Any effort to change behavior significantly in a large organization will face difficulty. Any effort to change how the PPBS process treats DLR-related logistics issues in the Air Force should anticipate a set of specific difficulties and develop strategies to deal with them. This chapter identifies likely organizational barriers to change in the PPBS process relevant to logistics. In particular, it examines the following:

- The lack of an organizational tradition of closed-loop resource management.
- The lack of an organizational tradition of integrated process management.
- The lack of a tradition of managing organizational transformation aggressively.
- A tradition that favors modernization and operation performance over other goals.
- Inflexibilities in the Air Force PPBS process.

The Air Force lacks a strong organizational tradition of balancing resources and readiness realistically and “closing the loop” on plans to verify the balance.

An organization with such a tradition would exhibit the following characteristics:

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1For details, see Kotter (1996).
It would have a clear understanding of how changes in specific resources, including logistics resources related to DLRs, affect such outcomes as readiness levels at the leadership level and in the parts of the organization where these changes occur.

When it changed resource levels, it would anticipate the effects of this change on such outcomes as readiness levels and monitor its system performance to determine whether the expected level of change occurred. If the change expected did not occur, it would find out why and adjust its understanding of links between readiness and resources appropriately. It would then adjust its resource use to reflect the new understanding.

Many of the challenges discussed in Chapter Two flow directly from a very different Air Force approach to resource planning and management:

- The Air Force PPBS process routinely drives from a plan to a program to a budget. The Air Force does not routinely compare the DLR-related logistics services it expected to buy with those it actually bought and carefully explain any large differences. So it has only limited visibility of disconnects between expectations and realizations.

- The analytic models available to Air Force logisticians and programmers are quite limited in their ability to predict how a change in logistics resources related to DLRs will affect readiness. This limits the Air Force’s ability to evaluate actual outcomes after the fact and identify the causes of surprises with confidence.

- The Air Force PPBS process itself uses many unrealistic assumptions. Obvious examples include assumptions that future programs relevant to current resource decisions will be fully funded when they rarely are, assumptions that process improvements will be more successful than they typically are, and assumptions that “fully funded logistics requirements” will meet all relevant operational needs when in fact they will not.

- A lack of basic confidence in analytic models discourages resource allocation decisions based on them. It also discourages evaluation based on such models. Without such confidence, it is
hard to maintain the discipline required to develop realistic readiness-based programs and to ensure that the programs implemented perform as expected.

- Without well-understood links between readiness and resources, the Air Force uses broad objectives linked to core competencies to frame its justifications for funding. Because the “metrics” it uses to support this approach are broad and qualitative, they impose little discipline and do not provide measurable outputs.

Elements of the proposal here address these barriers directly. Reframing logistics issues relevant to DLRs to make explicit links to readiness opens the issue of how resource changes will affect outcomes. Redefining the APPG process to build enforceable guidance embodies an explicit closed loop that compares a plan with an outcome. The proposed HAF closed-loop process does this in another way. Each of these must use realistic assumptions and well-defined, meaningful metrics to close their loops successfully. Proposed enhancements of human capital and analytic capabilities support these closed loops directly and create an environment in which players can have enough confidence in analysis to sustain accountability when plans are not realized.

The primary residual concern in this area is why these barriers exist in the first place. Does some motivation lie behind these barriers that could make it difficult to address them directly?

One possibility is a concern about what the exact function of the Air Force headquarters is, given that the Air Force is increasingly decentralizing its management. The decentralization is meant to reduce indirect costs and put as many resources into operations as possible. Our assessment and proposals draw this strategy into question. The complex, cross-functional issues (e.g., the linkages between logistics and operational readiness) facing the Air Force might suggest that it rethink the roles and responsibilities of its headquarters, particularly in terms of its ability to provide more strategic, independent option development and analytic support to the leadership. The issues identified in this report raise concerns about any Air Force decision to move many of its analytic functions to field operating agencies and physically away from the headquarters to achieve congressionally directed headquarters staff reductions. To date, removing ana-
lytic capabilities from the headquarters has weakened the corporate Air Force’s ability to identify and assess such complex issues as logistics and formulate informed options for leadership review. Placing the Air Force’s analytic capabilities in field operating agencies and locating them away from headquarters diminishes their ability to participate in the identification of these critical issues and in developing options.

Recent Department of the Army and Department of the Navy reorganizations concluded that a strong analytic support capability must be physically co-located or near to the senior leadership. Its purpose is to identify and objectively assess options for the leadership. The arguments offered here suggest that the Air Force should redevelop a similar type of capability. Without recreating the centralized analytic capabilities that existed in the Air Force prior to the 1991 reorganization, this approach cannot be implemented.

The senior leadership must ultimately display a basic commitment to “close the loop” in this way and to avoid systematic surprises as a normal part of its planning. OSD and Congress can discourage a tolerance for repeated surprises by not rewarding the leadership with add-on funding well into the year of execution. The senior leadership must also resist the temptation to tolerate the use of conservative assumptions that are so unrealistic that they systematically overestimate the need for logistics resources related to DLRs to achieve a particular level of readiness. Careful, systematic planning to manage surprises and surges that could stress the logistics system, if successful, should reduce the use of very conservative assumptions to make the logistics system more robust.

These considerations suggest that the Air Force should expect to move toward a more realistic, closed-loop system over a period of time as it observes the effects of repeated, incremental adjustments in the system as a whole and gains confidence in the new direction. Any change that takes time has difficulty in an organization, such as the Air Force, where the leadership turns over so often. Long-term change will require institutional commitment by the leadership that is repeatedly and convincingly reaffirmed.

The Air Force lacks a strong organizational tradition of viewing the supply chain as an integrated process and assigning effective, clear
responsibility and accountability for and authority over the total supply chain to ensure its integration.

An organization with such a tradition would exhibit the following characteristics:

- The organization would recognize that “the supply chain” is not just about supply. It includes every activity, in-house and outside, that contributes value to the ultimate customer that the organization serves. So it naturally includes transportation, maintenance, and logistics planning; elements of contract, financial management, and information management; and so on.

- The organization would identify a clear, simple set of “system” metrics relevant to the supply chain as a whole. These metrics typically emphasize attributes relevant to the ultimate customer that the supply chain serves. The organization would verify that performance metrics throughout the supply chain encourage players in each part of the chain to take actions that enhance performance relative to the system metrics.

- The organization would align incentives with performance metrics throughout the portion of the supply chain that it controls to encourage players in each part of the chain to take their performance metrics seriously.

- The organization would participate in formal and informal efforts to share data to improve the joint performance of the supply chain as a whole. These efforts would include connectivity of information systems to give players access to common, reliable data; formal exchange of personnel as technical advisors or managers; continuing adjustment of system and performance metrics to achieve the best joint outcomes; and formal, joint efforts to improve the supply chain as a whole.

- The organization would participate in consensus-building activities with other members of the supply chain. It would support development of consensus-based analytic models of the supply chain that individual members of the supply chain can

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2For details, see Kuglin (1998).
use to support objective, constructive discussions of improvement.

Many of the challenges discussed in Chapter Two flow directly from a very different Air Force approach to DLR supply chain planning and management:

- To date, it focuses its assessment of the DLR supply chain on the portion of the supply chain associated with the traditional supply function, which focuses on organic and contract materiel management and inventory management. For example, “supply chain managers” are responsible for activities that lie almost entirely within the traditional supply function.

- The Air Force has a fairly simple set of system goals associated with mission capable rates, safety of flight, and total ownership cost. It has linked its mission capable metrics to supply and maintenance metrics in simple ways, but does not have good enough agreement on how supply and maintenance resources affect mission capable rates to enforce much discipline on this score. It has not systematically linked performance metrics throughout its logistics system—even its organic activities—to any system-level metrics.

- The Air Force does not have enough confidence in its high-level understanding of how actions contribute to the performance of key parts of its DLR supply chain to hold specific players accountable for success. So incentives are only lightly linked to the specific performance metrics in place throughout the supply chain.

- The Air Force traditionally relies on strong stovepipes to organize current use of resources and to plan for future use of resources. This structural attribute manifests itself in logistics activities relevant to DLRs in two ways. First, the MAJCOMs have primary responsibility for planning and executing their own logistics activities. The IL/LG Meeting, Corporate Structure, SRRB, and other similar groups provide mechanisms for developing consensus across MAJCOMs, but they have failed to resolve very strong and important disagreements about ongoing change in logistics policy. Second, individual logistics functions—supply, maintenance, transportation, contracting, and planning—main-
tain strong stovepipes in every part of the Air Force and are even more heavily stovepiped from operations and other functions in the Air Force. This structure adds another dimension of complexity to any effort to build and sustain consensus on logistics issues. Again, the IL/LG Meeting and Corporate Structure provide forums in which to wrestle with this complexity, but neither has found an effective way to align Air Force resource management with the key DLR supply chain processes that cross functional and MAJCOM boundaries.

- The power of Air Force stovepipes makes it hard to call out any one organization and make it an effective champion for the total Air Force DLR supply chain. The most logical candidate would be the AF/IL, but two problems complicate any attempt to give the AF/IL effective authority and responsibility. The first is the practical question of who the senior logistician in the Air Force is, the commander of AFMC or AF/IL? Formal resolutions in favor of AF/IL have not diminished the four-star power of the AFMC commander in Air Force–wide logistics issues. Second, more generally, as a staff officer, the AF/IL has great difficulty asserting effective authority to integrate logistics inputs from the MAJCOMs, all of whose commanders have line responsibility and (with one exception) four stars. Without an empowered and powerful champion for integration, the Air Force stovepipes tend to dominate logistics resource management in the Air Force.

- MAJCOM stovepipes have become more important to resource management as the Air Force has delegated more and more PPBS-related responsibilities to the MAJCOMs and removed HAF-level capabilities to integrate MAJCOM inputs. These changes simply aggravated problems caused by stovepipes already present. That said, they have had particularly negative effects on resource planning for Air Force inventory policy, which recognizes large Air Force–wide scale economies in inventory management and depends on cross-MAJCOM coordination to achieve these scale economies. The recent changes in the Air Force PPBS process have made that harder.

- Standard Air Force personnel policy does not promote significant personnel exchanges across functional lines to give personnel a more complete view of the total DLR supply chain. An important problem of this kind currently occurs in the PPBS pro-
Professional logisticians in the Air Force show a general lack of interest in gaining programming and financial management skills. The Air Force does not reward logisticians for acquiring such skills or use active career management to develop them. The result is a fairly low appreciation of PPBS-related processes among Air Force professional logisticians.

- Despite many years of efforts, the Air Force does not have an integrated logistics information management system. Lack of a common data source that all players endorse leads to disagreements based on bad data that complicate joint efforts at improvement across the board.

- The Air Force limits information and personnel exchange with external sources. Without these, coordination with parts of the DLR supply chain outside the Air Force is difficult.

Elements of our proposal here address these barriers directly. Reframing logistics issues relevant to DLRs clarifies the system-level metrics relevant to the DLR supply chain and sets the stage for linking each segment of the supply chain to a common set of goals. A new APPG process provides an explicit setting in which to integrate the supply chain. A new HAF closed loop can support such an effort in a less direct way. Giving AF/IL the skills, analytic tools, resources, and, most important, the authority and responsibility to integrate the supply chain goes to the heart of the issue. This effort will work only if AF/IL has the actual ability to operate through all of the forums available—from the Corporate Structure down to the IL/LG Meeting, SRRB, and so on—to build a unified Air Force vision of the supply chain and how it should operate. In a sense, the above description of barriers is an agenda for explicit changes that AF/IL must be empowered to make to integrate the supply chain.

As with the first barrier raised above, the residual issue here is the most important one. Why have these barriers to integration persisted for so long? And why is the Air Force moving to a still more decentralized structure? The senior leadership and all key players must be committed to integration to allow progress on any of the fronts suggested here.

As above, it is very likely that the leadership and the key players will have to be led to such continuing commitment by evidence that it
yields empirically verifiable results. Repeated, incremental adjustments in the system as a whole can build such a case over time. Again, any change that takes time has difficulty in an organization where the leadership turns over so often. Long-term change will require institutional commitment by the leadership that is repeatedly and convincingly reaffirmed.

The **Air Force lacks a strong tradition of managing organizational transformation aggressively.**

An organization with such a tradition would exhibit the following characteristics:\(^3\)

- It would view a major organizational change as a formal development program that involves investments, predictable milestones, unpredictable outcomes, and outcome-oriented metrics to track progress and adjust course as development unfolds.

- It would approach major change around the processes involved and involve all parts of the organization associated with the processes slated for change.

- It would develop formal coalitions of all players whose personnel must change their behavior on the job for change to succeed. These coalitions would develop a commonly held vision and translate outcome-oriented metrics into performance metrics designed to measure the extent to which personnel in fact change their behavior appropriately.

- It would use outcome metrics to develop organizational support for investment in training, tools, and time for personnel to set aside their normal formal duties to support change.

- It would explicitly reward personnel who change their behavior appropriately and punish those personnel who do not. To do this, it would use whatever incentive system it uses to motivate personnel in other contexts.

- It would recognize major organizational change as something that will continue in one form or another for the indefinite

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\(^3\)For more detail, see Camm et al. (2001) and Moore et al. (2002).
future. In response, it would integrate the concept of such change into its normal operating arrangements.

- This approach encourages a realistic approach to making and implementing plans for change. Plans for change are realistic about implementation costs and transition costs. And they are realistic about the degree of change likely to be achievable. Monitoring change repeatedly ensures the realism of the plans and the success with which they are implemented.

The Air Force generally uses a different approach to managing major organizational change.

- It prefers changes that occur within functions or formal organizations to changes that require coordination of several organizations or functions associated with a particular process. This occurs because either recommendations for change arise within long-standing functional or organizational channels or a particular organization or function takes lead responsibility for change.

- Major change often reflects the priorities of the function or organization with lead responsibility more than the priorities of the Air Force as a whole. This affects the metrics used to judge success and the shape change takes as it unfolds in the sponsoring organization or function.

- The Air Force is reluctant to make major investments in training, tools, and staff time to support change. This occurs because the budgeting system the Air Force—and DoD as a whole—uses discourages any investment that incurs costs today to achieve benefits in the future and because the Air Force rarely quantifies the future benefits that might be used to justify a current period cost associated with change.

- The Air Force tends to assume that any change will succeed without extensive oversight, feedback, and adjustment. It makes plans based on success and has difficulty identifying and correcting problems that prevent full success. As new leadership teams enter, they find it easy to substitute their new priorities for those of the previous team, often leaving earlier changes incomplete and, in effect, orphaned.
• The Air Force leadership does not focus on rewarding personnel who change their behavior appropriately and punishing personnel who do not. Performance evaluations typically give much more priority to factors other than successful change.

These barriers present serious challenges for the changes proposed here. These changes immediately jump across functional and organizational stovepipes. At a minimum, financial management and programming specialists must find common ground with logisticians in almost every part of our proposal. Any attempt to appoint a single office as executive agent risks narrowing priorities and losing the central understanding that Air Force–wide priorities must guide this effort, but some standing organization must become the integrator for change to begin. Significant enhancements in skills and tools will be necessary just to create the change itself. Additional investment will be required to support the change. The changes proposed here have the potential for identifying a suite of metrics that the Air Force could use to monitor whether personnel are adjusting their behavior appropriately to implement the change. But significant change will be hard to achieve if the Air Force as a whole does not back up these metrics with changes in incentives that increase the value of successful change.

The more attention the Air Force gives to improving its generic change management skills, the more value changes of the kind proposed here will add to the Air Force. The Air Force honors leadership and knows how to develop and sustain effective leaders. But contrary to the hopes and expectations of many successful leaders, leadership by itself is typically not enough to ensure successful change, especially when the senior leadership of the Air Force is so transient. The changes proposed here would benefit, along with many other proposed changes, if the Air Force could help its leadership understand more about the dynamics and challenges of effective change management. Particularly when faced with one semisuccessful change after another, any Air Force workforce becomes increasingly inured to the next wave of change. In an environment in which the

\[\text{\footnotesize A supply chain perspective requires identification of high-level metrics relevant to the supply chain as a whole as well as metrics actionable in each segment of the supply chain that are compatible with the high-level metrics. The Air Force initiative on a balanced scorecard illustrates metrics relevant to DLRs as well.}\]
Air Force can expect to continue experiencing change after change, success will increasingly depend on teaching the Air Force leadership what that means and how it must change its approach to leadership to manage each change effectively.

Again, this will not happen overnight.

The senior leadership has traditionally favored modernization and operational performance relative to other goals.

Throughout its history, the Air Force has been distinguished from other parts of DoD by its commitment to push the cutting edge of technology in order to upgrade the military capabilities of its weapon systems. As the Air Force has downsized since 1986, the need to scrutinize all resource use carefully has heightened the importance of this perspective. As the Air Force budget came down in real terms, the Air Force leadership continued to seek modernization and to cut other activities where possible to preserve resources for modernization. This approach has produced such effects as the following:

- The Air Force has favored wholly new weapon systems over modified versions of existing weapon systems to introduce new operational capabilities.
- The Air Force initially addressed the increasing resource demands of its aging fleet by extending schedules for overhauls and upgrades. This approach released resources, at least initially, for modernization efforts.
- With the rest of DoD, the Air Force has tended to frame infrastructure in terms of cutting costs to release funds for modernization, not improving support for the warfighter. This approach produces a bright line between “teeth” and “tail” that neglects the deep connection between the two and emphasizes how cuts in funding for tail release funds for modernization not how it degrades support to the warfighter using existing systems.
- Observers generally agree that the Air Force has been reluctant to invest its scarce resources in process improvements and technology upgrades that could improve reliability and maintainabil-

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5See, for example, Builder (1989).
ity of weapon systems. Whenever possible, it preserves available resources for modernization, even when doing so slows process change that could improve the performance of support in the future.

- The Air Force’s basic approach to its resource allocation process tends to address modernization of systems first and considers other resource requirements, including support of existing systems, in a residual “trade-space” that effectively treats such support as a bill-payer for the new systems favored in the first step.

In this setting, the Air Force views logistics policy relevant to DLRs primarily through the lens of infrastructure policy, particularly at the depot level. Logistics is viewed more as a bill-payer than as a force-multiplier. And even where investments in the reliability and maintainability of existing systems and components could reduce logistics costs, allowing the logistics community to pay bills for the Air Force without giving up performance, these investments generally compete unsuccessfully with investments in modernization that enhances military capability directly. Investments in process changes to cut logistics costs in support of paying bills elsewhere in the Air Force compete even less successfully.

In a sense, the changes proposed here are direct challenges to this set of implicit values. Reframing logistics issues relevant to DLRs explicitly rejects the distinction between infrastructure and operational capability and implicitly questions why a dollar spent on modernization should be worth more than a dollar spent to improve support to an existing system. Building closed loops that tighten the connection between logistics resources and operational capability takes another step in the same direction. Building human capital and analytical capabilities is explicitly designed to build the credibility of such an argument.

The pattern of Air Force behavior sketched above suggests that the senior leadership could be wary of the kind of policy changes proposed here, which would support a “diversion” of funds toward DLRs to improve current support to the warfighter. A consistent refrain when such arguments are advanced is that the logistics system is extremely inefficient today. If it would simply clean up its own processes, costs could fall without endangering current support to the
warfighter. What this argument neglects is that, to clean up its processes, the logistics community needs increased investments of leadership focus and resources to discover specifically what changes would improve efficiency and what is required to make these changes occur. It takes money to make money. If the senior leadership prefers to focus its current attention and resources on modernization, it will be careful about any effort to divert this focus, even if doing so would release the resources the leadership wants for modernization in the future.

So the kinds of changes proposed here cannot succeed unless the senior leadership takes a different view of modernization. Presumably the best way to build the case for such a change is to demonstrate empirically that improved logistics support relevant to DLRs can produce results comparable to modernization, particularly in a resource-constrained world. This will probably take a long time. The challenge is to sustain enough support from a leadership predisposed to modernization to build the empirical case for an alternative view.

The basic structure of the PPBS process can limit the flexibility of the Air Force in addressing resource management issues effectively.

Even when asking how the Air Force might change its treatment of logistics issues relevant to DLRs in its PPBS process, appreciate that significant aspects of the PPBS process as a whole are unlikely to change. Three elements of the PPBS process are particularly important here:

- The PPBS process takes a long time to process information and make decisions. Planning inputs to the APPG must begin well over two years before the relevant year of execution and more than three years before that year of execution ends. The remaining years in the FYDP lie years in the future beyond this. Without an effective means for updating plans, programs, and budgets through the course of the PPBS timeline, such a delay would build in extraordinary inflexibility. Any such delay would be even more important today, when the Air Force operates in an uncertain national security environment, than it was during the Cold War, when it was easier to plan against a fairly steady external threat.
• Formal interactions between the Air Force and OSD occur throughout this cycle. OSD provides guidance and queries at fairly fixed dates in each cycle, and the Air Force responds at fairly fixed dates. Of particular importance to DLR-related logistics policy is that cost and pricing data and guidance pass back and forth repeatedly as fairly fixed points. The PPBS process gives the Air Force extraordinary flexibility to decide how it will accept inputs and respond. Whatever it chooses to do in-house, however, must always remain synchronized with the general PPBS calendar. Whatever data the Air Force uses to support its internal decisionmaking, it must draw on these data to fill specific PPBS templates at predesignated dates.

• PPBS documents and templates typically address deltas from the previous PPBS cycle. Because the PPBS timeline extends for several years, several PPBS cycles are always proceeding in parallel. To remain as flexible as possible within this context, a delta in one cycle may be a response to a problem or change that came to light in another cycle running in parallel. So the delta itself cannot be understood in isolation, within its own cycle. This process requires a fair amount of basic accounting and documents management simply to synchronize its moving parts. The mechanics are demanding enough that they can absorb the leadership focus on simply getting appropriate products out at the right time. This focus can easily draw Air Force attention away from the substantive analysis and decisionmaking that should underlie this process. The need to turn products on short timelines, to coordinate them to ensure compatibility across all active PPBS cycles, and to include all relevant players in vetting new positions can easily limit the resources, time, and focus available to determine exactly what those decisions should be.

These are serious concerns, but they must be kept in perspective. Despite these complexities, the PPBS process is extraordinarily flexible. The military departments and agencies each use very different approaches to it. Within a component, the details of the PPBS process have typically changed dramatically over time. The challenge is to recognize this degree of flexibility, to frame the concerns above primarily as constraints, and to use the opportunities presented by the PPBS process to pursue the Air Force’s high-level goals. Put more crudely, the challenge is to avoid pointing fingers at the constraints
imposed by the PPBS process and blaming them for poor performance; rather, focus on the elements of the process the Air Force can control and take advantage of them.

Each of the changes proposed here targets a different opportunity for the Air Force to improve an element of the PPBS process that it can control. In particular, the proposal for a new HAF closed loop creates a learning tool that the Air Force can use to monitor its approach to PPBS on a continuing basis and adjust it to get more value from it. Such an approach requires an aggressive Air Force approach to the PPBS process. The biggest barrier to such an approach is likely to be an unwillingness to make the investments and to reassign responsibilities and authorities to make the specific changes proposed here, primarily for one of the reasons discussed above. The PPBS process itself need not add any barriers not already reviewed above.

**SUMMARY**

The way the Air Force treats logistics resources relevant to DLRs in its PPBS process today is not an accident. It reflects deep-rooted traditions that color how the Air Force treats many issues, not just those addressed here. The Air Force tends not to follow up on policy changes to verify that they have proceeded as planned. For example, in a PPBS cycle, the HAF does not systematically verify that the MAJCOMs propose changes that effectively reflect the intent of the APPG. It does not systematically track implementation of a program or budget to verify that deviations between the intent of the program or budget and their actual effects are understood and appropriate. When changes do not have the effects intended, it does not adjust planning factors in future programs and budgets to reflect the effects that did occur. When intended and actual effects differ repeatedly, year after year, it takes a long time for the Air Force to ask why and seek an effective way to end the deviation.

The Air Force prefers to organize itself around functions and operational MAJCOMs, not integrated processes, such as DLR supply chains. Although the Air Force has initiated many changes during the past 15 years, it has not made systematic and continuing change an integral part of how it manages its decisionmaking. The leadership of the Air Force has traditionally focused more on issues of modernization than on those of support. The changes proposed
here challenge many of these traditions fairly directly. The changes proposed here must occur within the bounds of the existing DoD PPBS process, which, as flexible as it is, imposes significant requirements that absorb significant Air Force resources and management focus, simply to comply with the procedural requirements.

So the changes proposed here face significant barriers. In all likelihood, these barriers will slow the rate at which these changes can occur. The Air Force should expect these changes to take time to demonstrate their value and gain the support of the leadership. Those responsible for the changes, at all levels, should expect such barriers, address them directly, and plan accordingly.