Leading airmen: a systems approach to squadron leadership

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Leading Airmen:
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September 2007

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The purpose of this MBA Project was to investigate systems thinking and apply these principles to Air Force leadership. The paper offers squadron commanders, in particular, a primer in systems thinking that will enable them to approach unit leadership challenges from a systems perspective. The first two chapters examine the origins of systems thinking and present a holistic organizational model as the basis for problem analysis. Chapter II illustrates the importance of correctly interpreting the external environment and dealing with external influencers. Chapter III applies these concepts and introduces a systems approach to financial leadership. Finally, Chapter IV examines the roots of continuous process improvement and offers suggestions for commander implementation of Air Force Smart Operations for the 21st century. This project is written directly to Air Force squadron commanders. It is the author’s hope these topics will help spur commanders around the Air Force to challenge their mental frameworks towards developing and better enabling Airmen leadership to face the challenges of the twenty first century.
LEADING AIRMEN:
A SYSTEMS APPROACH TO SQUADRON LEADERSHIP

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I. INTRODUCTION

As a service, the Air Force struggled into existence nearly 50 years after the invention of the airplane. Prior to this, early airpower proponents struggled to convince the defense institution that the airplane should be treated as much more than just a technological advancement for supporting ground troops. While hindsight makes it difficult to deny the dramatic impact of air power on the modern world, these struggles seem to indicate defense leaders of the time experienced barriers to understanding the true potential unfolding before them. This failure to see a revolutionary change in war fighting was the result of a myopic view of the defense mechanism by those most trained to detect and exploit such scenarios. It is unlikely airpower would have been nearly as effective if the Air Force had not escaped the Army’s parochial grasp. For reasons we will never fully know, the defense institution of the early twentieth century viewed the organization in a way that may have hindered the analysis of the changing environment and new capabilities.

Lest we think this is a problem of the past, the Air Force of today faces similar challenges from elusively defined threats, the development of new technologies (e.g., space assets, unmanned aerial vehicles, information warfare, etc.), and increasing budgetary pressures. Like our predecessors, each of us views these situations through a lens or framework that shapes how we interpret the impact these scenarios will have on our organizations.¹ For a decision maker, these frameworks can be either a window to opportunity or a barrier to understanding. As such, Airmen leaders must strive to develop the most accurate frameworks possible in order to deal with the challenges facing the Air Force today.

To that end, this handbook challenges Airmen to question and improve the frameworks they use to understand the world around them. The theoretical foundation used in this study is *systems* thinking and acting i.e., a system being a set of interrelated

components working towards a common purpose.\textsuperscript{2} The goal and central hypothesis of systems thinking revolves around the concept of fit and congruence, or alignment. In short, the fit of crucial components or variables determines organizational performance, including the extent to which an organization’s strategy and design fit the external environment in which it operates.\textsuperscript{3}

This paper offers squadron commanders, in particular, a primer in systems thinking that will enable them to approach unit leadership challenges from a systems perspective. Chapter I examines the origins of systems thinking and presents a holistic organizational model as the basis for problem analysis. Chapter II illustrates the importance of correctly interpreting the external environment and dealing with external influencers. With this solid foundation, Chapter III takes a systems approach to financial leadership. Finally, Chapter IV examines the roots of continuous process improvement and offers suggestions for commander implementation of Air Force Smart Operations for the 21\textsuperscript{st} century. It is the author’s hope these topics will help spur commanders around the Air Force to challenge their mental frameworks towards developing and better enabling Airmen leadership to face the challenges of the twenty first century.


II. SYSTEMS THINKING

Due to the generally accepted view of the increasing complexity of life, most of our educational experiences have taught us how to break down systems into smaller sub parts and then examine those isolated pieces to simplify understanding (reductionism).\(^4\) For example, rather than viewing the whole human body we reduce it into smaller systems like the pulmonary and skeletal systems. We further break these systems down to cellular and muscular functions to specialize our understanding. Unfortunately, by reducing the whole system in this manner it can become difficult to see how these pieces relate and impact one another. This can lead to a flawed analogy for reality and an incomplete framework for viewing a system when problems arise. Human systems, such as an Air Force squadron, are no different. To the extent that an analytical framework is incomplete or insufficient, then describing and predicting behaviors and outcomes are reduced and real improvements illusive. All the while, leaders and managers may fail to see the underlying systemic reasons for what is occurring within their organizations. Like a heart specialist who fails to clarify the importance of diet, organizational problems can be missed or mis-diagnosed until dysfunction or bankruptcy occurs.

A. THE ORIGINS OF SYSTEMS THINKING

Systems theory is not a modern-day concept but the culmination of centuries of thought. Many have quoted Aristotle’s statement, “The whole is greater than the sum of its parts,” without realizing it as a basic definition of the systems framework. While the truth in this statement is not difficult to understand, it can be very difficult to prove. Largely due to the complexity of seeing and proving these holistic relationships

mathematically, the scientific method was derived in which complex problems were reduced into smaller, more understandable sub-parts and processes with fewer variables than the original problem.  

While an incredible amount of progress in all fields has been made using this method, the gap between studying the parts of a system and seeing the connectedness of the parts into the larger whole can result in our conclusions being incomplete. Knowing this, we mentally attempt to overcome this problem by reassembling the parts after we have analyzed them to try to see the bigger picture. Intuitively we know, however, that the actual reality we are studying is much more than just the reassembled pieces. It was in this gap between the reductionism of the scientific method and the complexity of reality that systems theory was born. While early work focused on physical and biological systems, over the last 50 years systems theory has been applied to many fields. When applied to social systems, systems thinking and organizational systems models provide a framework and set of tools to see the workplace with all its connectedness rather than as dissected functional stovepipes shown on glossy organizational charts.

No Air Force squadron is independent to itself. Instead, it takes in inputs from the environment, processes them and then adds products back into the larger system. For example, a flying Wing takes in pilots, maintainers, aircraft etc., and transforms them through a training process to provide combat capability to the DoD and the Nation. When a system makes these exchanges with the environment it is said to be open. Examples of open systems can be easily seen in the physical environment all around us and make great illustrations of systems thinking. For example, biologists discuss how small, unrelated events can adversely affect an “ecosystem” even when immediate consequences seem miniscule. The concept is that while the disturbance may not appear to directly impact a sub-part, there exists an interrelationship among the parts that can impact results, i.e., cause and effect are often not close together in time and space.


6 Senge, *The Fifth Discipline.*
Environmentalists often draw from this principle when denouncing seemingly insignificant changes in the world as the precursor to much larger problems. The ongoing debate over global climate change is a perfect example. When we have a reductionist mindset, it is easy to miss signs pointing towards future system-wide problems. For instance, it took decades for scientists to understand the consequences when a small, distant nation chooses to cut down its rainforests. For the rainforest nation, clearing the land provides economic opportunity and improves the lives of its people without any clear, direct, negative impact. Likewise, reductionist thinking would not even register this event when analyzing countries thousands of miles away. Not until symptoms in non-rainforest nations reached a level that the existence of a problem was undeniable would these nations begin to look for solutions. Unfortunately, this delayed recognition of the problem may limit the range of viable solutions. In this case, it was not that scientists did not understand the dynamics of rainforests and the CO2 oxygen cycle, but rather our frameworks failed us and prevented us from appreciating the greater impacts on the balance of the world’s ecosystem.

Ultimately, any system in question will strive for a balanced equilibrium that is a sustainable system wide stability, in ways an analysis of the sub-parts may not predict regardless of how well we understand the sub-parts processes. A human organization, like an Air Force squadron, is no different than an environmental ecosystem in the interrelatedness of its parts and a natural tendency towards a state of equilibrium. Just as viewing the impact of cutting down rainforests in the Congo cannot be understood by isolating the event, neither can organizations be fully understood without viewing the interrelatedness of systems within which they operate.

Borrowed from thermodynamics, another important system concept is entropy. All physical and biological systems will tend towards disorder and decay. Because human systems like Air Force squadrons are not formed through natural processes, they are said to be contrived systems and have the potential to overcome this tendency towards decay. This provides an opportunity for organizations to survive long beyond the

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pioneers who created them. This premise should lead us to take a long-term outlook on all of our important organizations. Unfortunately, without a systems view, many organizational decisions are reached from a short-term perspective. This can be exaggerated in a squadron when the typical length of command is two years and personnel are frequently replaced. Unfortunately, short-term decision making contributes to decay and reduces the organization’s prospects for long-term survival. Failing to realize organizations are open, living systems, attempting to reach homeostasis and defy entropy will hinder one’s ability to effectively lead within the system. When properly applied, the body of systems thinking can help the leader promote long-run organizational effectiveness and identify root causes of problems before they undermine system integrity.

While volumes have been written on the systems framework, it is sufficient to realize that most contemporary training and education leads us to reduce systems into small pieces often to the point we no longer recognize their proper contextual places in the original system. In contrast, general systems theory assumes all systems are governed by universal principles of organization and can be analyzed at a holistic level. Systems thinking provides a theoretical mindset and model for overcoming the pitfalls of a myopic reductionist view. Practically, shifting perspective to view organizations as open and living systems can help a commander recognize and anticipate the impacts of subtle changes both outside and within the squadron. With this background, the following section provides an organizational systems model that a commander can apply to any Air Force squadron.

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B. AN ORGANIZATIONAL SYSTEMS MODEL

In order to illustrate these concepts, it is necessary to develop an organizational systems model. Shown below in Figure 1 approach to viewing an open organizational system:

Unlike a traditional job-based organizational chart, this diagram begins to illustrate the general flow of processes a squadron goes through as it accomplishes its mission. Because the system is open, the model includes what is happening beyond the squadron as a critical component for overall system analysis. Labeled as the external environment, the concept of interpreting and interacting with the external environment is so critical for organizational leadership it will be developed more fully in Chapter II. Suffice it to say, we ignore careful understanding of the external environment at our own unit’s peril and will not likely succeed in command without improving our vision of external forces.

Figure 1. Organizational Systems Model After 10

10 The author has drawn on several sources for the development of the organizational model. Work from Nadler and Tushman, A Model for Diagnosing Organizational Behavior, 35-51, Harold Leavitt, William Dill and Henry Eyring, The Organizational World (New York: Harcourt Brace Jovancich, Inc., 1973), Cary Simon, Organizational Behavior Systems Lecture, Jan, 2006., has been incorporated into this model.
1. Inputs

Next in the flow, every organization needs fuel to survive, and for the squadron, this comes from the inputs it receives. These include tangible resources such as capital, property, equipment, and people as well as intangible resources such as unit history and leadership. Tangible resources, such as a unit’s budget authority, are always in short supply for Air Force squadrons. As a result, there is an additional responsibility for leadership in charge of wise stewardship of public resources that goes beyond simply expending inputs in “profitable” ventures. Chapter III will address a systems framework for managing scarce public resources.

People in the organization are an obvious but often misunderstood input into the system. Unlike fixed resources, people have a capacity to change making their ability to add value to the organization variable. Recognizing Airmen in this way illustrates the imperative to develop them within the squadron rather than take them purely as an interchangeable fixed asset to be plugged into a pre-designed task. As the Air Force Chief of Staff, General Moseley has made “developing Airmen” one of the top three priorities for the service.11 In a world increasingly driven by knowledge workers, this direction makes sense when viewing the organization from a systems perspective. Under a more mechanistic view of the organization, a leader would be tempted to ignore development of lower echelons of the organization, preferring to educate Airmen only to the level required for their specialized function.

Another important input in the organizational model is the history of the unit.12 As open, dynamic, living systems, squadrons have a corporate history much like a person. This history contributes to the unit’s overall resources from which it draws on to accomplish its mission. Key leaders and strategic decisions in the unit’s past have helped create current organizational norms, attitudes, and values. With squadron commanders rotating on a biannual basis, most commanders may not have a good understanding of this history, and may need to research the unit to develop an understanding for this

12 Nadler and Tushman, A Model for Diagnosing Organizational Behavior, 35-51
invisible input into the organizational process. History often helps explain the informal structures and attitudes prevalent in every system and can be of great insight to a commander.

Leadership also falls into the input category and has an inherent responsibility to set the direction for the organization. Given a particular organization’s current external environment, leaders must help formulate the goals, values, rules, vision, policies, and overarching mission the organization is expected to accomplish. Often termed as an organization’s strategy, a commander must choose how the squadron will accomplish its mission in light of its resources and placement within the external environment. Strategy is not the same as an assigned mission statement. It is an active and adaptable position of how the unit will accomplish the mission based on the situation today and the leader’s vision of the future. Strategy also helps save resources by defining for the unit what it will choose not to accomplish. Strained by limited resources and increasing requirements, military organizations often adopt an attitude that says the unit will do more with less and accept any mission. While admirable, this complete flexibility is the opposite of strategy and communicates to the organization that regardless of inputs, results must be maintained or even increased. Some of these demands may be met by increasing operational effectiveness and enabling increased productivity. Over the long run, however adopting a strategy of complete flexibility without regard to inputs is fatalistic and can put strains on the unit that will have to be relieved in order to reach a sustainable position. It is worthy to note that direction setting by the leader is not a direct output, but merely describes the leader’s viewpoint and hopes for the organization. Ultimately, the results produced by the system will show whether the leader was effective at impacting the system by obtaining the desired results.

2. Throughput

Once inside the organization itself, the transformation of inputs into goods and services begins. This “throughput” process, describes the general design of the organization. Many models have been built to explain this process, but generally what occurs can be seen through five mechanisms: tasks, people, structure, processes, and
technology. These mechanisms define how the inputs will be converted into the final product. These categories are the target of most efforts at improving operational effectiveness within an organization and generally have at least some measure of variability the leader can impact. For instance, while squadron manning is subject to an assigned billet system, individuals within the unit can be tasked outside their designated job to accomplish duties as desired by the leadership. Similarly, while still subject to a vertical chain of command structure, a unit may choose to form small work teams with leadership based on criteria other than rank. Fighter aircraft formations are often directed by younger officers leading wingmen who outrank them for that assigned mission. Air Force Smart Operations for the 21st century (AFSO 21) is a program that aims to improve throughput process efficiencies by eliminating or re-designing elements within the organization that have limited value-adding ability. As the lowest level of command leadership, squadron commanders may have the greatest insight into AFSO 21- type improvements if trained to view the organization holistically.

There are many ways to describe an organization’s throughput process, but what is most critical for the leader is to understand the interconnectedness of the sub-parts of the system. As shown in the Figure 1, there is a web of combinations of impacts when the elements of design are viewed in this manner. There is no one correct way to design a human social system. Squadrons with the exact same mission may achieve similar results with very different internal designs. What is most important is how well the design elements relate to one another. When the elements of the organization are designed in a cohesive manner, the system is said to exhibit a high level of congruence. Perfect congruence means all elements of the system are operating in harmony and the relationships of the variables of design fit well and are supportive of one another. A healthy body is a congruent system and has reached a positive balanced equilibrium.

One simple example of the fit of design variables can be seen in the way a squadron rewards performance for its officers. While it seems obvious we should reward

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13 Leavitt, Dill and Eyring, *The Organizational World*

14 Nadler and Tushman, *A Model for Diagnosing Organizational Behavior*, 35-51
those behaviors we find desirable and discourage those we dislike, organizations often fail to align rewards with objectives. An organization that wants to move to team-based work projects should not evaluate individuals the same as one focused on individual effort. For instance, Air Force Officer Performance Reports that stress numerical stratification against one’s peers as a primary means for promotion, by nature, discourage collaborative effort. Neither individual or team effort is necessarily right or wrong, but what is important is the congruence of the variables with the desired outcome. Systems that reward one outcome, while hoping for something entirely different, are prevalent in all walks of society and violate the principle of design congruence.  

When designed well, the activities occurring within the organization will be aligned from start to finish and fit into a tightly connected activity map directly supporting the desired outcomes. While benchmarking has become a popular consulting tool, world-class organizations in both the private and government sectors are often difficult to replicate due to their high levels of congruence. An organization may copy a particular process or procedure, but if the entire organizational system does not align with these changes, the unit is unlikely to experience the gains from the benchmarked system. As a macro example, air forces around the world have yet to match the USAF in capability despite clear efforts to do so. While some will say the reason is our people or training, others will say it is our technology. Still others may point to our organizational structure and delineated doctrinal concepts. With sufficient funds, foreign air forces could replicate these individual design elements exactly and still not match the USAF in capability. This can partly be attributed to an Air Force system that has reaped the advantages of design congruence. Because there are no perfect human organizations, every Air Force squadron can be improved when commanders develop and implement strategies to improve congruence within their units.

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3. Results

Once the inputs have been transformed, an open system produces results that can be seen outside the squadron itself. These results come in the form of visible results, such as goods and services, as well as less tangible results like squadron culture.

The most visible outputs of the system are the goods and services the organization provides. For an Air Force squadron these outputs should be directly related to the assigned mission statement. Squadron commanders need to remain mindful of how their squadron fits into the larger Air Force system when developing unit goals and objectives, or the outputs they achieve may not support the overall Air Force mission effectively. While squadron missions can vary dramatically, it is essential for every Air Force to attempt maximize combat capability. Because of the larger mission of the USAF, this is true whether the unit is an operational fighter squadron or a financial services squadron. This places an additional responsibility to reach mission objectives while also utilizing the larger Air Force enterprise resources as effectively as possible. When a leader sets a direction aligned with the unit mission and couples it with this maxim, the larger Air Force system will be improved. A commander should expect to be measured by the unit’s ability to achieve the desired outputs.

As an open system, another result of the system process is the intended and unintended outcomes produced by the system. System outcomes can be seen visibly on the nightly news programs. When the U.S. Military toppled the Iraqi regime, the President declared “Mission Accomplished.” On one level, this statement was true, as the mission the military system had been tasked to complete was accomplished. Other outcomes of that system output were also expelled into the external environment. Clearly, one intended political outcome was to illustrate to the world the U.S. resolve to pursue its interests in the Global War on Terror. At the same time, an unintended consequence was a growing backlash of anti-American sentiment, particularly in the Muslim world.

This example is not meant to stir controversy, but to illustrate how important it is for a leader to anticipate both the intended and unintended consequences of a system’s
The feedback loop in the diagram illustrates this principle. A leader must constantly monitor the system results and try to limit the amount of negative exchanges with the surrounding environment, or the unit may be adversely affected in the long run.

Similarly, every organization also exudes from itself a certain, observable culture. Unlike the internal design congruence of a system, a leader cannot directly change the culture of the organization since it is a by-product of the system itself. Many leaders failing to realize the difference between these stages in the conversion process have attempted to direct cultural changes by verbal edict. As most of us have seen, these types of mandates rarely accomplish the leader’s goals. As a by-product, culture can be changed, but only by going back to the inputs of the system (people, resources, history, leadership) and the design of the organization and seeking to realign the root incentives forming the basis for the current culture. Lastly, leaders must remember that culture not only affects the organization, but elements of a squadron’s culture will also be visible by the external environment. While still acceptable within an organization, it is possible for the external environment to change and no longer find a squadron’s culture tolerable. The Navy’s Tailhook incident is an example of an acceptable culture inside an organization causing problems for the organization when viewed by outside stakeholders. During the feedback process, a leader needs to assess the organization’s culture against the environment it operates within in order to avoid such clashes and the damage they cause for the organization.

C. APPLICATIONS OF THE ORGANIZATIONAL SYSTEMS MODEL

With a basic understanding of systems thinking and an organizational systems model, a squadron commander can begin to view the unit through a more holistic framework and use this vision as a guide to assessing the unit’s performance. The framework illustrates how the whole system is interconnected and impacted by the external environment. As a result, when changes are made in the system, consequences will occur in areas beyond where the original change occurred.

A common occurrence in squadron leadership is to identify a situation that is not in line with a desired outcome, and immediately set out to correct the issue. While the
problem may be that simple, it is more likely the leader has identified a symptom to a problem and not the root of the problem itself. If we make a habit of solving symptoms rather than root problems the negative impact on overall system effectiveness will likely be greater than if we had delayed a correction to seek the root cause. As a simple example, an increase in safety incidents, or a rise in Airmen tardiness, may be observed symptoms facing a squadron commander. Taken by itself the solution could be to re-invigorate the safety program or increase punishments for late arrivals. While these solutions may help the immediate situation, it is also possible these problems are symptoms of demands placed elsewhere on the system that are impacting safety and performance. A change in the external environment, such as rising operational demands, may be closer to the root of the problem than the observed symptoms. While treating the symptoms may give the leader a sense of being proactive, it may do little more than frustrate an already strained system and mask root problems that need addressing. Eventually, the problem will resurface, and the consequences will likely be greater than when first identified.

Rather than wasting resources solving symptoms, commanders can apply systems thinking to look for root causes. When problems arise, the leader should scan the system for changes that have moved the system out of balance. Variations may be found in the external environment or the inputs that are entering the system. Likewise, performance measures can be analyzed to look for changes in the results the organization is producing. Lastly, constantly monitoring the squadron’s throughput process, focusing on design congruence, can help identify root causes and opportunities before their impacts ripple throughout the organization.

Seeing the unit as a whole and recognizing interconnectedness is another tool a leader can use to aid in problem analysis and obtainment of objectives. As we know, human systems are continuously changing and remarkably complex, making leadership a constant challenge. Understanding that the whole is truly greater than the sum of the parts and attempting to expand one’s mental models will help explain some of this complexity and improve the quality of Airmen leadership.
D. SUMMARY

In this chapter, general systems theory and a basic systems model for the organization have been introduced. While reducing systems to sub-parts has some advantages, leaders must be leery of a myopic view that overlooks how these small pieces affect the entire system. Systems’ thinking acknowledges the interconnectedness of these parts and attempts to illustrate causal relationships by examining the whole rather than just the sub-parts. This principle can be found in natural biological systems as well as in human systems, such as an Air Force squadron. Identifying the squadron as an open and living system, we recognize the unit as having specified inputs such as the environment, resources, people, history, and leadership. These inputs are transformed through our people, structure, tasks, and technology to create results that are exchanged back with the environment. The better the congruence of the variables in the system the more likely the organization is to operate effectively. The leader’s challenge is to use these system tools to interpret the external environment and the organizations outputs, and set in motion a direction that will most align the system variables into a tightly knit activity map where the inputs, throughputs and results are operating with a high level of congruence. As a model, this is but one of many tools a commander can employ to help the unit, and should be blended with the leader’s experience, managerial skills, and intuition to best direct the squadron towards successful mission accomplishment. The next chapter will expand on this framework to illustrate how a squadron commander can help the unit thrive as it interacts with the forces of the external environment.
III. INTERPRETING THE EXTERNAL ENVIRONMENT

Anyone who has witnessed a military change of command ceremony cannot help but be impressed by the grandeur of it all. Steeped in heritage, the ceremony represents the passing of authority from one leader to the next and can be of great significance to the unit and the leaders involved. Over the course of a just a few minutes, responsibility changes hands, and the outgoing commander steps aside while assuring the squadron it will continue to prosper under this new leader. With characteristic military confidence, the new commander takes the stage to outline his/her vision for the future. To watch it all unfold, future success for the squadron seems to be a foregone conclusion. After all the congratulations are said and done, however, a thoughtful new commander realizes just how many forces and factors may be beyond their direct control. While his predecessor’s command may have been during a time of peace, his may be one of war. Generous budgets and manpower levels may shrink following a change in national political power. The very mission of the unit may become obsolete as new technologies emerge or competitive outsourcing proves to be more efficient.

In truth, when organizations are understood as open systems, the environment around the unit plays a crucial role in shaping its overall effectiveness, effectiveness being defined as goal accomplishment and adaptability. While a squadron commander may “assume command” and bear ultimate responsibility for the performance of the unit, he/she never really gains complete control over the forces that will impact these responsibilities. While a new commander should exude optimism, understanding and managing this underlying premise is sobering and daunting. How well the squadron handles this gap between what can and cannot be controlled often determines how the unit actually performs. Fortunately, systems thinking can help squadron commanders bridge this gap and develop a strategy for both interpreting and interacting with the external environment surrounding the unit. With this in mind, this section presents a framework for squadron commanders to view the influencers surrounding the unit and develop a strategy for coexisting and succeeding with the world outside the organization.
A. THE EXTERNAL ENVIRONMENT

“No plan has ever survived contact with the enemy.”

-Unknown

If organizations did not interact with the world around them, successful leadership would be much simpler. Leaders would align internal processes to maximize performance and produce consistent results year after year. Unfortunately, as the wise strategist above relates, once the perfect plan meets the outside world new variables are introduced and success now requires the system to take into account the context in which it has been placed. The more unstable the environment, the greater the impacts the organization can expect to feel.

For many reasons, both the level of environmental instability and the pace of life have drastically increased over the last several decades. The incredible improvements in computer processing power illustrate this phenomenon. Imagine trying to accomplish today’s common workplace tasks on the 64K computers found in offices of the late 1980s. With this increasing pace has come a corresponding increase in change, complexity, and uncertainty in the external environment. These changes no longer make it realistic for an organization to make a ten-year plan and expect it to remain relevant. Many cite these changes as ushering in the age of the knowledge worker, where the ability of our workforce to harness rapid changes in information, will determine success in this new climate.16

Systems thinking can be applied to help understand this complexity by treating the external environment as another relationship required to be seen holistically. When a system is open, its very survival depends on its ability to keep a positive exchange of inputs and results with the external environment. This requires a measure of adaptability on the part of the system in order to continue to succeed despite changing conditions.17


17 Nadler and Tushman, A Model for Diagnosing Organizational Behavior, 35-51.
While this may seem simple, history is replete with examples of both public and private organizations that disappeared for failing to adapt to the world around them. In this era of instant access and transparency of information, we should expect organizations to be punished even quicker when they fail to adapt to the changing environment. Not surprisingly, many organizational scholars advise leaders to see the external environment as the first level of analysis before attempting to improve organizational effectiveness measures.18

Since an Air Force squadron is not self-sustaining it makes sense to sort through the array of forces outside the unit to attempt to make the same relationship connectivity described in the first chapter. It is not hard to see that the squadron could easily be considered as part of a larger Air Force Wing system, and the Wing part of a Major Command system and so forth. Theoretically, it could even be said that all of our individual Service systems are part of a larger super system, i.e., seeing a hierarchy of systems. What is most important is not the exact boundary, but the understanding of the exchanges occurring between the system in question, the overlapping systems above it, and the external forces surrounding it. The basic principles of systems thinking remain the same – the fit of the major variables determines performance. For this analysis, it is sufficient to consider an Air Force squadron as a complete system having porous boundaries with the rest of the world.

As a squadron commander, the challenge is to create an organization that both sees and correctly interprets changes in the surroundings. This requires the ability to understand the content and context of what is observed and to be able to see correlated consequences of these insights.19 This is the essence of interpreting the external environment.


B. BUILDING SITUATIONAL AWARENESS

Academic management literature often refers to the process of looking outward from the organization as scanning the external environment. A more familiar phrase for Airmen is situational awareness (SA). Airmen can be said to have SA when they correctly understand their current position in relation to all the relevant variables at any given moment in time and respond accordingly. For example, after a mission, fighter pilots examine their varying levels of SA during an air battle to determine whether their corresponding actions were correct. When it is determined an error was made because of poor situational awareness, the reason for the low SA is sought out so that in future battles the pilot will better understand what cues to look for. Since two battles are never the same, an improved ability to interpret the environment (situational awareness) is much more valuable than a standard solution to a previous problem.

Gaining experience in building this SA requires several things. First, you must know where you are starting from and be competent in your business. Just as an F-22 will not be lethal in the hands of a Cessna pilot, neither can a squadron be effective if its Airmen and leaders are not competent. Next, you must recognize that most choices are contingent, meaning they depend on the circumstances in which the problem occurs. Qualified, but inexperienced workers in all fields are often frustrated when they apply a textbook solution only to find it does not work in their situation. Do not interpret this to mean there is no place for principle-based leadership and decision making. If this were the case, leaders and organizations would be driven by the environment and lose all identity and autonomy as a separate system. Every individual and organization is founded on cornerstone principles that help define its existence. For any Air Force squadron, these would include the Air Force core values of Integrity, Service before Self, and Excellence in All We Do. When a squadron faces a situation violating these values it must side with principles or risk losing its identity. Correspondingly, an open organization would be wise not to constrain itself with too many non-negotiable ideas or risk the ability to adapt to its surroundings. In recognizing this conflict between contingency thinking and principled thinking, a leader must understand the unit’s core principles and weigh them against the changing environment. Whenever a situation
occurs that does not violate this small set of principles and values, an organization can approach problems, causes and solutions from a contingency perspective.

Lastly, building situational awareness requires selectively filtering the information entering the organization from the environment. This filtering process is perhaps the most difficult and requires practice. In today’s fast-paced world, if this process is not done well a leader and the organization can be paralyzed by the constant deluge of information or harmed for failing to spot valuable insights.20 This is where a holistic, systems thinking mindset can help a squadron to see interrelationships and avoid ignoring potentially relevant environmental cues. Consider this simple but poignant example. The pay-day loan industry provides short term loans with a typical term of two weeks for amounts between $100 and $1500 dollars. These loans give the borrower quick cash in return for a claim against their next paycheck. When annualized, the fees for these loans are an incredible 390% to 900%. At the end of two weeks the borrower must repay the loan plus fees or take out another loan to carry forward the balance. Less than one percent of pay day loan borrowers are able to repay these loans and have to take another loan. On average the typical borrower pays back $793 for an original $325 dollar loan.21

Looking back, few squadron commanders probably understood this business model or noticed the rise of this burgeoning $28 billion dollar industry. It is likely, however, that most commanders around the country did notice the pay day loan shops popping up outside military bases. The question is how many made a connection between this change in the environment and the squadrons they led. It is a sad fact that many of our enlisted families struggle to make ends meet every month and often have limited access to stable credit sources. The reason these business were showing up was because some of their most profitable customers were driving on base every day. Lacking sound financial training and faced with mounting money problems, many


Airmen turned to pay day loans to get by. Unfortunately, this was not a solution for most Airmen but the beginning of a damaging debt cycle resulting in personal crisis’s ranging from marital problems to criminal activity. Eventually, these types of personnel problems resulted in noticeably decreased readiness. Ultimately it was this decrease in readiness that successfully persuaded Congress to limit fees charged to military personnel to 36% claiming predatory lending practices were ruining servicemen’s finances, impacting security clearances, and reducing available personnel for deployment to combat zones.\(^{22}\)

The point is, when pay day loan shops entered the military base environment nearly a decade ago, it was a substantial event that would eventually impact every organization in the Air Force, illustrating how cause and effect can be far apart in time and space. Unfortunately, many failed to see the relationship between these loan sharks and the organization and filtered out this environmental change. Only when readiness measures dropped did the service begin to see the real impact of pay day loan shops. The clear lesson is that the process by which we filter information is crucial, thereby requiring squadron leaders to think systemically when assessing the environment surrounding the unit. The clear lines of responsibility built into the chain of command may make some commander’s apprehensive to do this for fear of overstepping their bounds. While there is definitely a time and place for a focused “stay in your lane” mentality, skillful practitioners realize the importance of discerning the difference when building SA on the external environment.

Because interrelationships can be difficult to see, a commander simply cannot be the sole source of situational awareness for the squadron. More appropriately, the whole squadron would need to be trained to become human sensors for the organization as they go about their daily lives.\(^ {23}\) When this principle is applied, Air Force squadrons can generate a great potential advantage due to the breadth of experiences each airman brings to a unit. Moving every few years, traveling abroad, and witnessing how other parts of


\(^{23}\) Leavitt, Dill and Eyring, The Organizational World
the Air Force system operate in different environments helps sharpen these sensory skills. As Airmen are exposed to systems thinking, they can review past experiences and see how they have already observed the connectedness of the external environment with Air Force units. Accordingly, these Airmen, if given voice by their commanders, can now be powerful sources of knowledge for the squadron.

C. INTERACTING WITH THE ENVIRONMENT

Once we expand our vision to begin to see how the world around us is connected with the organization, we can develop strategies to interact with these influencers. While much has been written on this topic, the focus of this section is to implement ideas from various models deemed most applicable to an Air Force commander. As our Airmen become external organizational sensors, the information they provide can be sorted into at least two categories: threats, and stakeholders.

Airmen appear most tuned to detecting threats from the external environment. The very nature of the Department of Defense is to repel threats from harming our nation, so it is not surprising that military leaders are keen to sensing threats. In general, an external threat can be identified as an entity whose current operating practices puts the organization’s objectives at risk. As a systems thinker realizes, threats can be both direct and indirect. An enemy of the state, such as Al Qaeda, could be considered a direct threat. It is not just our enemies who can become a threat. Even our allies may become indirect threats when their actions jeopardize our objectives.

A caution for commanders is to jump too quickly to categorize all external influencers with whom they disagree as threats. What may initially be perceived as a threat may be turned into an opportunity or a collaborative stakeholder if common ground can be achieved. For instance, in the pay-day loan example, had local commanders engaged these businesses earlier, there may have been an opportunity to help young Airmen with financial struggles. After all, pay-day loans provided some Airmen with a means to get by when they had no other financial options. With the new legislation, this option is now gone as pay day lenders will stop serving military customers. Somewhere between the extremes of predatory lending and no lending, it is possible a cooperative
relationship with the pay-day lenders could have been developed allowing them to
coexist with military bases under a new paradigm. As a minimum, organizations could
have used this external change to springboard into better financial training and oversight
before the problem impacted readiness. The point is that dealing with threats takes
precious resources away from more productive uses and can take its toll on the unit. For
this reason, skilled leadership selectively minimizes the number of threat relationships the
squadron chooses to face.

Once it is determined an external factor is a true threat, it is a commander’s
responsibility to protect the organization from harm. While there is a potential for greater
strength in an organization as opposed to an individual, rigid organizational structures
leave a chink in the armor at every leadership junction. When a commander possesses
the authority and resources to protect their squadron there is generally not a problem.
However, when treatment of an external influencer requires more authority or resources
than a commander possesses, then skillful advocacy upward to the next higher level of
organization can be a viable intervention. Failing to do so makes the commander
culpable to the harm the squadron feels from the impact of the external threat. This can
be a subtle weak spot for the organization. If a commander perceives his/her role as
being an autonomous decision maker, s/he may struggle voicing up the chain concerning
the squadron’s need for assistance. The problem is worsened if the perception throughout
the chain of command is that strong leaders solve their own problems while incompetent
leaders ask for assistance. Under these conditions, short command tour lengths and a
desire for future promotion can result in some commanders allowing the organization to
remain at risk rather than speaking upward for help. As a systems thinker, a commander
would fight these incentives and get help for the unit before the consequences of inaction
hurt the squadron.

A larger category of external influencers can be termed stakeholders, i.e., any
individual or group that has a stake in the outcomes the organization produces. For
example, an airman’s family is an external stakeholder to the squadron the Airmen works
in. While an Airmen’s spouse and children do not go to work with him/her every day,
they have a strong interest in what occurs at the squadron. In fact, many such stakeholders exist as the example in Figure 2 below illustrates.

![Sample Squadron Stakeholder Relationships](image)

**Figure 2. Sample Squadron Stakeholder Relationships**

This is not an exhaustive list, but illustrates that as an open system the squadron interacts with many outside groups. Whether recognized or not, this web of relationships can be vital to the unit, and strategies for managing them can be essential. There are alternative methods for attempting to manage an array of relationships. One method exercises the process of managing some stakeholders similar to the concept of managing internal affairs. Relationships with “mixed blessing” stakeholders (potentially supportive on an issue or potentially threatening on an issue) may need the extra time and resources needed to collaborate towards developing win-win relationships. Finally, defensive strategies may be needed to counter non-supportive stakeholders.

Under the first method, the squadron recognizes the interrelationship with the stakeholder and seeks to minimize or maximize the results of the relationship as necessary to best suit the organization's objectives. Each stakeholder is analyzed to determine its interests, the incentives driving their actions, and the relative bargaining power they hold over the organization to achieve their objectives. Greater cooperation is required with stakeholders who have higher bargaining power, while lesser stakeholders can be managed with less cooperation. At the extreme, the relationships between the
organization and its stakeholders can become self-serving and focused on power and control, i.e., your organization being a stakeholder on their stakeholder map. The organization may choose a strategy of manipulating a weaker stakeholder while simultaneously countering manipulation by a more powerful stakeholder. The level of trust in these relationships is likely a moving target, depending on the issue and the sensitivities associated with power struggles. Even when interests overlap, strong negotiation skills and tight contractual agreements may be necessary to facilitate interaction between the organization and its stakeholders.24

While these previous scenarios describe reality for many organizational-stakeholder relationships in the modern world, another view is developing that is more aligned with a systems framework for the organization. While the default may be for stakeholders to compete with one another, this dominate or be dominated relationship creates incentives to minimize collaboration and withhold information to gain the upper-hand. Contrary to this, when organizational leaders seek to find common understanding among stakeholders and to build trusting relationships, both parties can benefit by describing problems as mutual, i.e., stakeholders collaborate instead of compete to solve complex problems thereby seeking alignment with key system influencers.

The basic premise is to form relationships with stakeholders similar to those found in positive human relationships where possible. This requires a mutual understanding of both side’s interests and goals while maintaining a respect for differences. It ultimately requires a level of trust be built between an organization and its stakeholders allowing better strategic alignment of all interactions. From a systems standpoint this makes tremendous sense as the organization can never be viewed as independent from the environment within which it operates. Rather than seeing stakeholder relationships as a drain on resources, they can be viewed as opportunities to create an even stronger position than currently exists.25

For example, suppose you are a maintenance squadron commander responsible for the personnel and maintenance of F-15 aircraft. Your mission is to provide combat capable aircraft to support the Wing’s air superiority mission. Examining your key stakeholders, you highlight the relationship with the three F-15 fighter squadrons’ your unit provides aircraft to support. Because operations and maintenance report through two separate chains of command, neither you nor the fighter commanders have direct influence over the other unit.

If the fighter squadrons are approached from the management perspective, it becomes clear that you must identify the relative balance of power and seek to minimize the fighter squadron’s negative impacts on your unit. From what you have observed of the flying squadrons, they are constantly pushing to fly more sorties. Not only that, they continuously want to make what appear to be ad hoc, last-minute changes to your schedule. Because you must manage the flow of aircraft for daily operations and long-term maintenance and upgrades, these changes have a substantial rippling effect. In fact, your unit performance ratings are directly tied to measures of scheduling effectiveness that punish changes and deviations from the plan. As a result, you determine to put procedures in place that intentionally underutilize the assets as to maintain a buffer for when the fighter squadrons require changes. Likewise, you recognize your bargaining power is strongest through monthly “contracts” with the stakeholder. In this manner, you can reduce the amount of changes to your schedule by requiring increased bureaucratic oversight to approve even minor schedule changes. You do not know the fighter squadron commanders very well and have limited need to interact with them, relying on the formal structures to facilitate the relationships.

If instead a more collaborative approach between the units is exercised, the scenario changes. First, recognizing that excessive flying and last minute changes are impacting your squadron’s effectiveness, you contact the fighter squadron commander to try to understand why this is happening. He explains that the mission requires providing combat capable pilots to the Wing and the right mix and quality of training is essential to make this happen. While s/he does care about the number of sorties the unit flies, what is more important is that each mission accomplishes the training objective planned. When
this does not occur, the sortie has to be re-accomplished. While you are graded on aircraft effectiveness, s/he is graded on pilot readiness thereby routinely asking for more sorties than are needed to ensure there are enough to meet the minimums when fallout occurs. While you build a monthly schedule, s/he builds a weekly schedule. Even then, daily schedule changes are often required based on the outcome of each day’s missions. You also learn that during certain weeks, the complexity of the flying missions requires coordination with many other flying units and hundreds of thousands of dollars are sunk into the effort. During these times, scheduling flexibility is much more important than during routine, squadron training.

After meeting, you both recognize that your objectives are much more intertwined than at first look. With renewed understanding of the others issues and challenges, the two squadrons set out to operate from a position of trust and collaboration. Rather than inflate training requests, the flying commander agrees to tell you exactly how many sorties are needed to accomplish the mission. In turn, you agree to not withhold aircraft and provide as many sorties as you can, given the condition of your assets. Each of you agree to provide the other with more fidelity of information, highlighting critical periods for your units in advance, and attempting to prevent them from overlapping. Over time, trust is developed, and when changes are requested from either unit, they are respected. The monthly contract is still maintained, but the amount of bureaucratic oversight is minimized and managed.

This simplified analogy illustrates several principles. First, when we attempt to manage stakeholders we make an assumption that we fully understand their organization like we do our own. Unfortunately, with low trust levels, it is unlikely we have enough information to see all the factors at play in the relationship. Second, managing relationships in this manner often leads to a sub-optimal outcome. Both units were still accomplishing the mission, but they were having to work harder to do it and were likely less effective. Collaborating with stakeholders has the potential to improve organizational effectiveness and give the squadron earlier and more accurate insight into changes in the environment that may impact operations. Last, collaborative stakeholder
relationships take time to develop and have to be maintained. While forging strong trusting relationships is beneficial to the squadron, it cannot be accomplished overnight or without meaningful commitment. Unfortunately, frequent squadron personnel turnover jeopardizes these commitments. It only takes one commander or key individual to revert to manipulative management strategies to destroy a collaborative stakeholder relationship that may have taken years to develop.

In practice, squadron commanders may need to use a combination of these ideas to best deal with the external environment. Unlike the operations-maintenance example above, some stakeholder relationships may be beyond the commander’s scope of authority to change. In these cases, more of the management approach will be required than in scenarios where the commander has the ability to help shape the relationship. From the systems perspective, the goal should be to recognize the power of collaborative relationships and attempt to forge them whenever possible.

D. SUMMARY

As technology increasingly breaks down the boundaries of information flow, organizations must recognize how the external environment relates to the organization. Commanders can improve their squadron’s ability to handle these relationships by training units to build their situational awareness skills and become organizational sensors. In this manner, Airmen help the unit stay in tune with the changing environment so that it can anticipate needed organizational adjustments. As this information is taken in, commanders can filter it through a systems framework to attempt to see what changes may impact the squadron. Classifying these external influencers as threats or stakeholders is one method to better understand how to deal most effectively with them. Lastly, these relationships can be managed in a traditional manner attempting to minimize the negative impacts of stakeholders, or in a more collaborative way that seeks win-win agreements through trusting relationships. Ultimately, a commander will have to decide how best to interact with stakeholders, realizing that applying a collaborative

approach to relationships is desirable, particularly when the issue is important to both sides. When a threat or stakeholder relationship reaches a point a commander is unable to effectively interact, s/he would exercise the skill of voicing the need for assistance up the chain of command. Applying these tools, dealing with the external environment can become one of the most critical and rewarding aspects of squadron command.

Armed with a solid theoretical understanding of the systems approach to viewing the squadron and its environment, the following two chapters use this framework to address current issues facing the Air Force and its squadron commanders. The following chapter will challenge the reader to apply these principles in the area of financial leadership.
IV. A SYSTEMS APPROACH TO FINANCIAL LEADERSHIP

In today’s military, strong leadership is desperately needed in the command of the Air Forces scarce financial resources. With a 2008 Presidential budget request of 623 billion dollars, defense spending represents the largest segment of the United States discretionary spending. Strained by six years of active military operations in Iraq and Afghanistan, rising personnel costs, and a need to replace aging equipment, the Department of Defense (DoD) is thirsty for an increasing share of the Nation’s budget.

As the lowest level of the Air Force organizational structure with command authority, most squadron commanders feel far removed from the monstrous defense budgeting process and the bureaucracy within which it operates. In truth, no one within the organization has more power to wrangle out inefficiencies and improve defense spending than the squadron commander. As the final step from appropriation to obligation, field organizations have the ultimate insight into how dollars are actually spent. Unfortunately, as the DoD has grown, the appropriations process has created skewed incentives that often discourage wise spending and can result in resources being spent when they should have otherwise been saved. Examining this problem using an organizational systems framework model will help illustrate how this trend must be reversed before the organization is hurt by shortsighted thinking. Before building the model, this paper will examine the current state of the federal and defense budgets and analyze the forecasted trends to gain insight into the financial environment the Air Force is facing. A systems model for unit defense spending will then be introduced to analyze the problem and make recommendations for Air Force squadron commanders.

A. STATE OF THE NATION’S BUDGET

A fundamental responsibility of leadership is to interpret the external environment and apply that knowledge to the benefit of the organization. Before addressing squadron spending, a basic understanding of the key financial issues facing the nation is necessary. Regardless of political affiliation, all citizens should be aware of the growing national debt, the solvency of mandatory spending programs, and the impact on future
governmental spending. More so, while political expediency often keeps these long-term issues out of the national limelight, commanders must acknowledge and anticipate how these issues will impact the DoD’s ability to accomplish its mission.

At the time of this writing, the total national public debt was over 8.8 Trillion dollars. This includes both private debt (about 3.3 trillion) and federal debt, or the amount the government owes to itself. To gain perspective, in order to retire this debt today, every citizen would have to contribute $30,000 beyond their current tax obligations. More alarming, since 2006 this debt has been increasing by 1.3 billion dollars a day. Figure 3 below illustrates the rise of the national debt adjusted for inflation since 1940.


These numbers do not necessarily spell economic disaster, but do illustrate a claim on future dollars for which the DoD will compete.

Adding to mandatory spending are the entitlement programs of Social Security and Medicare. Each of these programs is facing potential long-term insolvency as the

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nation’s demographics change. Beginning in 2008, the first of 77 million baby boomers will be eligible for Social Security, and the nation’s workforce will begin to drawdown faster than it is replenished as this generation retires. Under current legislation, the decreasing workforce, increasing longevity, and rising health care costs will continue to eat up a greater share of our national budget.

As an example, Social Security expenditures are growing faster than revenues as subsequent generations of current workers are not as large as the boomer generation. Social Security currently makes up around 4.6% of Gross Domestic Product (GDP) and is expected to increase to 6.7% by 2017. Additionally, there are currently three workers paying into the system for every one receiving benefits. As the Nation’s demographics change, this will shift to only two workers per recipient. The Congressional Budget Office forecasts revenues in the trust accounts to exceed expenditures beginning in the year 2017, and being completely drained by 2040. At this point, the pay-as-you-go system will only be providing around 74 cents for every dollar of benefits. The remainder will have to be financed from the general funds.

Even worse, Medicare expenditures began exceeding revenues in 2006 with the hospital insurance trust fund forecast to be exhausted by 2018. For the first time in its history, Medicare issued a funding warning to inform the executive and legislative branches that over 45% of program funding will be coming from non-dedicated sources. If not corrected, these overages must be paid from the shrinking discretionary dollars that also fund defense. Consider the following quotes from the Social Security administration, Medicare trustees, and Congressional Budget Office:

As Social Security and HI reserves are drawn down and SMI general revenue financing requirements continue to grow, pressure on the Federal

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30 Social Security and Medicare Board of Trustees, Status of the Social Security and Medicare Programs: A Summary of the 2007 Annual Reports,[2007]).
budget will intensify. We do not believe the currently projected long-run growth rates of Social Security or Medicare are sustainable under current financing arrangement.\textsuperscript{31}

We are increasingly concerned about inaction on the financial challenges facing the Social Security and Medicare programs. The longer we wait to address these challenges, the more limited will be the options available, the greater will be the required adjustments, and the more severe the potential detrimental economic impact on our nation.\textsuperscript{32}

Either a substantial reduction in the growth of spending, a significant increase in tax revenues relative to the size of the economy, or some combination of spending and revenue changes will be necessary to promote the nation's long-term fiscal stability.\textsuperscript{33}

Figure 4 shows graphically this rising budgetary pressure as the entitlement programs begin to require an increasing share of the GDP.

\textsuperscript{31} Social Security and Medicare Board of Trustees, \textit{Status of the Social Security and Medicare Programs: A Summary of the 2007 Annual Reports},[2007]).

\textsuperscript{32} Ibid.

\textsuperscript{33} Congressional Budget Office, \textit{The Budget and Economic Outlook: Fiscal Years 2008 to 2017},[January, 2007]).
Over this same period, the rate of GDP growth is forecast to be about half as much as these mandatory spending items. Overall, mandatory spending currently consumes over 60 percent of the federal budget with the Congressional Budget Office (CBO) forecasting continued growth over the next decade.35

For DoD leaders scanning the external environment, these numbers should provide insight into the landscape defense spending is placed. While we can be assured the projections are not completely accurate, commanders should concentrate on the projected trends and attempt to forecast the impact on the DoD as a whole and specifically on the units they lead.

Figure 4. Spending on Social Security, Medicare, and Medicaid as a Percentage of GDP 1996 to 2016 From34

34 Congressional Budget Office, *The Budget and Economic Outlook: An Update*[August, 2006]).
35 Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2008 to 2017*
B. DEFENSE TRENDS AND FUNDING

While most Air Force commanders have had exposure to the defense appropriations process few would claim mastery of this complex system. Ultimately, to resource the military, countless man hours and systems must interact before any money is available for readiness. As this figure from the Naval War College illustrates, no one agency has complete control over the budgeting process with individual Service’s Program Planning Budgeting and Execution (PPBE) systems intersecting with multiple planning systems.

Figure 5. Planning & Budgeting Relationships From

While most squadron commanders have limited impact on PPBE, an appreciation for its complexity is valuable. This complexity makes detailed performance monitoring and system flexibility very difficult. Likewise, giant bureaucracies have been created resulting in strong levels of entrenchment within the various sub-agencies.

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As the product of this process, the annual Defense Appropriations Act represents the largest category of discretionary spending in the federal budget. Unlike mandatory spending, the DoD budget is revisited each year and is therefore more sensitive to the politics of the day than mandatory spending. In real dollar terms, the budget has fluctuated both up and down by several hundred billion dollars over the past fifty years. As a percentage of GDP however, it has remained reasonably constant as Figure 6 illustrates.

![Defense Spending as percentage of GDP](image)

Source: Congressional Budget Office

**Figure 6.** Defense Spending as percentage of GDP From

This chart is often cited as evidence the Nation is under spending on defense during a period of a protracted war on terror. As seen above, most recent conflicts exhibited large spikes in defense spending. While this may be true, other environmental changes may also account for the differences. Notably, the relationship between mandatory spending and discretionary spending has also changed during this same period. In 1960 mandatory spending accounted for 32% of the federal budget. By 2004, it had more than doubled to 68% leaving only 32% available for defense and all other

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discretionary programs. This change in the available financial resources has impacted the country’s war time surge ability and has increased the pressure to reduce DoD spending as soon as feasible.

In addition to the financial pressures, the struggle for control of the DoD between the Congressional and Executive branches also impacts our approach to the problem. As we begin to develop a systems mindset to the financial problems facing the Services, it is important to note Congress, not the President, has the Constitutional responsibility for providing for the Nation’s defense. Article 1, Section 8 of the Constitution states that Congress has responsibility:

To raise and support Armies; To provide and maintain a Navy; To make Rules for the Government and Regulation of the land and naval Forces; To provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions; To provide for organizing, arming, and disciplining, the Militia, and for governing such Part of them as may be employed in the Service of the United States…

This point must be understood as Congress ultimately exerts significant leverage on the financial conduct of Air Force squadrons.

Equally as complex as the DoD budgetary system, is the flow of funds from Congress down to the Services. Layered in law, regulations, and accepted practice, DoD eventually receives budget authority (permission to obligate the government), and passes it down through the chain to end users as illustrated below in Figure 7.
As the authority is passed down, a line is drawn below which commanders are not responsible for anti-deficiency violations. Below this line, commanders are not held legally responsible for ensuring funds are not overspent. Most squadron commanders fall into this category and are given operational targets or budget allowances from the wing or major command level. Spending within these target levels becomes the objective squadron commanders are expected to achieve.

Unfortunately, the financial management control system of such a giant bureaucracy creates skewed incentives for unit commanders. While tight legislation, regulations and controls require all transactions to pass the tests of purpose, time, and amount this does not ensure efficiency. Anyone who has witnessed end-of-year spending realizes monies are often spent that would not have otherwise been used were it not for the expiration of the funds. Adages such as “if you don’t spend it you can’t get more” and “whoever spends the most gets the most” have just enough truth in them to further illustrate this principal. While collectively all can agree spending should not occur in this

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manner, there are few punishments for the spendthrifts in our organizations. As we will see in the next section, this short-term thinking will hurt our squadrons if we do not become agents for change.

C. SYSTEMS MODEL FOR UNIT SPENDING

Both the external and internal environments described above create a financial context from which unit commanders should approach their fiduciary responsibilities. As has been shown, the complexity of the systems involved make large sweeping changes very difficult to enact. The Secretary and Chief of Staff of the Air Force have attempted to reap savings through improved business process models. The Air Force Smart Operations 21 is a leadership initiative aimed at more efficient resource use through system-wide process improvement. For many reasons, business initiatives have met with tough resistance throughout the service ranks. In large part, bureaucratic entrenchment and the structure of the management control system itself foster this resistance. In order to achieve any success with these efforts, commanders must see the situation from a different mindset.

Using a systems thinking framework we can develop the feedback loop shown below in Figure 8.

Figure 8. Systems Construct For Spending After

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40 For a complete discussion of systems thinking and the development of systems models for analyzing problems see, Senge, *The Fifth Discipline*. 40
The left hand side illustrates the relationship within the DOD of requesting, appropriating, and spending funds to obtain some measure of unit readiness. As we know, defining the actual level of readiness is very difficult to do. Many operational commanders feel their units are never ready enough, and therefore there are never enough funds to get to their desired level. This can result in ever-increasing budget requests. Given the magnitude and uncertainties of operational taskings, this mindset in itself is not unreasonable under the current framework. Added to this, there is a strong perception that if money is not spent, it will be taken away in a subsequent year and threaten future readiness. The result is most unit commanders are prone to spend all the money they are allowed even if they do not feel it really necessary in the current period. The incentive to spend all you are given runs contrary to efficient spending where resources are spent to achieve their maximum effectiveness. By prioritizing and rewarding units for fully expending resources, we have aimed our focus at measuring spending, not readiness.

The right hand side of the diagram is a balancing loop and incorporates some of the external stakeholders discussed in previous sections. The Congress exerts its constitutional authority over the DoD through the appropriation and authorization process. This activity generates an appropriations bill that is reported to the general public. The size of the defense bill impacts the general public as it limits discretionary spending for all the other programs important to the many constituents of Congress. While recognizing the majority of the general public truly appreciates the safety and security provided by a strong military, we must also realize how other concerns factor into public perception. Education, healthcare, welfare programs, and job security are a few of the many issues that add to the frame of reference the public will view the defense spending bill. Any public perception of waste within the DoD will also reduce the perceived value. Ultimately, after some delay for the democratic process, the majority public opinion will work its way back through our democracy to more congressional action.

It is known that the further removed consequences are from the source of the actions which triggered them; the more difficult it becomes to see causal relationships. When we fail to understand root causes of problems, we are unlikely to make any
significant long-term improvements. Starting at the lower levels of the Air Force, if squadron spending is inefficient and collectively results in higher budget requests and higher appropriations in the short run, it may take several years of growing negative public opinion before we see a decrease in defense appropriation. We are then likely to assume the decreases are more arbitrary and political than they really are and will fail to appreciate our contribution to the problem.

Herein lays the danger for the Air Force when squadrons view themselves as isolated from the larger process and more victims of budget cuts than contributors. A vicious cycle of rising and falling budgets is likely and certainly will jeopardize the long-term readiness of the force. As an example, the Air Force is currently operating the oldest fleet in history and recapitalization is an absolute must. Unless something changes, this means the organization needs large increases in budget authority to make these investments and ensure future readiness. From our Service leader’s perspective, the right hand side of the diagram must be generating a favorable response for this to occur. Since the Secretary and Chief of Staff have no direct control over the right-hand diagram, they must find the highest point of leverage on the left side of the loop. In addition to re-addressing what readiness means, targeting the spending side by ensuring the Service is operating as efficiently as possible is the clear choice. Reducing spending through gaining process efficiencies is the highest leverage point within the Service’s control. Clearly, this is recognition by the Air Force has helped bring about the AFSO 21 initiative.

Remembering the skewed incentives and organizational complexity of the budgeting and flow of funds processes, the structures are not well aligned to accomplish these changes, and so they are met with resistance. For the squadron commander, it is difficult to see the link, much less the incentive, between saving money by not buying more chairs during end-of-year spending and recapitalization of the fleet. Admittedly, this is a major problem as saving money is not at the root of the problem and can only have limited effectiveness until higher leverage points are addressed. Changing our

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41 Senge, *The Fifth Discipline*. 
views on issues such as readiness measurement, appropriations accounting, and resource management will require the underlying Congressional structure for funding the DoD to also change. In fact, ideas such as performance-based budgeting (PBB) have gained increasing momentum over the past decade in the public sector and may someday impact these issues.\textsuperscript{42} Effects-based operations (EBO) are a similar form of this thinking and are being implemented across many Air Force disciplines. EBO, which focuses on determining a desired measurable outcome then acting (resourcing) and reporting to that level, is a major step in the right direction for gaining leverage in the system model.

The problem remains that given the long delays associated with both military and public policy changes, squadron commanders cannot wait until all the structures have been adjusted before beginning to change the spending paradigms. The consequences of waiting are continuing the vicious cycle illustrated, until ultimately the balancing loop makes an overcorrection and true readiness levels are hurt. Many current commanders will be retired from service by then, and these changes will not trace directly back to today’s actions. We all, however, will continue to be part of the general public desiring from our military continued safety to enjoy peace and prosperity. It is for these reasons, we must act now at the unit level to improve resource efficiency and cooperate with AFSO 21 initiatives.

Practically, good stewardship and citizenry are not always rewarded under the current system. It is paramount that squadron commanders take the initiative to achieve efficiencies and generate savings. These savings must then be passed back up the chain for efficient re-allocation. Commanders must speak upward informing the next level how efficiencies were created and how much better the squadron could do if certain structures were changed. These commanders must then follow suit until ultimately higher leverage solutions are proposed to Congress and the true barriers to efficiency are removed.

D. SUMMARY

This chapter has developed a framework for squadron commanders to better understand the difficult financial situation the Air Force is currently facing and become agents for change by finding and passing on savings through more efficient operations. Given the impending pressures facing the federal budget, public opinion is not likely to favor an upward trending defense budget. Examining the systems diagram presented here and recognizing the impact of delays on the balancing loop, it is clear that future readiness can best be ensured through action today. It will not be the resource advisors or budgeteers who must lead this action but the unit commanders in the multitude of organizations across the Air Force. Collectively, squadron commanders have the greatest ability to overcome organizational inertia and generate upward momentum for change and they must pursue these ends. Our dual role as both Airmen and citizens demands that we take on this challenge for the sake of the Air Force and the Nation.

Generating these changes requires a commitment to becoming more efficient with the scarce resources the Nation entrusts to our squadrons. This can only be done, when an organization fully understands the processes occurring within the unit. The final chapter will provide an overview of process thinking and the Air Force Smart Operations for the 21st century framework that aims to develop a culture of continuous process improvement.
V. AIR FORCE SMART OPERATIONS FOR THE 21ST CENTURY

Perhaps more than any of the services, the Air Force has a history of adoption of civilian leadership and business practices. From transformational leadership to total quality management, the service has never been reluctant to introduce and adapt current civilian initiatives into the Air Force’s way of doing business.\(^{43}\) Since, as a service, we espouse flexibility as the key to airpower, we should not be surprised that this willingness to change flows over into our organizational concepts. While sometimes challenging, this willing and pioneering spirit is part of our culture and has contributed to the Service’s success.

Air Force Smart Operations for the 21st Century (AFSO 21) is the newest initiative the Air Force has undertaken to meet today’s challenges. It is a compilation of many tools aimed at improving the organization. While all of the concepts have been developed in the academic and business communities, AFSO 21 has as one of its chief objectives for Airmen to internalize the program and make it a part of Air Force culture. AFSO 21 can be best described as a framework for continuous process improvement throughout all levels of the organization and across the full range of Air Force operations.\(^{44}\)

Lest we approach AFSO 21 from a purely business perspective, consider what has occurred over the battle-space in the last five years. Time-sensitive targeting (TST) is the process by which a commander can employ airpower against an emerging target with a very short window of opportunity. As the conflicts in Iraq and Afghanistan have highlighted, the strategic importance of these targets can be immense. Unfortunately, the initial design of the process resulted in response times measured in days. Through a process study and mapping of the value adding steps of the TST process, Air Force airpower is now able to deliver precision ordnance in a matter of minutes instead of days.

\(^{43}\) Mike Thirtle, "Toward Defining Air Force Leadership" In \textit{Air War College Senior Leader Course}, Book 1 ed. (Montgomery, AL: Air University Press, 2006), 23.

\(^{44}\) \textit{Air Force Smart Operations for the 21st Century Playbook} AFSO 21 Office,[Nov, 2006]).
The principles that resulted in this marked improvement in combat capability are all embedded in the AFSO 21 framework. As such, the shift in mindset AFSO 21 can help create has the ability to become an enabling force for knowledgeable Airman both over the battle space and in the supporting squadrons that make up the Air Force.

While it is easy for senior leaders to mandate this initiative, it is much more difficult for them to dictate the conceptual acceptance needed for true gains. In order to unleash the real power of the AFSO 21 concepts, Airmen working in the thousands of Air Force squadrons must see for themselves the impact the program can have on daily operations. This will only occur if squadron commanders can digest the principles of AFSO 21 and lead their squadrons toward improvement. While initiated at the Headquarters level of the Air Force organization, only in these squadron-level, bottom-up changes will AFSO 21 reach the potential our Service leaders envision. The aim of this chapter is to demystify the process concepts embedded in AFSO 21 and provide squadron commanders with a baseline understanding of process improvement they can apply to their specific organization’s mission. To that end, the paper will develop the groundwork for AFSO 21 by illustrating its place within a systems view of the Air Force. An overview of the civilian process improvement roots will then be presented along with the AFSO 21 plan of adaptation. Finally, specific aspects of the AFSO 21 plan will be illustrated with suggestions for squadron commander implementation.

A. WHY AFSO 21?

Before going further, it is important to make the link between AFSO 21 (process improvement) and the systems framework the previous chapters have developed. Fortunately, systems thinking and process improvement go hand in hand. Systems thinking creates a framework to view the organization and its surroundings holistically, enabling better insight into the interconnectedness of each part of the system. As we have seen, applying systems thinking towards leading an organization can help expand understanding of the unit and deepen the ability to see systemic problems. Process thinking seeks to accomplish a similar goal by looking at the internal end-to-end processes within an organization, as opposed to just the functions that support them.
Recall from Chapter II, the organizational systems model shown again in Figure 9 below. When the organization takes in inputs, it goes through a transformation process of those inputs to increase their value in the form of visible results. While there are many ways to go about this transformation, an organization will be most productive when each aspect of the system is connected in an aligned and meaningful manner (congruence). Organizations with high levels of congruence experience a form of competitive advantage that is difficult for others to imitate.\footnote{Nadler and Tushman, \textit{A Model for Diagnosing Organizational Behavior}, 35-51} The aim of AFSO 21 is to do just that by creating an organizational culture that can more clearly reflect the underlying processes at work in the organization and continuously improve them to build a more congruent Air Force system.

Those who have been around the Air Force for any length of time may immediately associate AFSO 21 with the total quality management (TQM) initiative and run for the hills. This would be a mistake. This chapter is presented last in the series because AFSO 21 must be received in the right frame of mind. To a systems thinker,\footnote{The author has drawn on several sources for the development of the organizational model. Work from Nadler and Tushman, \textit{A Model for Diagnosing Organizational Behavior}, 35-51, Harold Leavitt, William Dill and Henry Eyring, \textit{The Organizational World} (New York: Harcourt Brace Jovancih, Inc., 1973), Cary Simon, Organizational Behavior Systems Lecture, Jan, 2006., has been incorporated into this model.}
process improvement in an organization is not optional but a natural consequence of seeking higher levels of congruence.

Conceptually, process stagnation in the face of a changing environment will eventually mean death or irrelevance for the system; therefore, continuous process improvement is vital. Unfortunately, a lack of understanding often causes the tools of improvement to be emphasized rather than the principles that the tools were created to support. When this occurs, more work is often created than value is generated. For instance, for many unfortunate Airmen, TQM became nothing more than bleary hours of generating metrics to build slides few understood, much less used to make improvements.

This problem is not limited to the Air Force. In civilian manufacturing, Toyota has long been recognized as the leader in continuous process improvement. Surprisingly, Toyota has freely shared its practices and opened its doors to observation by hundreds of thousands of executives worldwide. Despite this, few companies have been able to generate similar successes even after implementing the exact same tools Toyota uses. After four years of study on this problem, Harvard scholars concluded the reason for this failure was “the observers confused the tools and practices they saw on their plant visits with the system itself.” As a systems thinker and squadron leader, one must not get caught in this trap. The reason for AFSO 21 is not to get better at using process tools, but to enable the organization to improve.

As we saw in the last chapter, external financial pressures at the National level are resulting in ever-increasing fiscal pressures for the Department of Defense. In order to adapt to this changing environment, the organization must change to continue to meet the Nation’s Defense needs. Likewise, internal pressures to improve are also being generated from an increasingly knowledgeable and professional Airmen corps desiring both better work environments and results. In truth, throughout its history, this dedicated Airmen cadre has always set out to improve the Air Force. After all, service members are some


of the most dedicated and conscientious individuals our Nation has to offer. Yet, while Airmen work hard to improve their units, this does not always mean they are improving the system. Regardless of how diligent the workforce, the impact of localized improvement efforts can be limited by the existing structures within the system, unless they are overcome by a unified effort across the whole organization. If successful, AFSO 21 can provide the voice and avenue for this unified effort and result in the improvements all Airmen desire.

Why AFSO 21? Because as system thinkers, we know a complex, adaptive system like the Air Force must continuously change for survival. Not only that, but in an organization that spans the globe and employs more than 350,000 people, a framework for this change must be put in place to capture organizational learning and guide the thousands of sub-systems (squadrons) that make up our Air Force. With this in mind, let us begin to examine the roots of process improvement found in the AFSO 21 initiative.

B. PROCESS IMPROVEMENT

Through either professional military education (PME) or personal study, most commanders have been exposed to at least some of the different process improvement programs used in AFSO 21. Lean, Six Sigma, and Theory of Constraints are but a few familiar programs that could be included in the process improvement movement. Without addressing these specifically, it is helpful to understand the origins of these programs to better understand why they can add value to dynamic organizations.

Process improvement has been an ongoing pursuit to better organize the way people accomplish their work. At the core, its chief aims are to more efficiently use the resources that go into producing the outputs of an organization. The advancements in the concepts are easiest to trace in the improvements in the manufacturing sector. From the introduction of interchangeable parts in the 1850s, Henry Ford’s assembly lines of the 1930s and the Toyota Production System of the late 1900s, manufacturing processes have been on a continual quest for better ways to accomplish work.49 Overlaid on these

physical improvements, management philosophies have evolved to improve organizational effectiveness. Through standardized work and time studies, Fredrick Taylor introduced Scientific Management in the early 1900s to improve labor efficiency. Frank Gilbreth added process charts and motion studies while Deming developed total quality management (TQM) following WWII. Japanese guru Taichi Ono developed the principles of Just-In-Time and stockless production to support the innovative Toyota Production System.50

 Lean thinking was born out of the principles of these various ideas. A lean process is simply one in which only the steps that add value to the final outcome are present in the system. Continuing on this improvement pathway, Six Sigma was initially introduced by Motorola in the mid 1980s. With roots similar to Total Quality Management, Six Sigma utilizes statistical tools to improve efficiency by reducing variation in work processes. Around the same time, Eli Goldratt popularized the notion of eliminating system constraints with the Theory of Constraints, illustrated in the book, The Goal.51

 Even this cursory and incomplete history of process improvement can easily leave the best leaders feeling apathetic. Outside of academics, most practicing managers do not have the time to master a new management program every few years. In truth, if one took the time to read up on the different programs he/she would find that at their base these programs have tremendous similarities with incremental improvements in either management philosophy, or management tools. In an honest quest to improvement management science, the eventual branding process of each new idea makes it appear to be something entirely new rather than a complement to frameworks. What Air Force leaders can benefit the most from is an understanding of the fundamental principles of process improvement, which can be seen throughout all of the philosophies.


The baseline of systems thinking is the perfect framework to make these connections. At the core, process improvement strategies teach practitioners to see work not as pieced together individual tasks, but as connected processes following a flow that often transcends our formal work structures. While a squadron may be organized around activity-based flights, what it produces most likely follows a flow that involves multiple activities coming together to accomplish the finished product or mission. This simple holistic shift of mind, should guide a leader to define and optimize the processes of the organization rather than the individual activities that make up the process. There are many industry tools with branded names like process mapping or value stream mapping to help accomplish this, but the tools are secondary to the principle itself.

Another unifying theme of process improvement is the continual elimination of waste across organization’s system processes. Waste of all kinds does not contribute to the accomplishment of the final product and can be a major source of inefficiency in the process. Mentioned earlier, manufactures have gained significant improvements by reducing both material and labor wastes. For instance, small but consistent reductions in the amount of scrap sheet metal in a maintenance back-shop can greatly improve efficiency when multiplied over time or over the hundreds of back-shops in the Air Force. Likewise, reducing the distance or number of people financial documents must traverse before completed, could be a significant waste reduction for a financial services squadron. Once understood, this is a concept a squadron commander can use relatively easily without any specific tools. For illustration purposes, Table 1 shows one consultant’s overview of the three main programs found in AFSO 21 and their approach to improvement.
### Table 1. Process Improvement Program Summary From\textsuperscript{52}

<table>
<thead>
<tr>
<th>Program</th>
<th>Six Sigma</th>
<th>Lean Thinking</th>
<th>Theory of Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>View of Waste</td>
<td>Variation is waste</td>
<td>Non-value add is waste</td>
<td>Constraints drive waste</td>
</tr>
<tr>
<td>Application</td>
<td>1. Define</td>
<td>1. Identify Value</td>
<td>1. Identify Constraint</td>
</tr>
<tr>
<td></td>
<td>2. Measure</td>
<td>2. Define Value Stream</td>
<td>2. Exploit Constraint</td>
</tr>
<tr>
<td></td>
<td>5. Control</td>
<td>5. Improve Process</td>
<td>5. Repeat Cycle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tools</th>
<th>Math-Statistics</th>
<th>Visualization</th>
<th>Systems thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Problem focused</td>
<td>Process flow focused</td>
<td>Constraint focused</td>
</tr>
</tbody>
</table>

Source: AFSO 21 Playbook

So while process improvement may seem a daunting subject requiring more time than a commander has to give it, much can be accomplished just by viewing the organization holistically and being exposed to some of the basic concepts. From the author’s perspective, AFSO 21 will reach its greatest effectiveness when Airmen of all ranks no longer view it as a program, but just as the framework from which to set in motion and capture process changes. As an Air Force we should not undertake AFSO 21 anymore than we should have “done TQM.” Rather, we should learn to think systematically about our organizations and therefore improve them by re-designing or bettering the processes embedded in squadrons worldwide.

### C. THE AFSO 21 APPROACH TO PROCESS IMPROVEMENT

Fortunately, the Air Force has taken just such a holistic approach to enterprise-wide implementation of process improvement. AFSO 21 is not advocating an off-the-shelf improvement solution born out of the most recent academic or business consultant

research. Instead, the program is attempting to set a framework within the Air Force for Airmen at all levels to improve the Air Force. Read the following excerpt of the commander’s intent for AFSO 21:

The Commander’s intent is to improve processes across the Air Force to eliminate the wastes and costs that do not add value to the Air Force’s core mission and tasks. We will apply proven process improvement practices and tools, but focused primarily on Lean concepts adapted to our Airman culture. Senior Leaders and Commanders will lead this effort and participate at all levels of command. We support a fundamental cultural change where all Airmen understand their individual role in improving our daily processes and contributing to the Air Force mission, and where all Senior Leaders and Commanders understand their role in removing barriers that inhibit mission effectiveness and process efficiencies. This will be accomplished with a sense of urgency and applied top-to-bottom in the Air Force.  

From this, one can see the intent is to make this a distinctly Air Force movement. If this is achieved, proven process improvement principles and tools will be adapted (not merely adopted) to the Air Force culture. Fundamental to that goal is for commanders to understand these principles so they can empower the vast knowledge base embedded in the Airmen whom they lead. As has been shown, these principles are all based in a holistic, system’s view of the organization. Avenues for training in methods and tools will occur, but must be preceded by this fundamental shift of mind in how we view our Air Force organization.

The strategy for AFSO 21 implementation as well as the governance structure can be found in the Air Force Smart Operations for the 21st Century Playbook, Version 1.1 dated November, 2006. Adopted from this manual, the figure below illustrated the AFSO 21 undertaking is a long-term endeavor appropriate for systemic improvements. During a typical two year squadron command tour, a commander should expect to see only a small portion of the full implementation. For the change process to take root, progress must be passed from one commander to the next each holding a long-term, systemic view of the organization.

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53 *Air Force Smart Operations for the 21st Century Playbook*
### Table 2. AFSO 21 Implementation Timeline From\textsuperscript{54}

<table>
<thead>
<tr>
<th>Phase 1 Initiation</th>
<th>Phase 2 Full Implementation</th>
<th>Phase 3 Mature and Sustain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership commitment</td>
<td>Structure in place to sustain process improvement</td>
<td>Commanders spending more time on strategy and improvements</td>
</tr>
<tr>
<td>Share vision</td>
<td>All key area “touched”</td>
<td>Self-improving work teams</td>
</tr>
<tr>
<td>Establish governance</td>
<td>Strategic alignment of goals / metrics</td>
<td>Cultural changes effected</td>
</tr>
<tr>
<td>Mission priorities / goals set</td>
<td>Redeployment of resources is routine</td>
<td>Improvements extended to strategic partners</td>
</tr>
<tr>
<td>Initial training and benchmarking</td>
<td>Substantial and growing performance improvements</td>
<td>Use more advanced Lean CPI tools</td>
</tr>
<tr>
<td>Quick visible wins – demonstration area established</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The timeline shown in Table 2 demonstrates another important concept that may be missed if the program is considered to be merely a top-down initiative. With a four to seven year timeline to maturity, today’s staff sergeants and captains will be the squadron leadership during Phase Three when AFSO 21 is reaching full implementation. If the Air Force enterprise fails to engage the younger ranks now, this implementation process could become a loop instead of a linear timeline. That is why this current generation of squadron commanders is crucial to the long-term success of the process improvement initiative. These younger ranks are in the specialization phase of their careers and will not pursue AFSO 21 any more than their predecessors pursued TQM if they are not introduced to the concepts at the squadron level. Enterprise-wide communication methods, such as the AFSO 21 Playbook, Air Force Portal, and Letters from the Chief, are likely too far removed from these ranks to make a significant impact on their thinking. Leaders they see and hear day-to-day must make these concepts come to life within a frame of reference these younger Airmen can relate to. Finding ways to interject systems thinking and process improvement concepts into everyday practices and communications will benefit the entire Air Force and help to facilitate the desired cultural changes.

\textsuperscript{54} Air Force Smart Operations for the 21\textsuperscript{st} Century Playbook
D.  AFSO 21 MODEL

The AFSO 21 Air Force team has developed a model to illustrate the continuous change process desired by the program. Figure 10 shows the five steps included in this iterative improvement model.

![Figure 10. AFSO21 Five-Step Continuous Improvement Cycle From](55)

Notice that imbedded within the model is the underlying assumption that the improvements initiated will be based on increasing combat capability. Recall from Chapter III, that in setting the direction for the squadron, every Air Force unit should be seeking to maximize combat capability. By unifying process improvement Air Force wide, AFSO 21 provides an avenue for the organization to recover saved resources across a multitude of units and redeploy them to best meet this maximization goal. In a perfect world, all waste and non-value added activities eliminated from processes across every type of Air Force squadron could be captured as an enterprise-wide increase in combat

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55 *Air Force Smart Operations for the 21st Century Playbook*. 55
capability. We know we will never reach perfection, but in the process of trying to reach this theoretical maximum, Air Force combat capability will increase. Likewise, organizational systems thinking recognizes cultural change cannot be mandated. While the commander’s intent clearly calls for cultural change and the AFSO 21 model highlights its significance, these mandates cannot ensure it will occur. Cultural change is a process within itself and will take time to achieve.

A great example of successful cultural change is the safety culture that has developed throughout the Air Force. Decades ago, aircraft mishap rates and safety related incidents were off the charts by today’s standards. A change of mindset had to occur before a cultural change could develop. As Airmen began to understand the significant impact on combat capability safety incidents caused, the seeds for change developed. Accordingly, safety programs now fall directly under commanders with accountability assigned to each commander for ensuring safe operations. As such, safety has become part of our culture and Airmen are accustomed to continued emphasis from their supervisors on safe practices and risk management. For real process improvement to occur, a similar ownership of AFSO 21 needs to occur through the entire command structure of the Air Force. Cultural change takes time, but it is nearly impossible if the formal and informal leaders of the organization do not embrace the changes.

E. SQUADRON COMMANDER’S ROLE

Besides taking ownership for the program and leading change, squadron commanders can help initiate process improvement directly during the early stages of the continuous improvement model illustrated in Figure 10. As mentioned, most Air Force structures are designed around activities and not processes. During the second step of the five-step model, a commander can lead the squadron in stepping back and defining the actual process flows occurring within the organization. Although difficult, ignoring how the squadron is functionally structured and just seeing how the squadron produces its products may be all that is required to recognize areas for potential improvement. While there are tools for this (e.g., value stream mapping), a first cut can easily be accomplished just by observing and sketching the work process.
Within the AFSO 21 governance structure, specific individuals will be trained in process improvement (process managers) and will be able to assist a commander and the unit as necessary in the use of these tools. The important point is that regardless of the governance AFSO 21 creates, the multitude of processes across the Air Force requires that many of the areas for improvement will need to be identified at the squadron level. This may lead to bigger projects if the process is ultimately connected to higher levels of the enterprise. However, identification of these connected processes by the lowest levels of the organization will be an integral part of unraveling complex enterprise processes.

Likewise, some activities may be identified within the squadron that do not add value to the squadron’s mission. AFSO 21 literature calls these “transactional activities.” The processing of Officer Performance Reports (OPRs) is an example of a transactional activity. The recent change from two-sided to one-sided OPR forms is an example of reducing the waste in a transactional activity. While the OPR process is necessary, it does not add value and therefore its impact on mission accomplishment should be minimized. While hard to quantify, one can imagine the tremendous number of man-hours this simple procedural change will create. On a smaller scale, squadron commanders should trace some of the transactional activities occurring daily within the unit to look for areas of improvement. Are reports being generated or briefing slides compiled that have no value to the mission? Find and eliminate these types of activities to both accomplish a process improvement action and free up resources for better uses.

As was the case in the flying and maintenance squadron examples given in Chapter III, some of the processes a squadron identifies will cross organizational lines. This is where the governance structure developed in Phase One of AFSO 21 timeline (Figure 3) will allow improvement. In the past, processes crossing functional stovepipes or organizational lines were difficult to impact due to the multiple levels of ownership for the different activities. Under the AFSO 21 guidance, process owners at the appropriate rank structure will be identified when this situation is encountered. These owners will be empowered to assess the whole process and run AFSO 21 improvement
events across organizational lines. Therefore, when a squadron commander identifies a process of this type, he/she will now have a venue through the chain of command to recommend investigation or improvement.

The last concept for squadron commanders this paper will address involves step three, process redesign, shown in Figure 9. In the early 1990s a concept called Business Process Reengineering was introduced by consultant Michael Hammer in the Harvard Business Review. Basically, Hammer observed that as technology was increasing, businesses were consistently trying to overlay this technology on top of their existing processes. He advocated that it was “time to stop paving the cow paths,” and Business Process Reengineering was born.\(^{56}\) According to Hammer, as complex organizations grow, many processes develop that were never intentionally designed but were the compilation of the growth process. The result is that many processes that do not work well become entrenched in the organization. Likewise, over time, organizations develop layers of written and unwritten rules that become outdated and limit improvement opportunities. As such, Hammer contends many processes should not be marginally changed or optimized, but should be obliterated and completely redesigned to fit the organization’s current needs.\(^{57}\) Undoubtedly, a large organization like the Air Force has many processes that must fit this description. These processes are perpetuated within the system as new Airmen are inducted into the service because of our strong emphasis on training and standardization. As a commander develops a feel for the processes occurring within the unit, he should challenge the assumptions going into the processes themselves and determine whether they are in need of a complete redesign with more relevant assumptions.

For example, an enterprise process improvement like the Defense Travel System challenged the assumption the military needed fully-staffed travel offices on every base. While at one time, airline reservation systems and completion of travel documentation required specialized training, advances in technology changed the underlying

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\(^{57}\) Ibid.
assumptions the initial process was built upon. While implementation issues of DTS at some locations have hampered its acceptance, it has much more potential to save resources and streamline the travel process than minor modifications to the older system could have yielded. Inevitably, outdated processes such as these are occurring on smaller scales throughout the Air Force waiting for an observant commander to redesign them for the modern world.

Similarly, it is likely that embedded within the volumes of directives guiding Air Force activities are outdated rules that ultimately constrain improvement on the processes they impact. Unfortunately, finding these constraints can be difficult within a highly rules-based culture such as the Air Force. Even the Air Force IDEA (Innovative Development through Employee Awareness) program lists recommendations regarding changes to existing Air Force policies, rules, procedures, and regulations as ineligible suggestions. While understandable given that rules are devised to help promote good order and discipline, the problem in this structure is that those most likely to recognize the rules-based constraints are unlikely to recommend them to be changed. At the unit level, squadron commanders can give younger Airmen an avenue to voice their observations regarding work constraining policies and procedures. While some suggestions may come from a lack of a proper perspective, a commander will likely find many rules-based constraints that could be removed. Once identified, the commander can recommend changes through the appropriate regulation revision process.

F. SUMMARY

While Air Force Smart Operations for the 21st Century is a new initiative, it is clearly based on a proven systems framework for improving dynamic organizations like today’s Air Force. Beneath the layers of governance, implementation, and process tools presented in AFSO 21 documents, lie fundamental principles any commander can implement to improve the squadron. These principles take a holistic approach to squadron outputs by viewing work as process flows rather than simply connected

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58 Air Force Smart Operations for the 21st Century Playbook
activities. Once the branding is peeled away from popular management programs, consistent themes can be found that do not require a commander to be a process improvement expert in order to begin to improve the organization.

Most importantly, squadron commanders need to take a systemic view of the Air Force in order to lead their Airmen to improve processes in a manner that maximizes combat capability. It would be a tragic loss of opportunity if AFSO 21 were half-heartedly adopted by squadron commanders, or worse, presented to younger Airmen as another flavor of TQM. Whether in a flying squadron or a contracting squadron, continuous process improvement makes sense. Not only that, but the framework for improvement within AFSO 21 is adaptable enough to Air Force culture that it has potential to withstand the test of time. Fittingly then, this current generation of Air Force squadron commanders can promote the future combat capability of the organization by training today’s Airmen how to think systemically and see their work as connected processes. If this occurs, the gains from AFSO 21 for our Nation’s Defense will be much further reaching than the founders of process improvement could ever have imagined.
VI. CONCLUSION

Our Air Force exists to enhance our Nation’s ability to protect itself by providing sovereign options to our leaders and by being prepared to win our Nation’s wars when called. This is a daunting challenge requiring tremendous leadership throughout the Air Force to lead Airmen to reach their full potential. As the first line of command, squadron commanders have the unique privilege of engaging Airmen at a personal level and leading them towards accomplishing the core processes and missions that make up the backbone of the Air Force.

This primer into systems thinking has presented a framework for commanders to view their organizations and the environment around them holistically in order to better understand the fundamental interrelationships impacting the performance of the unit. While setting the direction for the squadron, commanders can maximize combat capabilities by aligning the processes of the unit to obtain the best possible fit amongst the people, tasks, structures, and technologies found in that unit. As the unit accomplishes the mission, Airmen should live as organizational sensors listening to the feedback and cues the external environment is providing. As situational awareness is developed the commander can guide the unit to adapt and change as needed to stay aligned and relevant. Thankfully, Air Force Smart Operations for the 21st Century supports this framework and provides commanders an avenue to capture organizational learning in this quest for a continuously improving learning organization.

Clearly, systems thinking alone is not a panacea for assured leadership success. As a model, however, it is a useful framework to examine the organization and its challenges. As squadron commanders take a holistic, long-term view of their commands, the Air Force at large will be strengthened. While the challenges of command are great, our Nation needs leaders willing to challenge assumptions to solve problems at their roots and build better organizations. Ultimately, by applying the principles introduced in this paper, today’s commanders can contribute to the Force without sacrificing tomorrow’s strength. Fly, Fight, and Win!


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