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# Incentive Pay for Remotely Piloted Aircraft Career Fields

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# Summary

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## Background and Purpose

RPA have figured prominently in the conflicts in Afghanistan and Iraq, and they are expected to continue to do so in future operations of U.S. military forces. The United States Air Force currently operates three types of RPA: the MQ-1 Predator, the MQ-9 Reaper, and the RQ-4 Global Hawk.<sup>1</sup> Each requires an aircrew that comprises a pilot and a sensor operator at both the continental United States–based mission-control element (MCE) and the deployed launch-and-recovery element (LRE). Under current policies, the Air Force pays the personnel who operate the aircraft and its sensors incentive pays, specifically, AVIP and CEVIP. Controversy surrounds the awarding of these special pays to RPA operators, with some arguing that such pays should go to only those who crew traditional manned aircraft and others debating the need for and affordability of such incentives when the services are facing substantial budget cuts.

The demand for RPA required the Air Force to divert pilots who were trained to fly traditional aircraft to flying RPA. The Air Force also created two new career fields, one for officer RPA pilots (18X career field) and one for enlisted RPA SOs (1U career field). Personnel in these new fields will eventually replace those who have been temporarily operating the RPA. The Department of Defense asked the Air Force to assess the effectiveness and efficiency of RPA incentive pays

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<sup>1</sup> Most of the analysis in this monograph focuses on the Predator and Reaper.

for attracting and retaining pilots and SOs, and the Air Force asked RAND to assist in that assessment.

## **Manpower Demands**

A first step in determining the effectiveness and efficiency of incentive pays is to ascertain the demand for RPA skills. Here, the Air Force has both a short- and a long-term issue. The short-term task is to produce enough RPA pilots and SOs to meet current operational demands, i.e., 24/7 coverage for 51 active-duty MQ-1 and MQ-9 combat air patrols (CAPs). While ten crews (consisting of one pilot and one sensor operator) per CAP are required for normal 24/7 operations, only seven or eight are currently available, resulting in the need for extensive overtime.

The long-term issue is the need to effectively transition from growing to stabilizing the career fields. Our analysis suggests that the ten-crews-per-CAP requirement will be satisfied quickly, after which the current training production level can and should be reduced. Current Air Force short-term ramp-up plans call for a training production of 60, 146, and 168 new 18X RPA pilots in FY 2011, FY 2012, and FY 2013, respectively, and 353, 327, and 327 SOs in FY 2011, FY 2012, and FY 2013, respectively. These ramp-up numbers are significantly higher than normalized training-production requirements, which we estimate to be 95 18X RPA pilots and 95 SOs per year. PAF analysis indicates that the currently planned production levels will eliminate opportunities for those in the FY 2011 through FY 2013 training-production cohorts (i.e., graduating classes) to serve second operational tours. A more deliberate pace of replacing the traditional pilots that are filling in as RPA pilots (designated 11U pilots) with 18X RPA pilots (i.e., pilots in the new RPA career field) could provide a better transition to a normalized crew force.

## Civilian Employment Opportunities

Another key issue in determining what sort of incentives might be needed to retain RPA personnel is the demand for RPA skills in the civilian market. Since civilian organizations could offer much higher salaries than the Air Force can, if they especially prized RPA skills, they would likely offer salaries that are lucrative enough to induce members of the Air Force to leave the service.

Our analysis shows that the unmanned-aircraft-system (UAS) industry has experienced significant growth in the 2000s, much of it fueled by contracts from the U.S. military. This growth has sparked an increase in employment opportunities for individuals with RPA operational experience. If military spending on RPA continues at the pace some predict, so should employment opportunities. However, the role that cuts in U.S. defense budgets beyond FY 2011 could play in U.S. defense spending on RPA is unclear. As the Air Force develops its strategies to man RPA career fields, it will have to consider the pull of the defense-contractor job market on its RPA pilots and SOs.

Employment outside defense-contracting organizations will remain limited for the foreseeable future, although opportunities will likely exist in other government and public service organizations, such as U.S. Customs and Border Protection (CBP). Until the Federal Aviation Administration (FAA) opens public national airspace to RPA and the UAS industry finds solutions to its technological hurdles, civil and commercial UAS markets will remain small. Thus, retention of RPA pilots and SOs in the Air Force will depend largely on the pull of defense-contractor positions until nonmilitary UAS markets grow significantly, and the strength of that pull is not clear.

## The Effect of Incentive Pays

Evaluating incentive pays requires estimates of their effect on retention and their cost. We used an econometric model of officer and enlisted retention behavior, the Dynamic Retention Model (DRM), to simulate the effect of the CEVIP and AVIP under varying assumptions regard-

ing the wages available to individuals with RPA training in the civilian labor market. The parameters of the model were estimated using a longitudinal sample of approximately 30,000 enlisted airmen and 30,000 officers, where each individual's history of active component (AC) and reserve component (RC) participation was tracked for up to 20 years. The version of the DRM used in this analysis was originally developed to support the 10th QRMC and was refined, further developed, and reestimated to support the 11th QRMC.<sup>2</sup>

For the Air Force, there is a tipping point at which it becomes cheaper to retain a trained individual than to recruit and train a new one. Even if this tipping point is not reached, incentive pays may be needed to meet experience requirements.

If the civilian wage opportunities for RPA pilots are no different from those for other officers, reducing or eliminating the 18X RPA pilot incentive would have only a marginal impact on the career field's ability to meet requirements. However, if civilian wage opportunities for RPA pilots are higher than those for other officers, the conclusions regarding the need for incentive pays differ markedly. When civilian wage opportunities are 110 percent of those of other officers, the career field may not retain enough personnel to meet the current planned manning requirements without incentive pays.

The situation is similar for the SO force. If civilian wage opportunities for SOs do not differ from those available to other enlisted personnel, the consequences for retention are negligible. However, if civilian wages for SOs are higher than those for other enlisted personnel, the conclusions change considerably, even when enlistment bonuses are in place. When civilian wage opportunities for SOs are 130 percent of those of other enlisted personnel, the career field may not retain enough personnel to meet the current planned manning requirements without the incentive pays. At 140 percent, retention will fall short of the planned manning requirement, even with the current incentive pays and reenlistment bonuses.

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<sup>2</sup> The mathematical foundations, data, and estimation methods for the DRM are presented in Asch et al. (2008) and Mattock, Hosek, and Asch (forthcoming).

Thus, cutting incentive pays for either officers or enlisted personnel would result in a significant decline in the cumulative retention of 18X RPA pilots and SOs. If training cost or civilian wages available to airmen with RPA training are sufficiently high, CEVIP results in steady-state cost savings for RPA SOs. While there is no cost savings in a steady state, the cost premium associated with offering AVIP to 18X RPA pilots is small (1 to 3 percent) over the likely range of wages available to those who enter the civilian labor market.

## Meeting Career-Field Demands

Because retention rates vary depending on the civilian wage potential of the career field, it is necessary to understand the civilian wage potential for 18X RPA pilots and SOs. For officers, we assumed a wage opportunity comparable to the earnings of 32- to 36-year-old men with four or more years of college in professional/technical occupations. In 2009 dollars, that demographic group earns an average of \$86,808 per year. For enlisted personnel, we assumed a wage opportunity comparable to the earnings of 27- to 31-year-old men who have completed some college courses in professional/technical occupations. In 2009 dollars, that demographic group earns an average of \$45,811 per year.

Comparing these average wage estimates with the medians of the ranges of the salary figures reported by civilian-employer representatives, we find that RPA pilot jobs for those deployed to overseas war zones pay at least 150 percent of the average wages that would be expected for separated officers in general. Findings for SO wages are even more striking. Although only two organizations reported having SOs, even the lowest figures they provided were 127 percent and 181 percent of the average civilian wage for stateside and deployed positions, respectively.

Given that a wage potential of even 110 percent for 18X RPA pilots and 140 percent for SOs would result in a staffing shortage, these estimates of higher-than-average wage potential for SOs and RPA pilots suggest that it would be advisable to continue the full incentive

pays for both career fields and the bonus pays for the SOs, for whom a large increase in programmed training production may also be needed.

## **Recommendations**

On the basis of our findings, we offer the following recommendations.

### **Recommendation 1: Retain incentive pays for the 18X RPA pilot and SO career fields, at least until more information on the normalized career fields is available.**

Current estimates of the civilian wage potential suggest that civilian pilot positions (requiring deployment) pay much higher salaries than the typical salaries officers can expect. Pay for SOs is even higher relative to the average pay of enlisted personnel in the civilian market. This information, combined with the predicted low retention rates given even modest civilian wage premiums, suggests that incentive pays are needed. In the case of SOs, continuing the reenlistment bonuses would also be justified.

### **Recommendation 2: Reevaluate the training production ramp-up and continue to rely on 11U pilots.**

Our analyses showed two diametrically opposed findings regarding the appropriate number for training production. There is a need to keep the training-pipeline production limited to no more than about 100 people to ensure that existing RPA personnel will have an opportunity to complete a second tour in MCE units to increase the experience level of squadron personnel. Yet if retention is poor, training-pipeline production would need to be increased to have enough personnel to meet operations, training, staff, and leadership requirements. We suggest that greater emphasis be placed on retaining personnel and growing the mature career field rather than ramping up so quickly that MCE units will in only a few years have more personnel than they can absorb. The health of the future career field in the long term should take priority in decisions regarding training-pipeline production and desired levels of retention.

To balance the need for meeting MCE requirements quickly and building a healthy and sustainable career field, we suggest retaining the incentive pays and starting with a tempered ramp-up, with a training production rate that will fill MCE requirements for 18X RPA pilots by FY 2016 and for SOs by FY 2013. Traditional pilots could continue to fill the gaps in the MCE force as the 18X RPA pilots are trained, with a target end date of 2016.

**Recommendation 3: Study attracting and selecting candidates for the 18X RPA pilot career field.**

Air Force personnel must volunteer for all rated positions. This requirement is not new; however, because rated jobs have always received the same rated incentive pay, that pay has not been a factor in deciding which rated position to select when volunteering. Such other factors as interests, prestige, responsibility, civilian career opportunities, danger, and various types of compensation, such as bonus pays, drive career choices. That could change if RPA positions do not receive the same incentive pays as other rated careers. Analyzing the effect of incentives and other compensation policies on the Air Force's ability to attract many candidates and high-quality candidates would be worthwhile. We therefore recommend investigating this issue when at least a few cohorts of data are available and collecting new data on potential applicants' reasons for or against volunteering for the RPA career field, along with their final decisions and qualifications.

**Recommendation 4: Revisit the issue of RPA incentive pays in three to eight years.**

Since the two RPA career fields are quite new, much of the planning is still under way, and many aspects of them are still uncertain. The number of personnel lost to training attrition, difficulties in recruiting, and even the length, content, and costs associated with training are likely to change in the next few years as the Air Force learns more about the career-field requirements and as the personnel are selected and developed under normalized conditions.

In addition, the civilian market for personnel with RPA training is only in its infancy, and its magnitude is hard to anticipate. For exam-

ple, because at present the FAA will not permit unconstrained RPA operations in commercial airspace, commercial applications, such as remotely piloted cargo planes, are still in development. If and when the FAA reverses that decision, commercial RPA applications could grow rapidly. As another example, other countries (such as the United Arab Emirates) are beginning to enter the UAS market, so the international job market may grow rapidly as well. Because of the many uncertainties in both the U.S. and international markets, the civilian pay estimates and the number of job openings we present in this monograph, while based on the best information available at the present time, could turn out significantly differently as the Air Force career fields and civilian markets mature.

For this reason, we strongly advise the Air Force to reexamine the issue of RPA career-field retention, incentive pays, and other compensation policies once the career field has at least a few years of data available. Until then, our recommendation is to continue incentive pays for both career fields and retain the SO bonuses because the consequences of failure to retain enough personnel would cause serious problems with filling operations, training, leadership, and staff positions.