.1). The next section will delineate these macro processes which were put in place to manage the new organization which had been designed, and describe their effect on the military hierarchy.

Process Change and the Military Hierarchy

The new organization would require different processes to operate, which will be described in this section. Implementing these processes affected the roles and responsibilities of the military commands which comprise NAVAIR. The 1996 update provided a macro view of the new business operating structure, which included four key entities:

1. Corporate Leadership, who provides overall guidance and strategy for the organization;
2. Naval Aviation Program Management Offices, or Teams, who define the need for products and or services from the rest of the organization;
3. Competencies who provide the people, processes, and facilities necessary to provide the products and services to customers; and,
4. Area and Depot Commanders, who accept and allocate funding, and perform fiduciary functions needed by competencies to support teams with required personnel and facilities.

Four key phases to the business process were outlined in the report: planning, budgeting, allocation/distribution,

and execution. In the planning phase, Teams develop a work plan and identify resource requirements by competency. Competency leaders then develop and investment plan to meet demand for people and facilities during the budgeting phase. In the allocation/distribution phase, Area Commanders reconcile demand with their respective business plan and rate structure; they accept and allocate funds to programs; and, they perform fiduciary functions and execute an A-11 budget within their controls. Teams then perform the work, in the execution phase, according to the plan that has been developed and resourced (Navy 1996b, p.13). The execution phase, in which the area commands accept funding and execute a budget, became a key point in the implementation process, as will be described in the next chapter as one of the adaptive strategies described as, "cite regulations."

The corporate policy was that this structure was developed to support an organization focused on products and driven by customer demand. Its emphasis is not on the business operations of an individual program office, nor on the development of an individual product, but rather " . . . on how the TEAM manages its business as a whole" (Navy 1996b, p.12). Two key sets of documentation, the

Business Operating Guide (first approved in December, 1995) which documents the operating concepts of the new structure, and the Program Operating Guides (developed in the summer of 1994, and approved by their respective Program Executive Offices in the fall of 1994)(Navy 1996b, p.17) were also part of the official documentation of the new processes. Part of the original policy design included reengineering processes. Elsewhere in this document, it is argued that the detailed work of re-engineering processes across the organization had not been fully accomplished by the end of the implementation period, and thus, the original design has not been fully realized. However, it should be noted that the macro business processes and mechanisms just described have been implemented, and accomplish a necessary first step toward overall corporate workload planning. This is part of the reason that the policy implementation can be characterized as a conditional success. One of the reasons this claim can be made relates to the cross-functional view that the new organizations provide. As one informant relates:

> "So, as part of that consolidation, we had to become a more efficient organization and do things such as reduce redundancy and become more efficient in the way we do business, reduce cost, and all that. So, the concept of CAO was all put

> in place to meet those needs, reduce costs, become more efficient, give visibility to the resources and capability we had in the organization, and apply those resources to our primary purpose, which is programs" (Informant_02 1997, para.12).

The national view of competency allows the organization to better serve the program teams. This is a change from the previous organization, and is also indicates the command structure at the local site now has less power, as a result of the increased authority and responsibility of the national competency organization, as is highlighted in this comment by another informant:

> A: I think there's a big difference there. I mean I used to hear Admiral Bowes say, hey, when I was a program manager and when I was a PEO, I had no idea what it took in terms of resources to get something out of one of the field activities. I went to them and they gave me their budget and that was that. I either paid for it or I didn't and if I didn't; I didn't get what I thought I needed. That was it. There was no negotiation, this is what you need, and if it was more than what you thought it was that was still the price.
>
> "I've heard Admiral Lockard say that, I've heard Admiral Bowes say that. I've heard many people say that. What they have now is the program managers have more insight I think into what it takes to actually get work done. It's far from perfect. I mean I saying we can't have total visibility into that, but it's become more of a focus than . . . there are just not enough resources to go around, and I think that your customers being the program managers, don't have the money and you need to be more competitive or they're going to send their work elsewhere so they give you more.

> Q: And the current organization helps to make those costs or the true costs, let's put it that way, more visible?
> A: Yeah.
> Q: And better understood meaning a positive to the new organization?
> A: Yeah. I think they do that because the competencies have more visibility as to what they are responsible for. So that they demand more information because they own the people at those sites. See, do you understand what I'm saying? I not sure you do.
> Q: In terms of?
> A: Of why, how come, do we understand better about why things cost what they cost at the sites. Because we now have, we're now have ownership of the people that are there. Before you didn't. It was a different country. It was a different organization. Now you know how much your engineers, what their rates are, what they are charging at these sites. They owe that to you. You do their fitness reports. Before they worked right for the Commanding Officer" (Informant_07 1998, paras.377-391).

The crux of the issue is that before the competency-aligned organization came into being, the Commanding Officer had both a workload control/business relationship and a supervisory relationship over the personnel assigned to the command. After implementation of the new policy, these relationships became separated. The business relationship was retained, but the supervisory relationship shifted to the competencies and the product teams, both national organizations, typically not located with at the site. Team Leaders play a role in evaluating team members'

performance. The competency leader is the supervisor of record; however, for personnel assigned to product teams, the product Team Leader has "significant" input into the team members' evaluations, and indeed, "evaluations of military and civilian IPT team members will preponderantly stress team tasks and responsibilities." (Navy 1996a, p.33). In this way, the emphasis and focus on the team as the key element of the new policy is reinforced, but at the diminishment the role of the Commanding Officer. This diagram outlines the relationships just described:

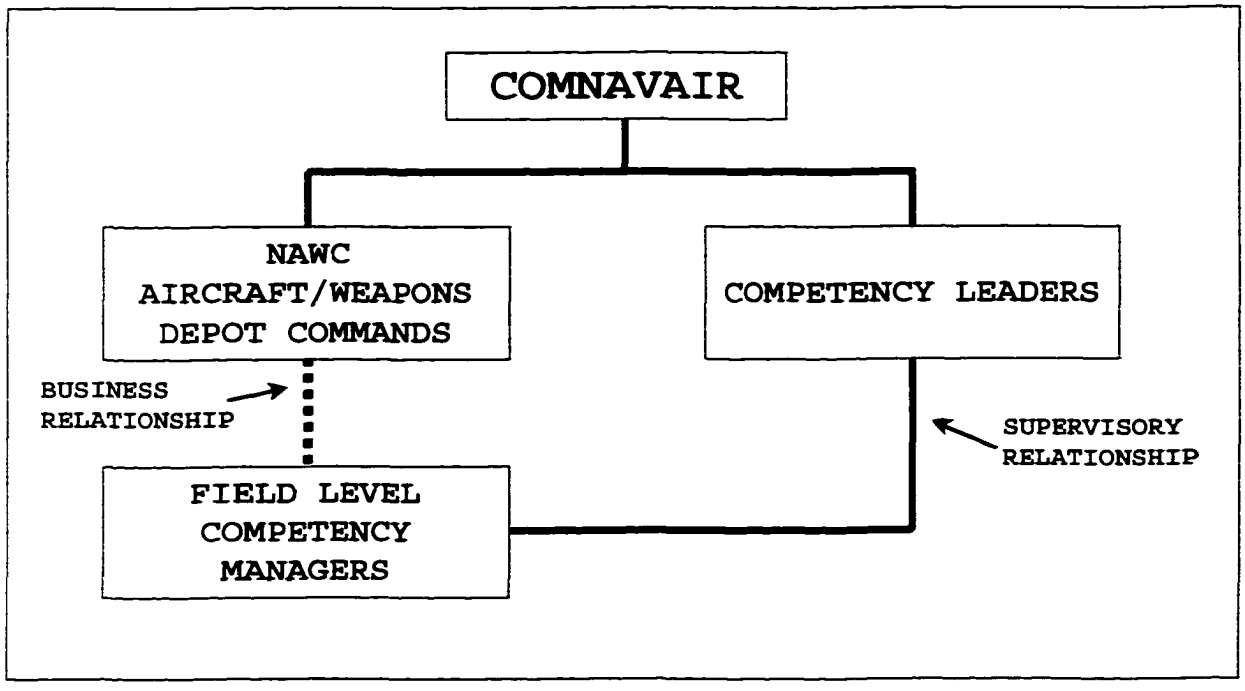

Figure 10. New Reporting Relationships (Navy 1996b, p.21).

The command accepts tasking and maintains a business relationship with employees located in the command. This relationship includes the fact that the local command sets rates for the work performed at its site, is responsible to maintain a "balanced budget" and not exceed funding authority, but does not directly evaluate the performance of the employees with whom this business relationship is held. Supervision of the employees rests with the competency leadership which, as pointed out previously, may not be located the site where the work is done.

One informant states that the change in the focus away from individual site, and the resulting decrease in influence of local commands was a conscious decision, and not necessarily just an unintended consequence:

> "Well, you know, just like a sword cuts both ways good and bad. But when the field activities basically the CO's position got demoted significantly by design, to breakdown these organizational barriers and get away from parochialism's, i.e. China Lake had to be fed, Norfolk had to be fed whatever, so it all boiled down to jobs and COs represented that parochial interest.
>
> "Well, these are my words now, but I think in the NAWC-AD (Naval Air Warfare Center Aircraft Division) and WD (Weapons Division) side of the house, they basically ripped the spine out of the COs' perspectives to breakdown the barriers . . . by design. That rice bowl had to be broken, so these CO's end up being viewed between themselves as "roads and commodes", at least in the NAWC-AD

and WD perspective because all this stuff was being, you know, breaking down the barriers.

"Now the downside was that we had a supervisor of a GS-12 would be the lead person for that competency, and where ever it was Trenton or Lakehurst, they were supervised by somebody in Indianapolis, and that 12 may not have a . . . clue as to how management should be working, yet they were the lead guy or lady or whatever? And the CO had basically had been disemboweled by design, so for all practical purposes, that competency could be viewed as rudderless, because it didn't have . . . the person that was in charge didn't have the maturity, in the sense of being developed, not age, to be able to work autonomously.

"So there was, you know, there is some baggage that went with this, but I think . . . I know it was done by design and . . . even though these shortcomings were pointed out, for the good of the order downstream, those barriers had to be broken.

Q: You say you know it was done by design, you're talking specifically about the major . . .

A: The disembowelment of the COs" (Informant_13, 1998, para. 154).

The leadership of NAVAIR, in its orientation toward product focus, and its formulation of competency-site relationships, made a conscious decision to diminish the power of the site and the local commander located there. And, as the interview points out, there is a "two-edged" sword in this aspect of the policy decision, since the competency leadership in some cases was not located where the work was done, and in some cases was not experienced enough to evaluate the quality of its performance.

It was noted earlier that the movement toward team-based organization had been put in place at several sites before the national policy to do so. One result was that at those sites, the transition to the new national structure became more of an evolution, rather than a revolution in terms of requiring adoption of a totally new way of doing business. Instead, it allowed the focus to be more on tailoring the existing arrangements to the new structure. On one hand this was positive since it required less of an attitudinal change at the three sites. One effect of this at the local level was to validate the change that individual business units had made on their own initiative. The larger organization moving in this direction solidified the local decision. As one informant stated:

> "We had been working real hard here for ten years to getting a team environment. Prior to the competency-aligned organization coming into effect, we already had what we called the "PMTO's" program management teams, for all of our major programs. So, we had long since been moving that way. If the CAO did anything for us, it allowed us to move there faster and solidify it, so we didn't have to back up from it" (Informant_03 1998, para.364).

However, even though this history of getting work done through teams may have made the transition to team arrangements easier at a given site, on the other hand, at the same time, it also complicated the change at that site

because the new team structure did not necessarily correspond to the existing team structure at the site. This situation can lead to one example of a phenomenon which will be discussed in more detail later in the next chapter on "bottom-up" strategies, that of changing the policy to tailor it to local situations. This is what the policy implementation literature refers to when authors draw a contrast between policy as "designed" and policy as "implemented."

One example of this kind of dissonance created by the reorganization plan relates to the concept of product line focus. One depot organization had reorganized and teamed professionals and artisans around a product line. For example, what this meant was that instead of an engineer, a production control manager, and a machinist reporting through their respective functional departments of engineering, production control, or the machine shop, these individuals were now reporting to a cross-functional product manager for the F-14 aircraft. This manager was given the resources and vested with the authority to ensure that the organization at that site met production schedules and quality goals for the F-14 rework product. Note that this form of organizing was intended to optimize production at one site, not across all

sites which did similar work, nor across the organization as a whole.

The new national structure differed in two significant ways from this approach. First, it emphasized organizing into teams around national products rather than products specific or limited to only one location. Second, it assumed an organizational structure which would group people by professional expertise (the Competency) and then match these talents to product teams as needed (the Integrated Product Team). This had the effect of undoing the local product line focus which had been established. For instance, the following comment relates the effect of this change at one Naval Aviation Depot, "Well, what it did was it unraveled the product lines in the sense that now we were pulling the engineers and logisticians back together, from a competency standpoint . . ." (Informant_06 1998, para. 367).

This is another example of how the power of the local command was eroded during the implementation process. Problems such as these at the local level did not necessarily get elevated to the senior level of the organization for resolution. Perhaps it is not appropriate that they should have. Many of these issues tended to be

resolved through informal processes and adaptive strategies, which will be discussed in detail in the next chapter.

Conclusion

NAVAIR management took a "top-down" approach to implementation of the new organization. A detailed plan was developed and set in motion. Top management was engaged throughout the process to monitor progress, and endure compliance. The military command structure in the organization has been characterized by informants as a constituency which lost power as a consequence of the policy design. However, the top-down perspective does not necessarily illuminate how this power loss was effected and what the response of the losing constituency was to the process. In fact, some of the changes which occurred through the implementation process, to some extent, diluted the some of the more radical features of the original design, and retained some of the power of the commanding officers. The next chapter explores this phenomenon in more detail.

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Chapter 7. Bottom-Up Implementation

Introduction

This chapter will discuss the second research approach to the NAVAIR policy implementation, the bottom-up approach. The overall implementation strategy chosen by NAVAIR management, the top-down approach, was discussed in the previous chapter. In the NAVAIR case, as has been noted in many others, bargaining and negotiation are political processes that occur naturally in large organizations, and transform policies which are implemented within them. These political actions may be viewed as natural consequences of the implementation process as noted by Richard Elmore in his discussion of the "backward mapping" approach to policy implementation study, as well as other policy analysts. Elmore cites the importance of reciprocity in the relationship between superiors and subordinates in an organization, the connection between hierarchical control and complexity, discretion as an

adaptive device, and bargaining as a preconditions for local efforts. He proposes that "the greater the reliance on delegated discretion, and the less reliance on hierarchical controls, the greater the likelihood of affecting the target audience" (Elmore 1982, p.28). He also states that the logic of backward mapping connects policy decisions directly with the point at which their effect occurs (Elmore, 1982, p.33).

It follows that one important way in which to understand policy implementation is to describe these interactions and then to map the result back to the original policy. In this way, the political interaction of those involved in implementation becomes key to understanding the implementation process. From this perspective, implementation is a bargaining process.

Other policy analysts have noted that the participants in a policy implementation are assumed to pursue their self-interest (Bardach 1977), and to be concerned about the political support they enjoy among constituencies other than those who designed the policy (Stoker 1991). Implementation effectiveness is not found in the directions of those who design policy, but rather through the interaction of those who implement it. In the context of policy implementation, a natural consequence of this

approach is that bargaining or alternatives will be explored which enable the implementation of the core policy, although perhaps the alternatives will not result in complete implementation or precisely as the policy was designed. The flexibility inherent in "delegated discretion" results in changes to the policy as envisioned. One way in which these changes occur is the interaction of persons involved in the policy process, policy makers and policy implementers, engage in bargaining and other behaviors which adapt the policy to the environment in which it must be implemented.

In response to the new NAVAIR policy, multiple adaptive strategies appear to have been utilized, and have been cited by informants in this research. "Dual-hatting," negotiation, symbolic compliance, personnel "mapping," appeals to Congress, and citing of authoritative studies or laws and regulations to support a position, are examples of these behaviors. These categories of adaptive strategies will be described and discussed in turn in this chapter.

In the NAVAIR case, there were multiple opportunities for such interactions to occur. One significant result was that the original flat organization structure proposed by the transition study team became transformed with the

addition of another layer of management, the Area Command. This set up a potential for conflict in the new organization among competency, Integrated Product Team, and Area Command. National competency leaders are "responsible for the development of the processes, tools, the knowledge, skills and abilities to perform the work and the facilities necessary to perform the work" (Informant_02 1997, para.50). Product teams are responsible for performing the work. Area Commanders are a separate organization which have local responsibility for execution of a budget and maintain facilities and services which are marketed to program teams.

In the original concept of the competency-aligned organization, Product Teams would broker services directly from competencies without the need for local site management to oversee the process. This construct was radical, since it severely limited the role of site management in controlling workload performed at the site. This approach was changed over time, apparently to satisfy two needs. First, the financial management constituency, the comptrollers, made the case that an intermediate management structure was required by law or regulation to maintain a "buyer-seller" relationship between the program team and the competency. This structure could only be

accomplished by an official with fiduciary responsibility to execute a budget, to meet a "net operating result" in Navy financial jargon. Second, there appears to have been a case made by military officers that military positions should be preserved. The Area Command structure preserves three flag positions as their leaders, plus numerous supporting staff positions, including some senior executive civilian positions. Some informants viewed the change to the original design as wasteful. As one informant stated:

> "They (the Area Commands) are more costly you know you got another whole management infrastructure that's trying to influence what happens overlaid on top of the competencies in an attempt to deliver products and services to the teams" (Informant_02, 1997, para.184).

Another addressed the issue of preserving military command billets in this manner:

> "Command structure and whoever never had the (courage) to change that. Well, no, we need all these Captains, just like they say that with SES. When a SES job becomes vacant and they say, oh, well we need to fill it. Well maybe you ought to think about not filling it, but not them . . .they have X-number of billets and they're not going to give any up, the same thing with the Admiral slots. You know when look at a (person) in charge of (Aircraft Division), can he do anything? Does he have an organization? Not really. The competencies rule, he can't do much with it. He's supposed to have financial and be able to move and charge the people. He's nothing. A figurehead. And he has a staff" (Informant_08 1998, para.205).

The comment, ". . . and he has a staff", reemphasizes the point that the intermediate structure does not come without cost, since command slots require staff positions, as noted earlier in Chapter 3. The system is self-perpetuating since a command position requires staff, and staff with more responsibility requires higher graded positions to manage increased responsibility, which in turn require a higher grader position to provide oversight and leadership. The same informant's comments continued in this vein:

> " . . . But there's no SES who's going to say I don't need all these people. They don't have the (courage) to do that. Plus half of them are in love with that crowd. There's no 2-star or 1-star Admiral going to say I don't need all these people. They're just not around. They're not made that way. The organization sort of blesses them to have more people instead of cutting them (Informant_08 1998, para.311).

The institution of the Area Command had another effect that was not intended by the original study team. It is clear is that employees at a particular site tend to identify with that particular site closely and not necessarily with their national competency first:

> "Q: Yeah, if I walk up to you, and I say, "Who do you work for?" Your reaction, you're gonna tell me . . . in the old days you would have said, "I'm a NADEP (Naval Aviation Depot) Jacksonville) employee, and I work on the P-3 (aircraft), on part of the P-3 examination and

evaluation group.' What we were trying to get to is, the guy says, 'I'm a P-3 examination and evaluation group team member, and I work at NADEP Jacksonville. . .'

Q: So site and team role in its pure form would have been reversed?

A: Yes.

Q: The identity would have been team role first and then site second, but it's still site first . . .

A: Yeah, But it's closer . . .

Q: Co-equal, maybe?

A: Yeah, maybe co-equal . . .

Q: And that is due to this whole thing with the command structure, you still have the gorilla down the street who has four stripes or a star or whatever . . .

A: And he's still got a responsibility . . . in his mind for what you do, and he signs your time card" (Informant_02 1997, paras.188-208).

The last point is key. The perception among many is still that the local command is the employer, not the larger organization. The personnel supervision responsibility is shared between Area Commands, program teams, and competencies as will be discussed in more detail in Chapter 8. When the interests of the larger organization offsite, whether it be the product team or the competency, conflict with the interests of the Area Command, the potential for conflict exists. As a result, bargaining and other strategies of adapting to the environment are employed.

Dual Hatting

A traditional means of leveraging scarce personnel is referred to in Navy circles as "dual-hatting," or "wearing two hats." This literally means the assignment of two or more jobs to the same individual, who then assumes multiple roles, and the "hats" that accompany them. Thus, an individual who has two roles, wears two hats.

An example of conflict between sites and the national policy emerges at sites with respect to the assignment of national competency positions which were directed by the national leadership to be implemented at all sites. While this might have been seen as a viable organization to the central leadership, functions are not common across all sites and traditional staffing patterns at some locations may not have required the same structure across the entire organization. As one manager relates,

> "Yes. So I'd say we have been able successfully to influence the number of teams that we have here—team leaders as, competency leaders—because it does create an overhead problem when you start adding those in just because the other activities have them. In other cases we've been able to combine some functions that were normally dictated. You have two managers that we've kind of aligned them under one manager and cross-competency type functions" (Informant_03 1998, para.144).

In this example, the local organization was able to satisfy the conflicting requirements of two competencies through assigning the same individual to both—through the process of dual hatting. Some site managers have been able to use this technique successfully by assigning the same person to multiple functions as a means of reducing the overhead or salary burden of creating positions which are not fully occupied with that particular assignment, but which when combined with another position, then fully engage the person's time. One informant provided a specific example of how dual hatting was used:

> "Well in the corporate operations area we have a 7.2 organization as the information management arm in the organization. Within the 6.0 competency there is also an industrial information management arm that is in that organization. Just by organizational alignment, it would require us to have the 7.2 manager, and then we also would have to have a 6.0 industrial information manager; when in fact, since we're servicing the Depot, we're managing the information. So initially, when we initially implemented CAO we did in fact put two managers in: one for the 6.0 information side of industrial information and one for the 7.0 side which is corporate information.
>
> "After a while of trying to work that, what we found was a barrier started to be built between the two sides of managing information, and they weren't necessarily working in harmony. So we had two managers, and we started to experience difficulty in the way they were managed and the direction they were getting from above on that side (from both the local and the national competency leadership).

"So to fix that, when we had a vacancy in one of the jobs, what we did then was combine, basically combine the two jobs, and said we will have one manager to manage information; and below that we can have industrial information and corporate information, but we're going to have one manager that these two areas will report to.

"It did two things for us. One, is eliminate the need for one GS-14, and the team could use that high grade some other place. The second thing it did was it pretty much fixed the area of the direction coming in from two different ways to manage the same information. We notified Headquarters that we were going to do it and did it. And so far it's working" (Informant_03 1998, para.148).

This particular instance did not occur throughout the corporation due to the uneven distribution of competencies across various sites. In other words, only three Depot sites had the potential for this particular solution because these three sites employ the greatest concentration of Industrial Competency (6.0) personnel (Informant_03 1998, para.156).

In another instance, similar overlaps existed in the area of financial management:

"We had the similar anomaly that existed between the Comptroller shop, which is corporate which the Comptroller position and budgets which was retained in 6 as a budget shop. So we had a 7.6 organization and a 6.D organization, and they're both really doing financial workload-type functions, and it was very similar to the thing I described for you in information systems, and eventually we combined those two under one" (Informant_03 1998, para.156).

These two examples illustrate the context in which the strategy of dual hatting has been employed successfully. Dual hatting, however, if done unilaterally, exposes the local site to the risk of exposure by the national competency leadership. To prevent confrontation and outright loss of flexibility, dual hatting is usually combined with bargaining or negotiation to gain permission, or at least, tacit acceptance of the action. As one of the informants stated,

> " . . . the other thing you have to understand on this is that this is somewhat controversial. It is understood. You know, for instance, the Comptroller, understands what we've done and it's being, I would say more or less, ignored because in both of these examples they kind of fly in the face of the original competency-aligned organization, and so we don't make an issue of it. Because if we make an issue of it, then it becomes an alignment issue, and then we get into all of the . . . the debate goes back about, you know, why didn't you align the way the book said, and when in fact we feel that we have a more efficient way of doing business here, and I believe it's recognized outside of the command that it's working well, so why mess with it? We don't make an issue of it" (Informant_03 1998, para.164).

At this particular site, some of these issues were resolved through "dual hatting." But what is the effect of "dual hatting" and the larger issue of conflicting roles on employees? Most informants agreed that the new structure demands more flexibility form employees:

A: You answer to different people for different things. And being able to balance that and juggle it and do what you need to do to satisfy everybody is the way you prosper. I mean if somebody. It would be a real simple life if somebody said here's your boss, you're only going to listen to him, you know, and don't worry about anything else. In some jobs you can do that. You do that if you're driving a truck and he says, all right, I want you to take this truck from here to there. It's not like that when you're dealing in a technical environment where you're part of the technical team and you have customers telling you one thing and your program manager telling another. You've got to balance all that" (Informant_07 1998, para.411).

This balancing act may be difficult for some employees, especially those who are used to a structured environment

" . . . it's a military command, and when you've worked in a military command all your life, you're used to a very hierarchical structure. And you're normally not used to saying who's the boss? And you usually only have one.

"This particular structure makes that very ambiguous. You have a minimum of two and sometimes three or more people that you follow. You follow your competency direction policy, you follow your team policy, and sometimes cross function and cross teams where you're supporting more than one team. So, if you're very hierarchical in nature and that's the way you worked your whole life, this is very upsetting. You know the standard question is, who do I work for? You know, I only want to work for one person and the answer to this one is, that isn't the way we operate anymore. You're going to have to get used to the flexibility, if you will, to work on teams, work in your competency and in many cases support multiple team activities..." (Informant_03 1998, para.491).

However, this informant seemed to believe that this particular problem may be eliminated over time as personnel turnover takes place:

> "The old school manager doesn't cope with it very well at all. The folks that are kind of mid-career are making the adjustment. And the folks that are coming in, they adapt very well; in my opinion" (Informant_03 1998, paras. 486 and 491).

Another manager talked of the toll that is taken on employees who are asked to continually to assume more and more responsibility:

> ". . . I just know for myself. I mean I . . . it's very difficult because I feel like I'm expected to give 300% not 200% anymore. Uh, it's just . . . we keep stretching people. And we just keep stretching them and stretching them. And uh, it's just . . . I guess the people who really didn't want to be here left, or are trying very hard to leave. And those that are here, you know, are stretching with the rest of us . . . Yeah, and I can't really relate at lower levels, uh but I know I get pulled in ten different directions and I just give it my best shot. I spend a lot of time here, weekends, late nights just trying to get it all done. Sometimes you've just got to say (smacks table) 'Stop! this is the best I can do!', you know? (Informant_06 1998, paras.273-280).

An in-depth examination of the issue of role conflict is outside the scope of this dissertation, but it appears to be a rich topic which bears further study. The strategy of dual hatting is one which may be successful in allowing local organizations to adapt to the corporate policies. But

it carries with it the consequence of increasing employee workload and the potential for more role conflict.

Negotiation

This strategy involves negotiating waivers or exceptions from national policy for local situations. Once again, the opportunity for this strategy to be employed usually arises from a situation in which site practice conflicts with national policy:

> "And, I think he was, what is the responsibility of the Commanding Officer was what it really boiled down to as opposed to the National Competency Leader . . .That's where the whole thing got real tough, and still I don't believe is completely settled. Because that's still probably the area where you have the most conflict. A National Competency Leader will say, "By God, you're going to do that," and the Depot Area Commander will say, "No we're not!" and there you go. . Yeah or any other CO says, "No we're not going to put on four more people or five more people," Right, it's against our, you know, it impacts our rate da, da, da" (Informant_03 1998, paras.618-630).

In this type of conflict, some sites have employed negotiation successfully. As one manager states:

> "Um. Where we've negotiated successfully? I think initially when we tried to put all our IPT's together. Team leaders were required for each IPT, and then you had competency leaders required for the competency side, which really in some view caused double management, and you had a team leader grade 13 or 14, you had a competency leader grade 13 and 14, and there was a real question about how the duties fell out between the two. When in the old days you really had one that

looked after that position" (Informant_03 1998, para.140).

Negotiation inherently implies at least bilateral participation. Because the situations which lend themselves to negotiation usually involve national leadership, the technique must convince a senior member of the organization to serve in the role of advocate:

> "Well, the role there is the (National) Competency Leader normally will get into that role and policy. And he will work his level with the other Competency Managers" (Informant_03 1998, para.634).

The examples provided so far have dealt with specific, limited instances in which negotiation was used successfully.

Another class of situation is where negotiation is used to exempt an entire organization from a given policy. Several informants remarked that this had been done in the Industrial Competency, in the case of the Aviation Depots. Complexity was the rationale for the decision to grant this wholesale relief; the fact that too much was occurring at once to make everything work effectively, was cited by several informants (Informant_05 1998, para.156; Informant_08 1998, para.141).

> ". . . Again, you, if all we had pulled off was going to competency aligned organization, it would have been a piece of cake; but when you pull

off the BRAC closures and all of the other stuff and the downsizing, it became fairly chaotic at times, particularly for a place like the Depots, where we were closing half the Depots, moving all the work load around the country, and asking them to implement the competency organization at the same time. For reasons like that, we sometimes gave parts of the organization permission to delay going to some of the structure immediately, and then we tended to forget that we told them they could delay, you know. I know the Depots today, people keep saying they haven't fully implemented; well, they were told up front they didn't have to do it at the same time schedule" (Informant_05 1998, para.156).

Another informant agreed with this comment:

"So quite frankly, this (CAO at a closing Depot) was more of an intellectual exercise, it had really minimal meaning. I had to get product out the door and to talk about the future like this was ridiculous. I basically had to close the plant, salute the flag and take care of the people, and this was not in my scope.

"So except for the minor involvement where the alignment of the engineering competency, if you will, with headquarters versus being within the Depot chain, I was sensitive to that because I still needed to have pretty good control over those engineers to get the product out the door. Except for that minor intrusion, if you will, of CAO at the Depot level, it didn't pass the "so what" test to me. And as a matter of fact, it's a statement I think of the Depot community in general. They were considered . . . there was so much turmoil going on even with the remaining Depots absorbing the workload that was being shed by the other three that were closing, that it was stupid for them to get seriously involved until things were settled out as result of BRAC" (Informant_13 1998, para.74).

Thus, negotiation has been employed successfully in both specific and general cases to adapt policy to local conditions.

Symbolic compliance

One of these strategies, symbolic compliance, is referred to often by informants. It can be defined as incomplete implementation of corporate initiatives, giving the appearance of compliance, while not fully embracing change. It seems to be the one of the most common strategies employed. Motivations for these behaviors in specific instances may be hard to ascertain. As one study points out:

> " . . . are individuals involved in implementation likely to feel a sense of responsibility for the action in which they are engaged? Very often, it is clear, the answer is no. The complexity of inter-organizational relations—often involving many units charged with dealing with each other in complicated ways—makes it virtually impossible to ascertain which are earnestly seeking responsible results (e.g., on behalf of the policy) and which are engaged in selfish or destructive or organizationally-centered action. Because of the complexity and often, the absence of a well-known structure or pattern of activity, individuals and organizations can evade any responsibility which blaming others for any failures or problems" (O'Toole 1985, p.212).

However, motivation may not be as important as the effect of the strategy, and the effect can be ascertained and analyzed. Symbolic compliance is defined as half-hearted implementation of corporate initiatives to give cosmetic

appearance of compliance, while really not fully embracing change. One informant referred to this tactic as "paying lip service" to corporate policy (Informant_04, 1998, p.213). In the words of another:

> "Well, some people feel that it's an effective model in which to implement and others just, as in any other organization, just say yeah and comply to the minimal degree necessary to conform to the thinking at the time" (Informant_07 1998, para.119).

Some symbolic compliance is seen as normal by those in the organization, because people tend to feel comfortable with the status quo: "It was a natural thing, yeah. I mean . . . everybody wants to protect the way they used to do business" (Informant_02 1997, para.164). At another site, initial (perhaps superficial) enthusiasm for implementation gave way to reverting back to the old ways:

> "I think the jury's still out. I think that when I watched it happen, at least our site, some folks jumped in full speed, others did business as usual and never changed, and they called it CAO, it wasn't at all just they kept the same structure they always had and did not participate in the full-blown effort although they said they did. If there was a benefit, I think it probably, they did reduce levels of management, if that was one of the goals that trying to get up to a level of 20:1 or 25:1 or 30:1, did get accomplished at (my site), and if that's good, bad, or indifferent I think remains, I don't think it's been decided yet. I see an awful lot of effort to go back to status quo, return back to the normal way of doing things" (Informant_04 1998, paras.79-86).

Symbolic compliance can also be used as a result of failed negotiation. If a situation exists in which a local command priority takes precedence for resources over a national one, negotiation may be employed first. Failing successful negotiation, symbolic compliance results, because the site needs to give the outward appearance of compliance with the national policy, even though full resources are not being applied to it.

Mapping

During the implementation of the new organization, the potential for conflict arose over various groups of employees and how they should be accounted for in the new organization. This occurred while competencies were drafting their implementation plans as described in Chapter 6. Various organizations postured themselves to retain control of functions through assignment of personnel to one location or another, or to use the jargon of the competency-aligned organization, "mapping" functions or employees to locations which would preserve power or influence or control functions deemed critical to the overall success of the competency.

In some cases, this mapping may not have conformed to the initial competency-aligned organization assignments of the employees. For instance, the Logistics competency (3.0) maintains information systems to provide analytical data to logisticians. In the original competency alignments, the information systems function was to be the responsibility of the Corporate Operations (7.0) competency. However, Logistics wanted to retain its organic information system capability as described here:

> " And you guys wanted this business. And I said I'm not real sure, ". . . I'm really not sure I want to do that." "Oh, those guys have all these information technology techs over there, and rah, rah, rah, rah." I'm kind of glad we found our way not to do that. I actually went down and pulled the strings through (another senior manager) who said, what the hell, turn them over, they're mine, turn them over and forced them to come back to with why, we need to keep them, but . . . So I think that's pretty explanatory about that process. So it turns out if we're into writing code, and doing stuff like that and that's not what we should be doing. We should be into taking applications to logistics" (Informant_10 1998, para.38).

In this case, the issue of appropriate placement of function gave way to the issue of the competency right to control a key process: collection, storage, and manipulation of logistics data. The issue was resolved through mapping, assigning the employees to the Logistics competency, which retained control of what was perceived by the Logistics Competency as key to its success: logistics information used in its logistics analysis function.

Mapping serves as an important way in which an organizational entity can establish or retain control over personnel and other resources. However, mapping does not occur in a vacuum, it has longer term consequences as well because the world outside the organization is constantly changing.

> "I would have enforced more discipline in the assignment of functions that people do, their

> coding, and then I would have probably given those people who had excess capacity, some real clear marching orders, and shift some things around to face the future. That may sound a little parochial, but we knew the future was going to be in sustainment and wouldn't accept it. Therefore, we . . . rather than shifting people from engineering to logistics, we sort of just let the engineers get into our business and do some of our business . . .
>
> "Now we are sort of in the boat, saying well how many logisticians do you need? I don't know, but I don't have enough. Workload is higher. Tasking is higher than it's ever been. Fleet's more interested in readiness, cheap readiness, somehow. Make magic happen. We don't have the skills to implement all these things, but in hindsight, absolutely" (Informant_10 1998, para.90).

In the view of this informant, incorrect mapping will have long term consequences because the organization did not align sufficient personnel in the right business units and competencies to adjust to changes in the fiscal and functional environment. Whether the competency-aligned organization has robust mechanisms to deal with these kinds of issues remains to be seen. However, the flexibility to be able to adapt the organization and its core skills and competencies to changes in the environment is key to survival in the future.

Cite Study

One informant used the example of citing findings from an independent study to support preferred CAO position:

> A: Indirectly . . . we are labeled as a separate business unit. We still are part of the (an) Area Command in the fact that our Commanding Officer reports to and has his fitness report written by the . . . Area Commander, but that is about, uh, ... from our perspective that's probably our only linkage to that unit. Other than that, we operate fairly independently and have many studies gone down onto where we should be located, then it turns out that we just always get labeled as a separate business unit.
>
> Q: Were those studies commissioned by you?
>
> A: No, they're commissioned nationally."
>
> (Informant_04 1998, paras.331-337).

This strategy does not appear to be widely used. Although in the example cited, it (among other factors) seems to have been successful.

Congress

One informant stated that appeals to Congress were one way in which local activities attempted to circumvent provisions of the reorganization plan:

> "Quite frankly, commands were our nemesis when we started this process. They would go to Congressmen, they would go around. They'd play the politics to keep us from changing or getting the reorganization or the reengineering we needed to get" (Informant_10 1998, para.102).

However, other sources familiar with NAVAIR's relationship to Congress did not concur that Congress played a major factor in the reorganization. On the contrary, the lack of interest and intervention on the part of Congress was remarkable (Informant_12 1998). The term, "lack of interest," however, does not apply to the Base Realignment and Closure (BRAC) commission actions which inspired constant Congressional interest, not only in the site selection, but throughout the implementation of the process. This may have led to some confusion about exactly what Congress was interested in on the part of the informant.

Cite Regulations

When the proposed policy runs counter to established law or regulation, citing regulations can be an effective adaptive strategy to change the proposed policy. This particular strategy was used successfully by the financial community and the military commanders to argue for reversing the thrust of the original reorganization study team to flatten the organization by eliminating layers of bureaucracy and command hierarchy. One informant described this process in these terms:

> "The original vision of CAO was national, an organization that had 8 pillars, you know, 1-0, 2-0, 3-0, 4-0 and so on. No what I'll call business unit wrap-arounds of pieces of these things. There would be one basic budget, one big mother A-11 budget and COMNAVAIR would be the commander--the only commander. You'd have some bases maybe. CO's and physical properties, but that was it. Well, at the last minute (this is some of the stuff I am sensitive to) at the last minute the comptrollers come out of the woodwork and say you can't do this. You're gonna violate all the rules of buyer-seller relationships, you need to have fiduciary arms-length. You need a Headquarters that then funds the working capital fund otherwise it is a conflict of interest. It was all these . . . probably legitimate, but you know--viewed you have people like me who just put their heart and sole in reinventing how to do something, in a business you wouldn't do this" (Informant_09 1998, para.22).

The financial managers used the financial regulations to which state that the Commander, NAVAIR, must maintain a buyer-seller relationship with the competencies to comply with laws and regulations regarding financial responsibility of government officials. This may have been a reaction to being excluded from the original study team as outlined in Chapter 5. As one informant stated:

> "In retrospect, if we would have had two more people on that team, we had to step back a couple of times. And I think that if we had had two more people on board we would not have had to do that-step back. And that was if we had brought the comptrollers in. The comptrollers were totally against this from day one. But the comptrollers are always against everything. And, it was the leadership's theory that, well, you know, we will just do what we gonna do and we'll eventually bring them in. And that was a mistake. I think that we missed the TQ (Total Quality) process of trying to get everybody involved on that one. And I think that hurt us. What it did is it hurt us from a timing standpoint as far as full execution--because we didn't do that.
>
> Q: It slowed it down?
>
> A: It slowed it down. And we had to go back and revisit some things. And we had to spend a lot more time reeducating people. Educating people who we thought were already on board. And so that was the only lesson I learned through that.
>
> Q: Why do you think that was so? Why do you think that they said that they were on board, and you felt they were on board, and all of a sudden, they came back and said, hey . . . ?
>
> A: Because in our organization, in our organization (chuckling) if you fess up to be against something at that time in the organization, you could've gotten shot. OK? If you didn't, you could uh, throw roadblocks at it, without knowing where the roadblocks were coming

> from. And so it was a tactic". (Informant_01 1997, paras.99-107).

The financial managers argued successfully that intermediate structures were required to satisfy financial regulations. These intermediate structures eventually became command positions. The military command hierarchy had lost influence in the CAO process. The comptrollers were excluded from the original planning sessions of the study group. Whether by design, or by circumstance, the result was a congruence of interests: those wanting to preserve military command billets, and those citing financial regulations requiring intermediate organizations to satisfy fiscal requirements wanted the same result, preservation of the status quo.

Several informants confirmed this reconstruction of events. One informant emoted:

> "So, plus, the military was saying, "Hey, you know. We are a command guys. We've got commands, you know, you've eliminated all the commands. We don't have any commands. . ." This was sensitive, okay? Now you won't find it written down anywhere, but I know that's what happened. They were all going in to Double 0 (the NAVAIR Commander) and saying this is screwed up!" (Informant_09 1998, para.22).

Another agreed, stating that perhaps other alternatives could have been adopted:

> "And I felt that one of the ways, you know, hindsight, one of the ways you could have done it that they didn't want to accept is, you could, I think you could have made the competency leaders the sellers of services. And you put the program teams in place under 1.0, and give them the money. And they buy from the sellers, and the sellers are the competencies, and they have the facilities and the people and the labs and the ranges and all the (resources) to deliver to the program teams.
>
> Why did you need an area command in there? (hushed) Why we need an area command in there is to give the goddamn guys command. And it's because it's close to the way we have always have done business, and we weren't able or willing to cast aside the way we have always done business, and go after the most efficient organization" (Informant_02 1997, paras.99-103).

Thus the adaptive strategy of citing regulations was used to adjust the original recommendations of the reorganization study. The roles and responsibilities of these arrangements were set forth in a series of tailored charters which specifically state that area commanders are responsible for fiduciary functions under the Anti-Deficiency Act, as well as preparing and executing budgets, and that they are held responsible for Net Operating Results (Navy 1996a, Navy 1996b, Navy 1996c). Other specific responsibilities for personnel management and supervision are also called out. Some of these will be discussed in more detail in the next chapter.

Later these area commanders were combined into the competency structure. The Commander Naval Air Warfare

Center, Aircraft Division is dual-hatted as the national leader of the Engineering Competency (AIR-4.0). In a similar fashion, the Commander, Naval Air Warfare Center, Weapons Division, also holds the position of head of the Test and Evaluation Competency (AIR-5.0). As on informant described this evolution:

> A: First of all, you got to remember that the toughest thing we were trying to do is that we were trying to get people in a military, hierarchical organization to work on teams collaboratively. That is kind of an oxymoron because the people have not been trained to do that-culturally they have been trained-you're my boss, you're my leader, you tell me what to do and I'll go do it. I'm in the military, I go kill people. If we have to collaborate on whether we're gonna take that hill, we'll never take that hill.
>
> "When we did certain things in the organization . . . in his (the Commander, NAVAIR's) mind, he didn't think this was a big deal. In his mind, all of these dudes here work for me. They went through several times trying to agonize where to put these guys: East, West and "D" (Depot)? And the solution is-you double hat people.
>
> Q: Because they had a command, right?
>
> A: Yeah, but he was trying to figure out how to have a command ,but still have the people work for him, and try to influence everybody else. What he did is he made East double-hatted with Engineering (a core competency leadership position) he made West double-hatted with T & E (Test and Evaluation, another core competency leadership position) and he made the Depots double-hatted with 6.0. OK? So his theory was when there was a problem, conflict between this guy and this guy, this guy would go this way and they would resolve it because they are all big boys.

"What actually happened, and really is still is a challenge trying to get people to think differently is that we think from a leadership/ownership standpoint. 'I lead the people I own!' and what East wanted to say was, 'I own all of those people.' What 7.0 wanted to say was, 'I own all of these people this way.' And that's when the fighting started.

"So we had to figure out a way to forget about who owned the level two's, three's, four's, and five's. Because if you ever get wrapped into that you could never go anywhere else because you were always fighting about who did they work for? All right.

"What we decided to do was to not look at who owned the people, but to look at the functional responsibilities of the leadership. One of the things you ought to get a hold of is the charters, operating agreements for Eastern Area Command, Western Area Command, which delineates in painful form by matrices what the Eastern Area Command responsibility is and what the competency leader responsibility is. Who does what to whom. Agonized. Because we kept fighting about this, and this is the only way we could solve it" (Informant_02 1997, paras.141-159).

As alluded to in this quotation, it was not easy to solve the governance issues and the control issues to implement the new policy. The adaptive strategy of citing regulations in this instance resulted in a long, drawn out period of conflict over the role of the Commander.

"Charters, I mean, that was a teeth gnashing experience from, that's about nine months to a year's work. I mean, guys were sitting there wordsmithing at the last minute and finally I just said, "screw it", you know, this is what it is, I shoved it up to the boss and that's the way it was. But, I mean, 99% of it was finally worked out, but there was a lot of blood letting, a lot of blood letting. The whole issue of how IPTs

would be run was a contentious issue" (Informant_13 1998, para.122).

In the NAVAIR case, this instance of citing regulations perhaps confirms more clearly than any other example a central premise of the implementation literature, that policy becomes transformed through the implementation process.

Conclusion

The previous examples support the thesis that in cases where national priorities conflict with local interests, policy implementers will employ adaptive strategies to resolve the conflict. Some are formal (mapping, dual-hatting), some are informal (symbolic compliance, negotiation), and some appeal to outside authority (regulations, studies, Congress). However, the variety of examples found in this case lends support to the assertion that policy does not get implemented in a vacuum and that an important key to understanding policy implementation is to be able to map backward from results to understand the underlying adaptive mechanisms that operate throughout the implementation process. The context within which the policy was transformed could not be understood from an examination of the top-down perspective alone.

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Chapter 8 Analysis and Conclusions

Introduction

The NAVAIR reorganization began in response to changes in the external environment which served as opportunities for senior management to modify the internal organization in a conscious manner. NAVAIR adopted a team form of organizing on a scale which had not been attempted previously in the Department of Defense (DOD). NAVAIR's existing military hierarchical structure may actually have served to impede the implementation of the reorganization. This outcome runs counter to classical assumptions that military organizations are rigid hierarchies that implement direction from the top down without change.

The process of implementing the policy has been described from the viewpoint from two theoretical perspectives. This reorganization process began as a top-down initiative. However, during the implementation

period, natural political processes, which are to be expected in any implementation effort, transformed the original design through adaptive behaviors of the people involved in the policy process. The bottom-up approach proved useful to describe and illuminate how these behaviors changed the original policy design. In particular, the military culture of NAVAIR served as a force to maintain at least part of the status quo, and transformed the original policy to preserve at some of the influence of the subordinate commanding officers in the organization.

However, this transformation of the policy design did not necessarily represent failure of the original construct. The success of an implementation effort should not be assessed solely through strict adherence to an original design. The political processes active at any time in any organization are natural manifestations of human behavior in organizations. As stated previously, the challenge to policy makers is to take these processes into account, and if need be, to use them advantageously to accomplish what the implementation set out to do. NAVAIR, as a large organization, shares many characteristics with other large organizations. Taking this notion of process

change into account, perhaps a more appropriate manner in which to gauge the overall implementation is to look at NAVAIR from the perspective of organization theory, to see whether its internal processes have changed to conform to the vision voiced when the implementation effort began almost six years ago. An understanding of this setting, in combination with the other perspectives already discussed, will provide the necessary context to assess the whether the overall implementation accomplished what it set out to do.

The dissertation has already addressed the key research tasks set forth in Chapter 1, which included describing:

1. NAVAIR's organization, including its relationships with contractors and key political officials;
2. the changing context in which NAVAIR functions, placing particular emphasis on the changing security environment for the United States following the end of the Cold War and the demands this placed upon the organization;
3. the origins and development of the reorganization plan, particularly its theoretical foundation and the process by which the theory was accepted and adapted to NAVAIR by the organization's leadership; and,

4. evaluating the implementation of the reorganization plan, by identifying the steps in the implementation process, and emphasizing the factors which affected translating the initial plan into new routines and relationships within a hierarchical military organization.

This chapter will complete the last research task. It will do so by viewing the changed organization from the perspective of organization theory, to provide an overall assessment of the NAVAIR policy implementation.

Organizational Theory Framework

As has been previously discussed, the NAVAIR reorganization plan was a response to the need for radical change, change required by both external and internal forces. The reorganization approach taken was based on industry best practices, and had its intellectual foundation in quality management and reengineering approaches. However, one perspective which has not been presented in this discussion until now is that of organization theory literature.

The NAVAIR organization, whether in its previous incarnation as a "functional matrix organization," or in its resurrected state of "integrated product teams" supported by a "competency-aligned organization," is still at root, an organization, and as such, shares elements in common with all organizations. How is NAVAIR doing business now, as a result of implementing the new organization, and how does this compare to the original vision organization as designed by the policy implementation team? The answer to these questions will assist is in evaluating the results of the implementation policy.

To begin this examination, it is necessary to employ an appropriate framework from which to examine the NAVAIR case. Traditional organization theory models based on solely on function or structure do not take into account the kinds of process interaction that are important in the NAVAIR case, as has been demonstrated in the discussion of the adaptive strategies and behaviors discussed in the last chapter. The systems approach to management incorporates the notion that large organizations are entities which share certain common transformational processes.

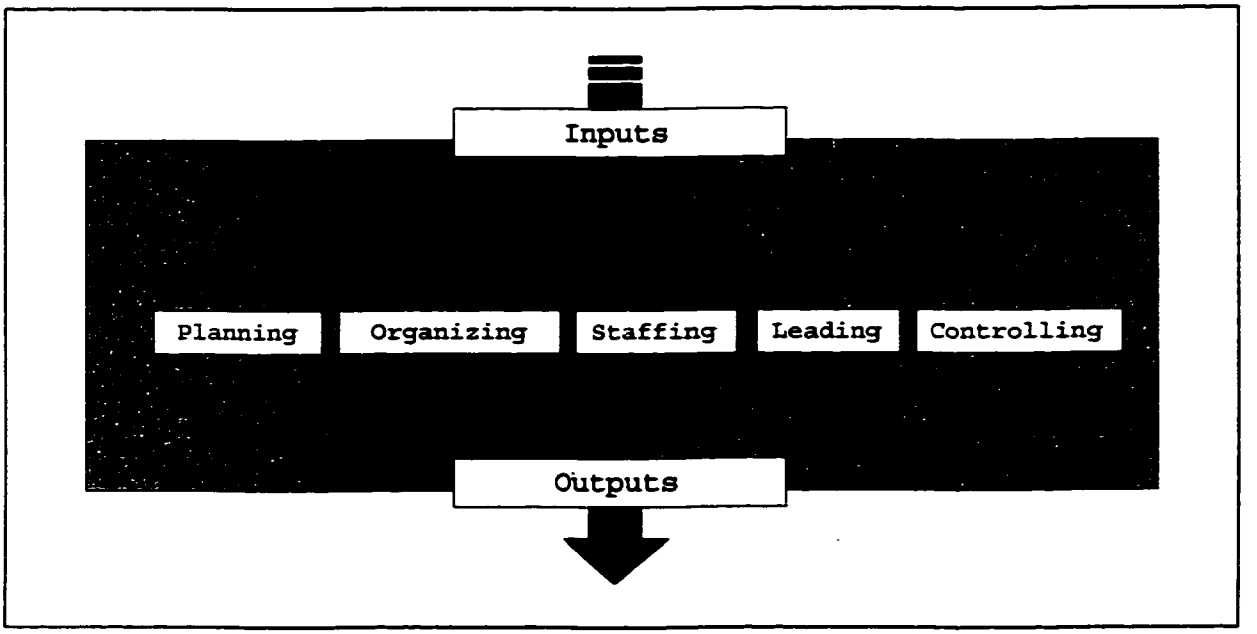

Figure 11. Systems Approach to Management, adapted from (Koontz 1984).

These processes act upon as set of inputs which can be resources, stakeholders, opportunities, constraints, goals, and so on. These inputs are transformed inside the boundaries of the organization and result in outputs such as products, services, profits, etc.

Using this model, the NAVAIR reorganization was focused on the transformation processes which occur within the organization's boundaries. The remainder of this chapter will examine each of these internal processes in turn and discuss how they operate under the new organization. It will conclude with an overall assessment of the implementation effort.

Planning

The first process described in the model is planning, and it is defined in these terms:

> "The purpose of every plan and all derivative plans is to facilitate the accomplishment of enterprise purpose and objectives. . . planning logically precedes the execution of all managerial functions" (Koontz, 1984, p.103).

Overall, NAVAIR planning has been improved as a result of the reorganization. One benefit cited by informants is the ability to have visibility over the entire organization to understand the effort expended on various functions. This view was not possible before the reorganization took place. In the opinion of one informant, the concept of competency helped this kind of resource view to be visible:

> "The more I looked at it though, I felt, if implemented properly, it could be a way to achieve the objectives of the organization we wanted to go after. Especially because, and the reason I believe that, is because . . . this was the first time in my career, that we had visibility on what was going on across all the NAVAIR activities, and that that visibility was aligned in some kind of rational sense. We would be able to align, here's all the logistics stuff we're doing, we could say, we know "Here's all the Research and Engineering, here's all the contracting work, . . ."
>
> From a competency standpoint, we now had visibility on all the things that were happening, and we could then attribute the infrastructure necessary to deliver those products and services.

> And the competency would be responsible for the development of the processes, tools, the knowledge, skills and abilities to perform the work and the facilities necessary to perform the work.
>
> And then the program teams would come to the competencies to get that work. So now we had visibility across the corporation. So we could identify if there were redundant pockets of capability or, uh, we could move work--in theory now--we could move work around an organization where it was necessary. And which should lead to a more efficient organization" (Informant_02 1997, paras.48-50).

Competency managers are responsible in the new organization to "develop an overarching plan to meet customer demand within the goals of the corporate strategy." Program managers are responsible to plan tasks, team requirements, schedule and resources for system procurement and sustainment throughout their life cycle (Navy 1996, p.13). The reorganized NAVAIR has made these tasks possible through allowing better and more timely information about what resources are being consumed in the organization. Another informant alluded to this increased information availability:

> "I think they do that because the competencies have more visibility as to what they are responsible for. So that they demand more information because they own the people at those sites" (Informant_07 1998, para.387).

This ability to get better information has enabled the planning function in ways perhaps that the original design did not envision.

For example, another responsibility of corporate competency managers is to develop enterprise-wide processes. As has been stated several times, this effort was postponed intentionally to allow more important aspects of the reorganization to occur first. In the view of some, this could be deemed as an implementation failure. However, the question is, did the organization follow-through on the original commitment? If it did not, then it might be accurate to characterize the failure to achieve process change as a significant failure of the policy design. However, if process change is underway, and the process efforts were merely postponed, then the design was modified to meet emerging requirements, as outlined in the discussion of the bottom-up approach. This appears to be the case and, the original policy goals are being met.

Given the fact that NAVAIR is a military organization, and thus, by almost by definition, changes its leadership every three years, there has been a remarkable consistency and focus on the goals of the reorganization over the almost six years of organizational change. This has allowed the

workforce to become accustomed to the new organization, to use the information now allowed by the competency aligned organization to give insight into what resources, people and dollars are spent on various functions, and then allow senior management to target areas for improvement.

This has been done through a process called Activity-Based Costing (ABC), a commonly-used industry approach which focuses on the resources consumed in various activities across an entire organization. In order for Activity-Based Costing to be effective, there must be common definitions and common understanding about what the organization's activities are. As a result of the competency alignment across the entire NAVAIR organization, this common understanding is now possible. The result of the ABC effort was to allow senior management to know on what processes it was spending its resources. These areas could then be targeted for process improvement. Post-improvement snapshots are also possible, allowing for the process change to be measured in quantifiable terms.

This is exactly what is going on in the command today. The Activity-Based Costing effort identified areas which were consuming significant resources. These areas were then

targeted for business process reengineering efforts. One informant described how the processes interrelate:

> "Anyway, the point of it was what we had accomplished was three of the four quadrants of the matrix and now it was time to focus on processes. That's why we're into the BPR and the ABC, because we really hadn't completed that--that vision. Because a lot of people thought that what was going on, well, management was afraid that people would think we were abandoning CAO by all this ABC. Really, the Admiral's point was we are just finishing it. We did 3 out of 4, and now we need to finish the fourth box which is the process box and that's where we are now. And when we're done with that, I guess we can declare victory on IPT CAO and get on with a new strategic plan. We're working on that right now. What's our vision in 2004. You know what do we want to look like" (Informant_09 1998, paras.46-47).

Reorganization has had a profound effect on the NAVAIR planning process. It has allowed senior management views of the enterprise which were not possible before, and permits those insights to be used to realize efficiencies through improved processes. And, although later than originally planned, it is true to the original vision of the policy design.

Organizing

This is how the systems model of organization defines the internal organizational process of organizing:

> "To design and maintain . . . systems of roles. . . that enable people to cooperate and work together effectively, (so that) . . . they know the part they are to play in any collaborative endeavor and how their roles relate to one another" (Koontz 1984, pp.229-230).

> "For an organizational role to exist and to be meaningful to people, it must incorporate (1) verifiable objectives (the task of planning); (2) a clear concept of the major duties or activities involved; and (3) and understood area of direction, or authority, so that the person filling it (the role) knows what decisions he or she can make to accomplish results" (Koontz 1984, p.230).

How does the reorganized NAVAIR address the roles in the organization? The original implementation plan and subsequent documents have specified roles and responsibilities clearly. The concept of Integrated Product Team is well-defined, and includes distinct functions for employees to perform. Roles such as Assistant Program Manager for Logistics, Product Support

Team Leader, and Business-Financial Manager are consistent across programs, and are well-understood by most members of the organization. Competency leadership roles are also well understood. In this sense, the reorganization has been successful in defining its new roles and communicating them to employees.

However, another aspect described earlier in the original policy design diminished the concept of site, and took power from the existing military commanding officer construct. In practice, implementing this change in culture is difficult. The Commanding Officer is accountable for a Net Operating Result, a bottom line. Employees at that site, assigned to national competencies, none the less feel allegiance to the site and have a strong interest in the financial success of the site. This can cause a conflict for employees as described by this informant:

> "I think in practice you find that the higher you go up in management the more dual allegiance you have, that you have both a Commanding Officer that's right there close to you that's trying to direct you and you're trying to do things for them, as well as you have a national influence that you're trying to abide by and salute, and do what they say, and it causes you to have a dual allegiance and no one seems to care, they don't want to buy any part of that

problem, they just say, they just overlook it" (Informant_04 1998, para.141); and,

"It makes it very difficult. I think you become a, and sometimes you make national decisions but yet you'll do local implementations, your heart is in one decision nationally, what's good for the corporation, but yet you know back at your own site you have to do what's good for the site, so you just maintain dual allegiances" (Informant_04 1998, para.149).

In the view of this informant, such role conflict is is a burden on employees.

The top-down design attempted to account for such conflict through well-defined roles and processes contained in the various operating and planning guides described previously. The original vision called for the roles of the commanding officers at the sites to be severely curtailed. The reinsertion of the Area Commands restored some of the responsibility of the commands and inhibited realization of the original design. In some cases, the result was the preservation of the primacy of the role of the site. This comment from an informant supports this assertion:

"New guy. Came from SPAWAR (Naval Space and Warfare Command, one of the Navy's systems command described in an earlier chapter). Wasn't involved in any of this stuff. Was clueless to what we did. Didn't understand IPTs. They're in a meeting; this was a year ago now. New guy, he didn't understand. He asked somebody, you with NAVAIR? Oh no. I'm NAWC Aircraft Division. Oh,

> I thought you were part of NAVAIR. You know what I'm saying. No identity with parent Command. In my model I'd have changed. I'd put NAVAIR outside of all of the gates of every base, it wouldn't be NADEP Cherry Point, it'd be NAVAIR CherryPoint. The IBM Oswego, IBM Manassas, IBM Endicott that would have been my model. That was the model I was trying to push for. NAVAIR Pax River, NAVAIR Lakehurst. Because here's another piece of data. NAVAIR total today is 30,000 people. It is 20% larger than the NAWC was when it stood up. So, NAVAIR in total is almost now the size the NAWC was when we stood it up. Now if we could have a single identity for NAWC with 25,000 people, don't tell me we can't have a single identity for NAVAIR? . . . In fact you're starting to see some subtle changes. It says Naval Air Systems Command now in front of Gate 1, it doesn't say Aircraft Division--that sign changed" (Informant_09 1998, paras.132-138).

The comment makes the point that site still plays an important role, but that things are changing, although not as fast as the plan envisioned. Another informant echoed the same sentiment.

> "We put at risk the full-scale implementation of the competency-aligned organization. 'Cause you de facto have forced the site focus, whether you like it or not, on our business, 'cause you've given this Area Command an Admiral, or at least a Commanding Officer. You've given him the financial responsibility, and they have taken it upon themselves to say, 'Because you've done those two things, then I must have knowledge and direction and authority over, and be accountable for the products and services I deliver to the corporation.' Which sounds like, it sounds like, almost like a competency talking here, 'Products and services I deliver to the organization' but

it's from a site perspective" (Informant_02 1997, para.322).

Another informant acknowledges that the core of the reorganization policy was achieved: competency alignment and teams (Informant_04 1998, para.129). However, the same informant caveats this statement by stating that not all goals were achieved and some conflict between site and national leadership still exists:

> " It is and remains, I think that's still one of the issues that has never been totally resolved, is that the Commanding Officers have never been totally relieved of their responsibility and have never gone to doing roads and buildings and things as was first projected with the competency alignment. I think that has never been achieved. I think the CO is still in charge and I think that many of the current static or current issues come about when a competency manager tries to impose his will or her will upon their competency without going to the Commanding Officer" Informant_04 1998, para.133).

The evidence seems to support the following conclusion regarding the "organizing" process. The majority of the goals of the overall policy design were realized. The organization is functioning, with national competencies supporting focused product teams. However, there is role conflict between the Area Commands and Commanding Officers and the national competency leadership. Some conflict of

this nature is to be expected. However, fewer overall efficiencies were realized than might have been under the original plan due to the additional staff required additional layers of command.

Staffing

The managerial function of staffing is defined as:

> "filling positions in the organization structure through identifying work-force requirements, inventorying the people available, recruitment, selection, placement, promotion, appraisal, compensation, and training of needed people" (Koontz 1984, p.377).

Staffing the requirements of program teams is a clearly a function of the competency in the new organization. Teams are staffed by competency leadership.

> "Well it's the way we've defined our--- through the competency chains is the competencies now dictate or describe their organization in terms of its levels. It's no longer completely up to the Area Commander or the Commanding Officer to define the organizational parameters of his business. Now the competencies is more or less come down and show and dictate the number of positions you will have" (Informant_03, 1998, para.112).

The basic system appears to be functioning well, that is teams appear to have their basic requirements met. However, one informant pointed out that stability in team assignments is a growing issue:

> "The thing we don't have under control is what I'll call the career pattern movement schemas for people. 'Cause we tend to have people they go into a job, they go into teams and they stay in a program office for ten years or 12 years and then they're almost incompetent. They can't come back out to a competency. You know they've lost their

technical edge, their network in the competency and visa versa. Those people that stay, you know, in Level 3, Level 4 and haven't been on a team in years. Nobody has confidence they can go on a team. So you get in a rut.

Q: Type cast?

A: You get stuck and I think we have to work on that. That's something that's long term going to bite us if we don't do something about it. Now, the good people, they move. They just know how to do it. You know what I mean?" (Informant_09 1998, para.110).

This appears to be a challenge for competencies to meet and can adversely affect other staffing issues such as retention and recruitment if not addressed.

Several areas of conflict that relate to staffing issues have been pointed out by informants. One recurring theme in their comments is the perception that there has been "grade creep" or assigning higher paid positions to functions than is necessary to perform the function. One informant describes what has happened in these terms:

"Well, in terms of just the flattening effect. We had reduced our number of high grades significantly through our efforts to become more efficient in removing layers of supervision and taken management hierarchy out of the organization. The competency-aligned organization through its, for whatever the reason, has added those back. We have significantly more, 13s, 14s and 15s today than we had then" (Informant_03 1998, para.104).

The probable cause for this is an attempt to make all functions performed at comparable grade levels across the

organization, regardless of whether the particular function performed at a particular location warrants it. At a given location, this can cause conflict because the salary may be paid from the site commander's net operating budget. In other words, from the competency manager's perspective, parity across the organization--having common processes performed by personnel being paid comparable salaries is a desirable end. From the site manager's perspective, at an individual site, responsibilities may not warrant the pay for the position specified by the national competency leadership, and the perception is that "unnecessary checks are being written by the national leadership that the site must pay." In the words of one informant:

> "I think what CAO has done in some cases has . . .opened the door for grade creep, ok? For instance, in the process of trying to set some of the standards across the team for who did what, I think in an organization like the Depot, which is typically blue collar organization, where typically the grades are a little bit lower -- that overall what has happened has been some grades that have fallen out, some higher grades that have fallen out within the Depot corporation. In fact, I know that to be a fact. If you ask any Depot Commanding Officer, he will tell you that some of these grades and stuff have been . . .outside of his control because of the . . . . competency. Like for instance 3.0 and 4.0, yes, he's the Commanding Officer, and yes he has to manage his budget because every cost goes into a labor rate for which he is ultimately accountable. But these grades in the process of

> becoming part of the "competency," there has been grade creep, and he has not been able to control that" (Informant_06 1998, para.143).

In this way, not all of the efficiencies have been realized, and an individual site may not be as competitive as possible due to additional overhead costs which must be paid for in its customer rates. On the other hand, as discussed in earlier chapters, the additional command structure results in additional staff and additional cost. Another informant described this effect in these terms:

> ". . . just like that CO when you make him an 0-6. Hey, I'm in charge here. Let's see what can I do today? and he has an XO (Executive Officer, or Deputy) who has a staff and they all got to do something to feel important. So, you know, there are layers and we don't need them, but you know, there are layers there and of course, as you know, the grade structure goes up and so on" (Informant_08 1998, para.305).

The result is that expected efficiencies were not realized. On one hand, additional command structures bring with them additional staff requirements. On the other hand, national competency managers seek parity across site boundaries. Although this inefficiency is an effect of the reorganization, it may be that a check and balance is operating to correct this unintended consequence. The current efforts to address high cost areas will identify inefficiencies in staffing. These inefficient processes

may come under closer scrutiny under the business process reengineering efforts underway. It could be argued that these efforts could not have been successful without the enterprise view of staffing resources afforded by the competency-aligned organization. The overall assessment on the staffing process must be a mixed one. The competency structure is operating to meet the needs of the program teams, but the overall organization has not realized all of the potential efficiencies envisioned in the original plan.

Leading

The systems model defines leadership as:

> "influencing people so that they will strive willingly and enthusiastically toward the achievement of organizational goals . . . (including a focus on) the human factor, motivation, leadership, and communication" (Koontz 1984, p.462).

An important precursor to the NAVAIR reorganization was the workforce experience with many of the theoretical principles of management theory as discussed in Chapter 5. The Total Quality Leadership/Total Quality Management philosophy was adopted by the command, and has been in use since the early 1980's. TQM/TQL have become terms in NAVAIR's lexicon. As described earlier, Dr. W. Edwards Deming was the proponent of this approach. The first premise of Dr. Deming's methodology for quality improvement was to "create a constancy of purpose" (Hertz 1989, p.259) in the organization. This notion refers to the need to focus on long-term objectives even though performance incentives in many large organizations are often based on short-term returns. Deming described how companies need top managers to make sound long-range decisions, but they often pay them huge bonuses based on short-term profits and

threaten their jobs when profits take a dive. Result? Managers maximize short-term profits, invest less money in people and equipment, and the companies stagnate (Hertz 1989, p.270). The rotation period for senior officers is about 3 years, which could have made it difficult to sustain management initiatives over several commanders. This is another aspect of the military culture of NAVAIR management touched on earlier. What has been remarkable in the NAVAIR case is that this has not had a large effect on the reorganization process. There has been a constancy of purpose over the almost six years of organizational change, and this has been conveyed by the leadership though various means.

As discussed earlier, senior emphasis on the reorganization policy has waned. However, this does not necessarily signal a lack of interest, but rather a realization that the issues which were important earlier in the implementation process have now been addressed, and it is now time to move on to other challenges, such as the process reengineering work envisioned in the original plan. These efforts have senior leadership attention and are progressing rapidly. Approximately a dozen different BPR efforts are in process currently and more are planned.

Progress on these efforts is communicated regularly to the workforce through personal appearances by senior leaders at all NAVAIR sites around the country, printed and electronic mail progress reports from senior leaders, as well as other means such as through video teleconferences and recordings. It would appear that the NAVAIR senior leadership has been personally engaged throughout the policy implementation, and continues to be engaged in related efforts now that the implementation period has been officially completed.

Controlling

The process of "controlling" in the systems management organization model is defined as:

> ". . . measurement and correction of the performance of activities of subordinates in order to make sure that all levels of objectives and the plans devised to attain them are being accomplished. . .thus the function of every manager, from president to supervisor" (Koontz, 1984, p.549); and,
>
> "Managerial planning seeks consistent, integrated, and articulated programs," while "management control seeks to compel events to conform to plans" (Goetz 1949, p.229, quoted in Koontz 1984, p.550).

The NAVAIR organization is oriented toward the project management approach to controlling efforts. Cost, schedule, and performance measures have been endemic in the NAVAIR corporate culture, before during and after the reorganization. What is different since the implementation process began is that now, senior leadership has more complete measures of process cost than before through the visibility afforded by the competency alignment.

Of particular interest is what is happening in the context of the business process reengineering efforts currently underway. One author points out

that a problem inherent to the team form of organizing is the inherent complexity of managing joint action which may have overlapping areas of responsibility:

> "No hierarchy of command can sort out issues as complex as those raised by large numbers of teams whose missions interpenetrate. That complexity drives us to create a self-organizing system that guides the formation and direction of teams around common purposes without always telling them what to do." Pinchot, 1993)p. 210.

It appears that the efforts of these groups are being coordinated through the "process owner," a senior competency leader who has responsibility for the area being studied. When areas overlap, the respective competency leaders negotiate a solution. The new system is not perfect, but seems to be flexible enough for issues to be resolved in constructive ways. And these are complex issues, as one informant states:

> "The competency leaders at the national level now put end-strength controls together, they put high-grade controls together, they put training requirements together. They put a lot of different things together for their competencies to move forward, but in many cases they're not well coordinated. And so, we have direction coming in from the competencies that may be counter to direction command really needs to go in. It's working itself. It's probably getting easier, better now than it was in the beginning. This coordination" (Informant_03 1998, para.348).

This and other comments indicate that control systems in the new organization are not perfect, but are functioning to keep efforts coordinated and to keep team leaders accountable for results.

Overall Assessment

The description of the implementation of the NAVAIR policy to reorganize has used both the top-down and bottom-up approaches. Top-down implementation was well-managed, met most milestones, and included routine communications to employees. However, a different portrayal of events is revealed through the insights provided by the bottom-up approach. Bargaining and adaptive strategies were employed by those involved in implementing the policy to transform the original design.

Does this partial achievement of original objectives constitute success? Notable exceptions to the original policy design and implementation plan are the additional layers of management created by the introduction of Area Commands into the policy design, and the deferral of process redesign work. However, an examination of key organizational processes as they are functioning today seems to indicate that the new organization is meeting most of the goals envisioned for it. This claim is supported by constancy of purpose over only two senior leadership changes in 8 years. The leadership is now following through on some of the changes which were not realized at

the end of the original implementation period in 1997. Activity-based costing led to business process reengineering. The hope is that business process reengineering will result in economies and efficiencies that were envisioned in the original policy design. Preliminary results indicate that the reengineering efforts are being successful.

The concept of competency alignment has helped this evolution because it had already prepared people to think in terms of holistic approach to how they do their job. Also, the new structure gives more visibility to processes which cross organizational boundaries, because the people resources (through the competency structure) are already managed across site boundaries.

It is also important to remember that the reorganization took place because of significant changes in NAVAIR's environment. Many informants spoke of the need for change to merely survive, much less successfully meet the challenges posed by a world of decreasing budgets, increasing workload, and the turmoil created by closing facilities and laying off employees.

NAVAIR's decision to adopt a virtual team form of organization in 1993, in response to extraordinary changes

in its external environment. While many of these changes were threatening (declining budgets, closing facilities), the organization's leadership was able to view them as opportunities for guided change, through a conscious policy decision to reorganize. NAVAIR's previous structure, a matrix organization with distributed business units, was transformed into an integrated product team focus supported by core competencies. NAVAIR's military form of organization impeded the implementation of reorganization as originally designed, which runs counter to classical assumptions about military organizations: that they are rigid hierarchies that implement direction from the top down without change. The study has confirmed that policies are transformed through the implementation process, and discussed these transformations from the viewpoint of multiple theoretical constructs. Adaptive strategies employed by various parties throughout the implementation process have been described. Final assessment of this policy implementation is that the original policy design was only partially implemented, but overall, the resulting organization achieves most of the goals of the original design.

In fact as a result of the successful policy implementation, not only has the organization survived, but it is more efficient at delivering products and services than it in the past, if one defines efficiency as number of units of product compared with number of units of resources used to produce the product. This assertion is supported by an examination of some statistics that can identify overall trends in NAVAIR performance. The metrics that will be cited are those that the organization uses to measure itself.

During the period from FY1991 to FY1999, product centers and aviation depots reduced their overhead costs by about 38% or for a total reduction of almost $700M. During approximately the same time period, from FY1990-FY1999, both groups sustained about a 48% reduction in people, a total reduction of almost 20,000 employees. Overall, funding obligation authority was reduced from FY1989-FY1997 by over 37%. Thus, resources and personnel declined significantly during the period of time of the reorganization.

Although during this period appropriated funding was cut by over $6 Billion, 6 major facilities were closed or privatized, and the number of employees was cut by almost

50%, NAVAIR's overall workload only decreased by 31% in the product centers and 27% in the aviation depots (Navy 1997 pp.44-46). And, from FY1993-FY1999, overall totals of aircraft overhauls and engine repairs (key output indicators) actually slightly increased. What these figures indicate is that the organization become more efficient, at least at a macro level. Available resources declined, workload declined, but at a lower rate, while production increased.

It would be inappropriate to claim that the changes wrought by CAO were solely responsible for this result. In fact, elsewhere in this dissertation, evidence is presented that supports the claim that changes to the original policy reduced potential economies that could have been realized. However, the impact of the team form of organization should not be minimized in its effect on NAVAIR efficiency.

At Naval Aviation Depot North Island, a recent briefing by a production manager claims that the team approach and the techniques of process reengineering have significantly reduced shop turnaround times over the past several years, and enabled the organization to become more efficient.

For example, in the hydraulics shop at North Island, turnaround time for repairs over the past three years has been reduced from 39 days to 29 days and then finally to 25 days (a 36% reduction). The number of handoffs in the process has been reduced from 28 to 19 over the same period (a 38% reduction).

Another shop shows a similar trend: turnaround time has been reduced over a three-year period from 78 days to 64 days to 43 days (a 45% reduction). In this example, the number of handoffs in the process has been reduced from 40 to 23 over the same period (a 43% reduction). These effects are solely due to process changes brought about by improvements implemented by self-directed teams, and not due to advances in technology or tooling (Fuller 1999). Overall, average component turnaround time in the depot in 1996 was 72 days. In 1999, the average was 35 days, over a 50% reduction. Over the same period, the labor rate charged to customers was reduced from $105 per hour to $80 per hour in FY2000 (Fuller 1999). These examples indicate that the overall effect of CAO is that it has contributed significantly to efficiency: even given fewer resources, the organization has increased productivity.

Another indication that NAVAIR's changes have resulted in positive results is the fact that industry continues to recognize NAVAIR as a high-quality organization. In the view of one industry authority, Aviation Week and Space Technology Magazine, NAVAIR has been very successful over the period from 1993-1997, so much so that it selected NAVAIR for recognition as the first Aviation Week Quality Center. Kenneth E. Gazzola, Aviation Week vice president and publisher, stated, "In an environment of acquisition reform and budget cutting, NAVAIR has managed to sustain and broaden its commitment to reinventing itself to deliver value to its customers. We are proud to single out NAVAIR as our first Quality Center" (AW&ST 1998).

The Aviation Week Quality Center designation is based on four core criteria: development of high-quality products and continuous process improvement techniques; organization-wide focus on customer needs; aviation/aerospace economic activity and employment; and innovation in pushing the limits of aerospace technology. A press release from Aviation Week presented the rationale for the award: "NAVAIR was chosen for its demonstrated success in developing and implementing customer-focused quality initiatives that have dramatically improved

productivity and life-cycle support while reducing the cost of acquiring and sustaining naval and Marine Corps war-fighting capability. The Command has reinvented itself by committing to total quality leadership, acquisition reform and facility consolidation, while at the same time developing and acquiring a variety of advanced aircraft and weapons systems including the F/A-18E/F Super Hornet, the V-22 Osprey tiltrotor, and the under-development Joint Strike Fighter, plus AIM-9X and Tomahawk Block 4" (AW&ST 1998). These comments cite recent NAVAIR-managed program successes, and state that the process has been accomplished through efficiency gains at lower costs.

The overall success of the NAVAIR implementation is due to a number of factors including, the magnitude of the external threats to the organization, the detailed policy design and implementation plan that was developed, the relatively short implementation period, the involvement of multiple layers of the organization in the implementation process, and the focus of senior leadership over an extended period of time.

These findings have implications for implementation strategies in a broader context. For example, during a recent briefing given by consultants in the field of change management to senior leadership from NAVAIR and another systems command, the consultants cited the importance of a substantial threat to energize cultural change within an organization, and imbue it with a sense of urgency (Hayes 1999).

It is interesting to note that the topic of this seminar was not reorganization, but rather a presentation of findings from empirical research in implementing Enterprise Resource Planning (ERP) software in a number of corporate settings over the past 3 years. The findings validated the assertion made by this dissertation that in the NAVAIR case, external threats served as a significant impetus for change. This and the other findings may have more general application as necessary conditions for successful program implementation in other settings, such as organizational behavior and change management.

The ERP briefing also cited other indicators for successful implementation of ERP to include:

- a detailed implementation plan which includes communication to employees and clear performance goals and metrics;
- employee training ;
- supporting team members which represent a number of communities throughout the organization and can act as advocates throughout the organization; and,
- leadership which shares the vision for the change and is willing to sustain the change process over time (Gunter 1999).

These prescriptions echo the findings of this dissertation and validate the assertion that its findings have broader implications in other fields.

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Appendix 1. Informant Interviews

Target

The target group of respondents for this interview are senior and mid-level managers who were involved with implementation of the new organization.

Questions will address the research tasks of the dissertation:

1. to describe NAVAIR;
2. to describe NAVAIR's organizational environment over time;
3. to describe the reorganization plan proposed by NAVAIR's leadership; and,
4. to assess implementation of the reorganization plan within the command structure.

The interview will focus on gathering information to answer research questions 3 & 4 first, then 1 & 2, to ensure that the most critical issues are addressed up front, in the event that time runs out during the interview.

Introduction

I am a doctoral degree candidate in the public policy program at George Washington University, with a concentration in national security studies. My dissertation topic is the NAVAIR reorganization. Specifically, I am doing a case study of the implementation of the new organization.

I would like to interview you with respect to your involvement in implementing the reorganization, and your impressions and opinion of the implementation process, now that the reorganization is largely complete. Your responses will be kept confidential and will not be attributed to you by name, but your role or position in the organization may be described to place your comments in context. Areas I am particularly interested in are:

- Why was the reorganization was necessary? Why this particular approach?
- How the original NAVAIR plan may differ from what was actually implemented? If so, why?
- What effect did the military command structure of NAVAIR have on implementing the plan?
- Do those "at the bottom" of the organization feel that the change was constructive?
- Did any of the political or organizational elite act as a "fixer," actively seeking to keep the initiative on track?
- What is your overall assessment of the reorganization and your role in it?

Informant Demographics
(Used for all informants)

- What is your current grade or rank? Has it changed since 1993?
- What is your current position? Has it changed since 1993?
- What is your current duty station? Has it changed since 1993?
- What is your Current competency or team assignment? Has it changed since 1993?
- What was your position and role during the reorganization?

The competency aligned organization study

(Used only for interviews with senior management and members of the original study team)

Group charter

- What was the original group charter? To whom did you report?
- What was the rationale or theory behind the reorganization?
- When you began the study, what were your expectations?
- Were these expectations fulfilled? Explain?
- What were the exit criteria for the study team? Were those criteria fulfilled?

Group make up

- Why were you chosen to participate in the competency organization study?
- Did you represent a particular constituency or point of view? Which one?
- What was your role on the competency organization study?
- Did your role change over time?

Group dynamics

- Who was the nominal leader of the study group. The informal leader?
- Was this a result of Position? Personality? Other reasons?

Direction

- To whom did the group report?
- How often did you receive direction/feedback on progress?
- How did you think the senior leadership wanted the reorganization to be carried out?
- In your opinion, were the leader(s) expectations fulfilled?

Documentation

- What are the key documents which were used to communicate team results?
- Final decisions?
- Do you have copies?

The NAVAIR Reorganization

Who was in charge of implementing the reorganization?

- By what mechanism was the reorganization to be implemented?
- How did those at the top of the organization try to assure that their plans were carried-out?
- How was the reorganization plan communicated to NAVAIR staff and contractors?
- What was the schedule for different aspects of the reorganization to be implemented? Was the time table achieved?

What was the theoretical basis for the reorganization plan?

- How was the theory developed and adapted to NAVAIR?
- Who decided that this theory was a sound basis for reorganization of NAVAIR?

By what process was the decision to re-organize made?

- Who participated in this process?
- Who was excluded? Why?
- What alternatives to the reorganization plan were considered?
- On what basis was the reorganization plan thought to be preferred?

Once the initial theme was established, how were the details of the reorganization worked out?

- Who participated in working-out these details?
- Who was consulted?
- Whose opinions and desires were given weight?
- Who benefited from the reorganization? Who suffered from it?
- What constraints were imposed upon the reorganization plan?
- Who imposed these constraints? And why?

What was the reorganization plan?

- What implications for the mission of NAVAIR were implied in the reorganization plan?
- What were the reorganization's technical objectives and implied objectives--to facilitate the work of teams in the new organizational structure?
- What were the means by which these objectives were to be realized?

What are the communications requirements of this method of organizing?

- What was required for the new communications infrastructure to be put in place?
- What resources were devoted to this effort (personnel and financial)?

Implementing the Reorganization

Who was in charge of implementing the reorganization?

- By what mechanism was the reorganization to be implemented?
- How did those at the top of the organization try to assure that their plans were carried-out?
- Was the chain of command (either military or civilian) used to implement the reorganization?
- What resources were devoted to the implementation of the reorganization?

What are the key benchmarks that would indicate that the implementation process was realizing the reorganization plan?

- What is the logical relationship between these benchmarks, if any?
- How do these benchmarks relate to the larger goals of improving organizational effectiveness?
- What was the schedule for different aspects of the reorganization to be implemented? Was the time table achieved?

Whose cooperation was necessary in order for the reorganization to be implemented?

- Was there widespread support for the reorganization among NAVAIR employees?
- How was the reorganization plan communicated to NAVAIR staff and contractors?
- Did those "at the bottom" of the organization feel that the change was constructive?
- What about support among NAVAIR's contractors?
- Whose interests were threatened by the reorganization?
- How were the concerns of the threatened groups assuaged?

Did the plan change over time?

- Did the reorganization plan change as it was implemented? If so, how? Why?
- Did the command structure help or hinder the reorganization effort? What about the hierarchy?
- What unexpected problems occurred during the implementation process?
- What constraints did implementers confront in the reorganization process?

- Did any of the political or organizational elite act as a "fixer" (Bardach, 1977), actively seeking to keep the initiative on track?

The NAVAIR Organization

What is the mission of NAVAIR?

- What are the activities (or products) of NAVAIR?
- Where and how are these products produced?
- What is NAVAIR's structure?
- How does it fit within the command structure of the Navy?
- How does it fit within the structure of the Department of Defense?

What is NAVAIR's organizational culture and how did it affect the reorganization?

- What is the background and perspective of NAVAIR's leadership?
- How would you describe the NAVAIR workforce?
- What is the background and expertise of the employees?

Who are NAVAIR's key stakeholders?

- Who are NAVAIR's major corporate contractors?
- What sorts of services do they provide?
- What are the key political relationships NAVAIR enjoys?
- How does the organization get resources?
- What political officials support the organization?
- Who are the key officials in the oversight of NAVAIR?
- Who are NAVAIR's political opponents and rivals?
- What has been the basis of criticism of the organization's performance in the past?

How has NAVAIR's mission and relationships evolved over time?

- How have activities of the organization changed to reflect changes in its mission?
- What is NAVAIR's budgetary picture, currently and over the past 10 years?
- What have been the causes of changes in NAVAIR's resource base over time?
- What do these changes in the budget mean for activities and allocation of resources within NAVAIR?
- How has political support for the organization changed over time?

Appendix 2.

Interview Analysis Categories

(1) Reorg_Causes
- (1 1) BRAC
- (1 2) Prog_failures
- (1 3) Over-Engineering
- (1 4) More_Efficient
- (1 5) HQ_Stovepipes
- (1 6) HQ_FA_Relations
- (1 7) Survival
- (1 8) Industry_Model
- (1 9) Cold_War

(2) Reorg_Successes
- (2 1) Checks_Balances
- (2 2) Program_Mgt
- (2 3) Measures
- (2 4) Teaming
- (2 5) Reducing_Conflict
- (2 6) Empowerment
- (2 7) Common_Processes
- (2 8) More_Efficient
- (2 9) Resource_Visibility
- (2 10) Flexibility

(3) Reorg_Failures
- (3 1) Initial_Team
- (3 2) Grade Creep
- (3 3) Measures
- (3 4) Layering
- (3 5) Site's_Rights
- (3 6) HQ_Politics
- (3 7) Role_Conflict
- (3 8) No_Common_Processes
- (3 9) Not_Enuf
- (3 10) Empl_Communication
- (3 11) Ltd_Opportunity
- (3 12) Control_Span
- (3 13) Turbulence

(4) IPT

(5) Reorg_Lessons_Learned
- (5 1) Do_Over
- (5 2) Other_Orgs

(6) Implementation
    (6 1) Reorg_Challenges
    (6 2) Leadership
    (6 3) Org_Mech
    (6 4) Genl_Changes
    (6 5) Winners_Losers
    (6 6) Next_Steps
    (6 7) Training
    (6 8) Prod_Spt_Teams

(7) Matrix

(8) Chain_of_Cmd
    (8 1) Helped_CAO
    (8 2) Hindered_CAO
    (8 3) Structure

(9) Start-Up
    (9 1) BnchMk_BestPrac
    (9 2) Plan_Mods
    (9 3) Tasking
    (9 4) Theory
    (9 5) Leadership
    (9 6) Methodology
    (9 7) Exit_Criteria

(10) Adaptive_Mechanisms
    (10 1) Dual_Hatting
    (10 2) Negotiation
    (10 3) Incrementalism
    (10 4) Mapping
    (10 5) Cite_Regs
    (10 6) Cite_Study

(11) Cust_Stakehldr

(12) Reorg_Focus
    (12 1) Life_Cycle
    (12 2) Split

(13) NAVAIR_Org
    (13 1) Mission
    (13 2) Workforce

Appendix 3.

Representative Report from Interview Database:
Program Management Examples of Reorganization Successes

Q.S.R. NUD.IST Power version, revision 4.0.
Licensee: John W. Mishler, III.

PROJECT: Diss_db, User John W. Mishler, 18:19, 19 Nov, 1999.

****
***
(2 2) /Reorg_Successes/Program_Mgt
*** Definition:
Examples of Programs or Program Management which are successes under the new organization
++
+++ ON-LINE DOCUMENT: Informant number 1
+++ Retrieval for this document: 5 units out of 203, = 2.5%
++ Text units 28-28:
A: So that's really how we got started. And, I can tell you that we have been very successful. If you look at our programs, based upon the
teaming concept, the competency split on responsibilities, that we have been very successful on the three programs that we have right now, the three major programs, the F-18, V-22, and the AIM-9X, and the fourth, the JSOW/JDAM [Joint standoff Weapon, Joint Defense ??] cost, schedule, performance. We have done extremely well.
28
++ Text units 32-35:
A. ACAT1D [Acquisition Category One D] and cost, schedule, performance. It worked out where we are on schedule, under cost or on cost, on budget. We have no major ugly issues right now. Also our success rate has gone up as far as programs going through OPEVAL [Operational Evaluation]. Gosh, when we first started this, our success rate for OPEVAL was less than fifty percent. So that meant that we were buying stuff and testing it, and it wasn't really getting to our customer. You could spend, gosh you could spend a long time, you could spend another year or two trying to figure out what you did wrong. So we never did meet our customer needs. And we have fixed that.
35
++

+++ ON-LINE DOCUMENT: Informant number 9
+++ Retrieval for this document: 1 unit out of 179, = 0.56%
++ Text units 38-38:
A: Per year. A lot of that's due to BRAC eliminating Bases and all the overhead associated with them, but a lot of it is streamlining. And we don't even know. All we know is, to me, the bottom line is the fleet is still flying safely. Readiness is I think starting to go down, but up until recently, you know, we were maintaining fleet readiness. In other words, the quality of the product, the sustainment of the product, is still there--the safety of the product. I'm that's really the bottom line. Modernizing V22s, F-18s, AIM-9X, JSOW; they're all being managed and running very effectively. F-18, when you look at F-18 versus F-22, it's a very successful program. So that's kind of a the bottom-line approach. We went from 52,000 to 32,000 employees during this period and still had all this sustained quality during it. We moved I don't know how many thousand end items from one Depot to another. A whole bunch of people retiring. All this chaos seems to be pretty much transparent to the Fleet. NAVAIR was still answering the mail and NAVAIR was doing their thing. They had no, I don't think, no perturbations through all this. So, we get a lot of crap from people, but the bottom line is it is pretty damn successful, as good as any company could have done. So now we're faced with what do we do next and that's where into the activity based costing and into really the process. There's a chart which I don't have up here anymore, but there were four quadrants in this chart and one of them was integrated program teams, competency alignment, I can't remember what the third one was, the fourth one was processes, process reinvention.
38
++
+++ ON-LINE DOCUMENT: Informant number 12
+++ Retrieval for this document: 2 units out of 300, = 0.67%
++ Text units 150-150:
A: I think, well, I think basically. I think we are doing very well. I mean, like I said, the F-18 is the Navy's #1 priority aircraft and I think that is because of the efforts that NAVAIR has done to keep it on time, on schedule, under cost, you know, that type of thing. We've also done a very good, with regard to some of our other older programs, or whatever. I mean, you know, the P-3 they're constantly, you know, letting us modify and upgrade the P-3 because it is such a good aircraft and we're

proving that to extend its life. I mean, I think it was planned to be, like, around for 29 years or something like that. Well, that airframe they found is such a good airframe that now they are doing things to extend that by another ten years. I mean, that says something for itself. I think it says something to the programs or whatever. F-14 is another one they have been constantly, you know, looking at and trying to do. They are kind of reviving the ASPJ a little bit. I mean, even though it had trouble in operational testing type of thing, it seems to be, you know, when we had Bosnia and that type of thing, the ASPJ proved itself to be a very reliable . . .
150
++ Text units 174-174:
A: Right. Yeah, I don't know why I forget V-22 because I love the V-22 program. It maybe because they haven't had. It seems to be the same type of, how do you say, controversial upbringing that the F-18 had. The F-18 E&F has had an awful lot of controversy and seems to always be in the limelight. V-22 has been a great program. It has kind of gone along and proved to be a very excellent program, and again, it's one that is, you know, been very stable. It hasn't raised a whole lot of eyebrows or hasn't been a whole lot of look at as has been with the F-18 and maybe that's why you kind of forget about it.
174
++
+++
+++ Total number of text units retrieved = 8
+++ Retrievals in 3 out of 14 documents, = 21%.
+++ The documents with retrievals have a total of 682 text units, so text units retrieved in these documents = 1.2%.
+++ All documents have a total of 4466 text units,
so text units found in these documents = 0.18%.
++
+++

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