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The Dynamic Retention Model for Air Force Officers

New Estimates and Policy Simulations of the Aviator Continuation Pay Program

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Prepared for the United States Air Force

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All the military services face problems retaining the number of quality officers they need to support current and future needs. In the USAF, the problem is most acute in the case of pilots, information technology specialists, scientists, and engineers. The USAF developed a pay incentive program to induce pilots to remain in the service. The ACP program pays an annual bonus to pilots who commit to certain terms of service. The ACP program has been expanded to certain groups of navigators and air battle managers. Generally the bonuses are paid to officers who agree to extend their service for specified numbers of years (e.g., three or five) or to a specified length of service, (e.g., 25 years of aviation service [YAS]).

Accurate models are needed to help the USAF develop retention policies that will retain a sufficient number of officers having the right qualities. The Air Force, and researchers working on personnel issues for the Air Force and other services, have long used an annualized cost of leaving (ACOL) model to help determine how changes in compensation would affect retention. However, the ACOL model does not handle two important factors in retention decisions particularly well: future uncertainty and random “shocks.”

The advantage of the DRM is that it allows us to model how officers might value future career flexibility in the face of uncertainty. This is important in evaluating how people will respond to contracts that obligate them to multiple years of service, such as those available under the ACP program. Advances in computer hardware and software have now made estimation of the DRM feasible on even low-end personal computers.

The DRM can be used to explore different policy options by taking individual retention decisions and running them through various policy alternatives. For example, it can analyze the effect of proposed changes to the ACP program, such as eliminating the until-20-YAS option or the elimination of the ACP program altogether. The DRM shows that eliminating the until-20-YAS option (while keeping the five-year contract option) results in only a small change to overall retention, while eliminating the ACP program altogether would result in the Air Force losing up to 15 percent of its most experienced officers.1

We have included the full model code and associated data in Appendix B; this should enable workers in the field of officer retention to readily replicate the results reported here,

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1 As of FY 2005, the until-20-YAS option is no longer available, and only initially eligible officers can take the five-year option.
enhance and extend the model, and run simulations exploring different policy alternatives (e.g., changes to the retirement system) from those covered in this technical report.

**Conclusions**

The DRM fits the data. Our extension of the DRM to cover ACP offers the Air Force an effective tool with which to analyze how officers respond to multiyear agreements. Computer code is now readily available to implement the model. We recommend that the Air Force adopt the model and consider widening its application.