CONNECTING RESOURCES TO READINESS

The end of the Cold War resulted in reduced force structures and diminished budgets, although the United States still faced a range of security challenges that was broader and more complex than those that had been posed by the Soviet Union. The more austere budget climate heightened policymakers’ interest in the connection between resources and readiness. Fewer resources make it more important to ensure that they purchase the greatest capability possible.

This difficult task is made more so because resources do not connect directly to readiness. That is, it is not clear how much additional capability—or readiness—a given expenditure buys. How much more readiness does recruiting more people or buying more spare parts gain? The question has no easy answer, because readiness results from a complex interaction of many things, including people (their number and skills), equipment (amount on hand and its condition), command and control capabilities, strategic lift, and so forth.

The Office of the Secretary of Defense (OSD) and the Services have wrestled with this problem for years, attempting in various ways to characterize the readiness of forces. Currently in use is the SORTS system, which measures important components of readiness but provides something less than an accurate assessment.1

1SORTS—Status of Resources and Training System—is the readiness reporting system used by the Joint Staff. In it, the Services report on aspects of units relating to
The search for a more definitive link between resources and readiness has caused policymakers to look to models as a way of illuminating the connection. The specific task posed for this study was to identify, describe, and evaluate how well a model or set of models currently in use defines the connection between resources and readiness. We have undertaken that task, but we have broadened it beyond the description and evaluation of a set of models. We also consider how models might fit into the larger context of overall force readiness and what policymakers might have to do to improve their capability to assess that readiness.

Because people have such an important influence on readiness and because the Services use a rich array of models to manage personnel, we focused on the personnel function. Our search led us to two Army models: Enlisted Loss Inventory Model/Computation of Manpower Program using Linear Programming or ELIM\textsuperscript{2}, and Military Occupational Specialty Level System or MOSLS.

ELIM is the primary model used by the Army to manage its enlisted personnel strength at the aggregate level. ELIM primarily addresses the enlisted personnel strength in operating units. It also tracks and produces output for the total Army end strength, including officers and personnel in the individuals account. Its primary function is to minimize the deviation between the number of people authorized and the number on hand.

The Army uses MOSLS to balance the Military Occupational Specialty (MOS) and grade-level requirements of the Army with the available population. It complements ELIM in that it provides grade and MOS detail, which ELIM does not consider. MOSLS supports enlisted personnel policy at two levels. At the most aggregate level, MOSLS enables Army analysts to explore the implications of policies and behaviors that affect the Service's need for total numbers of individuals with certain skills and grades. MOSLS also supports the

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\item readiness: personnel, equipment, and training. They report by assigning numerical “C” (for “characteristic”) ratings for each category and subcategory based on qualitative and quantitative criteria. For personnel, the services report on numbers assigned, skills, and grade.
\item ELIM was formerly called ELIM-COMPLIP.
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analysis of voluntary loss behavior and of involuntary loss policies upon the entire enlisted force. At the more detailed MOS and grade level, MOSLS results can be used to assess the effects of promotion, reenlistment, and accession policies. MOSLS also forecasts the Service's need for newly trained individuals by skill and helps determine the training programs necessary to produce them.

WHERE ELIM AND MOSLS FIT IN CONNECTING RESOURCES TO READINESS

Personnel readiness is part of a hierarchical framework of readiness. Personnel, training, and materiel all factor into unit readiness, which in turn contributes to the readiness of a given Service. That readiness combines with that of other Services—and that of the Joint community—to form overall force readiness.

Our research suggests that a number of attributes—for example, number of people qualified and available and their experience level comprise personnel readiness. However, these attributes are removed from resources. The Services do not buy qualified people; rather, they fund activities that lead to qualified people. For example, they recruit new enlistees and send them to schools, where they become qualified in a skill. Thus, activities—recruiting, retention, promotion—are what require resources.

Our research further suggests that activities are influenced by things the Services can and cannot control. We call the former control variables and the latter response variables. Advertising funds is an example of a control variable. The Army can determine how much and what type of advertising it wants to buy. Enlistment is a response variable. The Army attempts to use control variables to influence the response variables. The relevance of ELIM and MOSLS to this discussion is that, in the resource-to-readiness chain, the two models operate in the region between response variables and personnel readiness attributes. Figure S.1 depicts these relationships.

ELIM and MOSLS enter the picture far from the resources. In fact, they do not consider them. What they do consider is the historical performance of response variables, using a combination of modeling techniques including simulation and optimization to predict the ef-
flect on the attributes of personnel readiness. The Army then analyzes those predictions and decides if they represent the level of readiness it wants. If not, it can apply its resources differently to improve the prediction. In short, the Army decides what level of readiness it wants and uses ELIM and MOSLS to determine if its current resource allocation will produce it.

However, ELIM and MOSLS make no connection between control and response variables. As Figure S.1 shows, other kinds of models do; those we call econometric or behavioral models. These make predictions about things that are very hard to predict: For instance, how many more and what kinds of people will join the Army if the advertising budget increases by $10 million? Because they attempt to predict human behavior, they are subject to considerable uncertainty. However, they address a key segment of the resources-to-readiness link.

**HOW WELL DO ELIM AND MOSLS WORK?**

ELIM and MOSLS work well for what they were designed to do. ELIM and MOSLS are useful, and key, tools for Army active enlisted strength management. Both models use analytical techniques that
are valid and properly employed, given the original and current uses of the models. The models’ short-term predictions are typically accurate. The long-term predictions are also accurate during periods of little change in the Army’s structure and policies and in the external variables that influence personal behaviors (e.g., civilian wage and employment rates).

Although ELIM and MOSLS can provide some insight into the connection between resources and readiness, those using them for that purpose must keep the following clearly in mind:

- Neither model directly considers resources.
- The models both make predictions that, in part, hinge on personnel behavior, which is inherently unpredictable.
- Any results are subject to uncertainties the models do not consider. For example, neither model considers variables outside the military—such as civilian unemployment—that can profoundly affect response variables.
- The models may not adequately address interactions among personnel programs. For example, the Army might freeze promotions to obtain short-term savings. But this step may increase losses and drive up recruiting and training costs. The models would predict the former, but not necessarily the latter.

**WHAT TO DO?**

The Army could improve its ability to assess the effect of resources on readiness if it could link econometric models with ELIM and MOSLS. This is not to say that the link must be electronic. The linking could be procedural. But because the two types of models operate at different points on the resource-to-readiness spectrum, both outputs need to be considered.

Personnel readiness is still only a portion of the spectrum. The task of managing the resource-to-readiness process at the level of unit, Service, and force readiness remains. In theory at least, this task is possible. It would require additional research to identify models and procedures.