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TECHNICAL REPORT

Charting the Course for a New Air Force Inspection System

Executive Summary

Frank Camm • Laura Werber • Julie Kim • Elizabeth Wilke • Rena Rudavsky

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Preface

The Air Force inspection system relies on inspections by the Inspector General (IG) and assessments and evaluations by functional area managers to ensure that all wings comply with Air Force standards and are ready to execute their contingency missions. These oversight activities have grown dramatically over time, and the Inspector General of the Air Force (SAF/IG) is leading an Air Force–wide effort to reduce this burden while also improving the quality of oversight that the inspection system provides.

In 2010, SAF/IG asked RAND Project AIR FORCE to collect new primary data on the inspection system, identifying effective inspection and information collection practices elsewhere that the Air Force might emulate. This document provides an executive summary of the full report on the findings of a fiscal year 2011 project, “Enhancing SAF/IG’s Ability to Meet Its Title 10 Responsibilities.”

Frank Camm et al., *Charting the Course for a New Air Force Inspection System*, TR-1291-AF, 2013.

SAF/IG sponsored this research, which was carried out in the Resource Management Program of RAND Project AIR FORCE.

This document should be of interest to policymakers and analysts concerned with cost-effective design and use of formal system-wide oversight mechanisms in large, complex defense organizations.

RAND Project AIR FORCE

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Throughout this project, we participated in meetings of the Inspection System Improvement Tiger Team (ISITT) that Col Hyde chaired. The discussions in those meetings were invaluable to our analysis and often led to more in-depth exchanges with individual members.

We benefited greatly from focus groups held with major command (MAJCOM) IG personnel and from interviews and focus groups with personnel from wings that had completed a compliance inspection in the spring/summer 2011 time frame. Because we wish to keep confidential the names of personnel who participated in those focus groups and interviews as well as the specific wings we included in our study, we cannot acknowledge our Air Force facilitators by name, but we recognize the tremendous effort of those individuals who organized and scheduled these focus groups and interviews, and are especially grateful to the many Air Force inspectors and wing personnel who participated candidly in them.

We also conducted many interviews elsewhere that we can acknowledge without compromising the identities of Air Force personnel who gave us their personal views on the inspection system during our fieldwork. We thank Col Gregory A. Myers, Air Force Inspection Agency; Col Thomas A. Bussiere, Air Force Global Strike Command (AFGSC/IG); Col Warren Thomas, Air Mobility Command; Lt Col Thomas Hughes, Kathleen Armstrong, and Kevin Tibbs, Air Force Safety Office; Maj Shanon Anderson, 305 AMW/XP, McGuire AFB, N.J.; Maj Heather L. Morgenstern, USAFR/IGIA; James Cross, FAA Flight Standards National Field Office; David Gilliom, FAA Aviation Safety Flight Standards Service; Tony Fazio, FAA Office of Accident Investigation and Prevention; Linda J. Connell, NASA Human Systems Integration Division; and Dr. Anthony P. Ciavarelli, Human Factors Associates, Inc.

We also benefited from the contributions of many RAND colleagues. Meg Harrell and Alexandria Felton assisted the authors with the fieldwork for this project. Kristin Leuschner assisted in the dissemination of the findings. Hosay Yaqub and Donna White provided administrative support, and Donna White also played a key role in document production. We want to give a special thanks to Col Daniel F. Merry, who participated in this project while stationed at RAND as an Air Force fellow. He brought us invaluable recent experience with and insight

into the elements of the Air Force inspection system that Gen Rogers and the ISITT wanted to address.¹

We thank them all, but retain full responsibility for the objectivity, accuracy, and analytic integrity of the work presented here.

¹ The ranks and offices of all those listed in this section are current as of the time of the research.

Abbreviations

AFCAST	Air Force Culture Assessment Tool
AFMA	Air Force Manpower Agency
CCIP	Commander's Inspection Program
FAA	Federal Aviation Authority
IG	Inspector General
ISITT	Inspection System Improvement Tiger Team
MAJCOM	major command
MICT	Management Internal Control Toolset
PAF	Project AIR FORCE
SAF/IG	Office of the Inspector General of the Air Force
SAF/IGQ	Air Force Inspector General's Directorate for Complaints Resolution
UEI	Unit Effectiveness Inspection

Executive Summary

Air Force senior leadership relies on inspections, assessments, and evaluations to advise it on the efficiency, effectiveness, readiness, and level of compliance demonstrated by Air Force activities. Conducted by several different organizations within the Air Force, these oversight activities have grown dramatically over time, despite repeated efforts to limit the burden they place on individual Air Force units. Although Air Force Inspector General (SAF/IG) inspections constitute only about one-fourth of this oversight burden, SAF/IG has the responsibility for setting inspection policy and overseeing the inspection and evaluation systems for the Air Force as a whole. Acting in this role, in 2010, SAF/IG began an aggressive effort to improve inspection policy by reducing the burden the policy places on inspected units and by increasing the quality and relevance of the information it generates for the Secretary, Chief of Staff, and commanders of the Air Force.

At SAF/IG's request, in late 2010, we at RAND Project AIR FORCE (PAF) joined this effort by conducting analyses related to the five major inspection system goals that SAF/IG and its Inspection System Improvement Tiger Team (ISITT) are pursuing:

1. choosing a better inspection interval
2. reducing the inspection footprint
3. increasing the emphasis on self-inspection and self-reporting
4. introducing the new Unit Effectiveness Inspection (UEI)
5. introducing the Management Internal Control Toolset (MICT).

We relied on multiple data sources to inform our analysis: a review of practices the Air Force inspection system might emulate, such as the Air Force Culture Assessment Tool program (AFCAST), the Air Force Climate Survey, and the Federal Aviation Authority (FAA) inspection system; an investigation of Air Force personnel's experiences in the field, which included observing a compliance inspection, conducting focus groups with inspectors, and conducting both interviews and focus groups with members of recently inspected wings; and a review of literature on leadership, organizational change, and other topics.

The following is a summary of our recommendations as they apply to SAF/IG's major inspection system goals:

General Risk Management

- Consider adopting a formal risk management system to guide Air Force inspection-related decisions and activities.

- SAF/IG should take the lead in developing a risk management system suited to the new inspection system.

Choosing a Better Inspection Interval

- Look for ways to condition the frequency of inspection of specific activities within wings on risk management factors.
- Over the long term, revisit the decision to move toward one major inspection every two years for each wing.

Reducing the Inspection Footprint

- As future external inspections are reduced in size and focus, ensure that they continue to capture the priorities of the IG and the relevant functional area communities.
- Apply formal sampling guidance to reduce the burden of inspections and increase their productivity.
- Use information on a wing's past performance to design the focus and depth of each full inspection.

Increasing the Emphasis on Self-Inspection and Self-Reporting

- Consider adapting some aspects of the FAA's voluntary reporting system as part of the new commander's inspection program (CCIP).
- Create conditions that foster psychological safety to increase the willingness of all individuals in wings to report weaknesses so that they can be fixed.
- Support wings' efforts to preserve "external looks," during which outside perspective is obtained from non-IG personnel to identify areas in need of improvement.

Introducing the New Unit Effectiveness Inspection

- Recognize that leadership and discipline are multifaceted constructs and measure them as such.
- Ensure that measures of leadership take into consideration the impact of the full chain of command, not just the wing commander.
- Use qualitative methods during the inspection process, but ensure that they are standardized across inspection teams and sites.
- Develop a new UEI survey that adopts items from existing survey instruments.
- Use other existing data sources to inform the inspection process.

Introducing MICT

- Follow through to ensure that MICT is implemented cost-effectively.

- Recognize MICT as a complement to external inspections and assessments and internal self-inspection, not a replacement for them.
- Implement and sustain an approach to using MICT that maintains (1) standard core information, and (2) wing-unique information.
- Maintain ways to double-check any information in MICT that is freely available to external overseers at the major command (MAJCOM) or Air Force level.

Implementing Significant Organizational Change

- As a change to the inspection system goes forward, keep in mind that the inspection system has many moving parts and operates as part of a broader governance system.
- Anticipate that full implementation will take time. Plan for this by breaking change into incremental chunks and managing each chunk end-to-end.
- Use formal pilot tests to help monitor and refine increments of change before they are implemented throughout the Air Force.
- Anticipate and disarm negative perceptions about proposed changes.

Conducting Additional Analysis to Support Implementation

- Develop more detailed and quantitative analysis of the costs of the inspection system.
- Translate the risk assessment *framework* recommended here into guidance for an Air Force risk assessment *system*.
- Develop concrete and specific guidance that translates formal sampling methods into instructions that inspectors could apply in practical ways to increase the quality of information they can collect with a given amount of resources.
- Tailor the current, broad implementation guidance offered in Chapter Seven to an Air Force setting.

This summary discusses each of SAF/IG's major inspection system goals and provides additional detail on each of our recommendations.

Goals and Implementation

Choosing a Better Inspection Interval

Under the existing inspection system, the interval between inspections varies significantly across the Air Force. The Air Force leadership is moving toward standardizing and shortening this interval so that one major inspection occurs at every non-nuclear, active component wing every two years. This will ensure that wing commanders, who usually serve in a wing for two years, will face a major inspection during each tour at a wing. When we asked Air Force inspectors and inspectees about the proposed change, more favored this approach than any other. Other inspectors and inspectees suggested that a major inspection should occur at least every 18 months and alternate between different types of inspections so that, for example, a compliance inspection would occur every 36 months.

To inspect the commercial aviation system, the FAA uses a fundamentally different approach than does the Air Force in its inspections. This approach carefully varies the inspection interval across activities to reflect (1) the inherent risk associated with specific aviation-related activities, (2) attributes unique to individual inspected organizations, like the history of their past performance or the stability of their operating environment or leadership team, and (3) the resources available to conduct inspections in a given year. This variation would be expected to allow the FAA to use its constrained inspection resources to reduce more risk than would the proposed Air Force approach, given the same resources. Some of the ideas offered by Air Force personnel regarding inspection frequency (e.g., shorter inspection intervals for inherently more critical or risky activities and missions, and longer intervals for organizations that have demonstrated better local inspection capabilities) were consistent with the FAA's approach, suggesting that a similar approach may be feasible for the Air Force as well.

Reducing the Inspection Footprint

The Air Force is seeking ways to reduce (1) the number of days each year that a wing is subject to some external oversight event and (2) the resources consumed by both inspectors and inspectees during each event that occurs. The Air Force has already begun synchronizing IG inspections and functional assessments so that they occur on the same days. It also plans to integrate such events so that fewer external inspectors and assessors are required, and wing personnel spend less time preparing for and talking with those who do come. The Air Force inspectors and inspectees we spoke to generally support such an approach, but wanted synchronized inspections and assessments to be better integrated than they typically were at the time of our fieldwork (April to July 2011). At the same time, however, they noted how challenging effective integration would be. For example, an employee would have to go through every checklist to decide which items should be tracked as well as which items would require the perspectives of both an inspector and a functional assessor.

In its inspection system, the FAA relies heavily on both formal “sampling” (i.e., in which an inspector looks at some part of an organization or process to draw inferences about the whole) and no-notice inspections. Since informal sampling is already a pervasive practice in the Air Force inspection system, the Air Force could build upon this to instead use formal sampling strategies like those employed by the FAA. Such an approach would not require as much information as is typically collected under the existing system to assess wing performance. The Air Force could also make greater use of no-notice inspections—inspections that occur with very little advance notice (typically 72 hours or less)—to keep wings prepared at all times and to reduce the amount of resources required to complete individual inspections. The Air Force inspectors and inspectees we talked to did not express strong views about sampling, but generally favored much greater use of no-notice inspections. However, during some interviews and focus group sessions, participants suggested that no-notice inspections would work only if external inspection teams were much smaller than those traditionally used, tempered their expectations about performance, and/or potentially used a pass-fail approach to scoring.

Increasing the Emphasis on Self-Inspection and Self-Reporting

Our investigation of Air Force personnel's experience in the field revealed concerns about relying more heavily on wings' self-inspection programs, at least in their current incarnation. For example, inspectors noted that both the quality and the nature of self-inspection programs vary greatly under the existing inspection system. Additionally, personnel from recently

inspected wings felt that some units lack people with the skills required to detect and resolve weaknesses without external support. Both inspectors and inspectees worried that personnel within a wing find it hard to be honest with themselves about the weaknesses of the wing and would resist reporting such weaknesses outside the wing.

The FAA's successful voluntary reporting programs can serve as models of programs that the Air Force might use to encourage honest self-reporting by wing personnel. These programs offer a source of data to complement inputs from a more traditional inspection system focused on compliance. Further, by reassuring personnel that reported information will not be used to punish them, these programs directly address the challenge of encouraging knowledgeable personnel throughout an aviation system to report the negative information needed to diagnose problems. Air Force personnel themselves mentioned a number of ways to make a greater emphasis on self-inspection and self-reporting work, such as having wing personnel provide an "external look" to other parts of the wing. The FAA's experience and the ideas shared by Air Force personnel suggest that SAF/IG's plans to develop a more robust CCIP are feasible. Moreover, the actions some wings already take to prepare for compliance inspections, such as developing internal Tiger Teams and conducting compliance exercises, suggest that requiring wings to use a variety of formal self-inspection mechanisms may not be a drastic departure from current practice.

Introducing the New Unit Effectiveness Inspection

SAF/IG's vision for a new inspection system includes a new type of inspection, the UEI, which will subsume elements of the compliance inspection in place at the time of our research. One planned component of the UEI is an assessment of a wing's discipline and leadership. Our fieldwork and review of scholarly research did not yield definitive guidance on how to measure discipline. In contrast, the measurement of leadership within the new UEI holds promise.

Overall, our results indicate that, in spite of some inspectors' reluctance (based on their experience with the existing system), there is both a reason and the means to assess leadership during a compliance-focused inspection. Specifically, we found compelling evidence of a link between leadership and performance and identified several well-validated, practicable methods of measuring leadership. Air Force personnel cited a number of leadership characteristics they deemed important that have already been operationalized in, for example, the Air Force Manpower Agency's (AFMA's) Climate Survey and AFCAST surveys. Methods developed by academics, such as the Multifactorial Leadership Questionnaire, psychological safety measures, and the use of data aggregation, suggest additional and often complementary ways of assessing the effectiveness not only of a wing commander, but of the entire wing leadership chain of command.

Introducing the Management Internal Control Toolset

In 2009, the Air Force began to introduce a new standard information management tool to all of its reserve component wings. The MICT allows a wing to record and manage information on any item from an inspection checklist or elsewhere that the wing commander deems important to the wing's performance. When this information reveals shortfalls, MICT facilitates the management of a corrective action program to track progress until the root cause of the shortfall is brought under control. Based on experience with it to date, the Air Force is now introducing MICT to all active component wings.

While the Air Force inspectors and inspectees we spoke to are generally in favor of a system like MICT, they are quite skeptical that MICT will yield its promised benefits. Past experiences with new information systems have led them to worry that MICT will be too hard to use, will not work as well as the local systems they use now, will not come with enough resources to sustain appropriate training and user support, and might even invite resource managers to cut resources for inspectors based on the belief that fewer inspectors will be needed after MICT is introduced. Even though there is no objective evidence from the Air Force's experience with MICT to date to support these beliefs, the Air Force will still need to address them to ensure the success of its MICT implementation.

Implementing Significant Organizational Change

The changes the Air Force leadership is pursuing raise basic cultural issues. To ensure that these changes provide their maximum benefits, the leadership will have to address such issues. A formal approach to change management has emerged and evolved over the last three decades that is well suited to facilitating this kind of change in a large, complex organization like the Air Force.

This new approach (1) plans for change, (2) executes it, and (3) sustains the change until it becomes part of routine operations. The planning phase includes the tightly interrelated tasks of designing the change, establishing high-level support for the change, and convincing individual organizational members that they will benefit more from the change than from opposing it. The planning phase breaks a change into manageable chunks, like blocks of new aircraft, each of which can realize individual success relatively quickly. In the execution phase, training, monitoring, adjustment, and extensive communication are used to gather and assess information about the ongoing implementation of each incremental chunk, correct weaknesses quickly as they are exposed, and provide ongoing empirical evidence to senior leaders that the change is yielding its expected benefits. The sustainment phase migrates each incremental change from their initial implementation activities to the dominant command and control system of the organization as a whole.

Since the 1970s, the FAA has effectively used elements of this approach to achieve changes in its inspection system similar to those the Air Force is now seeking. The Air Force can particularly learn from the FAA's efforts when implementing its own change. Additionally, we offer many recommendations to the Air Force in the companion report of this summary (Frank Camm et al., *Charting the Course for a New Air Force Inspection System*, TR-1291-AF, 2012). These recommendations are summarized below.

Recommendations

Through our own analysis and our discussions with Air Force personnel in SAF/IG and ISITT, we developed the following recommendations:

General Risk Management

Consider adopting a formal risk management system to guide Air Force inspection-related decisions and activities. Such a system would significantly enhance the Air Force's ability to make its inspection system more cost-effective and would help clarify the relative

importance of different elements of a wing's compliance, readiness for a contingency mission, and execution of the current operational mission.

SAF/IG should take the lead in developing a risk management system suited to the new inspection system. Without such a system, several of the recommendations below (marked with asterisks) may not be feasible. A simple starting point for such an effort could be an Air Force-wide effort to attach risk assessments to each item on each functional area's checklist. As a neutral, honest broker, SAF/IG could take responsibility for structuring the conceptual approach to assessing risk and enforcing it over time.

Choosing a Better Inspection Interval

Look for ways to condition the frequency of inspection of specific activities on risk management factors.* If the Air Force had an appropriate risk management system (as described above), cost-effective opportunities would likely exist to customize each major wing inspection to emphasize items on a schedule as dictated by risk. Lower-risk items might be inspected only every four years, while higher-risk items might be inspected every two years, with additional no-notice inspections conducted more frequently if desired.

Over the long term, revisit the decision to move to one major inspection every two years for each wing.* A risk management system would also allow the Air Force to adopt a flexible approach that matches individual inspection events, including no-notice inspections, to information about the inherent riskiness of and a wing's demonstrated capabilities in the activities that these events examine. At the time of this report, the Air Force initiative to improve its inspection system appeared to be heading toward a two-year interval as an alternative course of action. However, keeping a more flexible approach in mind, the Air Force could collect specific data that would make it easier to revisit this decision in the future.

Reducing the Inspection Footprint

As future external inspections are reduced in size and focus, ensure that they continue to capture the priorities of the IG and the relevant functional area communities.* Opportunities exist to synchronize and integrate many inspections, assessments, and evaluations into single, more cost-effective oversight events. To do this, the Air Force will need to convene teams of IG and functional personnel that can assess redundancy within and across checklists. These teams must be prepared and authorized to weigh IG and functional priorities and ensure that they are appropriately represented and balanced in the final checklists.

Apply formal sampling guidance to reduce the burden of inspections and increase their productivity.* If the Air Force develops a risk management system, it could use that system to align the inspection checklists that the Air Force as a whole and individual MAJ-COMs create with what is feasible to measure at the wing level with the resources available. The Air Force could also give its inspectors more formal training in sampling strategies and use its risk management system to help individual inspectors apply these strategies.

Use information on a wing's past performance to design the focus and depth of each full inspection. Once the Air Force achieves its goal of ensuring that every wing commander faces at least one major inspection during his or her tour, the Air Force can turn to the question of how much effort to dedicate to such an inspection when it occurs. Presumably, if the IG finds strong evidence (e.g., from past inspection events, readiness reporting, AFMA's Climate Survey) that a wing is complying appropriately, is ready for assigned contingency missions, and is executing its current mission well, a scheduled biennial major inspection need not be as

demanding as it would be if the wing displayed weaknesses. Instead, small no-notice inspections can be used to probe particular aspects of the wing's operations.

Increasing the Emphasis on Self-Inspection and Self-Reporting

Consider adapting some aspects of FAA's voluntary reporting system as part of the new CCIP. Such a system would maintain the anonymity of individuals reporting from within wings and encourage more honest reporting. The FAA's successful use of a system of systems, including enterprise-wide programs as well as ones focused on specific elements of its organization, offers a number of practices that the Air Force could adapt, such as protecting the anonymity of voluntary reporters and using subject matter experts to analyze instances of non-compliance.

Foster conditions for psychological safety to increase the willingness of all individuals in wings to report weaknesses so that they can be fixed. Wing leadership can engage in efforts that foster psychological safety, such as conveying a message to personnel that committing errors may be permissible under certain circumstances, rewarding error reporting, and holding individuals accountable for "blameworthy" acts. Another step would be to implement "blameless reporting," i.e., a system in which personnel can report a deficiency without fear of reprimand.

Support wings' efforts to preserve the "external look." SAF/IG should encourage, via policy or other guidance, the use of external oversight by non-IG personnel who can take an unbiased look at a wing's practices. Many wings use such outside perspectives (e.g., personnel from one squadron assessing those in another squadron within the same wing) to identify areas in need of improvement. Participants in our fieldwork believe that a neutral, external assessment could help a wing's self-improvement efforts in ways that additional internal scrutiny could not.

Introducing the New Unit Effectiveness Inspection

Recognize that leadership and discipline are multifaceted constructs and measure them as such. As SAF/IG moves forward with plans to formally measure discipline and leadership within the new UEI, it should adopt multiple measures, both interrelated and independent, quantitative and qualitative, to obtain a robust picture of the status of leadership and discipline within a wing. Indicators of poor or insufficient leadership and a lack of discipline may be as telling as measures of good leadership and strong discipline.

Ensure that measures of leadership take into consideration the impact of the full chain of command, not just the wing commander. Leadership at the group, squadron, and flight levels, including both officers and non-commissioned officers, contributes to the overall functioning of the wing and, accordingly, should be included in IG assessments of the leadership climate. The use of statistical "data aggregation" techniques and survey items about the chain of command, such as those included in AFMA's Climate Survey, are two ways of accomplishing this.

Use qualitative methods during the inspection process, but ensure that they are standardized across inspection teams and sites. Qualitative measures obtained via interviews and focus groups can yield useful insights, such as helping to explain the results of a cross-sectional (i.e., one-time) survey, and observation may be the best way to obtain information about certain aspects of unit functioning (e.g., task evaluations, interactions between leadership and personnel). However, the Air Force needs to ensure that these observations are

gauged using a consistent set of indicators and that these indicators are measured in the same way.

Develop a new UEI survey that adopts items from existing survey instruments. SAF/IG has a strong base from which to develop and implement its own survey as part of the UEI. This survey could make use of survey items from scholarly literature that have been validated as methodologically sound and applicable in diverse settings. Similarly, items from the Climate Survey and the AFCAST surveys could be used by the IG in its own survey, either in addition to or instead of relying on data collected and reports generated by AFMA and the Air Force Safety Center.

Use other existing data sources to inform the inspection process. Inspectors should make use of data collected for other purposes to guide sampling decisions and to corroborate information they themselves collect during the UEI. As the UEI is developed and gradually implemented, inspectors could also be on the lookout for other naturally occurring data sources or systematic data collection efforts already in place (e.g., complaint data from the Air Force Inspector General’s Directorate for Complaints Resolution [SAF/IGQ]).

Introducing MICT

Follow through to ensure that MICT is implemented cost-effectively. Although MICT appears to offer well-designed software, Air Force personnel in the field are skeptical about its future usefulness due to their past experience with faulty implementations of information technology. Training will be helpful to address users’ needs. A real-time help line can assist users with the system as well. The Air Force should also plan for regular, but simple, updates to the system as opportunities arise.

Recognize MICT as a complement to external inspections and assessments and internal self-inspection, not a replacement for them. The Air Force should create and enforce policy that ensures that wings do not attempt to “save” resources by having MICT displace normal face-to-face oversight activities. If the Air Force ultimately finds that it must program additional resources to sustain MICT, it may be time to seek an alternative.

Implement and sustain an approach to using MICT that maintains (1) standard core information and (2) wing-unique information. The core information should be tied to a standard set of checklist items of interest to a MAJCOM or the Air Force as a whole. Wing-unique information can address issues that only one wing faces or issues that any wing, over time, has come to believe deserve additional attention.

Maintain ways to double-check any information in MICT that is freely available to external overseers at the MAJCOM or Air Force level. SAF/IG can double-check this information in multiple ways, e.g., by intermittently conducting stringent audits of numbers reported, by using voluntary reporting systems that guarantee reporters anonymity or effective amnesty, and by comparing data reports from different sources in a wing to ensure that they are internally consistent. SAF/IG should also be prepared to adjust what data it requests if it finds that the requests themselves are inducing honest reporting but compromising the effective performance of the wing.

Implementing Significant Organizational Change

As change in the inspection system goes forward, keep in mind that the inspection system has many moving parts and operates as part of a broader governance system. Elements of the new inspection system anticipated at the time of this report’s publication (e.g., better

self-inspection systems, better data management systems) involve changes that are designed to improve the motivation and capability of the leaders and airmen in wings. Aligning the inspection schedule to the tour length of the wing leadership may increase the motivation of wing leaders to give greater attention to compliance and readiness for contingency missions. The Air Force should monitor change closely and verify that these changes are having their desired effects before withdrawing external inspections.

Anticipate that full implementation will take time. Plan for this by breaking change into incremental chunks and managing each one, end-to-end. Changes of the magnitude that the Air Force is currently considering take many years. The Air Force can facilitate long-term change in its inspection system by breaking changes into incremental chunks, monitoring each chunk, letting each team take credit for the progress of the chunks it oversees, adjusting each new chunk on the basis of what was learned through the last one, and sustaining a coalition over time that supports this incremental approach.

Use formal pilot tests to help monitor and refine increments of change before they are implemented throughout the Air Force. Pilot programs offer a chance to test a new idea through limited application and correct unanticipated weaknesses before they cause significant harm. The new inspection system being developed offers many opportunities for pilots. For example, the use of MICT in reserve component wings might be monitored so that the Air Force has ex post measures of the effects of the change that it can use to adjust MICT before expanding its application. In addition, the Air Force could begin to collect systematic data on the Air Materiel Command's experience with the Military Aviation Safety Action Program to determine (1) whether it warrants broader application in the Air Force and, (2) if so, how it should be adjusted before its application is expanded. Other potential pilots might focus on initial efforts to develop risk assessments of checklist items, the use of no-notice inspections, formal programs to foster psychological safety in wings, the application of data from AFCAST or the Climate Survey, and measures of leadership attributes.

Anticipate and disarm negative perceptions about proposed changes. The Air Force should develop strategies that leaders throughout the chain of command can use to address any negative perceptions of inspection system changes and should refine these strategies as needed throughout the execution and sustainment phases. For example, the Air Force can collect information on the effects of ongoing change and use that information to demonstrate the benefits of change to the leadership, to those elsewhere who must change their behavior, and to the Air Force as a whole. These techniques, in turn, can give individuals the resources they need to support change, the freedom to change their behavior in positive ways, the skills to respond in ways that benefit the Air Force, and feedback that makes it clear how well each of them is doing at supporting change.

Conducting Additional Analysis to Support Implementation

Continue formal analysis of selected issues where full implementation will benefit from more technical depth. Over the course of our analysis, we identified a number of topics that we would have pursued if adequate time and resources were available in the context of this project. The Air Force could pursue these as it continues to implement the inspection system changes already under way. They include the following:

Develop more detailed and quantitative analysis of the costs of the inspection system. The data currently available to the Air Force are not adequate to support the kinds of careful cost-benefit analysis it will need to refine its new vision of the inspection system

as implementation proceeds. This task would address the costs imposed on units by external inspectors, the costs of self-inspections, and the costs to the external IG and functional communities of conducting external inspections. To the full extent possible, it should seek to state these costs in comparable terms, such as person days or dollars. It should also seek cost drivers in each of these three areas that are relevant to decisions that the Air Force will need to make as implementation of the new inspection system proceeds.

Translate the risk assessment *framework* recommended here into guidance for an Air Force risk assessment *system*. Just as the FAA inspection system has evolved a risk assessment system tailored to the industry setting in which it operates, the Air Force could develop a risk assessment system tailored to its inspection priorities, culture, and organizational structure. Such a system would identify specific roles and responsibilities throughout the Air Force; specific requirements for data, data management, and the analytic capabilities that the Air Force would use to apply data; and specific goals for positive and negative incentives associated with data collection and the institutional designs to instantiate these incentives. The FAA experience teaches us the importance of developing such a system in an evolutionary way and learning over time. This task would provide enough concrete detail to initiate this development process and offer guidance on how to sustain learning as the process proceeds.

Develop concrete and specific guidance that translates formal sampling methods into instructions that inspectors could apply in practical ways to increase the quality of information they can collect with a given amount of resources. The statistical, engineering, and social science research communities have access to extensive tools that they use routinely to sample data when they conduct empirical analysis. The Air Force inspection community needs access to such tools in a form that its inspectors can use. These analysis tools could synthesize the formal concepts relevant to Air Force inspections, assess which are most easily applied in a setting with real inspectors, and aid the drafting of explicit guidance for the application of these concepts in the Air Force inspection system.

Develop the basis for a more precise and operational definition of discipline. In the context of this analysis, the definition of discipline would focus on attributes that could be monitored and assessed in compliance with readiness inspection. But an established operational definition would likely be useful in a broader context across the Air Force. The more clearly a definition can support an empirically detectable link between unit discipline today and organizational performance tomorrow, the more influential the definition is likely to be in any inspection that monitors and assesses it.

Translate the current, broad implementation guidance offered in this report into a form more tailored to an Air Force setting. Ideally, the first part of this task would develop a detailed implementation plan with guidance on how to administer it and update it in response to accumulating evidence on the success of implementation. The second part would support the Air Force in its ongoing implementation of inspection program changes and draw lessons learned for future major Air Force changes.

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