

AD-A056 879

RAND CORP SANTA MONICA CALIF

F/G 5/1

OBJECTIVES AND CONSTRAINTS IN LONG-RANGE MANPOWER PLANNING, (U)

MAR 77 C B FOCH

UNCLASSIFIED

RAND/P-5803

NL

OF
ADA
056879



END
DATE
FILMED

9 -78

DDC

AD A 056879

AD No. _____
DDC FILE COPY

[REDACTED]

1
B.S.

6

OBJECTIVES AND CONSTRAINTS IN LONG-RANGE MANPOWER PLANNING,

10

Craig B./Foch

14

RAND/P-5803

12

6 P.

11

Mar [REDACTED] 1977

DDC
RECEIVED
AUG 2 1978
D
Jr

296 600

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

P-5803

hc

78 06 29 026

The Rand Paper Series

Papers are issued by The Rand Corporation as a service to its professional staff. Their purpose is to facilitate the exchange of ideas among those who share the author's research interests; Papers are not reports prepared in fulfillment of Rand's contracts or grants. Views expressed in a Paper are the author's own, and are not necessarily shared by Rand or its research sponsors.

The Rand Corporation
Santa Monica, California 90406

ACCESSION No.	
DTIC	White Section <input checked="" type="checkbox"/>
DDC	Defi Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist.	AVAIL. and/or SPECIAL
A	

OBJECTIVES AND CONSTRAINTS IN LONG-RANGE MANPOWER PLANNING

Craig B. Foch*

The set of topics addressed under the rubric of military manpower analysis is so broad as to admit of few useful generalizations about the subject. One of those few, I would argue, is a preoccupation with the short term. Problems are not problems until they are crises, are subjected to quick fixes, and then seem to disappear in the wake of a newer crisis.

A recent and particularly edifying example of this phenomenon is the reenlistment bonus. The guidelines for its employment in specific situations have been much debated (such notions as criticality of skill and/or manning level, replacement cost, and civilian comparability spring easily to mind), and its actual effects on individual behavior have been much studied. Seldom, if at all, has it been noted that an insufficiency of experienced manpower is, in two important senses, a long-term problem. First, such shortages are not intrinsically unpredictable. Estimation of reenlistment rates two, three, or four years into the future will likely be subject to large errors--but uncertainty is preferable to complete ignorance. The second sense in which this is a long-term problem is that year-to-year variation in reenlistment rates (and reenlistments) can and should be exploited to the military's advantage. When the private-sector labor market is uninviting and reenlistment rates are high, the experienced cadre would grow beyond minimum requirements, providing a hedge against a less congenial future.

One could doubtless trot forth a host of reasons to believe that long-range manpower planning is either impractical or impossible. Rather than launching an exhaustive (and exhausting) examination of them, however, I

*Originally presented as an invited paper at the 38th Symposium, Military Operations Research Society, Fort Eustis, Virginia, December 7-9, 1976.

78 06 29 026

would suggest that they each possess a qualitative analogue somewhere in the military hardware problem--where long-range planning is both possible and profitable.

It is not my desire here, in any case, to justify long-range manpower planning, but to discuss some of the problems and opportunities such planning might present us and how to tell which is which.

True Constraints

Consider first what I choose to call "true constraints"--i.e., those aspects of the situation over which the military has no control and to which, accordingly, it must accommodate itself. The list is so short as to invite a charge of naivete'; rest assured that I am familiar with the much larger set of "constraints" in the conventional sense. I will argue, however, that most of them are so defined out of choice rather than necessity.

Two of these "true constraints"--the size and composition of the American manpower pool and the condition of the private sector labor market--together affect the terms under which an all-volunteer military can contract for the people it wants. The population or, more precisely, demographic constraint can be modelled with fair precision far into the future. Currently, for instance, it can safely be predicted that the entry-age population cohort will be in significant decline in the years ahead. Other things equal, this change will render manpower more expensive to the military.

The role of future civilian labor market conditions is harder to assay. On the one hand, private sector worker productivity and wages can be expected to cycle around an upward trend, perhaps thereby also driving up

military manpower costs. But it is also possible that private sector employment will continue the shift toward technological complexity already evidenced by the large numbers of so-called "permanently unemployed." If so, the military may have the option of withdrawal from competition with the private sector, instead operating in parallel with it.

The budget is often regarded as a constraint in manpower planning, and in a broad sense it is. The constraint is not, however, in the form of a fixed number of dollars. Recent experience with the transition to an all-volunteer force demonstrates this. Where there is need, the dollars will be found--elsewhere in the defense budget, elsewhere in the federal budget, or in the taxpayer's pocket. The budget constraint, therefore, concerns not its size so much as the fact that it is determined in a *political context*. Needs will be filled, that is, when and if they are considered legitimate by the electorate.

Technology is sometimes cast in the role of manpower planning constraint, as when concern is expressed over the military's present or future ability to attract the highly talented people needed to operate and maintain the "gee-whiz" weapons of today and tomorrow. A comparison of U.S. and U.S.S.R. practices, however, suggests that such concerns reflect choices in military doctrine more than an immutable reality. The *ability* to construct a white-collar military, in other words, does not imply its *necessity*. Technology is, at any one point in time, a "true constraint," but only in the sense that it limits the set of alternative means to a desired end. Both forced and natural marches of knowledge change these limits over time--currently, by and large, in the direction of labor-savings; in the future, perhaps, towards capital-savings.

Finally, there is the adversary, whose past, present, and future behavior constitute the ultimate constraint. No amount of peacetime efficiency can compensate us for failure either to deter armed conflict or to prevail should deterrence fail.

Objectives

Beyond these few truly exogenous factors lie many more about which concern has been expressed at one time or another and which can, as a matter of choice, be viewed as objectives, constraints, or noise. For the purposes of this discussion, I would categorize these factors under the rubrics of *efficiency*, *equity*, and *insurance*.

Efficiency factors pertain to output and cost. Output can be measured quantitatively ("more is better") or qualitatively ("better is better") on scales defined objectively (e.g., last year's performance) or relatively (the enemy's performance). Costs are usually the budget variety, but are sometimes construed as foregone civilian sector output. Military output and costs appear interchangeably as objectives and constraints: maximize output subject to a fixed budget; or minimize the cost of producing a given output. Sometimes both are regarded as constraints in the pursuit of some third factor as objective; and, happily, only rarely are both regarded as objectives--as in "maximum output at minimum cost."

Equity factors are a diverse group held together by a shared allegiance to the concept of justice or fair play. In some cases the effort is directed toward society at large (as in Project 100,000); in others justice is defined in terms of military versus civilian (as in military pay comparability). As in the case of efficiency, equity factors may appear as either objectives or

constraints; unlike the earlier case, they are generally not regarded as either of these on a continuing basis. Rather, they loom and recede in response to political fashions and/or particularly egregious abuses.

The set of factors which I have grouped under the rubric of insurance, rarely encountered in manpower policy or research, reflect the interdependence of solutions and problems over time. It is probably overstating the case to say that today's solutions *are* tomorrow's problems; but it is certainly true that what we do or fail to do now has an impact on tomorrow's problems and on the solutions available to us then.

We insure ourselves from future harm in one of three ways, depending on the nature of the threat. If the problem is both foreseeable and avoidable, and if the cost of avoidance is smaller than the cost of solution, we insure against future harm by preemption. A case in point is foreseeable decline in the sizes of entry-age population cohorts in the years ahead, posing the potential problem of an insufficiency of first-term enlisted men. Solution of this problem, once it exists, will entail more intensive recruiting efforts and/or higher first-term pay. Avoidance entails increased retention of existing personnel and restructuring manpower requirements to make effective use of a more mature labor force. Which of these two is to be preferred, of course, cannot be determined conceptually.

If the problem is foreseeable but unavoidable, we insure against future harm by readying compensating differentials elsewhere. An existing example of such compensation is our reliance on better training and equipment in the face of the U.S.S.R.'s superior numbers.

In the case of unforeseeable problems, the means of insurance is ably described in the old saying--probably first uttered by a long-ago general--

"Don't burn your bridges behind you." Lest you think this trivial, let me cite one last example. It has been suggested more than once in the recent past that the military substitute careerists for first-termers *as a cost-saving measure*. At first glance, this seems eminently sensible; indeed, you will recall that I made the same suggestion earlier as a hedge against declining enlistment-age cohorts. The operative phrase here, however, is "as a cost-saving measure." Those cost savings come, in part, from wholesale dismantling of the accession and training establishments. Then comes the unforeseeable: a large-scale, protracted war, in which the advantage belongs to the side first able to summon large numbers to arms.

Dilemma and Resolution

Efficiency, equity, insurance--three distinct classes of concerns, all to some extent legitimate and mutually competitive. They cannot all be objectives of manpower planning, since simultaneous pursuit of even two competing goals is conceptual nonsense. It is not even clear that it is possible to designate any *one* of them as an objective and the rest as constraints, since the latter may more than exhaust the available degrees of freedom. It is possible, for instance, that cost-minimization, subject to constraints on the level of output, equity, and insurance against future calamity, would founder in the politics of the budgetmaking process. That is, the electorate might prove unwilling to foot the bill, least-cost or not. And even if the problem were not over-constrained, on what basis could a single objective be chosen?

The way out of this dilemma, I would suggest, is to be found in the observation that whatever we might say to the contrary, military manpower systems *are* managed. (The bumblebee, it is said, cannot fly. It is lucky

for him that he does not fund the research that demonstrates this and so is not obliged to be briefed on it.) When described in the terms used here, the management style currently extant has the quality of Zen: None of these several concerns are either objectives or constraints, but together they are both.

More prosaically, management may be described as simultaneous pursuit of a large number of disparate goals, any one of which is fully achieved only rarely, if at all. Success is measured and resources are allocated in accordance with a weighted sum of discrepancies between actual and desired performance. The weights are apparently implicit and are not necessarily constant over the range of observed discrepancies or over time.

We in the research community will one day help the military to improve this system by rendering both its weights and its aggregation process explicit. But first we must recognize that it exists to be studied.