Stress and Dissatisfaction in the Air Force's Remotely Piloted Aircraft Community

Focus Group Findings

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Preface

Remotely piloted aircraft (RPAs) and the personnel who operate them are crucial to successful operations in today's military environment, especially in intelligence, surveillance, and reconnaissance–critical special operations. The personnel manning the RPAs include those in two of the newest career fields in the U.S. Air Force. As these career fields mature and demand for skilled operators continues to grow, Air Force Special Operations Command (AFSOC) leadership has recognized the need to address workforce issues facing the RPA career fields to ensure these career fields' health.

AFSOC asked RAND Project AIR FORCE (PAF) to identify issues potentially affecting the RPA force and recommend ways to mitigate them. RAND PAF's effort focused on the following questions.

1. What major stressors are faced by the RPA community, and what are the resulting implications for personnel management and career field planning (if any)?
2. How might a deploy-to-dwell concept be meaningfully applied to the RPA force?

The research reported here was commissioned by AFSOC and conducted within the Manpower, Personnel, and Training Program of RAND PAF as part of a fiscal year 2015 project. It should interest RPA community leadership; Air Force and Department of Defense senior leaders concerned with the health and stability of the RPA community; and Air Force organizations charged with managing policies, resources, and services (such as manpower analyses, personnel screening and assignment policies, and base services) that affect the RPA community.

RAND Project AIR FORCE

RAND Project AIR FORCE (PAF), a division of the RAND Corporation, is the U.S. Air Force's federally funded research and development center for studies and analyses. RAND PAF provides the Air Force with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future air, space, and cyber forces. Research is conducted in four programs: Force Modernization and Employment; Manpower, Personnel, and Training; Resource Management; and Strategy and Doctrine. The research reported here was prepared under contract FA7014-06-C-0001.

Additional information about PAF is available on our website: http://www.rand.org/paf/

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Summary

Background

The U.S. Air Force's remotely piloted aircraft (RPAs) carry out a range of functions, including gathering intelligence, conducting surveillance and reconnaissance, and launching pinpoint attacks against a variety of targets. These aircraft have been enormously successful in these missions and have denied sanctuary to those who wish to harm this nation and our allies. However, to some degree, the RPAs and those who operate them have become victims of their own success. As the aircraft have proved their worth, the demand for them has exploded. The number of missions they fly, called combat air patrols (CAPs), has increased significantly over the last decade.

Even though the Air Force has increased its number of RPA units, it has been unable to keep up with demand. This problem is exacerbated by the Air Force's inability to fill the ranks of its RPA units, filling only about 80 percent of authorized pilot positions.

The result is that the crews that launch, fly, and recover these aircraft work inordinately long hours, and the RPA mission is more demanding in terms of flying time than the typical traditionally manned aircraft mission.[1] CAPs fly 24 hours a day, seven days a week, and therefore RPA pilots, sensor operators (SOs), and mission intelligence coordinators (MICs) are required at all times. The Air Force response to this round-the-clock mission has been to have two to three crews work in shifts (e.g., day shift, midnight shift, and swing shift). This high operations tempo (OPTEMPO) is one feature of the RPA lifestyle that potentially causes personnel stress.

Another unique feature of the RPA lifestyle is being "deployed in garrison." Most pilots, SOs, and MICs conduct combat missions from Air Force bases in the United States. While this allows RPA personnel to forgo many of the downsides of traditional overseas deployment cycles (such as being away from family and the comforts of home), deployment in garrison is not without its own stresses. For example, personnel have the added burden of a range of "administrative" responsibilities beyond the combat mission. In addition, while on midnight and swing shifts, personnel find it difficult to take care of personal responsibilities (installation facilities are typically closed when they are off duty) and participate in family activities (they are either working or sleeping). As a result, perceptions of stress in the RPA community appear to be high, and job satisfaction appears to be suffering.

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[1] For example, according to Secretary of the Air Force Deborah Lee James, fighter pilots fly an average of 250 hours per year, while MQ-1/9 pilots fly over 900 (Welsh and James, 2015).

Because of growing unrest within the community, the retention rate for RPA crews is expected to be far less than the Air Force would like, and the Air Force is concerned that it will have difficulty attracting personnel to these assignments. If the Air Force does have difficulties in attracting and retaining personnel, it will only lead to greater manning problems, compounding the stress on the force.

Purpose and Approach

Air Force leadership is well aware of the stress RPA crews experience and the potential deleterious effects on mission success. AFSOC recognized the need to identify the underlying causes of stress on the crews and to seek ways to mitigate that stress. It asked RAND Project AIR FORCE (PAF) to examine these causes and recommend ways to improve stress. RAND PAF researchers focused on the following questions:

1. What major stressors face the RPA community, and what are the resulting implications (if any) for personnel management and career field planning?
2. How might a deploy-to-dwell concept be applied to the RPA force?

Researchers approached these questions through focus groups with the RPA personnel directly involved in daily combat operations. Researchers conducted 28 focus groups with 186 airmen assigned to RPA pilot, SO, or intelligence (MIC) positions within Air Combat Command (ACC) and Air Force Special Operations Command (AFSOC). As part of those sessions, researchers administered two questionnaires—one open-ended (asking participants what they liked most and least about the job and what they most wanted to change), and one with Likert scale–type items asking about attitudes toward specific aspects of the job and lifestyle (e.g., manning, shiftwork, leadership, base locations).

The open-ended questionnaire was administered at the start of the focus groups as an exploratory tool. It allowed participants to generate their own thoughts without researchers or others in the group influencing their responses. The Likert scale item questionnaire was administered after discussing the open-ended responses, allowing us to confirm how much certain topics that we had believed might be an issue were of actual concern to participants.

Researchers also reviewed Department of Defense policies on deploy-to-dwell to gain a better understanding of these policies' purpose and to guide suggestions for instituting a similar policy appropriate to the RPA community.

Findings

Analysis of focus group data reveals both positive and negative attitudes on the part of RPA crews. On the positive side, the crews view their missions as important and find participating in them rewarding. They also feel a strong sense of camaraderie, including positive attitudes toward colleagues and working in a supportive team setting. Being near family; having well-meaning

leadership; and developing valuable job skills, experience, and knowledge were also cited as positive aspects.

On the negative side, crews feel stressed and regard the stress they experience as greater than that experienced in other career fields. About one-third of those in the groups showed signs of burnout, a feeling that typically occurs after prolonged periods of stress.

A number of themes emerged from the focus groups. Those themes are described in Table S.1. As shown in Figure S.1, some themes were mentioned much more frequently, and the negative comments tended to far outweigh the positive comments.

Table S.1. Themes Raised by More Than 10 Percent of Focus Group Participants

	Theme	Description
Positive Job Aspects	Mission	Having direct impact; seeing results of our efforts; mission is very rewarding
	Camaraderie	Being close to coworkers; working with and supporting the team
	Schedule	Consistent/predictable schedule with Panama schedule
	Family	Getting to be near family (deployed in garrison)
	Leadership	Direct supervisors are good; they do their best
	Skills	Getting to work at the cutting-edge; gaining valuable skills, experience, and knowledge
Negative Job Aspects	Manning	Underresourced manning or CAP load was too high
	Tasking	Lack of breaks and inability to accomplish tasks due to lack of time
	Scheduling	Scheduling or station assignments being too taxing, inconsistent, or inefficient
	Training	Lack of training, instructors, or opportunities for training
	Career Advancement and Retention	Lack of professional development or promotion opportunities
	Compensation	Lack of incentive pays, or better opportunities outside the military
	Location	Dislike of the location or housing
	Facilities and Services	Dissatisfaction with facilities on base
	Support and Understanding	Lack of understanding by other groups
	Duties Are Neglected	Not being able to complete other requirements
	Morale	Low morale and camaraderie
	Management	Problems with management or supervision
	Health and Well-being	Health-related concerns (e.g., sleep issues, psychological strain)
	Manning	Underresourced manning or CAP load was too high

Figure S.1. Proportion of Participants Mentioning Each Theme in the Written Comments
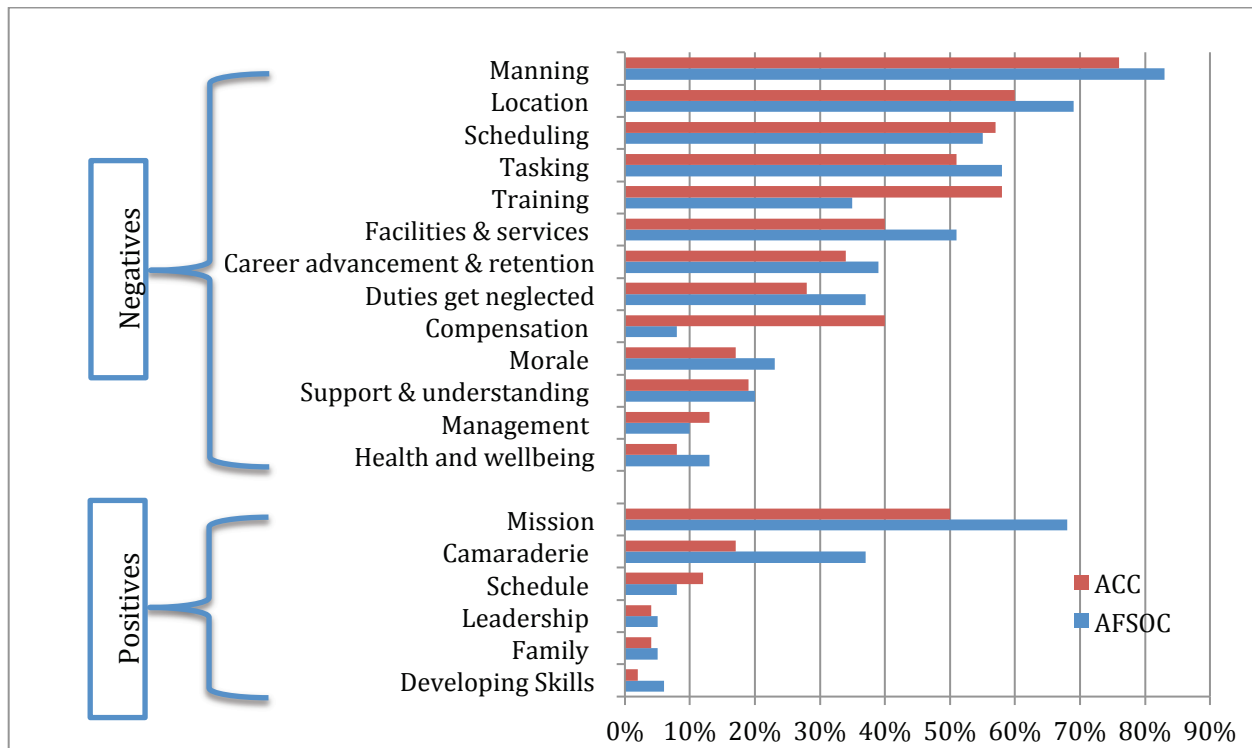
Some of the most frequently mentioned concerns were related to lack of manning and overtasking. Participants were concerned that not enough people were assigned to meet demands and that they were working too much to meet these demands. They also felt that they needed to work outside scheduled hours to accomplish necessary tasks.

Another frequently mentioned area of dissatisfaction was scheduling related to shiftwork. In particular, personnel described how shiftwork left them sleeping or working during evenings and weekends, when their family was awake and home. As a result, their families felt neglected, and personnel were rarely available to contribute to important family activities. Other concerns with shiftwork, such as trouble sleeping, were mentioned as well.

Some concerns were also expressed about training, primarily that RPA crews receive less training than those who fly traditionally manned aircraft. Although most personnel felt that they were adequately trained to perform their current duties, they felt that more training would allow them to offer more to supported units. For example, some suggested that having a better understanding of the supported units would be beneficial. In addition, some lamented the fact that there is no time to do continuation training; instead, all training is completed while engaged in combat operations. Personnel believe this limits the types of training available and prevents them from receiving important training necessary to fully support combatant commands. In other words, some participants believe that they are not well prepared for the *full* range of missions because there is a lack of time to practice other mission sets. Lastly, participants also raised concerns about their promotion opportunities, seeing them as better in other career fields.

RPA unit locations—Cannon, Creech, and Holloman Air Force Bases—were generally seen as undesirable. There was extended discussion in all groups about how RPAs technically could be flown from anywhere in the world. If some of the RPA crews could be stationed overseas (in a location like Hawaii or Guam), the need for shift work could be essentially eliminated. Many personnel lamented the fact that leadership was not pursuing more desirable locations.

Facilities and services available were also seen as lacking, largely because of the schedules the crews had to follow. Some facilities (e.g., commissaries, fitness centers, finance offices, and medical facilities) were not open when crewmembers could use them. Some felt that more should be done to support families, where, due to shiftwork, military members are unable to help with child care. Personnel also perceived that other members of the Air Force did not fully appreciate their work.

Other issues raised included perceptions that important needs and duties, including medical and other appointments, and general health and well-being (e.g., fatigue, stress, lack of sleep) were neglected.

Recommendations

A healthy and effective force is one that balances supply with demand; the concept of supply includes not just an adequate number of people but also the training, health, and well-being that drive sustained performance and retention. Based on our focus group findings, we recommend several changes to help build a healthier, more-effective RPA force.

1. **Reduce the workload on RPA personnel.** A major finding of our focus groups was that personnel in the RPA community feel overworked. One way to address this is to reduce workload until the career field is better established and more stable. This can be done in several ways: lowering CAP requirements temporarily to allow manning to catch up to demand; manning the career field at 100 percent (even if other, more-established career fields are feeling stretched thin); and raising crew-to-CAP ratios.
2. **Establish a combat-to-dwell policy for RPA personnel.** Institute a combat-to-dwell ratio for RPA personnel to help mitigate potential cumulative negative effects of combat exposure, high OPTEMPO, and shift work; to provide time for personnel to spend with their families; and to provide time for personnel to complete continuation training and other developmental activities. To do this, of course, the Air Force would need to increase the numbers of personnel allocated to the RPA career fields.
3. **Find ways to attract and retain RPA personnel.** The Air Force needs to take all steps possible to attract high-quality accessions and prevent the loss of qualified RPA personnel. It must continue to offer accession initiatives and offer bonuses and incentive pay, incentives the Air Force well understands and routinely uses in other career fields. The Air Force also needs to take steps to address the concerns raised by members of the RPA community. This includes ensuring that there are clear, attainable, and rewarding paths to job growth, including leadership and staff assignments and development and education opportunities commensurate with other desirable career fields. It also includes exploring the addition of new RPA base locations to allow personnel greater permanent

change of station (PCS) opportunities and possibly to eliminate the need for shift work. Addressing as many areas of dissatisfaction as possible will be critical to enticing new personnel.

4. **Continue to improve the RPA human factors environment.** The Air Force must pay attention to human factors issues, such as climate control, ergonomic design, and equipment upgrades. Although these types of human factors issues were raised occasionally in our focus groups, we did not delve into them in detail, and future research should therefore explore these issues more deeply. We note that the Air Force has a program underway to deal with equipment issues, and the other human factors issues fall under the control of the installations. Responding to these types of human factors issues could go a long way in addressing perceptions that the force is not valued.

5. *Use metrics to continuously evaluate the health of the RPA community.* An essential ingredient for ensuring the long-term sustainment, readiness, and well-being of the force is to define and implement data tracking mechanisms and associated performance metrics. Toward that end, we recommend implementation of a brief, annual survey of all RPA career fields, both to take the temperature of the force at strategic points in time and to solicit reflections and suggestions. We also recommend instituting a process for soliciting detailed feedback from the force about needed changes on a regular, ongoing basis and for communicating the ways leadership addresses those concerns. The Air Force must also track and analyze data on key aspects of RPA personnel in the career field, including such data as temporary duty, PCSs, and deployments, as well as leave requests and denials, professional military education opportunities, and career-broadening assignments. Tracking data over time would enable leadership to assess baselines and subsequently track improvements after policy changes are made.

Concluding Thoughts

Our focus groups were designed to diagnose the major sources of dissatisfaction and low morale within the RPA community. Armed with that information, the Air Force can put in place initiatives to help improve the health of the force. The above recommendations are examples of such initiatives. Some directly address major sources of dissatisfaction within the community; some provide tools to evaluate the success of various initiatives at improving attitudes and perceptions over time and determine whether perceptions within the community are aligned with reality.

One major conclusion from the focus groups is that there is no silver bullet to solving the community's morale issues. Instead, we recommend taking steps to address the variety of issues raised by personnel in the community, continuing to solicit feedback about those issues, and regularly exploring whether new issues have arisen. Last, we recommend that leadership communicate to the people in the RPA community that they have heard their concerns and, to the fullest extent possible, are working to address them.

1. Introduction

Remotely piloted aircraft (RPA) and the personnel who operate them are crucial to successful operations in today's military environment, especially in intelligence, surveillance, and reconnaissance (ISR)–critical special operations. The personnel manning the RPAs include two of the newest Air Force career fields: the 18X career field for pilots and the 1U career field for sensor operators (SOs). As these career fields mature and demand for skilled operators continues to grow, U.S. Air Force Special Operations Command (AFSOC) leadership has recognized the need to address workforce issues facing the RPA career fields to ensure that the health of those career fields are maintained. This study was commissioned by AFSOC to address those issues.

RPAs have proven to be wildly successful, and, unsurprisingly, the demand for them has rapidly increased over the past decade. The success of these aircraft in gathering critical intelligence and in striking high-value targets has caused field commanders to demand more and more of them. As a result, the Air Force has been ramping up the number of RPA combat air patrols (CAPs) it can manage as quickly as possible. The ramp-up target was 65 CAPs; this target was met in 2014 (Kelsey, 2014).

The ramp up has been so quick—from 33 to 65 in just six years (Kelsey, 2014)—that the Air Force has been hard-pressed to meet the growing demands. It has only been able to do so by requiring RPA crews to work an unusually high number of hours each week. As a result, CAPs were reduced to 60 around summer 2015 to address workload overstress (Secretary of the Air Force Public Affairs, 2015). This reduction was intended to allow the Air Force the opportunity to fully staff the formal training units (FTUs) at Holloman Air Force Base (AFB) with instructor pilots and increase RPA pilot production to enable the RPA force to "get well."

This unrelenting ramp up has taken its toll on the force. One result of these demanding work schedules has been dramatically increased stress on crews and a corresponding decline in job satisfaction. Even though most crews live in and fly RPAs from the United States, they are engaged in combat operations and their status is described as "deployed-in-garrison." As a result, the mission demands and concomitant stress are similar in some ways to an overseas combat deployment.

For example, RPA operations are ongoing 24 hours a day, seven days a week, 365 days a year, and the demand for RPA missions is insatiable. Personnel are therefore required to work shifts around the clock to meet the demand. This means that a large portion of the force's off-duty time occurs when base services are closed and when friends and family are working or sleeping. In addition, RPA crews have difficulty getting time off or taking ordinary leave because of duty demands, and the stress of the work environment can be high from both the

combat operations tempo (OPTEMPO) and the pressure to perform from commanders in the field.[1]

Because these personnel are deployed in garrison, however, both Department of Defense (DoD) policy and U.S. Code preclude them from receiving the benefits and services routinely given to personnel deployed overseas. Consequently, while the toll on RPA personnel accomplishing the missions can be high, support and incentives can be far less than those of an overseas deployment.

All of these issues were among those raised in a Government Accountability Office (GAO) report in 2014 (GAO, 2014). In that report, the GAO expressed concerns that these issues are leading to growing unrest within the RPA community and that this unrest will have negative consequences for the health of the career field. It recommended that the Air Force look for solutions to address that unrest.

Since that time, the Air Force has taken steps to improve the situation of RPA crews. For example, it directed the Air Force Manpower Agency (AFMA) to reexamine the manning needs of MQ-1/9 squadrons and update the crew ratio. It also has changed the rules for officers volunteering for rated positions. Air Force Academy and Air Force Reserve Officer Training Corps graduates can volunteer for rated positions, but now they cannot volunteer for specific Air Force Specialty Codes (AFSCs). This change is intended to improve the number of annual accessions into the career field. Additionally, to help flow additional personnel into the career field, junior missile officers will be given the opportunity to cross-flow into the RPA career field after a four-year tour in the missile career field. The Air Force also plans to increase the monthly incentive pay to $1,500 a month for RPA pilots nearing the end of their commitment. The Air Force is introducing the use of noncommissioned officers to fly RQ-4 (Global Hawk) RPAs, which will free up rated-officer inventory for the MQ-1 (Predator) and MQ-9 (Reaper) platforms (Swarts, 2016). The Air Force also is looking into having crews from other services that might be divesting themselves of aviation assets cross-train to RPAs (Welsh and James, 2015).

Nevertheless, in light of the GAO report, leaders within the RPA community acknowledged that more solutions were needed to mitigate workforce stress and dissatisfaction. As a result, in summer 2014, only a few months after the GAO report's publication, AFSOC turned to RAND to help identify promising solutions.

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[1] Although it was not explored in this study, data exist to explore whether leave is lost in this community at rates that are higher than in other communities. Nevertheless, those data do not fully reflect RPA personnel's possible inability to take leave on dates of their choice, as the continual nature of the enterprise means that most members of the community have to work through standard holidays.

Study Goals

AFSOC clearly recognized the need to further identify the underlying issues affecting the long-term health and sustainability of the RPA force. AFSOC therefore asked RAND Project AIR FORCE (PAF) to explore the factors affecting the RPA force and recommend ways to improve them. More specifically, AFSOC asked RAND PAF to focus on the following questions.

1. What major stressors face the RPA community, and what are the resulting implications for personnel management and career field planning (if any)?
2. How might a deploy-to-dwell concept be applied to the RPA force?

The first question reflected AFSOC's interest in identifying a variety of initiatives that would improve morale within the force, paying special attention to whether morale issues could be addressed through changes to manning requirements. We felt that that question was best addressed by first understanding the entire landscape of stressors and then determining where manning issues fit within that landscape, and our AFSOC sponsor agreed. The second question reflected AFSOC's interest in exploring one type of policy as a possible solution to addressing at least part of the morale issue. We again needed to better understand the full landscape of concerns in the community before we could evaluate how a deploy-to-dwell policy might address those concerns. That understanding would also help us suggest ways to implement the policy so that it met the intent of improving morale. As such, both research questions are at their core questions about stress in the community and ways to address that stress.

Research on Stress and Dissatisfaction in the Workplace

To improve job satisfaction in the RPA community, it is essential to diagnose the fundamental causes of stress and dissatisfaction. This may sound like a simple task, but stress and dissatisfaction can be affected by a wide variety of factors, all of which must be considered. The research literature on stress and dissatisfaction in the workplace offers insights into the types of factors that need to be considered, and those factors serve as the basis for the issues explored during our focus group discussions.

The focus group methodology used in this study is based heavily on previous RAND work studying stressors in 20th Air Force. In our report summarizing that work, we go into great depth explaining the various topics that have been studied in the research literature to explain why an organization such as the Air Force should be concerned about these issues.[2] Interested readers

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[2] This overview is drawn from a more extensive literature review conducted in support of the research reported in Hardison et al. (2014). That study identified key workplace stressors affecting 20th Air Force and explored many of the same types of issues being faced by the RPA community.

are directed to Hardison et al. (2014) for a more in-depth discussion. We have reproduced sections of that discussion here to serve as a quick overview of the literature.

Three Broad Topic Areas to Consider

A wealth of research suggests that problem behaviors in the workplace can be influenced by stress, negative attitudes, and negative perceptions of the workplace.[3] The issues raised in this body of work can be grouped into three broad topic areas (as was done in Hardison et al., 2014):

1. factors that affect well-being and attitudes in the workplace
2. types of well-being and attitudes that matter in the workplace
3. the consequences of well-being and attitudes for organizations and individuals.

For reference, a table showing the variety of factors that can fall into each of these three topic areas is reproduced in Appendix A. For more specifics on each of the topics, see Hardison et al. (2014).

Factors That Affect Well-Being and Attitudes in the Workplace

A wide variety of stressors and other relevant workplace, environmental, and individual factors are known to affect psychological and physical well-being and important workplace attitudes. For example, job characteristics (including skill variety, task identity, job feedback, and job enrichment) have been identified as relating to employee satisfaction and motivation (Hackman and Oldham, 1975). Work hours can also play a role in affecting workplace stress and attitudes (for a review, see Sparks et al., 1997). Shift work can have a variety of negative effects, from disrupting sleep-wake cycles to more frequent exhaustion and fatigue (for examples, see Sallinen and Kecklund, 2010, and Nethus, Hackworth, and Boquet, 2006). Shift length, among other shift-related factors, also has an important influence on health and well-being (Di Milia, 1998; Di Milia and Bowden, 2007; Smith et al., 1998). In addition to total work time, work demands and work intensity can affect job satisfaction and, at extreme levels, lead to exhaustion and burnout (Lee and Ashforth, 1996; Maslach, Schaufeli, and Leiter, 2001; Burke, Singh, and Fiksenbaum, 2010).

Elements of organizational structure, climate, and culture can also affect the amount of stress workers experience and how they act in response to that stress. Workplace norms, for example, can generate tension and stress or act as psychological buffers (Hammer et al., 2004). Another organizational factor that may influence workplace stress and lead to job dissatisfaction and poor

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[3] Many reviews on these topics already exist, and the research literature on each factor within a subtopic can be vast. For more information, we direct interested readers to the myriad of comprehensive reviews and books on each of the subjects mentioned here and in Appendix A. Examples include Cartwright and Cooper, 1997; Brief and Weiss, 2002; Danna and Griffin, 1999; Greenberg and Colquitt, 2005; Maslach, Schaufeli, and Leiter, 2001; Barling, Dupré, and Kelloway, 2009; Hassan et al., 2009; Galinsky et al., 2005; and Allen et al., 2000. In addition, the American Psychological Association (APA) has produced a fact sheet (APA, 2010) summarizing several relevant statistics from other sources.

psychological well-being is the amount of support and/or conflict experienced in interactions with others (Cooper and Cartwright, 1994; Penney and Spector, 2005). Evaluation and reward systems are additional elements that play a role in employee motivation and satisfaction (Gagné and Forest, 2008).

Environmental characteristics, such as commuting time (Koslowsky, Kluger, and Reich, 1995; Lucas and Heady, 2002) and sunlight exposure (Leather et al., 1998), also affect health and well-being. A variety of factors related to individual differences and family life can affect the roles of stress, attitudes, and perceptions in the workplace. These include family demands, work-family conflict (Allen et al., 2000; Kossek and Ozeki, 1998), and child care needs. Personality and temperament play a critical role in driving workplace stress and can also affect the ways in which individuals deal with stress in the workplace (Cullen and Sackett, 2003; Hershcovis et al., 2007).

Types of Well-Being and Attitudes that Matter in the Workplace

Although several aspects of well-being and attitudes and perceptions are relevant in the workplace, stress is at the forefront of many workplace concerns (APA, 2012). Stress in the workplace can be costly for both employees and employers, resulting in behavioral and physical problems as well as psychological ones (Cooper and Cartwright, 1994; Maslach, Schaufeli, and Leiter, 2001). Burnout and depression are other potential responses to adverse workplace and environmental factors (see, for example, Maslach, Schaufeli, and Leiter, 2001).

Experiences in the workplace can affect not only employee well-being but also employee attitudes and perceptions about the job—which, in turn, can have negative consequences for individuals and organizations. Employee perceptions about the fairness of an organization's policies and practices (Greenberg and Colquitt, 2005; Fox, Spector, and Miles, 2001; Cohen-Charash and Spector, 2001; Marcus and Schuler, 2004), the ability to balance the demands of work and family (Allen et al., 2000; Major, Klein, and Ehrhart, 2002), and job satisfaction (Spector, 1997) are all factors that can have negative consequences for individuals and organizations.

The Consequences of Well-Being and Attitudes for Organizations and Individuals

Poor employee well-being, along with negative and unhealthy workplace attitudes, can have serious, long-term consequences for employers and employees (see Brief and Weiss, 2002; and Danna and Griffith, 1999). They can, for example, lead to higher rates of absenteeism and turnover (Maslach, Schaufeli, and Leiter, 2001; Spector et al., 2006; Porter and Steers, 1973), lower productivity and quality of work (Drory, 1982; Maslach, Schaufeli, and Leiter, 2001), more mistakes and accidents (Barger et al., 2006; Dembe et al., 2005 and 2007), and even intentional harm to the organization (e.g., sabotage, theft) (Greenberg and Colquitt, 2005; Bruursema, Kessler, and Spector, 2011) or others in the workplace (Barling et al., 2009). High levels of workplace stress can result in many health consequences and, in turn, higher health

expenditures (Goetzel et al., 1998). These effects can also spill over to employees' personal lives, leading to problems such as increased rates of substance abuse (Sparks et al., 1997; Hodgins, Williams, and Munro, 2009; Frone, 2006), family distress (Mighty, 1997; Frone, 2000; Allen et al., 2000), and automobile accidents (Di Milia and Bowden, 2007; Barger et al., 2005), which can negatively affect the health and well-being of the family and the employee (see, for example, Allen et al., 2000; Barger et al., 2005; Sparks et al., 1997; Bell et al., 2004) and feed back into the workplace. Because of these consequences and their potential cost to employers, the Air Force should be concerned about stress and dissatisfaction in the RPA community.

Research Approach

Our study was designed to complement and add to several past research studies on RPA issues. For example, the GAO report mentioned above reported on several sources of stress and dissatisfaction within the community as part of its review. Other researchers have also measured stress and burnout (Ouma et al., 2011; Chappelle et al., 2014), shift work fatigue (Tvaryanas et al., 2008; Tvaryanas and MacPherson, 2009), and mental health and posttraumatic stress disorder (Otto and Webber, 2013; Chappelle et al., 2012 and 2014) within the RPA community. Lastly, in response to concerns about manning, AFMA explored manning requirements within the RPA force. The results of its first study were released internally within the Air Force in 2008; AFMA initiated a new study at the end of 2014, although the results of that study are still forthcoming.

As many of the past studies have focused narrowly on only one aspect of concern within the community, the goal in this study was to provide a more comprehensive picture of concerns. The GAO report provided a useful cursory look at the range of issues. However, the researchers' intent was to identify whether there were concerns that the Air Force should be attending to and provide some examples of what those concerns were, not to provide a systematic and comprehensive review of the concerns and their relative importance within the RPA community. We therefore saw value in expanding on the work from the GAO report to include not only a comprehensive look at the issues, but also a focus on the relative importance of the various concerns. Toward that end, we designed a methodology that involved conducting focus groups on a larger scale, collecting both qualitative and quantitative information, and separating results into distinct participant populations.

More specifically, in this study, we aimed to provide a comprehensive and in-depth understanding of the sources of stress and dissatisfaction within the RPA community to inform both of AFSOC's goals for the study (identifying initiatives for addressing stress in the force and exploring how a deploy-to-dwell policy might be applied to the force). Our approach used a mixed-methods design (i.e., with qualitative and quantitative analysis). We used focus groups to systematically explore the concerns expressed by the community in depth and written surveys administered during the focus groups to systematically analyze the relative frequency of each

concern expressed by the community. We also used the focus groups to explore in detail whether a deploy-to-dwell concept might be needed in the community and why.

In total, we conducted 28 hour-and-a-half focus group sessions with around 180 airmen (most groups had five to seven participants) assigned to RPA pilot, SO, or intelligence positions within Air Combat Command (ACC) and AFSOC. During the focus groups, we administered two questionnaires: One was administered at the start of the focus groups, and the other was completed in the middle of the focus groups.

In addition to the focus groups, we met with subject matter experts and leadership within the RPA communities to better understand the context for some of the issues being raised. Lastly, we reviewed the DoD deploy-to-dwell policy to better understand its purpose and applicability to the RPA force and to guide our suggestions for a similar policy appropriate to the RPA community.

Study Scope

Our sponsor asked us to focus the study on those RPA personnel who are directly involved in AFSOC combat operations.[4] We therefore focused our attention on the two primary types of RPA flown in combat operations in AFSOC: the MQ-1 and the MQ-9.[5] The two aircraft have similar characteristics and perform similar missions but differ in size, payload, speed, and range/endurance. The MQ-9 is generally considered an improvement over the MQ-1; as a result, the MQ-1 is slowly being phased out of operation. These aircraft are present in both the active and reserve components of the Air Force, and they are also flown by ACC. Those in the active component are organized into ten squadrons, most of which are stationed at and operate from bases in the United States. Some are assigned to ACC, and some are assigned to AFSOC. These squadrons routinely fly operational missions from their U.S. bases through a concept of employment known as remote split operations (RSO).

The standard aircrew complement for an MQ-1/9 consists of a pilot and an SO. The pilot flies the aircraft, and the SO operates the aircraft's sensor package, which records video and other intelligence information. Under the RSO construct, two different types of two-person crews are required to fly the aircraft: Launch and Recovery Element (LRE) crews and Mission Control Element (MCE) crews. As its name implies, the LRE launches and recovers the aircraft. The MCE pilot takes over flying the aircraft once it is airborne at a predetermined handoff point, and the MCE crew proceeds to conduct the mission assigned to that RPA flight. When the mission is complete, the MCE crew flies the aircraft back to its local base area and hands control back to the LRE crew for landing. MCE and LRE crews control the RPA from a ground control station

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[4] Appendix B contains more in-depth discussion on manning, training, specialties, and missions of the RPA career field.

[5] The RQ-4 is a third type of RPA flown by the U.S. Air Force. However, AFSOC does not use this aircraft, and therefore it was considered beyond the scope of this study.

(GCS), which is set up much like a two-person cockpit. MCE operations can be accomplished remotely from anywhere in the world where a GCS is located and the required connectivity is available.

Intelligence personnel are also considered integral members of the RPA team during RPA missions. These personnel typically serve as mission intelligence coordinators (MICs). A MIC works directly with the MCE crew and interacts with them throughout the mission, helping communicate and coordinate with multiple parties, including the supported unit and the teams responsible for processing, exploitation, and dissemination of the intelligence collected by the RPA.

Although our sponsor was initially most interested in improving quality of life within its own RPA community, after discussion with our sponsor, it was agreed that exploring the issues within the broader MQ-1 and MQ-9 RPA community would be more useful in the long run. Specifically, we saw the inclusion of ACC's RPA personnel in this study as important for several reasons. First, ACC and AFSOC organizational structures and missions may differ in meaningful ways; understanding these differences and their impact on perceptions about quality of life and job satisfaction could help identify AFSOC-specific solutions. Second, a career field view may be needed to identify sustainable solutions. Many issues in the AFSOC RPA force can only be addressed by decisions made at the career-field level. In addition, career-field level decisions directly impact AFSOC force management. For example, the number of instructor pilots that are pulled from the AFSOC force are determined in part by an increase in accessions. Numbers of accessions are determined by not only AFSOC's need for personnel, but also by ACC's need. As a result, AFSOC may not be able to control the number of instructor pilots that are pulled from their force. Given these kinds of interdependencies, changes may need to be made across the career field for improvements to have lasting effects. Third, AFSOC policy changes could impact the rest of the career field. To the extent that AFSOC implements changes, ACC may be compelled to follow their lead. However, what is good for AFSOC may not be good for ACC, and vice versa. Understanding the issues impacting both groups is therefore important to ensure that AFSOC decisions do not have unintended consequences for the rest of the career field. Last, if there are relatively few differences in the issues presented by AFSOC and ACC, our recommendations could apply across the career field. This could help bolster an argument that sweeping changes are needed.

How the Report Is Organized

Chapter Two describes the focus group methodology in detail, and Chapter Three presents the findings from the focus groups and the surveys administered during the focus groups. Chapter Four explores the idea of applying the concept of "dwell" to members of the RPA force as a way of mitigating the stress on its members. Chapter Five presents our overarching recommendations on ways to mitigate the stressors and dissatisfaction within the force, based on

the focus group findings. The report also has four appendixes. Appendix A provides a list of the types of topics that are relevant when studying stress and dissatisfaction in the workplace. Appendix B provides more detailed information about the structure and manning of RPA organizations, daily activities involved in RPA operations, the growth in demand for RPAs, and the personnel specialty codes and their associated training. Appendix C contains the Likert scale survey items administered to RPA personnel, and Appendix D contains additional survey results.

2. Focus Group Method

This study employed focus groups as the primary data collection method to define the stressors experienced by the RPA community. However, during the focus groups, we also administered two short questionnaires. The use of a combined questionnaire/focus group methodology offered important methodological benefits. The focus group discussions enabled us to delve deeper and probe for more information on any issues, explore unanticipated topics, and identify concrete examples to back up participants' expressed concerns. This aspect was particularly relevant in this study, where one goal of the research was to gain a richer understanding of the issues and another one was to capture the full range of issues being expressed by members of the RPA community. However, by including short questionnaires in the focus groups, we could simultaneously collect quantitative information on individual perceptions of the issues (through the questionnaires) in addition to in-depth qualitative explanation of the issues (through discussion).

We held a total of 28 focus groups with members of the three RPA communities of interest (the pilots, the SOs, and the MICs).[1] Each community participated in separate focus groups. The members of the pilot and SO communities were further separated, according to whether they were currently serving as MCE crews or LRE crews. We offered two sessions for each of the five participant groups at each base location, for a total of 30 focus group sessions. Two of the sessions had zero participants. For the remaining 28, at least one person showed up to participate. In most sessions the number of participants ranged from five to seven. Focus groups lasted one-and-a-half hours.

During the focus groups, we administered two questionnaires. One was administered before starting the focus group discussion, and the other was administered partway through the focus group discussion. Administering a questionnaire at the start of the focus group enabled us to capture individual perspectives before they could be influenced by the responses from others in the group.[2] We also designed the first half of the focus group discussions to be broad and open-ended to avoid priming participants to think about certain topics or aspects of the job. We used

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[1] Interviews are well-established methods of collecting systematic qualitative data for studying workplace issues. Using focus groups to conduct group interviews is also a well-respected method, particularly when there is a need to solicit perspectives from many people in a short time. The research community considers all three methods— surveys, interviews, and focus groups—to be rigorous empirical techniques when the sample, questions, administration procedures, and data analysis methods are well designed and appropriate to addressing the research goals.

[2] The influence of group dynamics on responses, while commonly a goal of focus groups, was not something we hoped to capture in our focus groups. Instead, we treated the focus groups as group interviews, with the aim of soliciting multiple perspectives in a relatively short time.

the second half of the focus group to explore attitudes toward specific topics of interest. The questionnaires followed the same pattern, with broad open-ended questions in the first questionnaire and targeted Likert scale items in the second questionnaire.

As noted above, administering these questionnaires enabled us to collect a large amount of information from participants within a short time. Although we knew the questionnaire sample size (and hence our findings) would be limited, we also knew the questionnaire would provide an initial quantitative assessment of participants' current views and agreement on the issues.

The content of the focus groups and the questionnaires and the methodology used to analyze them are discussed in detail in the remainder of the chapter.

Participant Information

Officers and enlisted personnel from AFSOC (Cannon AFB) and ACC (Creech and Holloman AFBs) serving in the following occupations were invited to participate:

- MCE pilots (18X, 11U, or ALFA tour pilots)
- LRE pilots and SOs (18X, 11U, or ALFA tour pilots)
- MCE SOs
- RPA intelligence personnel.

Supervisors at each base location distributed the focus group invitations by email and word of mouth. They also ensured that time was made available at the end of participants' work shifts (so as not to violate crew rest requirements) to allow those who were interested to participate. The invitations explained that participation was completely voluntary and that identifying information would not be recorded. Group size was not restricted—that is, volunteers were not turned away. However, larger groups (over ten respondents) were split when facility space was available. For the intelligence groups, efforts were made to split officers and enlisted airmen into separate groups when space permitted. Interviews were led by one of four trained RAND investigators.

In total, 186 personnel at Cannon, Creech, and Holloman AFBs participated. Figure 2.1 illustrates the participant distribution by occupation type and base. In the figures, we further separated MCE pilots into groups of 18X pilots and pilots of another type (11U/12U or ALFA tours) to see if responses would be different based on having rated experience in another career field. Participants who reported an AFSC that was inconsistent with our groupings or who failed to report their AFSC were placed in the other/unknown category. As seen in the figures, about 50 percent of the respondents were from each major command (MAJCOM), and about 50 percent were officers and 50 percent enlisted (87.5 percent were male and 12.5 percent were female).

In many cases, the sample sizes within a given occupation group are small. For that reason, we suggest caution in interpreting differences across occupations, as small sample sizes can be unstable. Because of concerns about stability, in the questionnaire analyses presented in the following chapter, results are reported separately by occupation group only for groups with a

sample size of ten or more.[3] However, even sample sizes as high as 30 can still warrant caution when interpreting differences across groups. For groups with lower sample sizes and groups that were not interpretable (i.e., other/unknown), we do not present questionnaire item statistics. They were, however, included in the qualitative data analyses where we report comparisons between ACC and AFSOC as a whole.

Figure 2.1. Participant Distribution by Occupation Type and Base
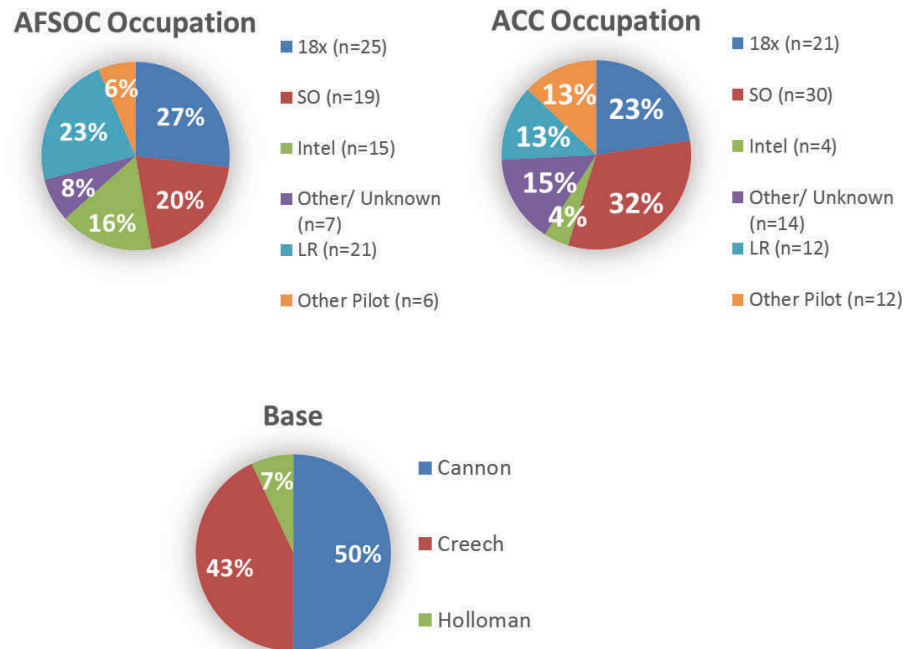
Focus Group Procedures

Focus groups proceeded in two stages.

Stage One: Questionnaire and Discussion

The first stage of the focus group was designed to be largely exploratory; our goal was to see what issues participants would raise without being prompted. Questions were, therefore, broad and chosen to avoid leading or priming anyone to discuss a particular issue.

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[3] We opted to exclude groups of fewer than ten participants for two reasons. First, we wanted to protect the confidentiality of participants, and when samples are in the single digits, participants can sometimes be identified through inference. Second, statistics based on small sample sizes can be highly unstable.

Stage One began with participants completing a questionnaire containing basic demographic questions (e.g., rank, Air Force specialty, gender) and the following unstructured, open-ended questions:

- What are the *best* things about your job here?
- What are the *worst* things about your job here?
- What could the Air Force do to improve you and/or your family's quality of life here at [Cannon, Creech, or Holloman]?
- What could the Air Force do to improve things on the job?

After the group completed the first questionnaire, we began the first round of group discussion. For all participants, we started with general background questions (e.g., What is your background? How long have you been here? Where are you from originally? How do you like living here?). We then asked the following questions, which were intended to inform both of our research question topics (stressors and the deploy-to-dwell concept):

- What are the best/worst things about your work here?
- What are the best/worst things about living at [Cannon, Creech, or Holloman AFBs]?
- Which aspects of living or working here do you most wish you could change?
- How would you say morale is in your career field? Are people usually pretty happy, satisfied with things, or not so much?
- What does it mean to be deployed in garrison? Is being deployed in garrison better or worse than being deployed elsewhere? Why?
- Does being deployed in garrison cause problems for you or your family?

Participants were encouraged to express whether they agreed or disagreed with the sentiments raised by their peers during the discussion. For all issues raised, we followed up with additional in-depth questions to probe for more information (for example, if manning was raised as an issue, we asked why the person thought his or her work was undermanned and how the manning problem could be fixed). Only issues the group raised were discussed in Stage One. If participants did not raise a topic, we did not ask about it.

Stage Two: Questionnaire and Discussion

Stage Two of the focus group was intended to be confirmatory. After extended discussion of their answers to the open-ended questions, a structured questionnaire was administered, which included about 70 closed-ended items using Likert-type scales (e.g., "strongly agree" to "disagree"). The structured survey items asked for a variety of perceptions and attitudes related to areas we suspected would be likely to lead to job dissatisfaction in the community. They also measured participants perceived job stress and levels of job burnout. After completion of the structured questionnaire, discussion was reopened and participants were asked to elaborate on any new points raised by the structured questionnaire. We also probed for additional detail as necessary. At the end of the focus group, participants were thanked and excused.

Stage Two of the focus group was intended to be confirmatory (rather than exploratory, as in Stage One). We presented participants with a questionnaire covering a number of factors that were hypothesized to be issues in the RPA community to determine whether RPA personnel in fact perceived them to be issues. It was also used to pilot potential survey items and collect a small set of baseline responses to inform future efforts to study these issues. The questionnaire included items covering the following general topics: manpower, tasking, and scheduling; training, career advancement, and retention; location, facilities, support, and understanding; and stress and well-being. Appendix B provides a complete list of the Stage Two questionnaire items.

Stress was measured using multiple items. One item was used in a past study of Air Force workplace stressors (Hardison et al., 2014). It asked participants: "How stressful do you find your job?" Potential responses were rated from 1 ("not stressful at all") to 7 ("extremely stressful"). The other items were adapted from Bray et al.'s 2009 survey of health-related behaviors among active duty military personnel. The only modification to these survey items was the time period referenced in the item stem. Bray et al. asked participants to respond about their stress levels in the last 12 months, whereas we opted to shorten the time period and ask about only the last 30 days. We decided to use 30 days in the RPA survey because the RPA workplace is rapidly changing. We felt that anchoring the question to ask about only the most recent month would ensure that responses were more reflective of the sentiments of the force at the time of the survey.

The modified stress items were: "During the past 30 days, (1) How much stress did you experience at work or while carrying out your military duties? (2) How much did stress at work interfere with your ability to perform your military job? and (3) How much did stress in your family life interfere with your ability to perform your military job?" Responses ranged from 1 ("not at all") to 4 ("a lot"). In keeping with Bray et al.'s survey, we report the percentage of respondents endorsing "a lot."[4]

The Malach-Pines Job Burnout Measure (Malach-Pines, 2005) was administered after the focus group ensued to assess how respondents feel about their work overall. This ten-item instrument has demonstrated adequate construct validity and high face validity, as well as high correlations with the Malach Burnout Inventory–General Survey's emotional exhaustion subscale (Malach-Pines, 2005). Example items include being "tired" and "disappointed with people." Items of this scale are publicly available and free to administer. An individual is considered to be experiencing burnout if the average score is a 3.5 or higher on the seven-point Likert-type scale, rated from 1 to 7 (not stressful at all = 1, moderately stressful = 4, extremely stressful = 7).

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[4] Due to an unforeseen transposition of scale labels "a little" and "some," the ordinal structure of the four-point scale was violated for the three items pertaining to "Stress in the past 30 days," preventing us from computing scalar statistics such as the mean. Instead, we report the frequencies for each response, mirroring Bray et al., 2009.

Other questionnaire scale items were developed internally, adapted from a previous survey of Air Force personnel designed by one of the present authors (Hardison et al., 2014), or pulled from other existing Air Force surveys. Scales assessed how much the statement "applies to you," "bothers you," and/or how much the respondent agrees or disagrees with the statement. Items developed internally or adapted from Hardison and colleagues used a scale ranging from 1 to 5. Items adapted from existing Air Force surveys used a range from 1 to 6. These scale differences are noted in the results. All items and the accompanying scale ranges are shown in Appendix B.

After completing the questionnaire, we started the second group discussion by asking the following question: "Now that you have seen the items on the second questionnaire, did it make you think of anything important that has not been discussed already?" We discussed any topics that the second questionnaire had prompted, then asked the group questions about other structured questionnaire topics if they had not been discussed already. These included questions about morale and promotion issues, manning/operations tempo, training/preparation, resiliency programs, adequate rest, and organizational culture.

Method of Analyzing Focus Group Information

Coding and Reliability for Unstructured Questionnaire Responses

All responses to the unstructured questionnaire questions were documented by one of three independent raters. All raters were trained on the coding scheme and definitions in advance. The raters were instructed to document the presence of every distinct statement that occurred more than once across the sample. The goal was to preserve a high level of specificity—for instance, "Food options are limited"—during the coding process. This approach resulted in a frequency-coded list of 93 items, henceforth called "sentiments." Topically similar sentiments were clustered into 20 groups of "themes." This process enabled us to retain the detailed content of the comments at the sentiment level, while still computing the percentage of respondents commenting on the higher-level themes.

Forty percent of the questionnaires were dual-coded by one of the three independent raters. Because of the qualitative nature of this study component, the data structure was not compatible with most quantitative tests of inter-rater reliability (e.g., Cohen's Kappa). Instead, rater reliability was assessed as percent coding agreement. For each questionnaire, the percentage of the sentiments and themes coded identically (including matched omissions) out of the total possible number of sentiment and themes was calculated for each rater pair. The average of those percentages served as the estimate of interrater agreement. This method yielded agreement scores exceeding 92.0 percent for each rater pair at the theme level.

Analysis of Closed-Ended Questionnaire Scale Items

Structured scale responses were evaluated *descriptively*, by examining distribution shape, mean scores, and standard deviations, as well as *inferentially* by examining statistically significant differences between mean AFSOC and ACC scores. Significance was defined as a difference between groups for which the probability of a false positive was less than one for every twenty comparisons (i.e., alpha = .05). To correct for the possibility of spurious effects resulting from multiple comparisons, we used Fisher's Least Significant Difference Test.

Gauging Comfort with the Focus Group Format

To gauge whether privacy concerns might constrain participants' willingness to disclose their personal opinions to the researchers, our questionnaire asked on a scale from 1 to 6 (1 = strongly disagree to 6 = strongly agree) how much participants agree or disagree with the following statement: "I feel comfortable voicing my opinions and criticisms in (a) the focus group discussion and (b) the paper survey." An examination of mean values in Table 2.1 indicates that agreement was consistently high across MAJCOMs and occupations, suggesting that participants felt comfortable participating using both formats in the focus groups.

Table 2.1. Participants' Degree of Comfort Voicing Opinions in the Focus Group and Questionnaire

Question	MAJCOM	18X	Other Pilot	SO	Intel	Launch and Recovery (LR)	Other/Unknown
Focus Group Discussion	AFSOC	5.1	5.7	5.1	5.3	5.7	5.3
	ACC	5.2	5.7	4.9	5.5	5.2	5.7
Questionnaire	AFSOC	5.3	5.8	5.2	5.3	5.8	5.7
	ACC	5.3	5.8	4.8	5.8	5.4	5.7

NOTE: Likert scale ranged from 1 = strongly disagree to 6 = strongly agree.

3. Focus Group Findings

Focus group participants expressed a diverse range of sentiments about their jobs, including both praise and concern. In this chapter, we present these sentiments, grouped according to the major themes identified when coding the participants' written responses. We start by discussing the results related to participants' positive comments. Following that, we discuss the results relating to the stress and burnout questionnaire items. Finally, we discuss each type of negative comment raised by participants in detail. In the discussion of each topic, we provide greater detail on the context and nuances associated with the issues as learned through the focus group discussions and specific written comments. In addition, we summarize notable findings from items on the second questionnaire that relate to each theme.

Overview of the Themes Raised in the Focus Groups

Figure 3.1 shows the proportion of personnel endorsing each theme. Table 3.1 provides a description of each major theme, along with example comments. As can be seen in the figure, some themes were mentioned by a large proportion of our sample. Other themes were mentioned less often, but many were still relevant views shared by others in our sample. This overview of the proportions mentioning a given issue provides a sense of respondents' prioritization of topics; those mentioned by the largest proportion of participants in written comments are topics that were most likely at the forefront of their minds. Other topics that were mentioned less frequently might also still be relevant concerns for leadership.[1] Each topic area is discussed in greater detail in the sections that follow.

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[1] For example, leadership might potentially prioritize complaints about health over compensation, even if those complaints were less frequent, on the grounds that basic health problems represent a more urgent issue with a lower tolerance for acceptability. Thus, users of these results must consider a variety of metrics for prioritizing needs that represent both consensus and key minority voices.

Figure 3.1. Proportion of Participants Mentioning Each Theme in the Written Comments
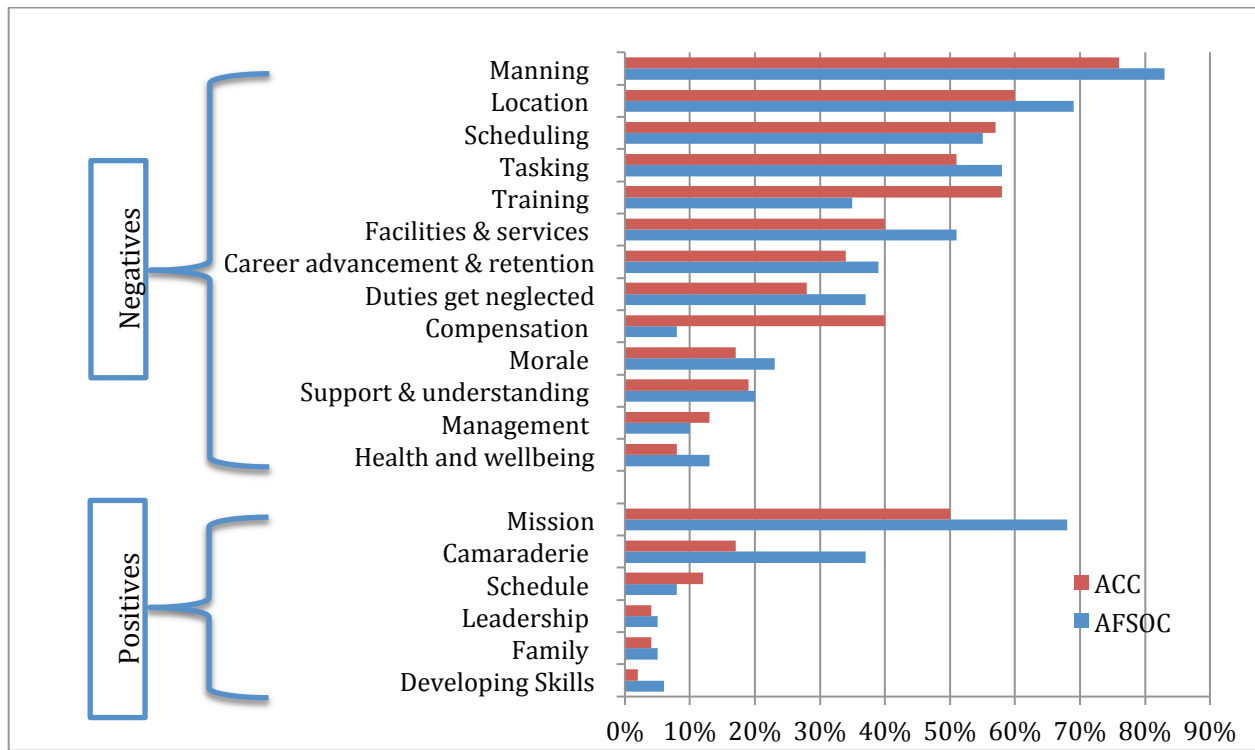
Table 3.1. Description of Each Theme and Example Comments

Theme	Description	Example Comments
Positives	Anything positive that subjects had to say about RPA	• All of us all know each other in 18X. All know each other from training on the way up. • Love the mission that we do. Feel like we are contributing to something. • We have a really awesome mission set. It never stops being cool. • Caliber of people we get to work with here at Creech. High-quality airmen.
Manning	Manning under-resourced or CAP load too high	• We have a hard time getting proficient at our jobs because we don't have enough instructors. • Had 23 pilots a night. Now 18. Requirements are the same, though. • [It's] not possible for [the squadron to have a] break crew currently. • "As long as wars continue, the planes are flying, so at some point leaders need to just say NO. Operational units never say NO to those tasking them."
Tasking	Lack of breaks, inability to accomplish tasks due to lack of time	• We fly all the friggin time, constantly, never stops. • Whenever they surge us and surge us some more, we prove that we can do more with less and do more with less on a regular basis, things begin to drop. • I'm stressed. I'm the only instructor. I was training a student for eight hours. Then in the last two hours, I was asked more questions than all day. I was so all over the place, my brain was overworked. I was trying not to get too short-tempered with him. I was just telling him what to do. I had to stand up and take a deep breath because I was overworked. • We're not doing continuation training, decompression time, most of the requirements of what a squadron needs to be required to do. Every single one of those is red, except the one thing we are doing currently. Only a few of things have we ever seen before, so we can only do our job.
Scheduling	Scheduling/ station assignments too taxing, inconsistent, or inefficient	• I think everyone would agree that the shift work is not a great aspect of the job. • The human body is not ever going to be happy working from midnight to eight in the morning.
Training	Lack of training, instructors, or training opportunities	• We have a hard time getting proficient at our jobs because we don't have enough instructors • We slow roll a lot of the training so we don't have a lot of men. Our qualifications are not getting done.
Career Advancement and Retention	Lack of professional development or promotion opportunities	• Zero career progression, not a thing for us yet. • Encourage young enlisted to broaden their career progression, this requires time away from "flying" their aircraft. This would require operational units to slow their nonstop flying. RPAs never stop, there is never a down day for operators to decompress, train, or mentor. • 18X career pyramid has been blank. No one knows what to do with us after a certain point, has been this way for five years.

Compensation	Incentive pay is lacking/better opportunities outside the military	• Can make three times as much. Lots of money in private sector. • [Aviation incentive pay] is gone away now, the results of those will not be seen for probably another five years. You probably will have a manning issue in the future because of this drop in incentives.
Location	Dislike of the location or housing	• "Perfect location for the zombie apocalypse!" • [The worst part is] the drive, the drive, the drive. • A lot has to do with local community and will not support a growing Air Force base, not willing to accept any sort of drinking, Home Depot, Target. • A lot of the bases we can go to are bad locations. Here's probably the best, but the community as a whole has only bad choices.
Facilities and Services	Dissatisfaction with facilities on base	• I can't feel my toes, even though I wear warmers [in the Remotely Piloted Aircraft Operations Center]. • The other thing that kind of grinds my gears is that being a 24/7 operation, a lot of the support agencies are geared towards Monday–Friday. • It blows my mind that we have eight squadrons that are 24-hours operations, but there is not a single 24-hour service on this base. • They won't let us PT [physical training] test at Nellis, just because we're from Creech.
Support and Understanding	Lack of understanding by other groups	• But people do think we don't have a very hard job. For new lieutenants, it'd be tough to come from here and go somewhere else and be proud of what you've done. • The Air Force public affairs office never lets anyone know the value of what we do. • They want an RPA everywhere, so combatant command [COCOM] wants a drone on something, but doesn't realize the strain. • "How is our mission helping end the war(s)? With every IED [improvised explosive device] emplace we kill, are we any closer to ending the overall conflict? . . . Is there any end in sight?" • I don't know if the leadership of the Air Force understands the mission and lifestyle.
Duties Are Neglected	Not being able to complete other requirements	• Have to get office work done after nine hours [in the cockpit]. Can't get in shape. • You can't do admin stuff if you're working on mids because it's a huge pain getting it scheduled at Nellis. • I can't take care of admin.
Morale	Low morale, camaraderie	• I get burned out mentally from eight consecutive instruction days. • [The 18X] might not speak up, but they are very unhappy and they don't see any changes on the horizon. • "Seven out of the ten airmen I've had here are trying or are going to get out or have expressed extreme depression or talked of suicide."
Management	Problems with management or supervision	• Most people want to treat RPAs same as all other planes. Just like other planes, [one commander gave us the rule that we] need to use [a] piddle pack [while flying]. • You can get phone calls from colonels and generals [chewing you out] and you still have to fly the mission.

Health and Well-being	Health issues, from sleep to psychological strain	• Can be hard to "off someone" and then go back home and hug the kids. The transition is hard. • Everything is classified, everything that we do you can't talk to your friends, coworkers, and family outside of work. • I know a lot of people that need to talk to someone but won't do it on their own, because they don't want to hurt the rest and people shut down.

NOTE: Comments within quotation marks indicate that they were exact quotes pulled from the written responses. Comments without quotation marks are paraphrased from focus group discussions.

Positive Themes Expressed in the Focus Groups

Respondents expressed several positive sentiments—both prompted and unprompted—about their experiences in the RPA community. The percentages of participants that mentioned each sentiment in their written comment are listed in Table 3.2. The most strongly endorsed sentiment was an expression of reward or satisfaction surrounding the mission sets and their direct, important, and observable effect on national security. The second most strongly endorsed positive sentiment was camaraderie, including positive attitudes toward colleagues and working in a supportive team setting. Other responses included positive sentiments regarding work schedules (which were mentioned only by the subset of airmen who work regular 9–5 hours or who were on a Panama schedule), being near family, having well-meaning leadership, and developing valuable job skills, experience, and knowledge. [2]

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[2] *Panama schedule* typically requires four crews, each working 12-hour shifts. The first two crews (Team A) work the exact same schedule of days: two on, two off; three on, two off; and two on, three off. Then this schedule of days repeats, with one crew working days and one working nights the entire time. The second two crews (Team B) work the exact opposite days as those worked by the first two crews, with one working days and one working nights. Therefore, on days that Team A is working, Team B is off, and on the days that Team A is off, Team B is working. After a few cycles, all four crews switch from days to nights and nights to days. This schedule is especially desirable because it allows all four crews to have Friday, Saturday and Sunday off every two weeks.

	M-F	S/S	M-F	S/S	M-F	S/S	M-F	S/S	M-F	S/S	M-F	S/S	M-F	S/S	M-F	S/S
Crew 1																
Crew 1																
Crew 2																
Crew 2																
Key	Days	Nights														

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Table 3.2. Proportion Expressing Each Positive Sentiment

	% Mentioning	
Positive Sentiments	**AFSOC**	**ACC**
Mission: direct impact; see results of our efforts; mission is very rewarding	68%	50%
Camaraderie: the people I work with are close; working with and supporting my team	37%	17%
Schedule: (Panama) schedule is consistent/predictable	8%	12%
Family: I get to be near my family (deployed in garrison)	5%	4%
Leadership: our direct supervisors are good; they do their best	5%	4%
Skills: I get to work at the cutting edge; gain valuable skills, experience, and knowledge	6%	2%

Several positive statements were endorsed on the questionnaire scale items. Average ratings on these items are shown in Table 3.3. Most notable among these were perceptions of encouragement by leadership to learn new things and positive attitudes toward the job (liking the job and finding it rewarding), particularly among SOs. LR personnel provided less strong positive statements. Note that there were two different scales used in the questionnaire. One scale ranged from 1 to 5, in which 5 = strongly agree; the other scale ranged from 1 to 6, in which 6 = strongly agree. Results are color coded to show level of agreement; blue indicates agreement with an item and red indicates disagreement. The stronger the agreement or disagreement on average, the darker the color is. Cells in dark gray represent populations where sample sizes were too small to report statistics.

Table 3.3. Average Response to Scale Items Expressing Positive Sentiments

Structured Positive Sentiments	MAJCOM	18X	Other Pilot	SO	Intelligence	LR
Items on a 1 to 5 scale (color key)	1 = strongly disagree	2	3	4	5 = strongly agree	
I like my job.	AFSOC	4.1		4.5	4.1	3.3
	ACC	3.6	3.5	4.4		3.9
My job is rewarding.	AFSOC	4.1		4.5	4.1	2.9
	ACC	3.9	3.8	4.4		3.4
Items on a 1 to 6 scale (color key)	1 = strongly disagree	2	3	4	5	6 = strongly agree
I am encouraged by my unit leadership to learn new things.	AFSOC	5		5.2	4.7	4.1
	ACC	4.2	5.2	4.4		4.2
My unit's leaders reward performance fairly.	AFSOC	4.5		4.3	4.1	3.2
	ACC	3.8	4.5	3.6		4.3

Question	MAJCOM					
When deserved, my unit's leaders do a good job of recognizing people in all grades and types of jobs.	AFSOC	4.7		4.2	4.2	3
	ACC	4.6	4.3	3.9		4.1
I am sometimes asked how we can improve the way my work group operates.	AFSOC	4.8**		4.5	4.2	3.2
	ACC	3.8	4.3	3.9		4
I feel comfortable voicing my opinions and criticisms to my leadership.	AFSOC	4.4		4.5	4.2	3.2
	ACC	3.8	3.9	3.6		4.1

NOTE: Dark grey boxes indicate cells where the data were omitted due to small sample sizes. ** Statistically significant difference between MAJCOMs for a given occupation where $p < .01$.

Findings from the Stress and Burnout Measures

Despite the fact that respondents endorsed a variety of positive sentiments, the experience of stress and burnout were broadly evident across scale types. Before introducing the theme of stress in the focus groups, participants were asked to rate individually how stressful they find their jobs on a Likert-type scale from 1 (not stressful at all) to 7 (extremely stressful) using an item that was administered in a 2012–2013 study of stress and dissatisfaction in the intercontinental ballistic missile (ICBM) community (Hardison et al., 2014). After the focus group and at the end of the final questionnaire, they were asked about stress levels again, this time using a modified version of a scale published by Bray et al. (2009), enabling a descriptive comparison of percentage endorsement to that of an Air Force–wide sample.

In response to the first stress question, responses indicated that on average participants view their job as more than moderately stressful (see Figure 3.2). Two AFSOC groups, SOs and LRs, rated their jobs as significantly more stressful than their ACC counterparts. The response levels to the stress item observed in this study are in the same range as those found in the ICBM community. In that study, average responses to this item ranged from 2.7 for the facilities managers to 5.8 for the missile operators (Hardison et al., 2014).

In response to the later stress question ("How much stress did you experience at work or while carrying out your military duties?"), the percentage of each occupation group endorsing the highest option ("a lot") was substantial and was higher than the Air Force average reported by Bray et al. in 2009 (see Table 3.4 and Figure 3.3).

It is worth noting that the difference between the AFSOC and ACC LR participants was statistically significant in the response to this item. Nevertheless, we suggest caution in interpreting this difference for two reasons. First, the sample sizes for each group are still quite small ($n = 12$ in each group), which could contribute to instability in the group estimates. Second, the circumstances of the participants in each MAJCOM were substantively different in ways that could explain the stark differences in their responses. ACC participants were most likely individuals who were training to conduct LR activities. They may have viewed that training as a welcome break from the OPTEMPO of MCE operations, leading to low perceived stress levels in their current duties. AFSOC participants, in contrast, were members of a brand-

new squadron dedicated to LR activities. The squadron had just been activated and the LR crews were facing the added pressure of transitioning to and establishing a new squadron. That pressure was expected to dissipate after the squadron was up and running smoothly.

Figure 3.2. How Stressful Is the RPA Job Perceived to Be?
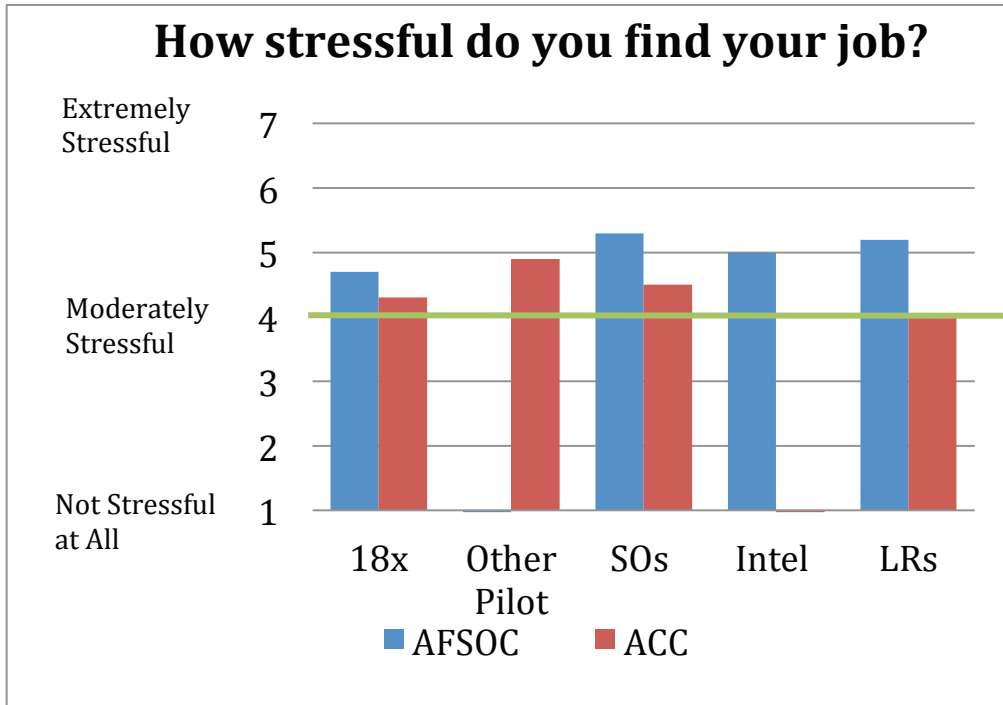
NOTE: None of the differences was statistically significant between MAJCOMs for a given occupation at *p* < .05. Scale anchors were 1 = not stressful at all, 4 = moderately stressful, and 7 = extremely stressful. Scores of 4 were anchored as moderately stressful. Scores above the green line represent average responses higher than moderately stressful.

Table 3.4. Percentage Endorsing "A Lot" on the Remaining Stress Items

During the Past 30 Days . . .		18X	Other Pilots	SOs	Intelligence	LRs	Bray et al., 2009
How much did stress at work interfere with your ability to perform your military job?	Air Force–wide						7%
	AFSOC	4%	—	**16%**	0%	**17%**	
	ACC	8%	17%	8%	—	0%	
How much did stress in your family life interfere with your ability to perform your military job?	Air Force–wide						14%
	AFSOC	9%	—	**21%**	8%	**25%**	
	ACC	**15%**	**17%**	**17%**	—	9%	

NOTE: None of the differences was statistically significant between AFSOC and ACC for a given occupation at $p < .05$. Cells in bold show groups with proportions higher than those reported in the Air Force as a whole. The stress items appearing in Bray et al. (2009) asked about the past 12 months. We elected to reduce that range to 30 days in order to increase memory accuracy, limiting direct comparison of results.

Figure 3.3. Percentage of Participants Reporting "A Lot" of Stress While Carrying Out Military Duties
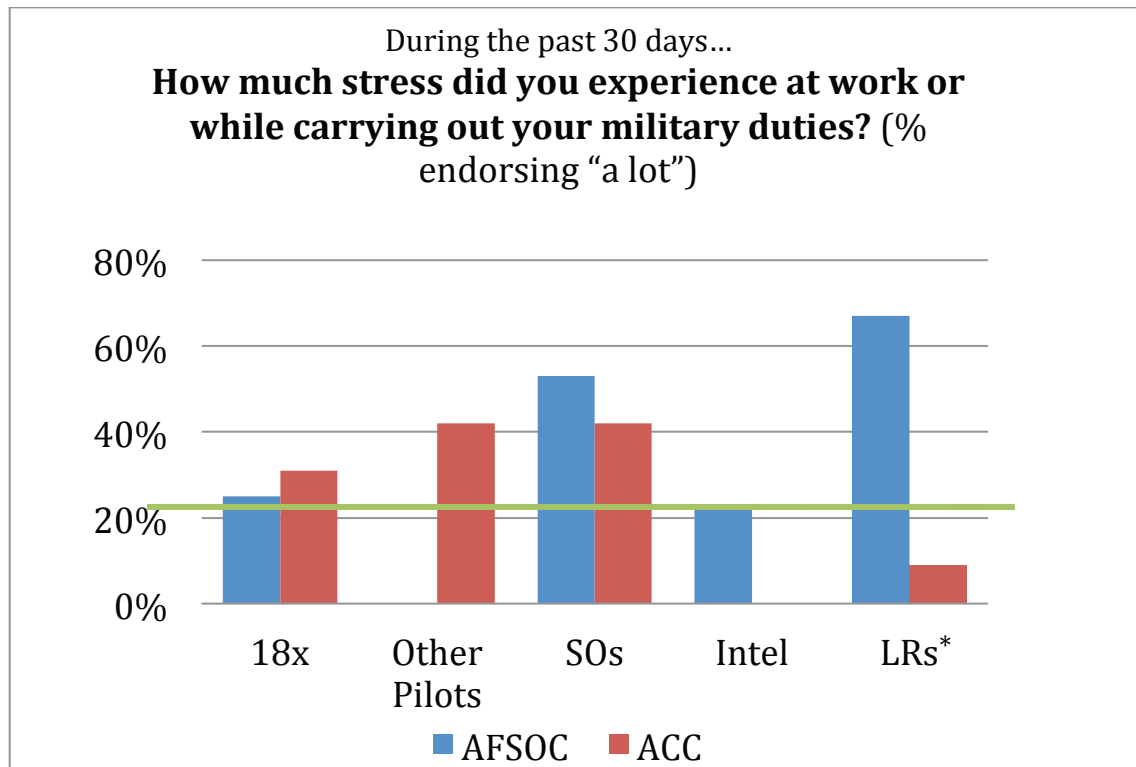
NOTE: Groups with a statistically significant difference between MAJCOMs ($p < .05$) are marked with an asterisk (*). ACC Intelligence and AFSOC Other Pilots were excluded due to small sample sizes. In Bray et al. (2009), 22 percent of the Air Force respondents endorsed "a lot" (the percentage is shown by the green line). However, that study asked about the past 12 months, whereas this study asked about the last 30 days.

As shown in Figures 3.4 and 3.5, responses to the Malach-Pines (2005) job burnout measure indicate that levels of stress within the RPA community are not ideal. On a positive note, over a third of participants did not show any signs of burnout. Nevertheless, approximately one-third of all respondents scored within the burnout range (i.e., receiving average scale scores of 4 or higher), and many others scored close to the burnout range, with average scores between 3 and 4. Although there are personnel who showed no signs of burnout, the fact that just as many are showing burnout is concerning.

Figure 3.4. Burnout by Occupation in ACC
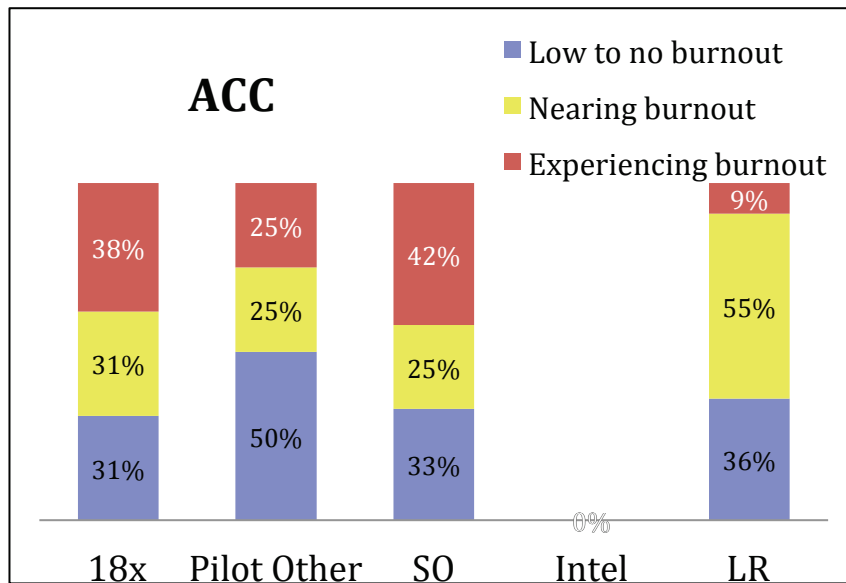
Figure 3.5. Burnout by Occupation in AFSOC
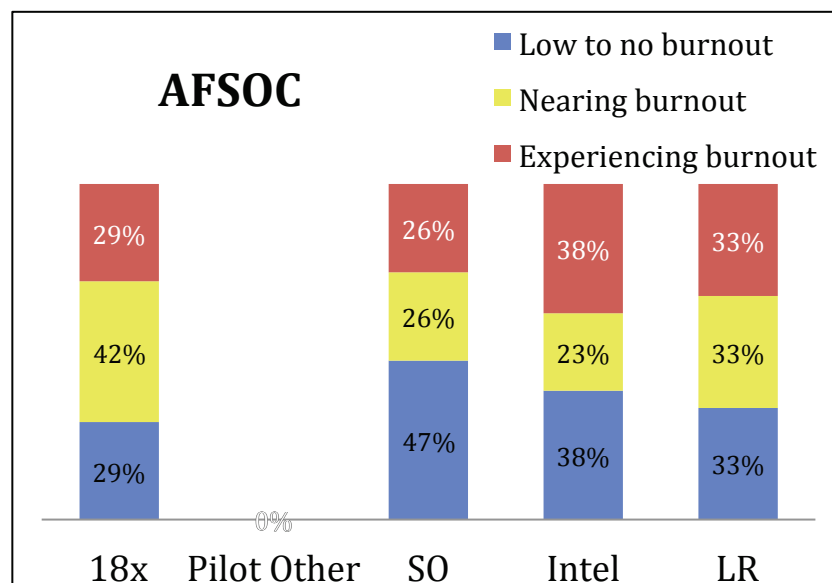
In general, it is believed that burnout develops after prolonged periods of stress in the workplace. Accordingly, time in the RPA career field should correlate with burnout levels. In other words, the longer personnel are in the career field, the more likely they are to develop burnout. For exploratory purposes, we examined the association between burnout scores and time in the RPA career field to test the hypothesis that increased time is positively associated with burnout. A positive relationship was found within AFSOC ($r = .30$, $p < .05$), but not within ACC ($r = -.07$, $p = .61$), and not when both groups were combined ($r = .11$, $p = .22$).

Nevertheless, because sample sizes are so small, we caution against overinterpretation of these correlations. It is possible that such a relationship might exist in ACC as well, but the sample sizes and range of participant experiences may not permit detection of that relationship in this study. In particular, it is worth noting that our ACC sample included instructors at Holloman AFB. Instructor positions are only provided to highly experienced personnel in the RPA community; the move to Holloman is also viewed as a long-needed break from the stressors of the RPA lifestyle. Given that breaks from the stressors of the workplace are known to be an important factor in preventing and reducing burnout, this could explain why no relationship was observed in the ACC data. However, because conducting multiple statistical comparisons in data with small sample sizes can lead to spurious conclusions, we did not pursue further exploration of within-MAJCOM data to test this hypothesis.

Negative Focus Group Themes

Respondents were explicitly asked to identify factors that they most disliked about the job and most wanted changed. For the discussion below, we grouped the themes into the following categories:

1. manning, tasking, and scheduling
2. training, career advancement/retention, and compensation
3. location, facilities, support, and understanding
4. other topics (including morale, management, health, and well-being).

Manning, Tasking, and Scheduling

As shown in Figure 3.1, manning, tasking, and scheduling concerns were at the top of the list of themes raised by our participants. Table 3.5 shows the proportion of personnel in ACC and AFSOC mentioning each theme.

Table 3.5. Percentage of the Sample Mentioning the Manning, Tasking, and Scheduling Issues

Theme	AFSOC	ACC
Manning: CAP load and other tasks are disproportionate to manning. Minimums not clearly defined, resulting in "mission creep."	83%	76%
Tasking: Not enough time to complete all necessary tasks; demanding schedule without enough breaks; deployed in garrison is harder than overseas because administrative and training duties added on top of a full load of mission duties.	58%	51%
Scheduling: Station assignments, shift work, and rotation schedule are strenuous, inefficient, or unpredictable.	55%	57%

The most consistent finding across occupations in both AFSOC and ACC was a concern about not having enough personnel to meet work demands. More than three quarters of the participants in ACC and AFSOC expressed a belief that, under current workload conditions, the level of manning is too low to sustain long-term mission effectiveness. Respondents noted that minimum numbers needed to perform the work were not clearly defined or were unrealistic. This view applied to both the crew-to-CAP ratio and to other necessary activities, such as training and administrative duties. During the focus group discussions, some respondents also lamented that increases in manning in the past have historically only led to proportionate increases in mission demands, which they described as "mission creep." For example, they speculated that if the crew-to-CAP ratio was raised, then the supported units might simply expect more work to be accomplished per CAP, which would negate any reduction in OPTEMPO from the increase in programmed manning. The following is an example of one comment about the overuse of rapid reaction forces:

> Supposed to be 30-day max contract, but ends up being up to six months. Crisis capability. When we get some theater level commands who don't get that, and it stretches out . . . There's no backfill, so people have to get redeployed. If you're rapid reaction, you have one hour to grab your bag and say, "Honey, see you in 30 days," but it has turned into several months because of mismanagement.

Concerns about not having enough staff to accomplish the work were also captured by structured questionnaire items. On average, respondents from all occupation groups strongly disagreed that they have enough people to accomplish their job. Figure 3.6 shows the proportion of respondents in AFSOC and ACC agreeing with the item relative to the Air Force–wide proportion reported in the 2012 Air Force climate survey (illustrated with a green bar). Figure 3.7 shows the distribution of participant responses by job type. Both figures show that manning appears to be a great concern in the RPA community, and Figure 3.7 suggests that all occupations groups in the study share this concern.

In addition, participants strongly agreed that they were working too much with too few staff. As shown in Table 3.6, this pattern was especially evident among AFSOC LR personnel, who rated each of these items more strongly than their ACC counterparts (see Table 3.5). However, it is again important to note that LR personnel in AFSOC had just recently begun a significant

reorganization process, going from an LR detachment into a separate squadron, the 12th Special Operations Squadron. Although this reorganization was done with the intent of improving the quality of life for the LR personnel and reducing their workload, the change occurred just before their participation in the survey. As a result, the spike in their responses could reflect a hectic reorganization. In addition, as mentioned previously, the ACC LR personnel were primarily from the 11th Reconnaissance Squadron, which is the LR FTU. They would rarely be involved in shift work and would not be deployed to operate LRs. As a result, they would likely view their work as a welcome break from the MCE OPTEMPO, which could easily account for their differences in perception. Given this information, we again caution against overinterpretation of the differences between ACC and AFSOC for the LR population. It would instead be advisable to collect LR responses to these items at a later date, after activities in the new squadron have stabilized, and with a more comparable LR population (i.e., those who are returning from deployments in support of combat operations).

All groups strongly endorsed items about shiftwork issues and overtasking issues (i.e., working outside of official work hours and working more hours than most airmen), as also shown in Table 3.6. During the discussion, respondents expressed frustration with a lack of time to complete essential tasks, a lack of adequate within-shift breaks to eat and use the restroom, and a lack of between-shift breaks to meet minimum recovery and decompression requirements. Timing of schedules, shift work, and the rotation of shifts common to RPA duties were perceived as very strenuous, inefficient, or unpredictable by most respondents. In particular, people expressed concerns over

- rarely having weekend days off to see friends and family
- missing friends and family because swing and midnight shifts led to conflicting schedules (i.e., when children and spouses were home and awake, personnel were either gone or sleeping)
- not getting important holidays off
- not being able to run basic errands and set up needed appointments because they were not operating on normal business hours
- trouble sleeping resulting from the shift schedules.

There was extended discussion in nearly all of the focus groups about how to eliminate the shift work entirely. Participants believed that MCE crews could easily be stationed anywhere in the world. They explained that if part of the force was located overseas (e.g., in Guam or even stationed in Hawaii) and part was stationed on the east coast of the United States, the time differences alone could enable the elimination of the midnight shift and possibly the swing shifts, allowing the entire force to work more normal hours.

Other suggestions from participants included asking for volunteers to serve on the midnight and swing shifts because some might prefer those shifts. Currently, all personnel are required to rotate through all shifts, regardless of their preference. Some commented that other career fields, such as maintenance, already allow people to volunteer for less-desirable shifts. A volunteer

system could reduce sleep problems associated with rotations across day, swing, and night shift; increase predictability for friends and family, as personnel would stay on the same shift schedule indefinitely; and increase job satisfaction for those who are able to work during their preferred hours. However, it is important to note that much of the interesting RPA work takes place during contiguous United States (CONUS) nighttime hours, which correspond to daytime hours elsewhere in the world. As a result, personnel serving on CONUS nighttime shifts would likely gain more experience than those serving on CONUS daytime shifts. Such experience differences would be one important issue to consider in deciding whether to stop shift rotations.

During the discussions, participants also expressed concern that these manning, tasking, and shiftwork-related challenges were likely to have other downstream negative consequences for performance, health, and well-being. We explore these topics in later sections of this chapter.

Figure 3.6. Percentage Agreeing "We Have Enough People in My Work Group to Accomplish the Job"
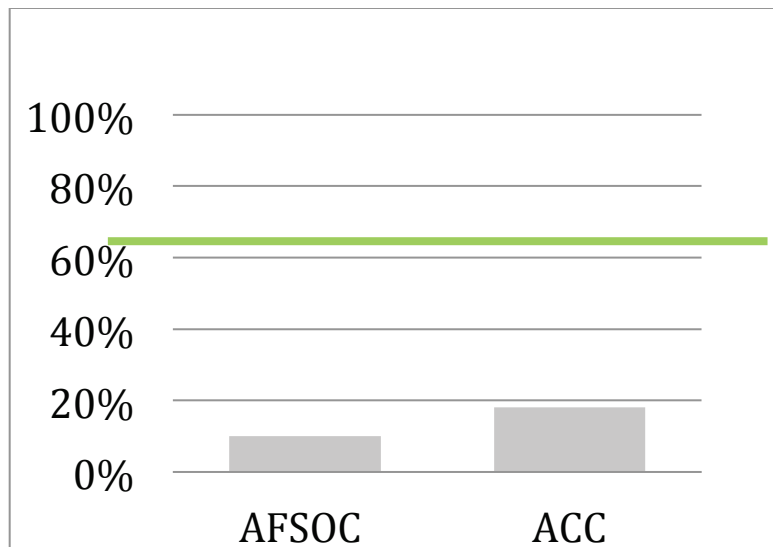
NOTE: A 2012 Air Force Climate Survey estimated Air Force–wide agreement with this item as 65 percent. This comparison benchmark is shown as a green bar in the figure.

Distribution of Responses by Job Group

Legend:
- Strongly Disagree
- Disagree
- Slightly Disagree
- Slightly Agree
- Agree
- Strongly Agree

Categories (top to bottom): LR, Intel, SO, Other Pilot, 18X

X-axis: 0% — 50% — 100%
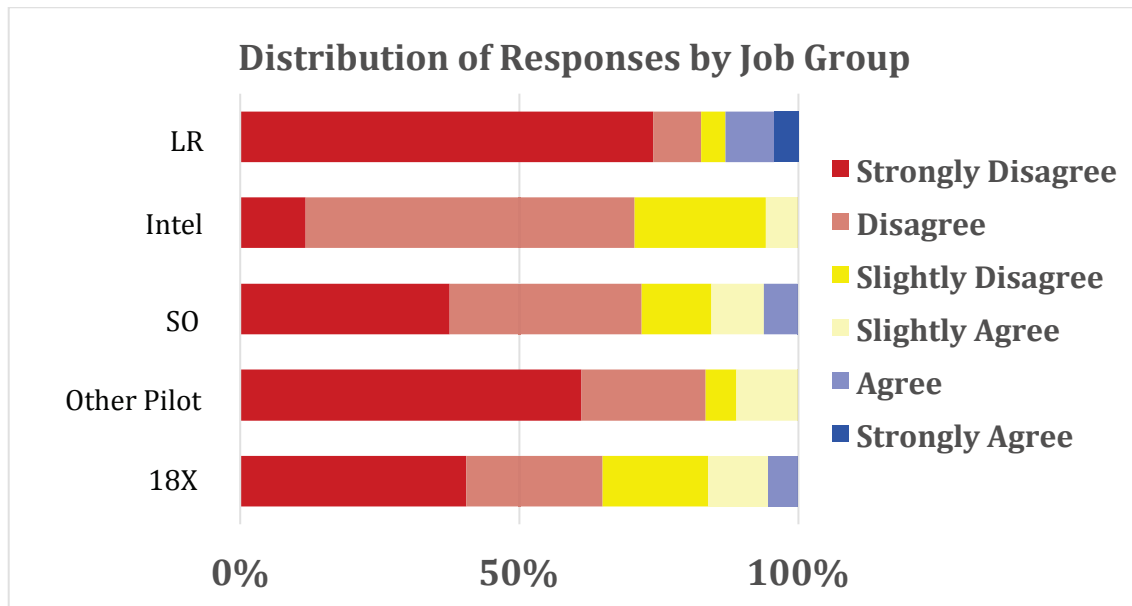
Table 3.6. Average Questionnaire Responses on Items Addressing Manning, Tasking, and Scheduling

Question	MAJCOM	18X	Other Pilots	SOs	Intel	LR
How often each statement applies (color key)	Never = 1	Rarely = 2	Sometimes = 3	Most of the Time = 4	Always = 5	
Working extra time outside of my official work hours	AFSOC	3.9		3.5	3.9	4.3*
	ACC	4.2	4.2*	4.2		3
Working shifts that last for more than 8 hours	AFSOC	4.7		4.2	4.2	4.8*
	ACC	4.8	3.8	4.5		3
How much the participant agrees (color key)	Strongly Disagree = 1	2	3	4	Strongly Agree = 5	
We are understaffed	AFSOC	4.8		4.6	4.7	5.0*
	ACC	4.8	4.9	4.5		4.2
I work more hours than most airmen	AFSOC	4.7*		4.2	4.2	4.8*
	ACC	4	4.2	4.5		2.8

NOTE: * Statistically significant difference between MAJCOMs for a given occupation where $p < .05$.

Training, Career Advancement/Retention, and Compensation

As shown in Table 3.7, a sizable number of focus group members expressed dissatisfaction with training opportunities and career advancement and retention. Availability of certain forms of compensation was mentioned much more frequently within ACC, however. This is discussed further below.

Table 3.7. Percentage of the Sample Mentioning Training, Career Advancement, and Compensation Issues

Theme	AFSOC	ACC
Training: Opportunities are poor or lacking. Do not get adequate supervision or feedback; qualifications expire; responsibilities exceed training, creating a risk of mistakes. Not given enough advanced planning/preparation to work effectively with our supporting units.	35%	58%
Career Advancement and Retention: Professional development and promotion opportunities lacking or inconsistent. Most want to deploy, take temporary duty (TDY), permanent change of station (PCS), or leave the Air Force so they don't have to be here, but TDY and PCS opportunities are lacking. Leadership turnover rates are unsustainable and disruptive.	39%	34%
Compensation: Benefits, incentive pay, bonuses, or allowances to compensate extra efforts and hardships are lacking. We can get higher pay and better quality of life in a civilian job.	8%	40%

Across both MAJCOMs, but especially in ACC, participants expressed concerns in their written comments that necessary opportunities to train (e.g., continuation training; tactics, techniques, and procedures; simulations) were unavailable, and that when training does occur, it often lacks adequate supervision or feedback from a qualified trainer. One item on the questionnaire in particular at least partially confirmed these concerns. Figures 3.8 and 3.9 show that most participants agreed they do not get the same level of preparation and autonomy as their peers in the traditionally manned aircraft career fields. Interestingly, the figures also show that levels of agreement with this item were highest among the "other pilots" group in our data. These "other pilots" are RPA pilots who worked in other rated communities as pilots or navigators before serving in the RPA community. This indicates that especially those with firsthand experience with a traditionally manned aircraft platform agree that the RPA community lacks training.

However, other questionnaire data (shown in Table 3.8) presented a more nuanced picture. For example, in general, most participants agreed they had been trained adequately for the job they were doing. Pilots in ACC tended to agree with the statement "I don't get enough opportunities to fly with an experienced crew member or instructor," whereas pilots in AFSOC did not. For 18X pilots, the difference between ACC and AFSOC was statistically significant.

During the discussion, some participants explained that their responsibilities often exceed their training, increasing the probability of performance errors. Similarly, concerns were expressed that they are not provided enough advanced preparation (by way of mission briefings and training) to work effectively with their supported units. Example comments were as follows:

Formal training is good. [Continuation training] is severely lacking.

If it's mission or training, mission wins out every time.

Figure 3.8. Average Level of Agreement with the Item "We Don't Get the Same Level of Preparation and Autonomy as Manned Assets Are Given"
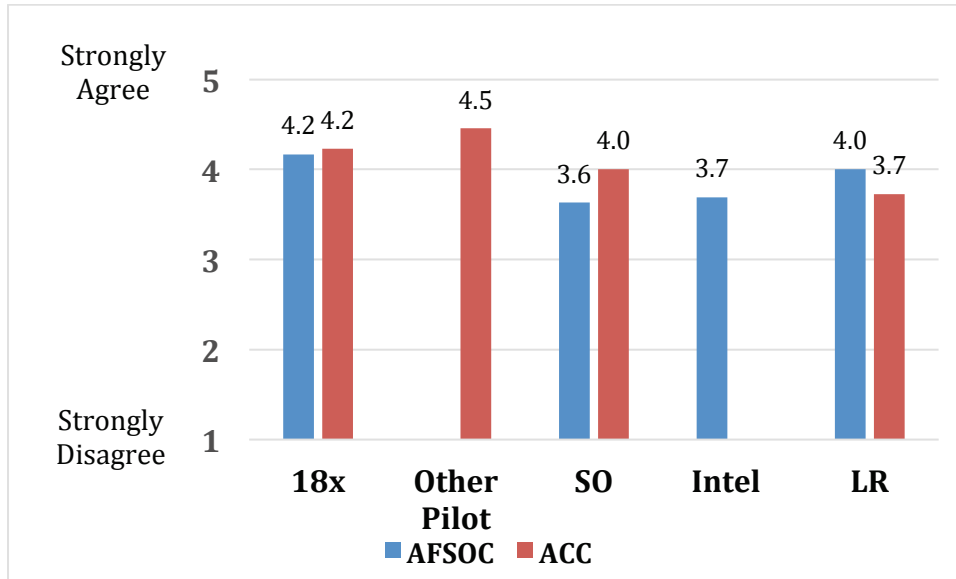
Figure 3.9. Distribution of Responses to the Item "We Don't Get the Same Level of Preparation and Autonomy as Manned Assets Are Given"
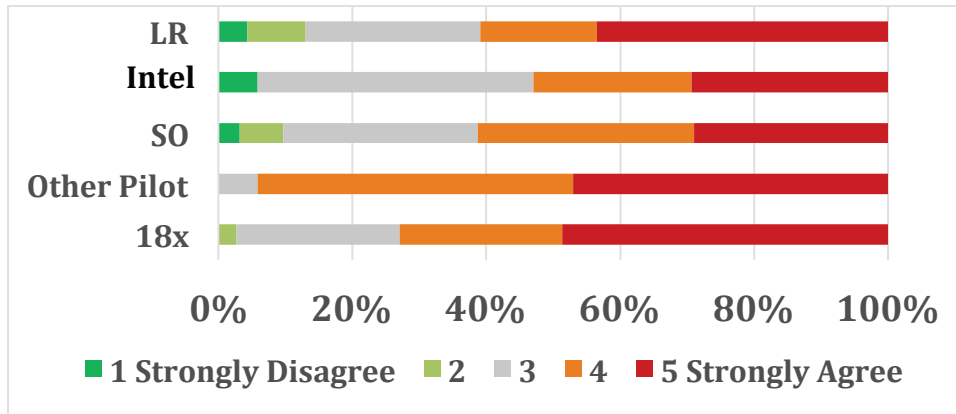
Table 3.8. Average Response to Scale Items Addressing Training, Career Advancement, and Compensation

		18X	Other Pilots	SOs	Intel	LR
Items on a 1 to 5 scale (color key)	1 = strongly disagree	2	3	4	5 = strongly agree	
I don't get enough training or education to advance in my career	AFSOC	3.3		2.8	3.1	4.1*
	ACC	3.2	3.7	3.6		2.1
People in my job have much lower chances of being promoted than people in other Air Force jobs	AFSOC	3.3		3.1	3	3.7
	ACC	3.9	3.8	3.2		3.5
I wish I had a different job in the Air Force	AFSOC	2.9		1.8	2.7	3.1
	ACC	3.2	3.4	3.2*		2.9
I don't get enough opportunities to fly with an experienced crew member or instructor	AFSOC	2.4		2.1	2.7	3.3*
	ACC	3.7*	4.7	2.7		2.3
We don't get enough constructive feedback from supported units	AFSOC	3		2.9	3.2	2.9
	ACC	3.2	3.3	3		3.1
Item on a 1 to 6 scale (color key)	1 = strongly disagree	2	3	4	5	6 = strongly agree
I have been adequately trained for the job I am expected to do.	AFSOC	4.8*		4.8	4.4	2.6
	ACC	3.6	4.1	5.1		4.8*

NOTE: Dark grey boxes indicate cells where the data were omitted due to small sample sizes. * Statistically significant difference between MAJCOMs for a given occupation where $p < .05$.

Career advancement and retention-related concerns were also discussed. Participants reported that professional development opportunities or promotion opportunities were lacking, possibly because of the relative newness of the career field. Many sought to use deployment, TDY, PCS, or other forms of leave as a means to extract themselves from what they perceived to be a stagnant career placement. Turnover among leadership, they commented, was much greater than that of the rest of the workforce, causing discontinuity and disruption. Some respondents reasoned that the best leaders leave "because they can," resulting in unsustainable shortages. Concerns about turnover among leadership were most frequently mentioned among AFSOC intelligence personnel, who had seen repeated turnover in their direct supervisors. Some example comments follow.

> The promotions to majors and lieutenant colonels are probably lower in the RPA force, and it's for the same reasons I laid out before, we can't get the billets we need to get the promotions.

> I've had four supervisors since I've been in the [Remotely Operated Aircraft Operations Center]. Swap out too often. Causes a lot of problems for me getting qualifications done.

> Your best guys are the ones who leave because they have better outside options. Hard to replace.

Some respondents raised the issue of compensation during the focus groups; however, this was discussed most frequently in ACC at the Creech AFB locations, where members of the RPA community used to receive extra pay to compensate for the long commute. This issue of the long commute and the lack of extra pay to compensate for it accounted for much of the difference between ACC and AFSOC on this issue in the written comments. Those who did discuss pay issues during the focus group (within both ACC and AFSOC) emphasized that if their various other work-related concerns could be addressed, additional financial benefits might not be necessary, but until then, some type of incentive to motivate their efforts or (particularly at Creech AFB) a way to reimburse their costs is the least that the Air Force could do. Without such compensation, some respondents commented that they could get higher pay and a better quality of life in a civilian job. The following are examples of these other types of pay and compensation comments that were raised during the discussion.

> Can get six-digit salary on the outside.

> Retention pay is inadequate. Need research on effects of actions on downstream retention.

Location, Facilities, Support, and Understanding

Two other major themes raised in the written comments were the geographic location of the base and the lack of facilities and services (see Table 3.9). Support and understanding by those outside of the RPA community was not mentioned in the written comments by as many participants; however, the issue did commonly come up in the focus group discussions as another area of dissatisfaction with the job.

Table 3.9. Percentage of the Sample Mentioning the Location, Facilities, Support, and Understanding

Theme	AFSOC	ACC
Location: Location, housing, and residential life are undesirable, remote, expensive or unsafe. Local community does not support us. Commute is long.	69%	60%
Facilities and Services: Facilities, services, and amenities on base are lacking; not 24/7 (e.g., finance, medical, recreation, commissary, childcare). Equipment is old or broken.	51%	40%
Support and Understanding: We are misunderstood, marginalized, or misutilized by the Air Force or our supported units. There is a lack of communication between groups. I don't know how our efforts impact larger mission objectives. We are misunderstood by the local community.	20%	19%

With respect to location, participants at all locations expressed dissatisfaction. Cannon AFB personnel tended to describe Clovis as a town that did not support the military community and has little to offer their families in terms of work and leisure. They emphasized feeling unsafe in Clovis, unable to afford a home, and unable to access destinations outside of Clovis because of

its remote location. Participants who worked at Creech AFB expressed somewhat fewer concerns about the nearby town than those at Cannon AFB. Members of the pilot community (the 18X and LR personnel) tended to have more positive views of ACC locations (see Figure 3.10) and the more negative views of the AFSOC locations. However, ACC personnel did discuss several location-related problems during the focus groups, including that the commute places additional pressure on their already-tight schedules, imposes a financial burden, and puts drivers at increased risk; they also noted that schools in the Las Vegas area are not highly rated. Those at Holloman AFB were not particularly fond of the location either; however, they were universally grateful to have a break from the other two base locations.

The following are example comments from the discussions:

> For morale, operate out of a nicer location. Could be anywhere in the world.

> "Being stationed here [at Cannon] feels like a punishment."

Figure 3.10. Average Response to the Item "How Much Are You Bothered by 'Having to Live Here"

NOTE: * Statistically significant difference between MAJCOMs for a given occupation where $p < .05$.

Concerns about facilities and services were also commonly raised. What respondents considered to be basic services (e.g., commissary services, financial services, child care, medical services, recreation) were unavailable during their shift rotation or reportedly did not offer enough quality options. Some ACC personnel indicated that the lack of onbase services (e.g., medical facilities) meant a 48-mile commute to Nellis AFB each time they had an appointment, which negatively affected already-tightly scheduled assignments at Creech AFB. Other respondents raised concerns about the condition of their work equipment, including software that was not up to date or optimized for their uses. For example, the following comment discussed the limitations of the simulators.

> What I'm trying to fight right now, there are only certain areas we can work in, while other areas are just terrain, so there's very limited places where it's

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> realistic. On the magic carpet terrain we can see things too easily. Especially for the SOs, it's way too easy for them to see stuff. We say we need better ways to train and operate, but we get the answer that it's going to take two years. I'm currently trying to find if I can make the model on my own time with the program.

Others address medical and family care issues.

> Child care hours are not supportive. Anything outside the hours, I have to provide child care for.

> If you have an appointment at Nellis, you are still expected to come back all the way up here. Nellis is the hub for everything. Anything different than a normal checkup.

Although only about 20 percent mentioned a lack of understanding by others in the Air Force in their written comments, respondents did consistently raise the issue more generally during the focus groups. They felt that those in the RPA community are the "red-headed stepchild" of the Air Force, meaning that they feel misunderstood, marginalized, or misutilized by the Air Force and/or supported units. This was a recurring theme during discussion, forming an undercurrent of much of the dissatisfaction. They described a clear lack of recognition of their efforts by leadership elsewhere in the Air Force and by their peers in other rated career fields. They commented that others believe their job is just like playing video games and that many are unaware of how much skill is required to fly RPAs. Many also commented that the public does not understand their efforts either. Comments about protests at the base gates came up in the discussions at Creech AFB as an illustration of how RPA personnel are often seen as villains in the public's eyes. Lastly, some respondents also felt in the dark about how their efforts affected larger mission objectives, limiting their effectiveness and motivation. Example discussion comments included:

> We're the red-headed stepchild. Fighter pilots will go out of their way to call us operators and not pilots.

> I think what we're doing in the 42nd is a complete waste of time [mission]. As Afghanistan winds down there's nothing to do, but we're still there burning holes in the sky, doing very little.

Scale responses were consistent with such sentiments, revealing, for example, high endorsement of the statement that "Other people in the Air Force don't understand how important our work is" (see Figures 3.11 and 3.12).

Figure 3.11. Distribution of Responses to the Item "Other People in the Air Force Don't Understand How Important Our Work Is"
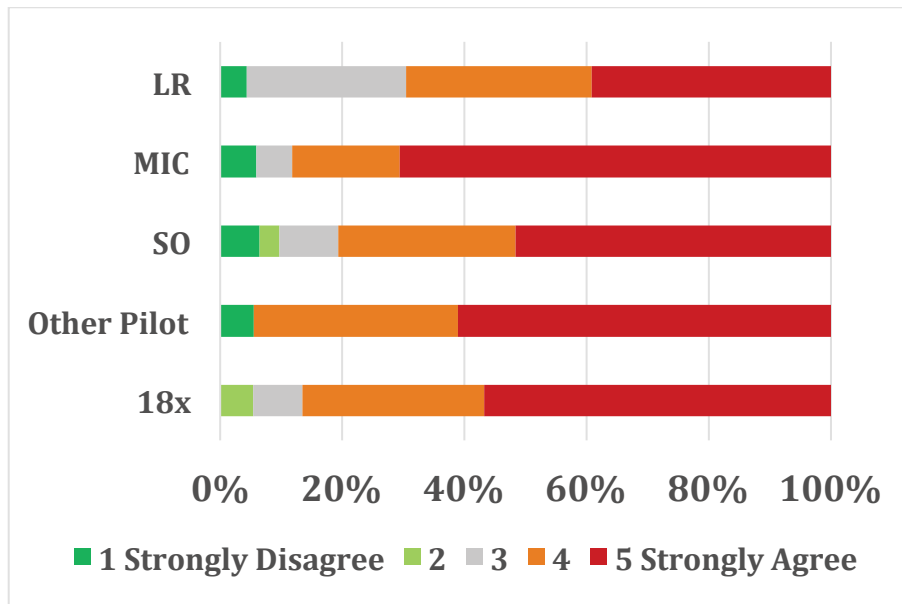
Figure 3.12. Average Agreement on "Other People in the Air Force Don't Understand How Important Our Work Is"
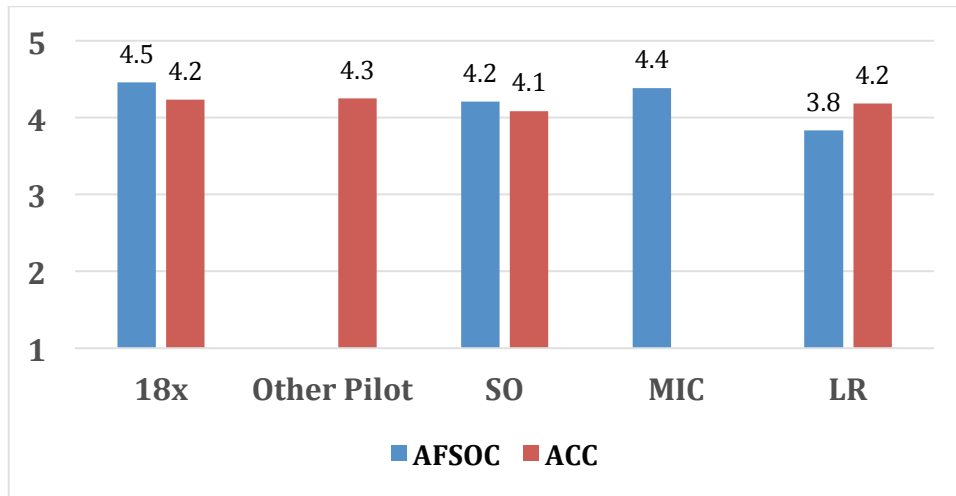
Morale, Management, and Health and Well-being

Several additional concerns were raised in the written comments that did not fit into a larger theme or spanned multiple themes. These are displayed in Table 3.10.

Table 3.10. Percentage of the Sample Mentioning Morale, Management, Health, and Well-being Themes

Theme	AFSOC	ACC
Duties Get Neglected: Administrative duties, finance, medical, and other appointments get neglected.	37%	28%
Morale: Morale and camaraderie are low; people are suffering from job burnout.	23%	17%
Management: Management/supervision is lacking, inconsistent, or otherwise problematic. Supervisors treat us unfairly. We are too micromanaged. I do not feel free to express ideas to supervisors.	10%	13%
Health and Well-being: My job causes significant problems related to fatigue, sleep, and mental health.	13%	8%

Around 30 to 40 percent of respondents mentioned that essential duties often are neglected because of their heavy schedules. These duties include administrative paperwork, financial planning, and medical and other such appointments. Respondents partly related these problems to issues associated with insufficient manning; however, shift work was also cited as a major contributing factor during the focus group discussions.

Although the majority of respondents had positive comments about leadership and management, some felt that management and supervision were lacking, inconsistent, or otherwise problematic, citing examples of being treated unfairly, micromanaged, or held to unrealistic standards. Example comments included the following:

> Leadership here put mission before people. Feedback is nonexistent from a leadership perspective.

> [Leaders] who come from other flying units arrive with an idea or mentality of how things should work. Do it my way even though it may not work.

One questionnaire item, as shown in Table 3.11, captured attitudes about negative management experiences. As shown in the table, on average, there was slight agreement with of the statement "we are micromanaged by supported units"; scores, however, did not differ by MAJCOM.

Table 3.11. Average Response to Scale Items Addressing Morale, Management, Health, and Well-being

How often does the following apply to you?	MAJCOM	18X	Other Pilots	SOs	Intel	LR
Items on a 1 to 5 scale (color key)	1 = strongly disagree	2	3	4	5 = strongly agree	
We are micromanaged by supported units.	AFSOC	3.6		3.4	3.3	4.3
	ACC	3	3.4	3.7		3.5
I don't get enough sleep because of my shiftwork.	AFSOC	4.1		3.4	3.4	3.5*
	ACC	3.7	3.9	4.3*		1.5

NOTE: * Statistically significant difference between MAJCOMs for a given occupation where $p < .05$. Text in parentheses indicate the extent to which the item "applies" to the respondent with a scale range of 1 to 5, and the extent to which the respondent "agrees" with the item with a scale range of 1 to 6.

Some respondents also discussed how the experience of stress has personally affected them. These individuals expressed a loss of satisfaction with their job, a loss of camaraderie with their team, and lowered morale. Some specifically mentioned feeling burned out from persistently stressful job conditions. Others reported that their job causes problems for their health and well-being, as manifested by issues with fatigue, sleep, and physical and mental health. Attempts to treat these problems have sometimes been met with resistance, as in the case of policies against the use of sleep aids. For example, "Medical treats me like a drug seeker when I ask for sleep aids."

Several well-being topics were captured by the Malach-Pines burnout measure described above. That measure included items such as how often the person feels "tired," "depressed," "weak," and has "difficulties sleeping." In addition to addressing those well-being questions, respondents indicated the extent to which they endorsed the statement "I don't get enough sleep because of my shiftwork." Generally, respondents tended to indicate that this statement applied to them sometimes or most of the time (see Table 5.10). The only exception to this was the ACC LR group, which, on average, reported that this applied to them rarely or never. This makes sense, as the 11th RS is the LR FTU and does not do shift work like the MCE crews.

4. Exploring a "Dwell" Concept for the RPA Force

This chapter addresses the second research question posed in our study: "Should there be a deploy-to-dwell concept for the RPA career field?" We addressed this issue in two ways. First, we explored the concept of being deployed in garrison with focus group participants and amassed all of the lifestyle and workplace issues they raised during any part of the focus group discussion that define the stressors associated with being involved in combat operations. Second, we explored the language in existing deploy-to-dwell policy to determine its applicability to the RPA community.[1] Based on our findings, in this chapter, we make recommendations regarding how the Air Force might approach establishing a deploy-to-dwell concept for the RPA force.

Focus Group Findings on the Characteristics of Being Deployed in Garrison

During the focus groups, we asked participants to provide their thoughts about being deployed in garrison. Participants identified several areas of similarity and differences between traditional concepts of deployment (i.e., away from home station and typically outside the United States) and deployment in garrison.

Differences from Traditional Deployments

The first difference that participants acknowledged was the fact that MCE pilots' lives are not in imminent danger, as are those of many deployed airmen. They did point out that they are considered potential homeland targets because of the work that they do, so conducting combat operations in garrison is not danger-free. But they do realize that, even for LRE personnel (who are physically deployed) and MCE personnel at home station, there is zero potential to be injured or killed in a plane crash or to be shot down, which is certainly possible in the other rated career fields. Although not emphasized by our participants, it is also worth noting that some Air Force personnel in other career fields who are deployed in support of combat operations are not in harm's way on a daily basis during their deployment; therefore, imminent danger is not the sole differentiating factor between those who are physically deployed and those who are not.

The second difference discussed was that those who deployed in garrison get to go home to their families at the end of the day. This point was emphasized most strongly by participants who had past deployment experience in a different career field. Those with past deployment

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[1] Portions of the material presented on this topic were adapted from an unpublished report on establishing a dwell concept for RPA personnel, which was written in fulfillment of an academic requirement and submitted to Air University during the course of the project (Larson, 2015).

experience commonly expressed being grateful that they would not need to leave their families. Although some mentioned this as a benefit of being deployed in garrison, those who had never deployed in support of combat operations often expressed disappointment that they were not getting to travel the world like their peers.

We also heard repeatedly that getting to go home to families each day was not as beneficial as it seemed. Participants explained that because of the shift work and high OPTEMPO, they rarely see their friends and families. On night and swing shifts, they are gone or sleeping during the hours when their families are home and awake. They also rarely share a weekend or holiday off with them. If participants are working night shifts, changing their sleep schedule to share time with friends or family during the day can disrupt sleep patterns for the remainder of the week, putting them in a difficult position. Given the shift work, the weekend work, and the holiday work, families feel neglected. The servicemember is present in the home, but unavailable to attend important family events (e.g., school recitals, children's sports games), unable to help out with daily child care, and unable to contribute to common parenting activities that require following a regular schedule (e.g., coaching a child's sports team). Our participants explained that this is even more burdensome on the families than a physical deployment because their families see them every day and therefore expect them to be able to contribute. The children especially do not understand it. This situation leads to daily home life pressures and conflicts for those deployed in garrison that are not felt by those deployed away from their families. Participants also noted that there is no end in sight to the shift work for the RPA personnel, which further adds to the family strain. At least with a physical deployment, families know the servicemember will return at some point and be able to spend time with them. As a result, many participants said they would rather deploy and be physically distant for a prespecified period of time.

Another difference raised by participants was that spouses of physically deployed personnel get a great deal of formal and informal support (e.g., military deployment services; support from friends, family, and community), whereas those deployed in garrison typically do not. People commented that child care resources are unavailable for single parents, and some found it more challenging to maintain friendships and other types of relationships because of the shift work.

Given the variety of family issues associated with in-garrison deployment, many of the focus group participants revealed that they would happily volunteer to deploy as part of an LRE element because they viewed deployed LRE operations as a "break" compared with in-garrison operations.

Another difference mentioned by participants is the burden of additional noncombat duties. Although the in-garrison force is operationally employed and supports combat daily, crewmembers explained that they still have to deal with all the normal day-to-day activities of the traditional nondeployed institutional force. Unlike traditionally deployed airmen, they are responsible for innumerable administrative overhead duties, such as awards, decorations, physical fitness tests, local exercises, and inspections. Our study participants discussed the lack

of 24-hour support from local base agencies, which are not tailored to support ongoing 24/7 combat operations as they are at typical overseas deployed locations.

Similarities with Traditional Deployments

Based on our focus groups, we also identified a few factors related to the involvement of in-garrison combat operations that are similar to the stressors faced in a traditional deployment.

One area of similarity is the OPTEMPO of the work. RPA personnel are engaged in 24/7/365 combat operations, meaning their work is never-ending. They fly missions all day, all night, every weekend, and every holiday, just as others might when deployed. The mission comes first, and as a result, they have found themselves being called upon to do more and more because the mission demands it. They described themselves as being in a never-ending surge. This surge mentality is more akin to working in deployed combat environment than it is to working at a home station.

Another similarity is the positive mission impact. Our participants wholeheartedly agreed that one of the best parts of their job is their direct involvement in combat operations. In fact, their work is often so central to mission success that they have far more direct mission impact than personnel in other rated career fields—and they have that impact on a regular basis. This was another aspect of the work that they viewed as highly similar to being deployed on the front lines. They are issued direct orders by very high-level military leaders, and they get to see the direct and immediate results of their efforts in vivid high definition.

At the same time, the mission impact leads to two additional similarities. The gravity of their actions and a deep level of responsibility accompany the work. Mistakes can have a direct and immediate mission impact on ongoing combat operations. In addition, crews participate in and are immersed in the full spectrum and violence of war on a daily basis. This can lead to significant psychological consequences from combat exposure that are on par with those experienced by personnel on the ground.

First, the pressure to perform can be high. Because all of the RPA activities are on an electronic feed, operators' actions are on display on computer monitors, with many people watching the activity live. The electronic feed can also be replayed over and over, something that often occurs when the mission does not go as planned. When lives on the ground are at stake, it is common to have very high-level leaders in the supported units watching the RPA operator's every move as the operator executes the orders. In those cases, there is a very real potential to cost lives with a mistake, and there is a high likelihood that it will happen in full visibility of high-level leadership. All of this scrutiny and responsibility creates a very high-pressure work environment. This level of pressure and responsibility for the lives of others may be akin to (or even exceed) the pressures faced by some personnel during a traditional deployment.

Second, the RPA force is unambiguously engaged and immersed in combat on a regular and ongoing basis. As a result, the force must deal with many of the same mental and psychological

aspects of combat that other combat forces experience. This finding is consistent with previous research. A report by Chappelle et al. found that

> RPA operators are showing signs of psychological distress as a result of the work they perform. Much like their counterparts who deploy directly to combat zones, RPA operators make life or death decisions of enemy combatants and bearing witness to the consequences of their decisions and operations they surveil (Chappelle et al., 2012).

The RPA community often surveils people for long periods of time, getting to know their targets' families, friends, and communities along the way. When strikes do occur, the RPA operators observe the death itself and the grieving of the family afterward. This often occurs close up, in vivid high-definition video.

Negative Factors Associated with RPA Duty

One notable difference in the combat exposure, however, is that the RPA personnel leave after such strikes and go home to face their families on the same day. As explained by participants, immediately transition to dealing with day-to-day family issues (like running errands or doing dishes) on those days can be hard. In contrast, those who are physically deployed have much more time to distance themselves from combat exposure. The families of those physically deployed also expect that their servicemember will need an adjustment period after returning home. In the RPA community, no such adjustment period and no time to distance oneself from combat exposure exists. Although this was discussed as a notable difference between those physically deployed and those deployed in garrison, it is also important to note that participants explained that psychological support services are regularly available to them, and, in cases where personnel are involved in strikes, those services are well utilized and do help. Regardless, the stress associated with the conflict between operational duties and family duties is clearly perceived as an issue within the community.

There are a number of additional downsides to being deployed in garrison relative to being deployed elsewhere that were also cited in our focus groups. One point discussed was the lack of formal combat recognition, including bonuses, medals, and deployment credits. Another was the fact that there is no end in sight to the OPTEMPO. They believe they could potentially face 20 years of the shift work and the combat-surge mentality with absolutely no break in the pace of the work. For many this is disheartening and perceived as unbearable. They have no planned recuperation time, nor do they have any time dedicated solely to continuation training, both of which are guaranteed for members of other rated career fields.

Participants also described differences between working in a regular home station job, compared with working a combat job in garrison. First, they lamented that they do not have much time available for professional development and career broadening. They cannot attend regular university classes because of the unpredictability of their work schedules. The force is also working at such a high OPTEMPO that manning is too tight to send many on developmental

assignments; days are packed too full to spend time even on distance-learning activities. Finally, while on swing and night shifts, personnel often have no exposure to leadership, limiting their mentorship and development opportunities.

The Deploy-to-Dwell Policy as It Now Stands

Although there were differences that participants could point to that lowered their stress relative to others who are physically deployed (e.g., being close to family, not being in imminent danger), a consistent message from our focus groups was that many of the realities of serving in garrison still lead to stress and dissatisfaction with the job. One way to mitigate those stressors would be to provide dedicated dwell time. Currently, MCE crews, which represent the bulk of the RPA force, are not considered deployed in the traditional sense. Rather, these individuals are considered deployed in garrison, wherein they remain in CONUS and fly daily combat operations from their home station. Although the MCE force is operationally engaged and is directly supporting combat operations, the current deploy-to-dwell policy does not apply to them.

Department of Defense Deploy-to-Dwell Policy

In late 2004, Secretary of Defense Donald Rumsfeld tasked his staff to develop a policy that would govern deployment lengths to Iraq and Afghanistan in an effort to minimize the effects of repeated, often-lengthy deployments in support of ongoing war efforts. The policy was codified in a published memorandum that formally established a "Boots on the Ground" policy (Chu, 2004).

This new policy was important because it provided deploying servicemen and their families a predictable timeline with respect to deployment lengths. This new policy, for the first time, put a "cap" on the length of deployments and limited service members to a maximum deployment length of 365 days. This policy also had an important effect on the warfighting commanders and their planning staffs, forcing the warfighting COCOMs to balance their demand for forces against a maximum timeline for deployment lengths. Perhaps the most important part of the policy was the fact that only the Secretary of Defense was authorized to "extend a unit or individual (if it is involuntary) beyond 365 days." This meant the warfighting commanders had to evaluate their requests for forces based on the deployment length caps. Only under rare circumstances would they request an exception to policy because of the level of approval required to grant such an exception.

The Boots on the Ground policy, however, was incomplete in that it did not require a minimum time period *between* deployments. Over the next few years this concept was developed. The first time this concept was formally codified as DoD-level policy was in January 2007. At this time, a policy memorandum titled "Utilization of the Total Force" was approved and released by Secretary of Defense Robert Gates. In this document, the DoD established a *planning objective* for the active force of "one year deployed to two years at home station and a

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"one year mobilized to five years demobilized" for the Guard and Reserve (Gates, 2007). In April 2007, a follow-up memorandum was released by the Undersecretary of Defense (Personnel and Readiness) that reclassified the previous planning objectives as a rotational frequency threshold (Chu, 2007). This was an important distinction in terminology, as the services now had to receive explicit approval from the Secretary of Defense to deploy units (or individuals) at a frequency that exceeded these threshold ratios of time deployed to time at home station. These policy memoranda effectively established a set of business rules that the Joint Staff and the services used to manage both the length and frequency of force deployments across the DoD, and they ensured service members and units were not redeployed without spending an established period of time between deployments at home station unless specifically approved by the Secretary of Defense. Today the combination of these policy concepts is commonly referred to as dwell time or as a deploy-to-dwell ratio.

In late 2013, the DoD consolidated these separate policy concepts into a single unified policy document whose purpose was "to establish a consistent set of standards to characterize and manage the employment of the total military force in order to preclude the over-exposure of personnel to combat and operational deployments" (Chu, 2013). In addition, this new policy memorandum formally added the concept of a deploy-to-dwell goal in addition to the deploy-to-dwell threshold previously established in the 2007 "Utilization of the Total Force" policy memorandum. As of the time of this writing, the current policy states "The Secretary of Defense's goal for operational Deploy-to-dwell ratio is 1:2 or greater. The operational Deploy-to-dwell threshold is 1:1" (Chu, 2013). For example, an active duty unit that is deployed for a full 365 days *should* then not be redeployed for two full years to meet the policy *goal* and *must* be home for a minimum of 365 days before redeploying to meet the policy *threshold*.

The concept of both a *goal* and a *threshold* is important for a number of reasons. First, the service chiefs, combatant commanders, Office of the Secretary of Defense staff, the Chairman of the Joint Chiefs, and ultimately the Secretary of Defense are briefed and are made aware of all deployment requirements that exceed the stated *threshold*. This ensures visibility at the highest level of decision making authority within the DoD and provides an opportunity for these individuals and their staffs to explore other options that could meet the combatant commander's wartime requirements without breaking a unit's dwell requirement, as they know they would be asked to provide justification and show what steps were taken to minimize such cases. The policy forced senior decision makers to make conscious and purposeful deployment decisions when *thresholds* could not be met.

Second, the concept of a deploy-to-dwell *goal* affects significant resourcing and planning decisions and, to a smaller degree, the global force management process. In theory, as forces are requested by the COCOMs through the global force management process, a similar level of staff and senior leader scrutiny should occur when policy *goals* cannot be met. *Goals* are in fact considered early in the global force management process, but in practice they can be quickly overtaken by events and subsequently ignored. This is not surprising, since commanders do not

have to ask formal permission from the secretary to deploy forces when the stated *goal* cannot be met. Staffing shortcomings aside, the true importance of stating a policy *goal* with respect to deploy-to-dwell is directly linked to the concept of readiness. One of the principal staff officers responsible for drafting the deploy-to-dwell policy memorandum stated that *goals* "were intentionally included in the policy memorandum to provide a benchmark across force elements and across the Services that would represent something like a sustainable, steady-state level of deployment" (Zagurski, 2015). For example, in testimony to the House of Representatives Subcommittee on Readiness, General Larry Spencer, then Vice Chief of Staff of the Air Force, stated:

> Time and resources used to conduct current operations limit opportunities to train across the full-spectrum of missions. For example, the operational and combat demands over the last decade have eroded our ability to train for missions involving anti-access/area denial scenarios. To meet combatant commander requirements, we have had to increase our deployment lengths and decrease time between deployments, which affect our reconstitution and training cycles. Our high operations tempo has resulted in Airmen that are only proficient in the jobs they do when they deploy (Spencer, 2015).

In other words, when policy *goals* cannot be met, then the overall readiness of the DoD suffers because units no longer have the dwell time necessary to reset and train across the full spectrum of missions they are assigned. Additionally, the deploy-to-dwell *goal* serves as a forcing function for the Services to size and equip their forces in such a way that the deploy-to-dwell *goals* can be met while meeting combatant commander requirements. If the deploy-to-dwell *goals* cannot be met consistently, then the services may be forced to make force structure changes over time.

In summary, the DoD has a well-established deploy-to-dwell policy. This policy clearly defines both *goals* and *thresholds* that the services, the Office of the Secretary of Defense Staff, COCOMs, and the Joint Staff have institutionalized within the day-to-day global force management process. It ensures that robust risk mitigation measures are taken across all these staffs to balance the demand from the combatant commanders against the capabilities of the force providers (Zagurski, 2015). In cases where the *threshold* ratios cannot be met, the business rules ensure that such decisions are reviewed at very senior levels and are ultimately approved by the Secretary of Defense.

Are "In-Garrison" Operationally Employed RPA Forces Considered Deployed?

Under the existing policy, the answer is no. U.S. Code Title 10, Section 991 states that

> A member of the armed forces shall be considered to be deployed or in a deployment on any day on which, pursuant to orders, the member is performing service in a training exercise or operation at a location or under circumstances that make it impossible or infeasible for the member to spend off-duty time in the housing in which the member resides when on garrison duty at the member's permanent duty station or homeport, as the case may be (10 U.S.C. 991, 2006).

Under this definition, the MCE force would not be considered *deployed* because this force does get to spend its off-duty time in the housing in which the member resides. It is worth noting that the context of this particular definition within Title 10 focuses primarily on the entitlements a service member receives when deployed, so it may not be the best definition with respect to the deploy-to-dwell policy. Nonetheless, under this definition, the MCE crew force would not be considered *deployed.*

A second definition comes directly from the Office of the Secretary of Defense (Personnel and Readiness) 2013 deploy-to-dwell policy memorandum and states the following:

> An operational deployment begins when the majority of a unit or detachment, or an individual not attached to a unit or detachment, departs homeport/station/base or departs from an en route training location to meet a Secretary of Defense– approved operational requirement. An event is an operational deployment if it is recorded in the Joint Capabilities Requirements (JCRM) or Fourth Estate Manpower Tracking System (FMTS) and is contained in the annual Global Force Management Data Initiative (GFM DI) compliant tool under the GFM DI reporting structure specified in Department of Defense (DoD) Instruction (DoDI) 8260.03. Forces deployed in support of Execute Orders (EXORDs), Operational Plans (OPLANs), or Concept Plans (CONPLANs) approved by the Secretary of Defense are also considered operationally deployed. An operational deployment ends when the majority of the unit or detachment, or an individual not attached to a unit or detachment, arrives back at their homeport/station/base. Forces operationally employed by Secretary of Defense orders at their home station or in "prepare-to-deploy order" (PTDO) status at home station are not operationally deployed (Chu, 2013).

This definition, too, clearly states that the MCE portion of the RPA force does not meet the definition of being "operationally deployed." The key element is the fact that the MCE force is operationally employed *at its home station.* So from both a Title 10 perspective and from a DoD policy perspective, the MCE portion of the RPA force cannot be considered deployed.

Are "In-Garrison" Operationally Employed RPA Forces Considered to Be in Dwell?

The same memorandum states that a unit is either "on operational deployment or in dwell" (Chu, 2013). This means that under current DoD policy guidance, the entire MCE portion of the RPA force is always in dwell.

Air Force policy defines *dwell* as

> the period of time a unit or individual is not on an operational deployment. Dwell begins when the majority of a unit or detachment, or an individual not attached to a unit or detachment, arrives at their homeport/station/base from an operational deployment. Dwell ends when the unit or individual departs on an operational deployment (Chu, 2013).

According to the Air Force definition, operationally employed MCE crews would be considered to be in perpetual dwell, at least assuming they had been deployed away from their home station at some point in the past.

The Spirit Versus the Letter of the Policy

The underlying spirit of the policy may apply to RPA, but the current policy as written does not. For example, a stated goal of the Office of the Secretary of Defense (Personnel and Readiness) memorandum regarding deploy-to-dwell is "to establish a consistent set of standards to characterize and manage the employment of the total military force in order to preclude the overexposure of personnel to combat and operational deployments." It is important to note that there are at least two specifically listed elements that the DoD is trying to prevent: (1) overexposure of personnel to combat and (2) overexposure of personnel to operational deployments.

A careful reading of the policy memorandum will show that the authors did a good job of addressing overexposure to operational deployments for most Air Force personnel (i.e., those who are operationally deployed and who get a break from combat exposure when they return to their home station). However, the policy memorandum lacks any follow-on guidance or language that specifically speaks to the concept of overexposure to combat. Because the policy is not limited to traditional pilots and frontline foot soldiers (i.e., it also includes shipborne sailors and other roles that qualify for combat status), it appears that visual or physical exposure to combat are not the sole factors addressed by the policy. Instead, other aspects of combat, including the lack of time to train and time to recuperate away from a combat environment, are also important in the spirit of the policy. This spirit was addressed specifically in a statement made by Army Chief of Staff General Raymond Odierno, discussing the potential benefits of increasing dwell time while answering a question posed by Senator Carl Levin during his confirmation hearings: "Units will have more time to reset, train, and prepare for full spectrum operations" (Odierno, 2015). Paradoxically, the MCE portion of the RPA force, which by definition is in perpetual dwell, has no opportunity to do any of these items, based on its 24/7/365 wartime OPTEMPO.

Limiting the length and frequency of operational deployments would seem to minimize exposure to combat or the combat lifestyle for those people who are operationally deployed. Hence, adding follow-on guidance to address overexposure to combat might not have been seen as necessary when the DoD policy was drafted. However, in the case of the MCE portion of the RPA force, the existing policy falls short because it does not extend the policy to address the unique nature of RPA operations, which results in personnel being "exposed" to combat on a daily basis on an unending 24/7/365 cycle. In this way, the existing policy falls short of its stated intent.

Establishing a Combat-to-Dwell Policy for RPA Personnel

A sustainable investment into the long-term health, retention, and performance of the RPA community could be leveraged by adding an MCE-specific clause to the existing DoD and Air Force definitions of dwell. For example, it could take the following form: "For the MCE of the Air Force RPA force, dwell is defined as the period of time an MCE squadron is not supporting

combat operations." By formalizing dwell time for the MCE squadron, personnel would be entitled to recovery and training time similar to that of any other squadron with a combat role.

Alternatively, the Air Force could institute its own in-garrison combat-to-dwell policy specifically for RPA personnel. In that policy, *combat* could be defined as being assigned to shifts involving flying a combat line. *Dwell* could then be defined as not assigned to combat shifts. According to this definition, time spent at home, leave, and holidays should not count toward dwell time, as long as the person is assigned to combat shift work as part of his or her regular duties. Using this definition would target those most directly impacted by the combat OPTEMPO, exposure to combat images, and the shiftwork lifestyle. For example, those in support roles (e.g., squadron commanders) who are not typically assigned to combat shift work would be considered to be in dwell under this definition, whereas those who are assigned to fly MCE lines on day, swing, or night shifts would be considered to be in combat.

During their dwell time, personnel could be assigned to follow normal workweek schedules (e.g., typical eight-to-five work hours, Monday through Friday), and they could be tasked with the same types of duties that other rated communities are tasked with when they are on dwell status. This time could be used to conduct continuation training, prepare for future contingencies, support joint training exercises, catch up on administrative duties and other Air Force training requirements, volunteer on base, or take advantage of other professional development opportunities. The time could also be used to provide administrative support to personnel who are considered in combat under the policy. It should also be used to allow personnel to take a break from the high OPTEMPO and spend quality time with their families.

Ways to Implement Combat-to-Dwell

This policy could be implemented in several ways. Entire squadrons could be placed into either combat or dwell status. Doing so would make tracking who was in dwell and who was in combat simple and straightforward. It could also provide immediate transparency to the supported units and to Air Force leaders about when their requests for additional MCE help would be violating an established combat-to-dwell ratio by pulling a squadron out of dwell. It would also allow greater bonding and unity within a squadron, as all personnel would be on the same day schedule during the dwell time period and would have an opportunity to work and spend time together on a daily basis. (MCE personnel are all on different schedules when flying MCE lines, which currently limits their ability to interact, bond, and support each other as a cohesive group.)

Although squadron-level dwell is the most transparent way to institute dwell and has the advantage of supporting squadron cohesion, it is not necessarily the most flexible and cost efficient. For a combat-to-dwell ratio of 1 to 1, another squadron would need to be available whenever an entire squadron enters dwell. If the Air Force wants to consider combat-to-dwell ratios other than 1 to 1, the process could become complicated and costly. For instance, three squadrons would be needed to implement a ratio of 1 to 0.5—two squadrons in combat and one

squadron in dwell. If there is less than two squadrons' worth of demand for combat work, then standing up two squadrons to accommodate one squadron of dwell could be wasteful. Additionally, as the work completed by each squadron may not be interchangeable, additional training may be needed when shifting personnel by squadron.

Another way of implementing the policy would be to add a fourth or even a fifth shift to the MCE shift rotation and allow entire flights to rotate into dwell. Currently, some flights are set up to rotate through shifts as a group. The entire flight starts out on day shift for a set period of weeks, then they all move to swing shift for that same set period of weeks. They then move together to night shift for that period of weeks and then all repeat the cycle. Dwell time could serve as the fourth shift, following the night shift. The entire flight would then enter dwell together.

The flight-level dwell approach has the benefit of allowing greater flexibility in combat-to-dwell ratios. A 1-to-0.33 combat-to-dwell ratio could be instituted with four shifts (three combat shifts followed by one dwell shift), and a 1-to-0.66 ratio could be instituted with five shifts (three combat shifts followed by two dwell shifts). This approach would increase the number of flights per squadron, but it does not run into the same concerns about interchangeability of skill sets that could occur with squadron dwell. It would allow squadron leaders to officially pull entire flights out of dwell status to address surges in MCE demand. Doing so would still allow for some transparency for supported units and for leadership, if reporting of any violations of flight dwell status were explicitly mandated in the policy.

Lastly, individuals could be placed into dwell one by one. This is the most flexible policy, but probably the most difficult to manage on a daily basis and the least transparent. Scheduling individual pilot shifts is already highly complex and managed manually by schedulers within the squadrons. Adding the need to track who is in dwell and who is available for combat would add another significant layer of complexity to scheduling problems. However, it would allow for the greatest flexibility in combat-to-dwell ratios, and it would allow for greater flexibility in addressing small changes in MCE demands and in addressing unplanned issues like undermanning or unavailability of MCE personnel (e.g., due to illness or injury). Reporting violations of the dwell policy to senior leaders would be more difficult and more burdensome, and violations would be less immediately obvious to leaders at all levels. If this approach were taken, tracking and reporting dwell and combat time at an individual level would be imperative to hold leadership accountable for violations in the policy.

These examples are not the only possible ways of implementation, and we advise allowing RPA leadership to try out alternative options in implementing any dwell policy. For example, leadership could explore changing the number of expected flight hours per day (e.g., six-hour flights with four shifts per day, rather than eight-hour flights with three shifts per day). Doing so, however, would change the number of shifts flown by personnel; if flights were to be rotated out as an additional shift, this would change the amount of dwell time that could be achieved with an additional shift. Allowing such flexibility in the way in which each squadron operates could help

reduce stress and improve satisfaction; therefore, it should not be inadvertently discouraged by the establishment of an overly restrictive combat-to-dwell policy. Some provision would need to be included in the policy to preserve flexibility.

Establishing an Ideal Combat-to-Dwell Ratio

There is no easy way to determine how much dwell time is needed. Too much dwell time could lead to boredom and a lack of the intrinsic satisfaction that comes with seeing a direct impact on the mission. On the other hand, burnout and other detrimental effects of workplace stressors are arguably best remedied when personnel are granted extended periods of time away from those stressors, and research supports the benefits of such breaks. For example, Etzion, Eden, and Lapidot (1998) found that personnel who were required to leave their jobs to work as military reservists for a period of time showed lower burnout upon their return to their jobs than people who did not leave to serve. Unfortunately, research has not yet clearly established how long the break needs to be to have meaningful effects, nor has it established how long the effects of a break from the stressors can last. As a result, the best way to identify an ideal combat-to-dwell ratio would be to implement various ratios and determine how each affects meaningful reductions in burnout as well as how long the effects last.

It is reasonable to assume that a combat-to-dwell ratio would not need to be as low as the DoD's threshold (1:1) and goal (1:2) for deploy to dwell, given that personnel do not have the added stress of being entirely away from family and still have access to the creature comforts of home. Moreover, starting with a much higher ratio for those deployed in garrison would have two key advantages. First, a high combat-to-dwell ratio might be much more palatable to personnel in other operationally deployed career fields, who might balk at the notion of offering dwell time to people living and working at their home stations. It certainly would not help the situation if RPA personnel were vilified for benefiting from policies that seem egregiously unfair to others in the organization. Getting others in the Air Force onboard with the change could be critical to the success of the effort. Second, a high combat-to-dwell offers the opportunity to implement the change without throwing the entire RPA enterprise into a horrific staffing shortage. This is particularly important, considering RPA personnel are already feeling overworked and understaffed.

In light of the fact that there is no clear way to establish the ideal level and the fact that higher levels would be more feasible and palatable in the short run, we suggest that the Air Force explore a slow ramp up of the amount of dwell relative to combat. It could state that it has a goal of achieving a 1-to-0.66 combat to dwell ratio by 2025, but that initial dwell time will be much smaller while force manning is ramped up to accommodate the dwell requirements. The Air Force could then start at a combat-to-dwell ratio of 1 to 0.20 for the first years, ramp up to a 1-to-0.33 ratio a few years later, and follow that with a final ramp up to the target of 1 to 0.66 in 2025. This would require rotation of individuals (rather that flights or squadrons) into and out of dwell status for the first few years, but at the point of achieving the 0.33 target, entire flights could be

placed into dwell. Some personnel could also be afforded additional dwell time at the individual level during the time between achieving the 0.33 and the 0.66 dwell time targets.

LRE Deployments Should Be Explicitly Addressed in the Policy

At present, AFSOC has established a separate squadron that houses its LRE crews. This serves to protect LRE personnel who have returned from an operational deployment from immediately returning to MCE duties. However, no such protection exists in ACC. In addition, surges in demand for AFSOC CAPs could still cause the LRE crews to be pulled away to help supply additional MCE crews. In either case, employing LRE personnel in MCE duties after they return from an operational deployment is inconsistent with the sprit of both the DoD's deploy-to-dwell policy and the combat-to-dwell policy we propose here. As a result, provisions to prevent the use of LRE crews during their dwell time should be explicitly addressed in the policy, and violations of LRE crew dwell time should be tracked and made transparent to leadership. Similar provisions could be made for personnel who may have recently returned from other types of operational deployments (e.g., intelligence personnel may be returning from long deployments outside of the RPA context).

Manning Implications for the Air Force

Although the results of the focus groups suggest that a combat-to-dwell policy would benefit the RPA community, implementing such a policy is not so simple. Most importantly, it would require significant manpower resources beyond those already allocated to the RPA community.

If the career field is not yet 100-percent manned according to current requirements, then there still is room to increase the number of personnel under the existing requirements. However, the current OPTEMPO that has resulted from not being fully manned (according to the current manning plan) is one of the major complaints of the community. Many are concerned that that maintaining that OPTEMPO indefinitely (i.e., undermanning creates a constant state of surge) will not only continue the unrest within the community, but will inevitably lead to mistakes that the mission cannot tolerate. For that reason, reaching 100-percent manning within the community (and ensuring that the manning requirements for accomplishing the RPA mission are set correctly) is important.[2] The Air Force has recently added capacity to the training pipeline to train an additional 200 RPA pilots per year by 2017, which will quickly provide some needed relief. Nevertheless, reaching 100-percent manning (and ensuring that the manning is set correctly for the mission) addresses only the issue of the unrelenting surge OPTEMPO that has existed to date. Even when 100-percent manned, the community will still inevitably be asked to

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[2] Note that many participants and subject-matter experts (SMEs) expressed concern that the manpower estimates for the RPA mission were not yet set correctly. When we began this study, a manpower study conducted by AFMA was just getting underway. At the end of our study, the results of AFMA's manpower study were still forthcoming.

surge on occasion. OPTEMPO would be expected to fluctuate over time, sometimes demanding a workload that goes above and beyond that accounted for in the manning numbers. Consequently, a dwell-time concept would still be important both for recovery from combat OPTEMPO and to address the other deployed-in-garrison issues described above (e.g., shiftwork, continuation training, time with family, exposure to combat). For that reason, dwell time should be addressed as a separate manning factor, one that exists in addition to ensuring that the day-to-day RPA combat OPTEMPO is not excessive.

If dwell time is still needed after the community is 100-percent manned, an important unanswered question remains: How would the Air Force pay for the increase in manpower beyond what is already allocated to the community? There are essentially two solutions: (1) Congress could approve an increase to the Air Force's end strength, or (2) the Air Force could pull manpower resources from another mission to compensate for the increase in manning required for the RPA mission. In other words, unless the Air Force can raise its end strength, it will be face the hard choice of moving requirements from a different mission to the RPA mission to implement dwell time.

Concluding Thoughts on an RPA Combat-to-Dwell Policy

As noted above, combat engagement and experience are not homogeneous. The shipborne sailor experiences a vastly different type of combat than the young Marine or Army soldier who goes outside the wire. Both of these examples differ from the combat experience of an A-10 pilot in a close air support role, and that combat role differs from the roles of a large Air Force crewed airplane, like a Special Operations AC-130 gunship. Many would broadly describe the aforementioned warriors, among many others, as the tip of the spear, yet each experiences and engages in combat in a different way. Behind the tip of the spear is another equally important part of the combat force: the medics, the logisticians, and the maintenance support troops, to name just a few. Each of these elements of combat power experiences combat in a unique and different way, but all participate in combat. Physical proximity to the enemy, level of engagement, threat to one's life, and many other experiences vary during combat, based on a military member's particular specialty, but physical presence in the theater of war is not in and of itself a requirement to be considered *engaged in combat*, according to U.S. Code. For example, U.S. Code Title 38, Section 1712A describes the "Eligibility for readjustment counseling and related mental health" for veterans who have been engaged in combat. Subsection (a)(1)(C)(iii) states that counseling and mental health services are available to

> Any individual who is a veteran or member of the Armed Forces, including a
> member of a reserve component of the Armed Forces, who engaged in combat
> with an enemy of the United States or against an opposing military force in a
> theater of combat operations or an area at a time during which hostilities
> occurred in that area *by remotely controlling an unmanned aerial vehicle,*
> *notwithstanding whether the physical location of such veteran or member during*

such combat was within such theater of combat operations or area [emphasis added] (38 U.S.C. 1712A, 2011).

In other words, although there are undoubtedly aspects of ground combat that are inherently different than those of air or naval combat, the similarities, differences, and relative impact of these aspects do not negate the fact that each is engaged in combat.

Of course, establishing a combat-to-dwell policy for the MCE force will not, by itself, be sufficient for successful change. It must be followed by a calculated increase in manning to expand flight and training activities to keep up with the RPA community's growing OPTEMPO. Moreover, effective use of dwell time will require more rest and recovery time during dwell. This could be achieved, in part, by increasing the crew-to-CAP ratio. The Air Force can easily justify these investments by the potential long-term gains in health, performance, and retention.

Framing this new policy for RPA as a combat-to-dwell policy sidesteps potential comparisons of RPA combat operations to those of traditionally deployed units by focusing both on the intent to minimize exposure to combat and to provide a policy mechanism by which the RPA force can accomplish the same types of things that traditionally deployed units accomplish while they are in dwell—namely step away from combat operations, reset, and train.

The basic framework of the proposed policy is simple—the MCE portion of the RPA force continues combat operations as it does today, but after a determined time period, each unit will cease combat operations and enter a period of "dwell" to reset and train. After meeting the newly established "combat-to-dwell" ratio, this unit would return to combat operations and the process would repeat. In acknowledgement that the RPA force deploys from home station and does not experience the entire range of combat impacts of those who deploy in the traditional sense, the objective and threshold ratios articulated in this new policy specific to the combat-to-dwell ratio should be lower than those used in the current deploy-to-dwell policy. Implementation of this new policy is simple and straightforward; it simply changes the current policy definition of "dwell." As written, the current definition states that a unit is either "operationally deployed" or is in "dwell." An updated definition would be required to allow a third status category that accounts for RPA MCE combat operations accomplished from home station. Adding something as simple as "For the MCE of the Air Force RPA force, dwell is defined as the period of time an MCE squadron is not supporting combat operations" to the existing dwell definition would suffice.[3] This would put in place a new policy definition unique to the MCE portion of the RPA

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[3] The proposed new definition of dwell would read in its entirety as follows:

> Dwell is defined as the period of time a unit or individual is not on an operational deployment. Dwell begins when the majority of a unit or detachment, or an individual not attached to a unit or detachment, arrives at their homeport/station/base from an operational deployment. Dwell ends when the unit or individual departs on an operational deployment. A unit is either on operational deployment or in dwell. For the Reserve Component, dwell is defined as the period of time an individual is not mobilized. For the MCE of the Air Force RPA force, dwell is defined as the period of time an MCE squadron is not supporting combat operations.

force, a definition that is based on personnel's time engaged in combat operations compared to their time in dwell—i.e., a combat-to-dwell ratio.

5. Conclusions and Recommendations

This project attempts to help the Air Force examine the underlying issues affecting the long-term health and sustainability of the RPA force. We focused on identifying (1) the primary workplace stressors affecting the RPA force and how can we minimize them, and (2) whether a deploy-to-dwell concept would work for the RPA career field. Our findings indicate that the force takes great pride in its mission-related service, yet personnel clearly point to a variety of operational and situational stressors that affect mental health, well-being, and morale. These stressors may significantly limit the performance and retention of the force. According to our focus group results, the stressors identified with greatest consensus were related to manning, tasking, scheduling, training, career advancement, facilities, and equipment. Below, we outline several recommendations designed to ameliorate these stressors.

Recommended Way Ahead for Improving the Health of the Force

A healthy and effective force is one that balances supply with demand, where the concept of supply includes not just the numbers of bodies but also the level of training, health, and well-being that drive their sustained performance and retention. Based on our focus group findings, several changes are recommended to help build a healthier and more effective RPA force.

1. Reduce the Workload

A major finding of our focus groups was that RPA personnel feel overloaded. One way to address this is to reduce the workload. Instituting temporary reductions in the CAP requirements would be one effective way to address this stressor. We made this recommendation to leadership when the results of this study were initially briefed. Not long after that, the Air Force dropped its CAP requirement from 65 to 61 combat air patrols (Everstine, 2015) to provide the needed relief.

Another solution that should be pursued is increasing the crew-to-CAP ratio, or essentially changing the amount of manning that is allocated to accomplish the existing workload. In our discussions with SMEs and focus group participants, many expressed a belief that a higher crew-to-CAP ratio is ultimately needed to allow for a manageable workload. Participants and SMEs noted that using a crew-to-CAP ratio to estimate needed manpower would be problematic, as a CAP is not well defined and the workload associated with a CAP can vary. We therefore recommend that the Air Force revisit how it defines a CAP and whether a crew-to-CAP ratio is the best unit of measurement for establishing the needed manpower. It is possible that describing the workload by numbers of active lines or by sorties (as is done for other aircraft platforms) could make manpower requirements clearer. Regardless of how the manning factors are defined, however, it is clear that RPA manpower needs need to be revisited. (At the time in which this

study was initiated, AFMA was just beginning a study revisiting the crew-to-CAP ratios used to determine the manpower requirements for the RPA force; at the completion of this study, results were still forthcoming.)

Regardless of whether manning requirements are increased, certain manpower exceptions should be established to protect the RPA force until the career field stabilizes. Given that the pilot and SO career fields are newly established, they are inherently more sensitive to the impacts of undermanning. Other career fields could sustain an 80-percent manning scenario, but such a scenario is likely to have much more negative effects on the RPA force. Although all career fields are feeling the impacts of budget cuts and losing personnel, spreading these impacts equally to include fragile career fields may not be wise. Doing so could lead to significant impacts on retention, which could in turn have devastating effects on an already overwhelmed RPA force. We therefore recommend sparing the RPA force from sharing in the undermanning burden until the force is better established. We also recommend protecting the RPA force from any force-shaping efforts that may be underway now or in the near future.

2. Establish a Combat-to-Dwell Policy

Another way to address perceptions of work overload and to mitigate long-term effects of other chronic workplace stressors (e.g., exposure to combat, working in high-pressure jobs) is to ensure personnel are afforded a dedicated break from those workplace stressors. Our findings therefore suggest that RPA personnel who are deployed in garrison would benefit from a promise of protected dwell time similar to that offered to any other deployed unit engaging in combat. This would give them a needed break from the pace, lifestyle, and psychological strains associated with combat operations; permit them to have dedicated time for continuation training and other developmental activities; and give them an opportunity to spend quality time with their friends and families within a normal workweek schedule. To reap the full gains of this investment, this policy change must be accompanied by a corresponding augmentation of manpower.

3. Find Ways to Attract and Retain Personnel

Many of our participants expressed concern that RPA personnel intend to leave the career field as soon as their service commitments are up. Such personnel losses would only add to the strain of an already overworked population. As a result, we highly recommend that the Air Force take all steps possible to prevent the loss of RPA personnel. This includes offering monetary incentives and bonuses to retain them. In addition, we recommend that the Air Force take steps to attract as many high-quality accessions as possible.

Consistent with this recommendation, Air Education and Training Command has set a goal of doubling the number of RPA pilots trained next year (Everstine, 2015). Nevertheless, given the growing dissatisfaction within the career field, incentives to attract personnel to the career fields might be needed, at least in the short term.

Although monetary incentives may be necessary (and perhaps even sufficient) to keep and attract enough personnel during the next few years, offering these incentives should not be the only action taken to retain and attract personnel. Because the sources of dissatisfaction are largely nonmonetary issues—including shift work, base locations, and career trajectories—the Air Force should at the same time seek to address as many areas of these nonmonetary sources of dissatisfaction as possible. There is no single "silver bullet" source of dissatisfaction, so the Air Force's efforts to address concerns will need to be multifaceted.

Guaranteeing protected career development opportunities is one example. If leadership seeks to invest in long-term retention, it must not only provide incentives that are competitive with civilian options, but it must also define clear, attainable, and rewarding paths to job growth. We therefore recommend that the Air Force take steps to ensure that personnel are afforded opportunities for developmental assignments, leadership assignments, TDYs, staff assignments, professional military education, and other career-broadening opportunities commensurate with those offered in other desirable career fields.

In addition, clearly articulated career trajectories for RPA pilots, SOs, and intelligence personnel are needed.[1] However, to have the desired impact on job satisfaction, leadership will need to clearly communicate these plans to all members of the RPA community, issue a promise that the Air Force will honor these plans, and follow through. In the case of the intelligence career field, personnel typically leave the RPA community at some point and continue doing intelligence work elsewhere in the Air Force. A career field trajectory for those personnel should address any loss in skill currency as a result of time in the RPA community and the length of a tour in the RPA community. Focus group participants mentioned that the intelligence work in the RPA community is so different from typical intelligence work that they are unprepared for it and lose career field currency as a result of their time working with RPAs. A few suggested that it might make sense for RPA-specific intelligence to be its own career field; however, this was only mentioned by a few participants, and even those were unsure if it would be a change worth pursuing.

To address an entirely different source of dissatisfaction, the Air Force could add new, more appealing base locations. This would allow RPA personnel to have better PCS opportunities. Adding locations strategically placed around the world could eliminate the strongly disliked shift work that is now required to maintain 24/7 operations.

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[1] In the case of the intelligence career field, personnel currently serve in the RPA community for only part of their career; there is no RPA-specific intelligence career field. However, intelligence personnel serving in the RPA career field require substantively different skillsets from typical intelligence assignments. As a result, the experience takes them away from their normal skill development track. This excursion needs to be explicitly addressed and planned for in the intelligence career field to ensure that impacted personnel remain competitive with their peers outside the RPA community.

Addressing concerns about shiftwork, base locations, and career development are just a few ways that the Air Force could begin to address retention and attraction of personnel to the RPA community without relying on monetary incentives; many more ideas for actions the Air Force could take to address the top sources of dissatisfaction can be found in Chapter Three. Taking action to address as many areas of dissatisfaction as possible will be critical to enticing new personnel to the career field and to eliminating the need for monetary incentives to attract and retain personnel in the future.

4. Continue to Improve the Human Factors Environment

Finally, increased attention should be paid to human factors issues, such as climate control, restroom breaks,[2] ergonomic design, and equipment upgrades. These issues were occasionally mentioned by personnel in our focus groups. The most frequently mentioned issue was that the rooms were too cold because of the need to keep the electronic equipment cool. After hearing about this issue from our focus groups, AFSOC was quick to respond. It added seat warmers to the GCSs to mitigate the cold temperatures. Being responsive to these types of human factors issues could go a long way in addressing perceptions that the force is not valued.

Although these types of human factors issues were raised occasionally in our focus groups, we did not delve into them in detail. We therefore recommend that additional studies explore these issues further. With respect to equipment upgrades, it appears that some efforts are underway. For example, according to outgoing Air Force chief scientist Mica Endsley, the Air Force is studying some of the human factors issues with the GCSs and hopes to have an improved GCS ready by 2017 (Tirpak, 2015). Attention to these types of issues is likely to lead to not only improvements in job satisfaction, but also in efficiency, performance, and safety. Although those changes will not be realized in the short term, personnel in the career field should be alerted that such changes are underway. That could help improve perceptions that leadership is addressing their concerns. In addition, if changes are implemented (such as adding seat warmers), follow-up should be planned to determine whether the change addressed the issue and whether it had any unintended consequences that could result in even greater dissatisfaction.

5. Employ Metrics to Continuously Evaluate the Health of the RPA Community

Defining and implementing data tracking mechanisms and associated performance metrics are essential for ensuring long-term force sustainment, readiness, and well-being. These enable leadership to directly observe the effect of a given policy change. One strategy is the use of recurring surveys and focus groups. We recommend implementation of a brief, annual survey of

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[2] Although availability of restroom breaks was mentioned by a few of our participants, most did not mention it. When it was mentioned to leadership, they indicated that there were no restrictions preventing personnel from taking such breaks.

all RPA career fields, both to take the temperature of the force at strategic time point and to solicit reflections and suggestions, not just about traditional physical and mental health, but also about the following dynamic factors:

- manning, tasking, and scheduling
- training needs and satisfaction
- facilities and equipment
- morale, stress, and burnout
- intention to stay in or leave the Air Force.

To maximize the returns on such a survey, it should be recurring, automated, and anonymous. By collecting the same data on a recurring schedule, investigators can track changes over time; past surveys, such as the present RAND questionnaire, can then serve as benchmarks for subsequent scores. Recurring surveys also enable analysts to associate temporal changes with contextual events, such as a change in policy, procedure, or RPA demand. Inclusion of a non-RPA comparison group can provide context for how RPA scores perform relative to more familiar career fields. Finally, by making the survey anonymous, respondents throughout the chain of command will be encouraged to report their concerns honestly without fear of exposure, stigmatization, or retaliation. An independent research organization can help ensure data privacy and objectivity.

Although implementing an annual recurring survey would be ideal, it is also worth noting that the Air Force as a whole is already a heavily surveyed population. Given that there are currently multiple climate surveys being administered to the force, adding a short section with a few occupation-specific items approved by career field managers or functional authorities to one of those surveys may make sense. Then all career fields could be quickly assessed and the rated community could get comparison data for a variety of major weapon systems. However, care should be taken to ensure that the instructions on the survey, the items selected, and the survey format are aligned with the RPA community's survey needs. If they are not properly aligned, then the results will not be informative.

In addition to implementing a recurring survey, a process whereby personnel can provide suggestions for improvements to leadership and leadership can communicate how they are addressing those suggestions should be established. A feedback loop whereby leadership continues to solicit feedback and suggestions even after changes have been implemented will be important for identifying when changes have unintended detrimental consequences. One existing example of an effort intended to solicit direct communication with personnel is the Force Improvement Program implemented by 20th Air Force. We recommended that the RPA force consider a similar approach to help establish open lines of communication about improvements that could be made to address dissatisfaction in the force. ACC has implemented such an effort. The results are now under review by leadership.

Lastly, the retention and analysis of archival data is imperative to establishing OPTEMPO and workload impacts on the force. This includes retaining and exploring information on TDYs,

PCS, developmental assignments, promotions, retention intentions, and traditional deployments. In addition, the force could benefit from an automated, centralized way of tracking issues that have a direct bearing on perceptions of quality of life in the career field (such as leave requests, denials, and deferments; professional military education opportunities; TDY assignments; and career broadening assignments).

In particular, we learned through our focus groups and meetings with SMEs that many relevant pieces of information about the RPA community are not being retained and analyzed. For example, existing documentation on leave requests may be scarce, and what is available may be misleading. Because it is well understood that the field is overworked, many personnel do not bother putting in requests because they know they will be denied. In addition, requests and denials are often communicated verbally without a formal paperwork trail. As a result, simply looking at the current records on the number of denied leave requests may suggest that leave requests are being granted, even though few personnel are actually getting the leave they desire. Carefully documenting and tracking these types of variables would enable leadership to assess baselines and subsequently track improvements after new career field management policies are implemented. Such tracking (if done carefully) could also help leadership demonstrate to members of the RPA community when perceptions of a problem are not confirmed by actual data. In those cases, communicating the discrepancy between perceptions and reality would be important for both checking the validity of the archival information and for dispelling rumors and false notions that could be leading to unfounded dissatisfaction. The Air Force Personnel Center does have the capability of tracking total number of days of leave lost every year.[3] However, carefully exploring possible misleading interpretations of the information is a must for ensuring that data provide useful and accurate information.

Care Should Be Taken in Deciding How Best to Address Problems

Most important, the interpretation of the focus group results should not be limited to just those that exhibit greatest consensus across the sample as a whole. This is because the present questionnaire makes no effort to weight the relative importance of each issue. Those weights represent a subjective judgment under the purview of Air Force leadership. Therefore, interpretation of these results should depend on which issues leadership views as the most critical. For example, leadership might potentially prioritize complaints about health over compensation—even if those complaints were less frequent—on grounds that basic health problems represent a more urgent issue with a lower tolerance for acceptability. Successful use of these results must consider a variety of metrics for prioritizing needs that represent both consensus and key minority voices.

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[3] Airmen can only carry over 60 days of leave at the end of the fiscal year; any excess is lost.

In addition, efforts to prioritize the variety of potential augmentation strategies should take care to distinguish between prospective (causal) and retrospective ("band-aid") strategies. Bonus pay, for example, might often be perceived as a mere band-aid because it could motivate airmen to endure a potentially unhealthy workload but does not remove the unhealthy workload. It serves a potentially coercive function, increasing retention without a corresponding increase in ultimate performance or well-being. When possible, band-aid strategies should be accompanied by strategies that target the causes and contributing conditions of a problem; for instance, increased manning would directly restore time needed for training and recovery.

Concluding Thoughts

Our focus groups were designed to diagnose the major sources of dissatisfaction and low morale within the RPA community. Armed with that information, the Air Force can create initiatives to help improve the health of the force. The above recommendations are examples of such initiatives. Some directly address major sources of dissatisfaction within the community; some provide tools to evaluate the success of various initiatives at improving attitudes and perceptions over time and determine whether perceptions within the community are aligned with reality.

One major conclusion from the focus groups is that there is no silver bullet to solving the community's morale issues. Instead, we recommend taking steps to address the variety of issues raised by personnel in the community, continuing to solicit feedback about those issues, and regularly exploring whether new issues have arisen. Finally, we recommend that leadership communicate back to the people in the RPA community that they have heard their concerns and, to the fullest extent possible, are working to address them.

Appendix A. Factors to Consider When Addressing Workplace Stress and Dissatisfaction

A wide variety of topics that organizations should consider when trying to identify sources of stress and dissatisfaction in the workplace have been explored in the research literature. For reference, these topics are listed in Table A.1. For more discussion of these topics, see Hardison et al. (2014).

Table A.1. Examples of Relevant Topics in the Research Literature

Factors that Affect Workplace Well-Being and Attitudes	Types of Well-Being and Attitudes that Matter in the Workplace	Consequences for Organizations and Individuals
Work and Organizational Characteristics • Work hours—amount and schedule (e.g., shift work) • Work demands—size of workload, intensity, uncertainty, repetitiveness • Work roles—role conflict, role ambiguity, autonomy, control, job rotation, and job enrichment • Organizational structure and climate—evaluation and reward systems, turnover, job security, norms, perceived justice, breaches of psychological contracts • Leadership • Work-life balance • Person-organization fit **Environmental Characteristics** • Situational pressures—weather, commute • Economic and industry pressures—unemployment, unions, increased training and education requirements for members of certain professions • Geographic location features—quality of life; cost of living; climate; hours of daylight and sunlight exposure; community's alignment with personal interests, goals, and lifestyle preferences **Personal Characteristics** • Demographics—age, gender, race, or ethnicity • Personality and temperament—locus of control, negative affect, emotional stability • Family demands and other life constraints or pressures—work-family conflict, child care needs, financial stability	**Well-Being** Psychological health • Stress • Depression • Burnout Physical health • High blood pressure • Weight gain • Migraines • Anxiety • Trouble sleeping, exhaustion • Body function or disease • Illness (e.g., catching the flu) **Attitudes and Perceptions** • Job satisfaction • Family and life happiness • Perceived justice, psychological contracts • Organizational commitment	**Work Consequences** • Productivity, quality of work • Mistakes, accidents, injuries • Absenteeism, turnover • Counterproductive work behaviors (e.g., stealing office supplies, defacing company property, badmouthing the organization, sabotage) • Reduced prosocial activities (e.g., helping coworkers, volunteering to stay late to get work done) • Increased healthcare and disability costs • Substance use on the job **Personal Consequences** Individual • Long-term health issues—heart disease, depression, suicide, alcohol and substance abuse, driving accidents • Illegal activity—DUIs, arrests, incarceration • Emotional and financial hardship Family • Unhappiness, fighting, divorce • Abuse • Emotional and financial hardship for the family

SOURCE: Hardison et al. (2014), pp. 37 and 38.
NOTE: "Leadership" was added to this version of the table.

Appendix B. Background on the RPA Community

This appendix provides additional context and background on RPA operations, including more detailed information about the structure and manning of RPA organizations, daily activities involved in RPA operations, the growth in demand for RPAs, and the personnel specialty codes and associated training.

Current MQ-1/9 RPA Enterprise

The Air Force currently operates MQ-1s and MQ-9s in the active duty, reserve, and National Guard components. The active duty component includes ten MQ-1/9 line combat squadrons. Eight of these squadrons are part of ACC. The other two squadrons are part of AFSOC. Seven of the ACC squadrons belong to the 432d Wing, the only all-RPA wing the Air Force. The wing and six of its seven MQ-1/9 squadrons are stationed at Creech AFB, Nevada. The seventh squadron is stationed at Whiteman AFB, Missouri. Another ACC unit, the 432d Attack Squadron, is stationed at Ellsworth AFB, South Dakota, and is part of the 28th Bomb Wing. Both of AFSOC's active duty MQ-1/9 line combat units, the 3rd Special Operations Squadron (SOS) and the 33rd SOS, belong to the 27th Special Operations Wing (SOW) and are stationed at Cannon AFB, New Mexico. At the time of this study, the 27 SOW was in the process of forming a third RPA squadron, the 12th SOS, which would focus on performing the LR mission.

The task of training new MQ-1/9 pilots and SOs to fly MCE lines falls primarily on three ACC RPA FTU squadrons located at Holloman AFB, New Mexico. A fourth unit at Holloman AFB, the 16th Training Squadron, provides administrative and instructional support for the three MQ-1/9 FTU squadrons. However, students completing the course of instruction at Holloman AFB are not typically qualified to perform the LR mission. Instead, training RPA aircrew for that mission is handled by the LR FTU at Creech AFB. This unit, the 11th Reconnaissance Squadron, is part of ACC's 432d Wing.

The only reserve squadron operating on a full-time basis is the 2nd SOS at Hurlburt Field, Florida. RPA crews from two other reserve squadrons augment their active duty counterparts in the 432d Wing at Creech AFB.

The Air National Guard is still transitioning to its full complement of RPA squadrons, which, when complete, will include 12 units from Arizona, Arkansas, California, Iowa, Michigan, New York, North Dakota, Ohio, Pennsylvania, Tennessee, and Texas. The Air National Guard RPA FTUs are located at March Air Reserve Base, near Riverside, California, and Hancock Field in Syracuse, New York.

Important Differences Between RPA Operations and Traditionally Manned Aircraft Operations

The RPA workplace structure shares some similarities with the workplace structures for other aircraft platforms (e.g., bomber, mobility, and fighter aircraft), which we refer to in this report as *traditionally manned aircraft*. Each traditionally manned aircraft squadron has officers and enlisted members who are assigned to both a primary duty, which for pilots is flying and training in an aircraft, and a secondary duty, which usually means working in a "shop," such as being in charge of training, safety, or scheduling for a squadron. RPA squadrons are similarly organized from this functional perspective, but are very different in their primary mission organization. RPA pilots are in charge of all the same "shops" a traditional fighter pilot is, but their flying schedule is much more time consuming. While a traditionally manned aircraft pilot might fly three days a week, an RPA pilot will typically fly about five days a week. The difference is even more pronounced when measured in terms of flying hours. On average, an RPA pilot flies around 900 hours per year, while a fighter pilot flies around 200 hours per year (Secretary of the Air Force Public Affairs, 2015). The RSO employment concept also causes differences between an RPA squadron and, for instance, a typical fighter squadron. Under the RSO concept, because RPAs can be flown remotely, most RPA aircrews do not physically deploy with their aircraft to forward bases in theater, unlike fighter aircrews. Instead, the Air Force deploys a small number of crews to operate the LRE. These crews are physically present at the takeoffs and landings of RPAs and focus on that part of the aircraft's mission.[1] This physical presence at the forward operating location is necessary to minimize the lag time in communication to the aircraft, enabling real-time corrections that are critical for safe takeoffs and landings.

The crews flying the RPAs once they are airborne and responsible for the RPA missions are part of the MCE. Whereas in fighter aircraft, the same pilot takes off, executes the mission task, and lands the aircraft, multiple MCE crews might fly an RPA before handing it off to the LRE for landing. LRE crewmembers often have experience in MCE, but not many MCE crew members have LRE experience.

One of the most important differences between RPAs and traditionally manned aircraft is that the cockpits and aircraft are separate entities in an RPA squadron, while in traditionally manned aircraft they are the same. As we have seen, this means that multiple pilots can fly the same aircraft over the course of a mission, but it has the further consequence of changing the relationship of manning to aircraft. As a result, force structure and manning for RPA do not have to follow the same pattern as that of traditional aircraft. For example, a fighter squadron would need to balance its manning with the number of squadron aircraft and how many missions that aircraft can safely fly per day. For longer sortie durations, there may need to be one pilot for each

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[1] The target MQ-1/9 LRE crew ratio is 4:1.

sortie (takeoff and landing) that aircraft must accomplish, plus reserve pilots for contingencies. In an RPA squadron, the number of aircraft in a squadron does not necessarily directly dictate the number of pilots a squadron needs. A large number of pilots could fly the aircraft, with everyone being given a very small amount of flying to accomplish. This allows the RPA enterprise to engage in 24-hour missions without forcing a single crew to fly for 24 continuous hours. While an RPA squadron's number of aircraft has some bearing on the number of pilots it needs, it does not directly tie the staffing to the number of aircraft as a traditional fighter squadron does. In this way, manning for RPA is more like that of a space operations squadron than it is like a traditionally manned aircraft squadron.

MQ-1/9 RPA Air Force Specialties

Air Force RPA crews include two distinct career fields. The MQ-1/9 RPA pilot career field is only open to officers, while the SO career field is only open to enlisted members. The RPA pilot flies the aircraft, while the SO is in charge of operating the sensor package.

There are three types of RPA pilots: 18Xs, 11Us/12Us, and ALFA tour pilots. The 18X pilots are officers who were never in another rated career field and have gone through RPA pilot training. The 11U/12U pilots are former rated pilots and combat systems operators trained in traditionally manned aircraft that have transitioned to flying RPAs permanently. ALFA tour pilots are pilots on loan from a traditionally manned aircraft career field who are expected to fly RPA for one tour (lasting between three to five years) before returning to their original aircraft platform.

The 18X pilot first attends a seven-week course called Initial Flight Screening in Pueblo, Colorado, where he or she learns the basics of flying a small plane. He or she next attends RPA Instrument Qualification at Randolph AFB, Texas, for ten weeks. This training consists of academic courses and simulator training. This training is followed by four weeks of RPA Fundamentals training, which also occurs at Randolph AFB. The training includes academics and simulator training to learn the fundamentals of flying an RPA. The next phase of training takes place at Holloman AFB, New Mexico, at the FTU, where pilots undergo Initial Qualification Training (IQT), specializing in either the MQ-1 or MQ-9. For MQ-9 pilots, IQT consists of 77 training days and includes both flying and simulator training. In addition to instructing the student pilots on the fundamentals of flying the MQ-9 aircraft, initial MQ-9 training covers the primary missions of ISR, air interdiction, and close air support, as well as familiarization with the secondary missions of strike coordination and reconnaissance, dynamic targeting, and combat search and rescue (Air Education and Training Command, 2014). Initial qualification training for the MQ-1 is similar in length and content. The service commitment for 18X pilots who have completed MQ-1 or MQ-9 IQT is six years.

SOs (assuming they are not retrainees from another enlisted career field) first complete Basic Military Training at Lackland AFB, Texas. After this, they attend Aircrew Fundamentals Course,

which teaches them the basics of being a member of an aircrew. This class takes nine days to complete. They next move into a Basic SO Course, which takes place at Randolph AFB for six weeks. This training teaches future SOs the basics of operating an RPA sensor. They then move into initial qualification training at Holloman AFB, New Mexico, for their particular aircraft (Air Education and Training Command, 2014).

SOs and pilots sit side by side in GCSs, which essentially serve as RPA cockpits. Figure B.1 depicts a GCS. Pilots and SOs are paired daily, much as a traditionally manned aircraft crew would be, with both members of the crew starting and ending their shifts at the same time. Like other members of the rated community, SOs and permanent RPA pilots (the 18X and 11U/12U pilots) spend their entire careers as dedicated RPA personnel. Only the ALFA tour pilots are slated to leave the RPA force to do other rated jobs.

Although the crew officially includes only the pilot and the SO, intelligence personnel work closely with MCE crews during their daily missions. In fact, most Air Force MQ-1/9 line combat units include a significant number of billets for intelligence personnel in their manning documents.[2] While there is some variation from squadron to squadron in how these personnel are utilized, they are most often used as MICs. The MIC is an enlisted person or officer in the intelligence career field whose job it is to "act as the team's communication focal point— integrating, filtering and passing information between the aircrew and the numerous external parties" (Machuca, 2012). MICs collocate with the MCE crews (often in rooms nearby), and they regularly collaborate with them on completing missions. However, they typically follow different shift schedules than the flight crews.[3] As a result, a single flight crew might interact with more than one MIC on a given day. Unlike the SOs and permanent RPA pilots, MICs commonly rotate out of RPA positions to serve in other types of intelligence positions elsewhere in the Air Force. In fact, rotation into other intelligence assignments is expected in the intelligence career field.

Maintainers also provide critical support for RPA operations. Some specialize in repairing the RPA aircraft; others specialize in repairing the GCSs. One distinct difference between supporting RPA operations and supporting manned aircraft operations is that maintainers can be called upon to repair GCSs in the middle of an MCE mission when the GCS is not functioning properly. In this way, there can be more interaction between the crew and the maintainers than in traditionally manned aircraft. RPA maintainers serve at the home station locations providing

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[2] AFSOC's 3rd SOS and 33rd SOS originally included MICs in their unit manning documents. Those billets were later shifted to the 56th Special Operation Intelligence Squadron, which today provides intelligence support for RPA operations in the form of MICs as well as traditional intelligence support to 27 SOW manned aircraft units.

[3] MICs are not formally considered part of the RPA aircrew. Their target crew ratio is lower than the target crew ratio for MCE operations. Moreover, since they are not formally part of the RPA aircrew, their shift durations are not subject to maximum flight duty period and crew rest constraints. As a result, MICs commonly work longer shifts than MCE crews.

support for the MCE GCSs and repairing the aircraft where RPA training aircraft are flown. Maintainers also deploy alongside the LRE crewmembers to provide both GCS support and aircraft maintenance in overseas locations. Similar to the intelligence personnel, maintainers commonly rotate out of RPA maintenance and into other types of aircraft maintenance positions at non-RPA base locations.

Although maintainers are critical members of the RPA community, in scoping the focus of this study, our sponsor asked us to focus just on the crew and the MICs in this research effort.

Figure B.1. RPA Pilot and SO at Duty Stations

SOURCE: Jeff Schogol, "Air Force Considers Larger Retention Bonuses for Drone Pilots," *Military Times*, January 8, 2015.

Growth in Combat Air Patrols

The demand on the RPA force is measured in CAPs. Although an official definition of an RPA CAP has not been clearly established, some notions of what it means exist. Most discussions of CAPs assume that one CAP is equivalent to near-continuous coverage of a certain area by an RPA. Although this definition seems most common, as a definition it is still lacking. The area that an RPA is responsible for is left undefined, and what constitutes near-continuous coverage is also left undefined. As a result, a great deal of confusion can ensue when talking about the work that a single CAP is capable of accomplishing and the number of personnel and aircraft needed to sustain it. This lack of clarity exists not only in official policy, but also within the RPA community. As such, we have not been able to identify a precise definition; therefore,

this relatively vague notion of near-continuous coverage of an area is the definition we also use in this report.

Because area coverage is expected to be near continuous, a CAP will have a large number of pilots and, to a lesser extent, aircraft. One RPA may need to be in transit to the location while the other maintains the coverage or returns to base for refueling. As a result, more than one crew and aircraft can sometimes be required to maintain that coverage. Because the coverage is intended to be near continuous, the operations run around the clock. Thus, multiple shifts of MCE and LRE crews and MICs per day are needed to maintain a 24/7 CAP.

The authorized manning of the RPA force is currently calculated based on the number of CAPs it flies. Currently, the Air Force has established ten crews per CAP as the target manning factor. As mentioned previously, this is a completely different way of manning squadrons than in traditionally manned aircraft squadrons. A traditional aircraft squadron is manned based on its number of aircraft, which then determines the number of missions that can be flown. In RPAs, the number of missions drives the manning and number of aircraft. As noted previously, this manning structure may be more similar to a space operations squadron than it is to that of a traditionally manned aircraft squadron.

In recent years, the number of CAPs the Air Force has said it will support for the combatant commanders has exploded. This growth is illustrated in Table B.1.

Table B.1. Growth in Predator and Reaper CAPs and Change in End-State Goals Over Time

Year*	Number of Existing CAPs (Source Document)	Official Final End-State Goal for Number of CAPs and Target Date to Achieve It (Source Document)
2003	—*	24 CAPs in 2010 (Schanz, 2011)
2004	5 (Schanz, 2010)	—*
2006	6 (Drew, 2015)	10 Predator squadrons in 2011(Tirpak, 2006)
2007	17 (Hebert, 2011)	15 Predator squadrons in 2010 (Tirpak, 2007)
2009	38 (Schanz, 2010)	50 CAPs by 2012 (Sirak and Schanz, 2009)
2011	48 (Schanz, 2011)	65 CAPs by 2013 (Church, 2011)
2014	65 (Kelsey, 2014)	—*

* We conducted a cursory search of published articles to generate the information for this table. That cursory search yielded relevant information for some of the years since 2003. Only the years for which we located information are included in the table.

The number of RPA CAPs being flown by the Air Force tripled between 2004 and 2007, then tripled again between 2007 and 2012. This was a huge increase in capacity that has strained on manpower in the RPA community. It was extremely difficult before the RPA community had its own career field, because any shortage meant transferring over another pilot from a traditional aircraft. To regain the skills of the pilot who had been transferred, the Air Force would have to

send another pilot through undergraduate pilot training, which is a very costly and time-intensive program. Now, there is a separate RPA pilot training pipeline that is much shorter and less expensive than undergraduate pilot training, which makes it easier to fill shortages in the RPA career field.

Conducting Combat Operations While in Garrison

One challenge that the RPA career field shares with only a few other career fields is being deployed in garrison; although members of the RPA career field are directly supporting and conducting combat missions overseas, most of them never leave their home station, in contrast to traditionally manned aircraft personnel, who are assigned to a base within the United States. Traditionally manned aircraft units conduct most of their training while at home station, then deploy overseas to conduct combat operations. In contrast, clear distinction between being deployed and being at home and the distinction between training and combat does not exist for most in the RPA career field. MCE pilots train while they are in combat and are in combat on a daily basis while they are working at home station. This lack of clear separation between training and combat is one difference associated with being deployed in garrison.

There are many other differences between the MCE deployment in garrison and physical deployments to other countries. The most notable difference is that for many who are physically deployed, there is potential direct danger associated with being in a combat zone. Military members who physically deploy are offered monetary benefits to compensate for those dangers. They can exclude all or part of their base salary from taxable income and potentially receive hostile fire pay or imminent danger pay. These benefits are not offered to the MCE RPA crews.

Nevertheless, MCE in-garrison deployments are still in some sense deployments, and being in garrison while conducting combat operations brings its own unique challenges. While fighter pilots are able largely to focus on flying combat missions while deployed, RPA crews do not have the same luxury. MCE crews are expected to be able to fly combat missions, train for future missions, and complete all of the other various requirements of a home station base at the same time. These could range from attending base functions, to writing up awards packages, to writing and submitting officer and enlisted performance reports, to complying with all DoD computer-based training. These additional duties mean that MCE crews cannot focus solely on the combat mission, even when they are assigned to combat duties.

MCE crews also face psychological stress transitioning from a combat environment at work to a home environment every day. The traditional fighter squadron would be immersed in the combat environment until its deployment ended, at which point it could return home and would no longer be in combat.

It is worth noting that some RPA crews (the LREs) physically deploy to overseas locations. While physically deployed, these personnel are afforded all of the benefits offered with traditional deployments, including support for their families while they are away. They do not

face the additional duties associated with being at the home station, nor do they face the psychological stress of returning to their families at the end of each shift. For the LRE crews, the lifestyle of deployment is identical to that of other career fields deploying away from home station. However, for many LRE crews (those in ACC who do not belong to a dedicated LRE squadron), upon returning from their physical deployment, they often return to combat operations shift work as members of MCE crews during their DoD-mandated dwell time. This continuous focus on combat operations differs distinctly from those in traditionally manned aircraft squadrons whose members spend their dwell time conducting continuation training and typically work normal business hours, Monday through Friday, while they are at their home station.

The shift work is another challenge faced by both MCE and LRE crews. Because there is such a demand for RPAs around the world by the combatant commanders, there is a constant demand for RPAs to be in the air. This constant demand requires airmen to fly the RPAs around the clock. This means that pilots are scheduled in shifts to provide coverage 24 hours a day, 7 days a week, including holidays, for their entire flying careers. The only MCE crews in the RPA community who have a complete break from shift work are the instructors and students at Holloman AFB, New Mexico, where new RPA pilots and SOs are trained in their RPA. Such shift work can be especially discouraging at a home station where MCE crews regularly interact with other base workers who are not working round the clock, not working on weekends, and not working on holidays. Unfortunately, the base services (e.g., child care, medical appointments, retail stores, and entertainment outlets) are not set up to provide round-the-clock, weekend, and holiday support to the shift workers, which only adds to the difficulties of working shifts. Some wing activities or briefings are scheduled for the convenience of people working day shifts, but typically those activities are not scheduled in a way that accommodates those on the swing and night shifts.

U.S. Base Locations for Active Duty RPA Operations

The location of active duty RPA bases also presents challenges for members of the RPA career field. The three largest bases for active duty RPA pilots and SOs are all in the southwest United States. Each location presents its own challenges. The largest RPA base in the country is Creech AFB, near Indian Springs, Nevada. This base is about a 45-minute drive from the nearest city, Las Vegas. Creech AFB does not have any housing on base. Junior enlisted live in dormitories on Nellis AFB and can board a bus for transit to Creech AFB. The bus ride takes about an hour. The main challenge of Creech AFB, as compared with the other RPA bases, is the commute, which creates a range of issues that affect the Creech RPA community: extra wear and tear on vehicles, the danger of driving a long way after a late shift, and the extra time the commute takes from airmen. However, the upside is that airmen do live in a major city with relatively easy access to the rest of the country through the Las Vegas airport.

The other two major RPA bases are in more remote locations. These bases, Cannon AFB and Holloman AFB, are both in New Mexico, near small towns. Holloman AFB is less than a 20-minute drive away from the nearest town, Alamogordo, which has a population of around 31,000 people. The nearest major city is El Paso, Texas, which is about 92 miles southwest of the base. Cannon AFB is the farthest from a major city, more than 210 miles southeast of Albuquerque. The nearest town, Clovis, New Mexico, has a population of almost 40,000 people and is less than ten miles from the base. This means that RPA pilots and SOs at Cannon AFB have the shortest commute, but also have the least opportunity for easy travel throughout the United States.

The two active duty RPA squadrons that are not stationed in New Mexico or Creech AFB are stationed at Ellsworth AFB, near Rapid City, South Dakota, and Whiteman AFB, near Knob Noster, Missouri. Ellsworth AFB is about a 20-minute drive from Rapid City, which has a population of more than 70,000 people. However, the nearest major city is Denver, Colorado, which is a six-and-a-half-hour drive south. Whiteman AFB is only 70 miles east of Kansas City, and just outside of Knob Noster, which has a population of less than 3,000. Ellsworth AFB is very close to a somewhat sizable town, but very far from any travel hub; Whiteman is very close to a tiny town, but has fairly easy access travel to the rest of the United States.

The most challenging climate is in Las Vegas, which has one of the hottest summers in the United States. The coldest base is Ellsworth, with an average low for January and December of 13˚F.

Appendix C. Likert Scale Questionnaire Items

This appendix displays the Likert scale questionnaire items that were administered during the second half of the focus groups.

In the table below, please indicate **how often each statement applies to you** using the following scale:

1	2	3	4	5
Never	Rarely	Sometimes	Most of the time	Always

Then, for each statement that applies to you, please also indicate **how much it bothers you** using the following scale when applicable:

1	2	3	4	5
Doesn't bother me at all		Bothers me a little		Bothers me a lot

	How often it applies to you:					How much it bothers you:				
	1 Never	2	3	4	5 Always	1 Doesn't bother me at all	2	3	4	5 Bothers me a lot
Skipping meals at work	1	2	3	4	5	1	2	3	4	5
Working extra time outside of my official work hours	1	2	3	4	5	1	2	3	4	5
Having to live here in [Cannon, Creech, or Holloman]	Not Applicable					1	2	3	4	5
Not being able to talk about my job with friends and family because it's classified	Not Applicable					1	2	3	4	5
Working shifts that aren't the same from week to week	1	2	3	4	5	1	2	3	4	5
Working shifts that last for more than eight hours	1	2	3	4	5	1	2	3	4	5
Engaging in multiple areas of responsibility (AORs) or special instructions (SPINS) in the same week	1	2	3	4	5	1	2	3	4	5

In the table below, please indicate **how much you agree** using the following scale:

1	2	3	4	5	6
Strongly disagree	**Disagree**	**Slightly disagree**	**Slightly agree**	**Agree**	**Strongly agree**

Statement	Strongly Disagree					Strongly Agree
I would feel uncomfortable if my colleagues found out I saw a therapist.	1	2	3	4	5	6
I have enough time to do my job well during duty hours.	1	2	3	4	5	6
We have enough people in my work group to accomplish the job.	1	2	3	4	5	6
I am encouraged by my unit leadership to learn new things.	1	2	3	4	5	6
I have been adequately trained for the job I am expected to do.	1	2	3	4	5	6
I am sometimes asked how we can improve the way my work group operates.	1	2	3	4	5	6
My unit's leaders reward performance fairly.	1	2	3	4	5	6
When deserved, my unit's leaders do a good job of recognizing people in all grades and types of jobs.	1	2	3	4	5	6
I feel comfortable voicing my opinions and criticisms:	1	2	3	4	5	6
to my leadership	1	2	3	4	5	6
in today's focus group discussion	1	2	3	4	5	6
in today's paper surveys	1	2	3	4	5	6
in a confidential online Air Force survey	1	2	3	4	5	6

In the table below, please indicate how much you agree or disagree with each statement using the following scale:

1	2	3	4	5
Strongly disagree		Neither agree nor disagree		Strongly agree

For each statement that applies to you, please also indicate how much it bothers you using the following scale:

1	2	3	4	5
Doesn't bother me at all		Bothers me a little		Bothers me a lot

	Agree or disagree					How much it bothers you				
	1	2	3	4	5	1	2	3	4	5
Statement	Strongly disagree				Strongly agree	Doesn't bother me at all				Bothers me a lot
I work more hours than most airmen	1	2	3	4	5	1	2	3	4	5
I like my job	1	2	3	4	5	Not Applicable				
My job is rewarding	1	2	3	4	5	Not Applicable				
I wish I had a different job in the Air Force	1	2	3	4	5	1	2	3	4	5
People in my job have much lower chances of being promoted than people in other Air Force jobs	1	2	3	4	5	1	2	3	4	5
I don't have: the right tools/equipment to be tactically effective	1	2	3	4	5	1	2	3	4	5
enough fun things to do on my time off	1	2	3	4	5	1	2	3	4	5
the same job opportunities as airmen in other Air Force specialties after separation	1	2	3	4	5	1	2	3	4	5
I don't get enough: opportunities to fly with an experienced crew member or instructor	1	2	3	4	5	1	2	3	4	5
opportunities to take leave	1	2	3	4	5	1	2	3	4	5
sleep because of my shift work	1	2	3	4	5	1	2	3	4	5
support for my spouse	1	2	3	4	5	1	2	3	4	5
training or education to advance in my career	1	2	3	4	5	1	2	3	4	5
Other people in the Air Force don't understand how important our work is	1	2	3	4	5	1	2	3	4	5
People outside the Air Force don't understand how important our work is	1	2	3	4	5	1	2	3	4	5
I am often really bored while on the job	1	2	3	4	5	1	2	3	4	5
I am often overwhelmed on the job	1	2	3	4	5	1	2	3	4	5
I have a lot of responsibility on the job	1	2	3	4	5	1	2	3	4	5
I feel like I have to be perfect on the job	1	2	3	4	5	1	2	3	4	5
We are understaffed	1	2	3	4	5	1	2	3	4	5
We are micromanaged by supported units	1	2	3	4	5	1	2	3	4	5

We don't get the same level of preparation and autonomy as manned assets are given	1	2	3	4	5	1	2	3	4	5
We don't get enough constructive feedback from supported units	1	2	3	4	5	1	2	3	4	5

When you think about your work overall, how often do you feel the following?

1	2	3	4	5	6	7
Never	**Almost Never**	**Rarely**	**Sometimes**	**Often**	**Very Often**	**Always**

Tired	1	2	3	4	5	6	7
Disappointed with people	1	2	3	4	5	6	7
Hopeless	1	2	3	4	5	6	7
Trapped	1	2	3	4	5	6	7
Helpless	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Physically weak/Sickly	1	2	3	4	5	6	7
Worthless/Like a failure	1	2	3	4	5	6	7
Difficulties sleeping	1	2	3	4	5	6	7
"I've had it"	1	2	3	4	5	6	7
Tense	1	2	3	4	5	6	7
Worried	1	2	3	4	5	6	7

During the past 30 days…	**1** **None** **at all**	**2** **Some**	**3** **A little**	**4** **A lot**
How much stress did you experience at work or while carrying out your military duties?	1	2	3	4
How much did stress at work interfere with your ability to perform your military job?	1	2	3	4
How much did stress in your family life interfere with your ability to perform your military job?	1	2	3	4

Appendix D. Additional Questionnaire Item Results

Table D.1 presents the results of additional questionnaire items that were not discussed in the main body of the report. For each item, the scale type and the total number of scale points are listed next to the item. For example, for items asking "how often each statement applies to you," the scale ranged from 1 to 5. Items using this scale are therefore listed as (Applies, 5) in the table. See Appendix C for the scale anchors.

Table D.1. Average Responses on Remaining Questionnaire Items

Question	MAJCOM	18X	Other Pilots	SOs	Intel	LR
Not being able to talk about my job with friends and family because it's classified (Bothers, 5)	AFSOC	2.5	—	3.1	2.6	2.3
	ACC	3.0	2.8	2.5	—	1.7
Working shifts that aren't the same from week to week (Applies, 5)	AFSOC	3.9	—	3.1	3.2	2.9
	ACC	3.1	3.8	3.9	—	2.8
Working shifts that aren't the same from week to week (Bothers, 5)	AFSOC	4.7	—	4.2	4.2	4.8
	ACC	4.8	3.8	4.5	—	3.0
Engaging in multiple AORs or SPINS in the same week (Applies, 5)	AFSOC	4.6*	—	4.0	3.6	2.0*
	ACC	2.2	2.6	3.9	—	1.0
Engaging in multiple AORs or SPINS in the same week (Bothers, 5)	AFSOC	2.4	—	2.1	2.1	1.9
	ACC	2.1	2.5	2.7	—	2.6
I have enough time to do my job well during duty hours (Agree, 6)	AFSOC	3.1*	—	2.9	3.4	2.0
	ACC	2.2	2.1	3.2	—	4.2*
I don't have the right tools/equipment to be tactically effective (Agree, 5)	AFSOC	2.3	—	2.2	2.5	2.8
	ACC	2.5	2.9	2.5	—	2.5
I don't have the right tools/equipment to be tactically effective (Bothers, 5)	AFSOC	2.5	—	2.3	2.6	2.7
	ACC	2.6	3.2	2.5	—	2.4
I don't have enough fun things to do on my time off (Agree, 5)	AFSOC	4.1*	—	3.3	3.0	4.1*
	ACC	1.7	2.8	2.5	—	2.1
I don't have enough fun things to do on my time off (Bothers, 5)	AFSOC	4.3*	—	3.9*	3.1	3.8*
	ACC	1.5	3.1	2.5	—	1.4
I don't have the same job opportunities as Airmen in other AFSs after separation (Agree, 5)	AFSOC	3.4	—	3.1	2.8	3.0
	ACC	2.8	2.8	2.9	—	3.3
I don't have the same job opportunities as Airmen in other AFSs after separation (Bothers, 5)	AFSOC	3.3	—	2.8	2.7	3.1
	ACC	3.2	3.5	3.2	—	3.4

I don't get enough opportunities to take leave (Agree, 5)	AFSOC	3.8	—	3.2	3.3	4.7*
	ACC	3.8	3.6	3.5	—	1.8
I don't get enough opportunities to take leave (Bothers, 5)	AFSOC	3.6	—	3.7	3.3	4.8*
	ACC	4.0	3.7	3.2	—	2.4
I don't get enough support for my spouse (Agree, 5)	AFSOC	3.7	—	2.9	3.2	3.9*
	ACC	2.9	3.6	3.9*	—	1.7
I don't get enough support for my spouse (Bothers, 5)	AFSOC	3.7	—	3.6	3.4	3.7*
	ACC	2.9	3.9	3.8	—	1.9
I am often really bored while on the job (Agree, 5)	AFSOC	2.8	—	2.2	2.3	2.7
	ACC	3.1	2.7	2.1	—	2.3
I am often really bored while on the job (Bothers, 5)	AFSOC	2.6	—	2.0	2.2	2.4
	ACC	2.5	2.3	2.1	—	2.4
I am often overwhelmed on the job (Agree, 5)	AFSOC	2.7	—	3.3	2.8	3.8*
	ACC	2.2	2.8	2.7	—	2.0
I am often overwhelmed on the job (Bothers, 5)	AFSOC	2.5	—	2.8	2.6	3.5*
	ACC	2.1	3.0	2.8	—	1.9
I have a lot of responsibility on the job (Agree, 5)	AFSOC	4.6*	—	4.5	4.4	4.6*
	ACC	4.0	4.6	4.2	—	3.6
I have a lot of responsibility on the job (Bothers, 5)	AFSOC	2.3	—	2.5	2.5	3.5*
	ACC	2.2	2.1	2.8	—	2.3
I feel like I have to be perfect on the job (Agree, 5)	AFSOC	4.4	—	4.4*	4.2	4.0
	ACC	4.0	4.5	3.6	—	3.4
I feel like I have to be perfect on the job (Bothers, 5)	AFSOC	2.8	—	2.7	2.8	3.3
	ACC	2.9	2.8	2.9	—	2.5

NOTE: Occupations with scores that were significantly different by MAJCOM at $p < .05$ are indicated with an asterisk (*) following the greater of the two means.

Acknowledgments

Abbreviations

ACC	Air Combat Command
AF	Air Force
AFB	Air Force Base
AFMA	Air Force Manpower Agency
AFSC	Air Force Specialty Code
AFSOC	Air Force Special Operations Command
AOR	area of responsibility
APA	American Psychological Association
CAP	combat air patrol
COCOM	combatant command
CONUS	contiguous United States
DoD	Department of Defense
FTU	formal training unit
GAO	Government Accountability Office
GCS	ground control station
ICBM	intercontinental ballistic missile
IQT	Initial Qualification Training
ISR	intelligence, surveillance, and reconnaissance
LR	launch and recovery
LRE	launch and recovery element
MAJCOM	major command
MCE	mission control element
MIC	mission intelligence coordinator
OPTEMPO	operations tempo
PAF	Project AIR FORCE
PCS	permanent change of station

RPA	remotely piloted aircraft
RSO	remote split operations
SME	subject-matter expert
SO	sensor operator
SOS	Special Operations Squadron
SOW	Special Operations Wing
SPIN	special instruction
TDY	temporary duty

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The demand for the Air Force's remotely piloted aircraft (RPAs) has exploded in the past few years. Even though the Air Force has increased its number of RPA units, it has been unable to keep up with this demand. This problem is exacerbated by an inability to fill the ranks of RPA units. The result is that RPA personnel work inordinately long hours, and the RPA mission is more demanding in terms of flying time than the typical traditionally manned aircraft mission. Air Force Special Operations Command leadership recognized the need to address RPA workforce issues and asked RAND Project AIR FORCE to identify issues potentially affecting the RPA force and recommend ways to mitigate them. Researchers conducted focus groups with RPA personnel, finding that while crews view their missions as important, they feel stressed due to heavy workloads, undermanning, shiftwork, lack of training, and undesirable base locations. About one-third of those in the groups showed signs of burnout, a feeling that typically occurs after prolonged periods of stress. Researchers recommend reducing personnel stress by reducing workload and instituting a "combat-to-dwell" policy that allows personnel time to attend to family and administrative needs and mitigates combat exposure.

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