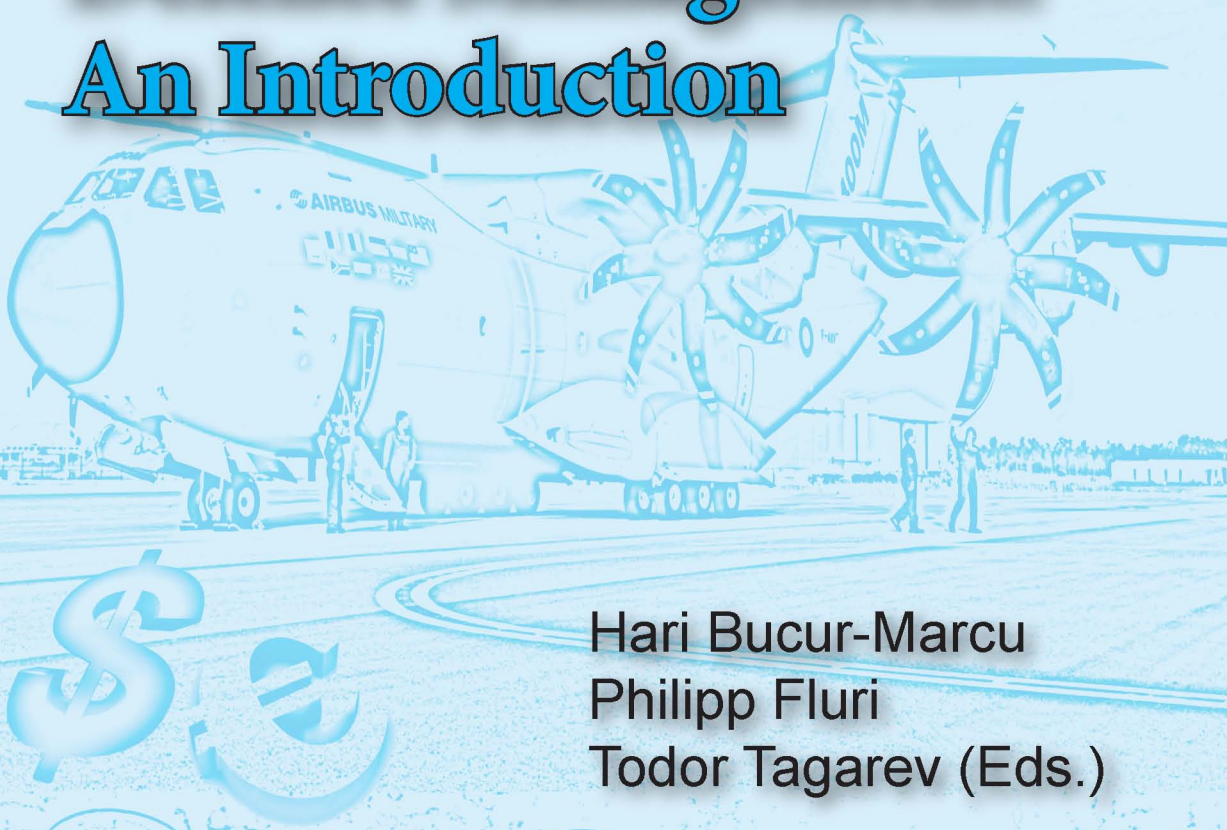
Defence Management: An Introduction



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Chapter 5

Manpower Management

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Introduction

Manpower is the essential military resource. Only with high quality and motivated people can budgets and weapon systems be turned into the effective military capabilities that are required to provide for a nation's security. Managing it, and managing it well—getting the right people into the right jobs at the right time and motivating them to work hard and intelligently—is therefore the essence of military success. But, as with any situation that involves human motivation, especially in the peculiar circumstances of military life, this is a management challenge of considerable complexity.[1]

This chapter explores that complexity. It begins with an overview section that assumes that the ultimate aim of any military manpower management process is to have

[1] For wide-ranging discussions of current issues in the management of military manpower see: Curtis Gilroy and Cindy Williams, eds., *Service to Country: Personnel Policy and the Transformation of Western Militaries* (Cambridge, Mass.: MIT Press, 2006), and Cindy Williams, ed., *Filling the Ranks: Transforming the U.S. Military Personnel System* (Cambridge, Mass.: MIT Press, 2004). A more technical survey of recent research in the economics of military manpower management is given in Beth J. Asch, James R. Hosek, and John T. Warner, "New Economics of Manpower in the Post-Cold War Era," in *Handbook of Defense Economics*, Volume 2, ed. Todd Sandler and Keith Hartley (Amsterdam: Elsevier, 2007), 1076-1138. For an earlier survey along the same lines see John T. Warner and Beth J. Asch, "The Economics of Military Manpower" in *Handbook of Defense Economics*, Volume 1, eds. Keith Hartley and Todd Sandler (Amsterdam: Elsevier, 1996), 347-398.

in place a force structure that is appropriate to a nation's security needs. From that it follows that the management process has to be a kind of quasi-market mechanism, one that attempts to match the supply of military manpower to the demand for it. On the demand side, the challenge is to know just what manpower numbers and mix of skills are required. These have to be determined within some form of force planning process that considers manpower requirements simultaneously with decisions regarding equipment, doctrine and organisation. But ultimately, the demand for military manpower will be driven by four critical considerations: the state of the international security environment; the perceived utility of military force in that environment; the technology of warfighting; and, as always, by issues of affordability. These factors and their implications for manpower requirements are discussed in the third and fourth sections of this chapter.

On the supply side, the challenge is to manage a lifecycle process of recruiting, training, promoting, deploying and finally releasing the right numbers of individuals such that there is a dynamic synchronisation of the distribution of available numbers and skills with the distribution of numbers and skills actually required to support the force structure. The fifth section of this chapter examines this process in detail. In particular, it addresses the issues that manpower managers face as they attempt to manage what is generally quite an inflexible process in the face of shifting demographics and changing labour markets. The sixth section explores some ideas for dealing with these issues through changing manpower supply processes to make them more flexible and hence more responsive to military requirements. A concluding section summarises the need for manpower management change and reflects on the factors that will determine how far and how fast that change might go.

Manpower Management: An Overview

In concept, the purpose of manpower management is quite straightforward: it is to have in place at the current moment the right numbers of people with the right mix of skills, experience, ages and rank levels necessary to sustain the required force structure. The challenge arises from the fact that required force structures are constantly evolving and transforming themselves in response to changes in the security environment, in military technologies, in national ambitions and in financial constraints. Manpower management systems, on the other hand, typically require long lead times to recruit, train, deploy, promote and release individuals in order reshape the manpower profile to satisfy force structure needs. And at each of these stages they must deal with intricate problems of human motivation.

Figure 1 presents a stylised overview of this problem. A nation is presumed to respond to the threats and opportunities offered by the international security environment by formulating some form of national security strategy.

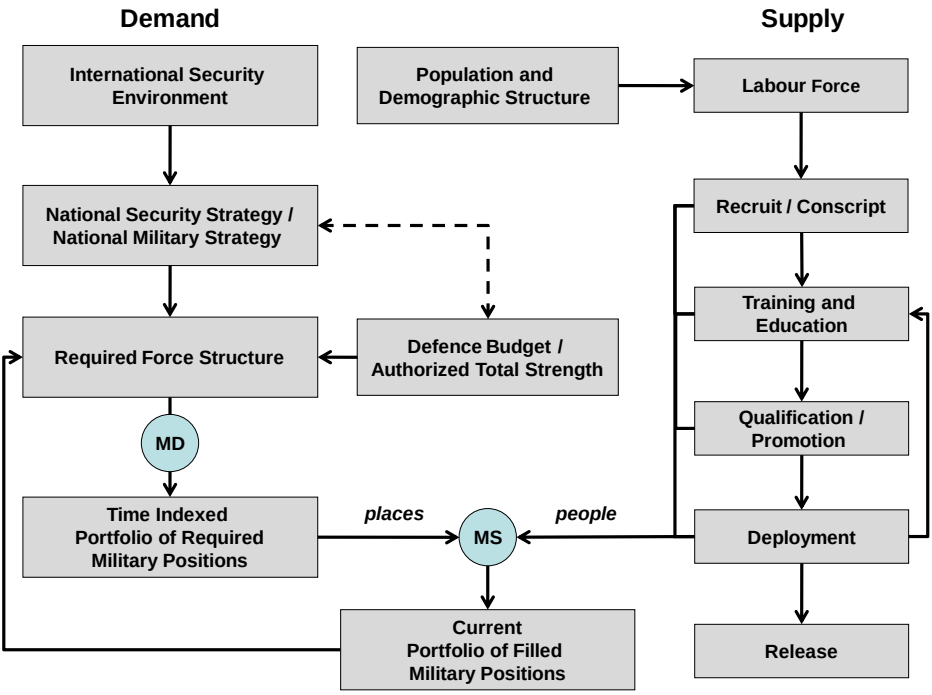

Figure 1: Managing the Military Manpower Portfolio.

As part of that broader strategy it will formulate a military strategy that reflects its perception of the utility of military force in dealing with those threats and opportunities. The force structure required to support that strategy will then drive the demand for military manpower, both in terms of numbers and particular skills required. But force structures and manpower cost money, and ultimately what is required will be shaped as much by budgetary considerations as by strategic need, perhaps even more so. In addition to financial constraints, manpower requirements will also be constrained by legal and administrative limitations on total force size imposed by governments and parliaments. It may not be the case, however, that financial and force level constraints actually match expressions of national security need. As a result, the required force structure that finally emerges is always a compromise between desirability on one hand and affordability on the other. In practice, it is the outcome of continuous jousting between political and bureaucratic elements in the defence ministry on one side and those in the economic and finance ministries on the other.

Within the constraints imposed by the political process, defence planners and managers make force structure choices as they decide upon the allocation of re-

sources at several different levels: between manpower and equipment, among the different military services, among different activities within each service, and finally among different types of manpower and equipment within each activity. But, again, force structures are not static; they are continually evolving in terms of equipment, doctrine and organisation, and hence the demand for manpower will include a dynamic element. That is, there will be a time-path for evolving military manpower requirements, both in terms of numbers and in terms of the required manpower mix. And even with the most careful planning, there will always be shocks to the system in the form of unanticipated budgetary changes, mandated increases or decreases in total force size, politically motivated equipment decisions, organisational restructuring, redeployments and simply different ways of doing business. Importantly, then, this manpower requirements portfolio has to have a time dimension such that it can depict evolving manpower requirements and provide critical lead time information to the suppliers of that manpower. Ideally, it would also have some built-in flexibility for dealing with unexpected shocks. The first major task of manpower management, indicated as MD in the diagram, is to process all these factors and arrive at a time-indexed portfolio of manpower requirements across the entire planning horizon, where each item, each place, in the portfolio is carefully defined in terms of required skills, experience, age and rank level. More simply, it must identify just exactly what places are going to have to be filled and when.

The second major task involves providing the actual people with the right mix of skills, experience, ages and rank levels to fill the required portfolio. This is the focus of the supply side of military manpower management, marked as MS in Figure 1 and shown as a process on the right hand side of the diagram. The task here is to decide on the number of individuals to recruit, promote, qualify and release each year. In some respects this process is of course no different from that of any other public or private institution that has to manage its labour force. But there is one crucial difference. Militaries, unlike most other institutions, are relatively closed systems. They generally take in new personnel only at the basic entry level and make no provision for lateral entry at higher levels, the basic justification being that only in this way can the unique mores, ethos and sense of corporateness necessary to the unique nature of military employment be properly cultivated. Such systems are characterised by strictly bounded entry age groups and strictly uniform career paths, usually with some explicit form of up-or-out system—promotion or release—that extends until retirement. Promotion itself depends upon the completion of well defined tasks, including progression through milestone educational and training stages, command responsibility and a broad experience gained through frequent changes of assignment and location. By design, manpower systems of this sort encourage rapid turnover of personnel, particularly at the lower levels, and therefore keep the force relatively young and vigorous.

Continuous attrition at higher levels ensures that there are appropriate size cohorts at each level in the command hierarchy and that there is a steady flow of openings in that hierarchy to motivate younger individuals to seek promotion. Closed manpower systems of this kind thus offer several important advantages to military organisations. Nevertheless, whether they can offer the flexibility required to meet changing demands for military manpower in an age of strategic uncertainty on one hand and shifting social and economic structures and changing labour markets on the other has to be examined.

The Security Environment and the Utility of Military Force

Changes in the international security environment are altering the way nations employ military force and hence their needs for military manpower. Globalisation, whose roots lie in information technologies, has created a much more decentralised world, one where the power of the state has seemingly diminished relative to transnational actors and where identity politics, the politics of tribe, ethnic groups and religion, have altered the system of states within which international relations have traditionally been conducted. At the same time, globalisation has given people in underdeveloped regions the ability to see and understand the disparity between their circumstances and those of the developed world, with all that that can suggest for envy, discontentment, frustration and destabilisation. The result is a much more complex, less stable and more unpredictable international security environment.

Within this complexity, growing economic interdependence, on one hand, has reduced, but certainly not eliminated, the likelihood of general war among the major powers. On the other hand, however, the end of the Cold War, which led to the relaxation of constraints on the behaviour of client states, and the collapse of the Soviet Union, which led to major changes in national alignments, have seemingly increased the scope for regional conflict. Beyond that, globalisation has also created both incentives and means for non-state actors to undermine international stability through terrorist attacks, insurgencies and other forms of non-conventional warfare, including the potential use of weapons of mass destruction. It has also afforded them potential sanctuary within so-called failed states or failing states, states which, because they either cannot or will not effectively participate in the globalisation process, have lost economic and political coherence.

What seems to be emerging is the implication that for most countries, other than for those confronting local territorial issues, there is no external conventional military threat. Rather the security of individual nations is indirectly bound up in a general international stability, a stability which can be threatened by regional conflicts, by the mere existence of failed or failing states, and possibly by states that might have an interest in destabilising the international equilibrium or who harbour non-state organisa-

tions with such interests. If international stability is to prevail, such threats will have to be managed through diplomatic, economic and political means if possible but through military means where necessary. At a minimum, military force will generally be required to provide the immediate security and stability conditions necessary for non-military means to be effective. But military force, in today's types of operations, though necessary, will rarely be sufficient to establish security, stability and functionality. Military activities in these operations will have to be augmented and integrated with other agencies, national and international, that can provide the aid and reconstruction efforts necessary to ensure that failed states become stable, functioning entities and thus less threatening to international stability.

Importantly, operations of this type that generally do not directly threaten the vital interests of other states require multinational participation, if for no other reason than to provide legitimacy to the effort, but also because few states are either willing or able to take on such burdens single-handedly, especially when nations' vital interests are not directly threatened. Recent history seems to suggest that the most likely operational employment of military forces for the typical country in the 21st century will indeed be in such multinational operations. If true, then there are significant implications for manpower requirements. First of all, these types of operations are labour-intensive and will place great strain on the forces of small and medium countries to contribute in an effective way. Sustaining that contribution will be even more difficult. This burden can be large, especially when most operations can be expected to last for long periods of time, requiring nations to provide for the regular rotation of troops. Moreover, militaries participating in these types of operations will have to be expeditionary; that is, they will have to have the means to get their forces to the areas of concern and be able to sustain them once they are there. And once there, these forces will require the training and technological capability to be able to work within the command and control network of the multinational force as well as to coordinate their activities with the local population and with the myriad of international agencies that can be expected to be part of the operation.

If stabilisation operations of this kind are to be the norm in coming decades, and it appears at this juncture that they will be, then a second major implication for force structuring and manpower requirements arises out of the drastic revision that has to be made about the very way we think about war. Success in these types of operations, where firepower can often be of little use and may even be counterproductive, requires not so much the defeat of an enemy force as it does the winning over of populations to ideals of government and international behaviour that contributes to domestic political integrity and ultimately to global stability. This transforms the entire concept of what we mean by military victory and with it the roles and operational methods of militaries necessarily have to be dramatically reinvented. Troops involved in stabilisation operations,

for example, will have to be capable of dealing with combat operations, peacekeeping and humanitarian support all within the same operation, often within a small geographical area and often within the same day. In this context, the operational environment can evolve rapidly, requiring that small units have the training, the flexibility, the correct information and especially the leadership to react quickly and effectively to changing circumstances in a complex, multi-dimensional environment.

While many countries will be persuaded that multilateral stabilisation operations should be the essential focus of force structuring and manpower planning activities, they cannot of course afford to ignore the possibility that their forces may be required for other employments, ranging from domestic humanitarian assistance at one end, through sovereignty protection, to major conventional war, or worse, at the other. The potential return of state-based threats is an obvious case in point as the relative political, economic and military fortunes of nations continuously shift, especially on a regional basis. Moreover, in an era where information technologies and computer networks play such a critical role, not only in warfare, but in the functioning of all modern societies, cyber warfare, the remote attack upon domestic computer networks and the defence of those networks, is becoming still yet another focus of military activity. Prudence will require that provision is made in some minimum way for all of these diverse possibilities. The difficulty is that each of them requires different technologies and different mixes of manpower and equipment. Some will require more high technology weapons systems, others more manpower, but, critically, both will require military personnel of exceptional qualities.

The Demand for Military Manpower

Every country will respond differently to these emerging notions of security. Each will therefore have its own unique approach to creating military capability, one that will be shaped by its history, its culture, its level of economic development and its geographical neighbourhood. Accordingly, every country will also have its own approach to determining the size and composition of its armed forces. But beyond specific particularities, there are certain general considerations that cannot be avoided in any force structuring exercise. The most fundamental of these has to be that any manpower strategy has to be clearly aligned with some notion of a national military strategy, and through that with its security interests. Without that linkage, manpower management has no direction and makes little sense.

The required force structure logically begins with the nation's security strategy, which in turn emerges from some sense of national values and interests, the perceived threats to those interests, the nation's geopolitical situation within the international security environment and, critically, its international ambitions. These considerations will (or at least should) shape just what roles the nation's armed forces will be expected to

perform and hence will be the primary determinants of the required force configuration and size. But other factors enter the equation. Foremost amongst them will be considerations of affordability. The size of the defence budget and, equally importantly, how that budget is spent, will place strict bounds on the feasibility of any proposed force structure. Other non-financial constraints may also be imposed, including mandated ceilings on force size, and on the size of specific components within the total force structure. Within these constraints, the demand for military manpower will then be determined, first by considerations of what specific military capabilities are to be acquired, and on what scale, and secondly on how these capabilities are to be produced (that is, with what combinations of manpower and equipment).

Financial Constraints

Effective defence budgeting requires the achievement of some balance among personnel, operations and maintenance, and investment expenditures. When, for example, increases in pay scales and other personal benefits exceed increases in the total defence budget, they must be compensated for either by reductions in personnel numbers or by reductions in expenditures for equipment and for operations and maintenance. If personnel numbers remain unchanged and expenditures for equipment procurement are reduced to provide budgetary room for the rise in personal costs, then imbalances in the mix of equipment and personnel inevitably take their toll in terms of military capability and performance. The retention of older equipment can intensify this imbalance as the rising cost of operating and maintaining it further squeezes the budgetary capacity to obtain new equipment. These pressures require defence planners to make difficult choices about the distribution of personnel, equipment and operational expenditures. Where budgets cannot sustain rising personnel and equipment costs without seriously distorting military capabilities, then the issue of what the military can reasonably be expected to achieve with the resources at hand has to be reconsidered, probably with a view to drastically revising the desired force structure into something more affordable, with the inevitable result that the appropriate numbers and mix of skills in the military will change significantly. Manpower management must be capable of foreseeing and developing the capacity to adjust to such pressures.

Non-financial Constraints

In addition to financial constraints imposed by defence budgets, manpower managers and force planners must work within government or parliamentary imposed ceilings on total force size. The effect of these ceilings is to further reduce the flexibility available to planners and managers in determining the optimal force configuration that a given budget will support. It may also have the perverse effect of encouraging force planning to focus on sizing the force to meet the manpower ceiling rather than making the nec-

essary tradeoffs between personnel and equipment to arrive at the most effective force structure available for the money. The result is that force structures become severely distorted as manpower numbers are maximised while expenditures for new equipment are reduced to what is left over after personnel costs have been covered.

Technology

Military technologies have changed dramatically over recent decades. This is especially evident in the increasing emphasis placed on the use of information technologies and networking but also on weapons systems with increased speed, stealth, precision and lethality. To the extent that militaries attempt to capitalise on these technologies, they will necessarily transform the way they operate, the way they are organised and the way they are manned. From the viewpoint of manpower planning, this essentially means continuous rebalancing in the skills and experience mix required in force structures. As capital is increasingly substituted for labour, it may also mean that manpower numbers may be reduced without compromising capability. Whether they do or not will of course depend upon the types of missions militaries can be expected to undertake in the future; some missions by their very nature will continue to require large numbers of personnel, even though the forces involved in them may be increasingly better equipped. Regardless of its effects on numbers, however, what is clear is that advances in military technology will unquestionably demand improvements in the quality of military manpower.

Qualitative Changes: The New Model Soldier

The changing nature of war, driven by technology and the volatile international security environment, has critical implications for the qualifications, training and education of military personnel. The skills required both for low intensity stabilisation operations and high intensity, network-based warfare will differ significantly from those required in the types of warfare that characterised the last century. If, as many expect, multi-national expeditionary stabilisation missions are becoming the norm for this century, then the ideal soldier will not only be a skilled and aggressive fighter, he will also have to have the administrative abilities and the cultural awareness to be an effective diplomat, civil administrator and policeman, and he will have to combine those abilities with sensitivity, patience and forbearance. These are virtues not normally associated with soldiers in combat situations, but necessary nevertheless, first to deal with local populations caught up in the confusion of conflict and rapidly shifting allegiances, and secondly to deal with an intrusive media that can quickly turn even a minor action into a major in-

ternational political and diplomatic crisis.[2] He will also be skilled in languages, both those of the country in which he is deployed and in the language of multi-national operations, usually English. He will also have to have the training and education levels that permit him to act with entrepreneurial initiative in a wide variety of different circumstances, often without adequate information and often without direction from higher authority. Enormous pressures and responsibilities will be placed on young leaders and they will have to possess that most necessary of all military virtues, the ability to exercise judgment under uncertainty and extreme stress. Quite obviously then, experience, judgment, initiative and technical proficiency are in the ascendancy as desirable military virtues. Youth and vigour remain important but their significance, at least relatively, is diminishing. This will have a profound effect on the composition of force structures and could well alter the fundamental dynamics of manpower supply.

The Supply of Military Manpower

On the supply side the task of manpower management is to ensure that the manpower requirements generated in the force planning system are met, both in terms of numbers and in terms of qualifications. In practice this means carefully synchronising the flow of manpower through a complex and interdependent system of recruiting, training, promotion, deployment and release activities. Failure to manage this synchronisation correctly can result in manpower structures becoming seriously imbalanced, with shortages in available numbers, skills, rank-levels and age levels emerging in some areas and surpluses in others. Both represent a misallocation of scarce military resources and both can be seriously damaging to the achievement of military capability. Given the highly interdependent nature of military structures, shortages in one area, for example, can potentially impede the effective functioning of the entire military organisation. Surpluses can be equally debilitating as they represent unnecessary personnel expenditures that could be more productively used in the procurement of new equipment or the repair and maintenance of existing equipment.

Managing the synchronisation of manpower flows becomes even more problematic when force structures change. The complex cause and effect relationship that characterises the system means that even a slight change in requirements can reverberate through the system, becoming amplified and creating serious repercussions throughout the entire force structure. In such circumstances misinformed decisions can have

[2] This phenomenon has given rise to the notion of what has been called the “strategic corporal,” the low ranking soldier whose actions can influence not only the immediate tactical situation, but the strategic situation as well. See: Charles C. Krulak, “The Strategic Corporal: Leadership in the Three Block War,” *Marines Magazine* 28, no. 1 (January 1999), www.au.af.mil/au/awc/awcgate/usmc/strategic_corporal.htm.

unexpected and enduring consequences. For example, general reductions in force size may be mandated for budgetary or strategic reasons. These can be difficult to achieve, especially when they must be accomplished within a tight time frame. But taking a more passive and measured approach by allowing the reduction to take place through normal attrition as members retire or seek voluntary release while at the same time curtailing recruiting can in fact lead to severe imbalances as the force ages, suffers skill shortages and becomes rank-heavy. Without careful management, the skill, age and rank 'blocks' that emerge from such approaches, and which can cause serious misallocations of total defence resources, can take decades to eliminate.[3] More proactive management of such reductions (or increases) would require varying not only recruiting rates but also training, promotion, deployment and release rates to effect more balanced changes. But doing so requires a highly responsive manpower management system, one with adequate information and sufficient decision-making flexibility to make the necessary choices in a timely and effective manner. It also requires some understanding of the basic dynamics of manpower supply.

The Dynamics of Manpower Supply

In practical terms, the basic challenge is to know, for each particular manpower category, how many persons to recruit, how many to train, how many to deploy and how many to release in each year over the planning horizon in order to sustain the desired force structure. To achieve this goal, manpower planners have to know not only the time profile of force structure requirements but they should also have some accurate idea of attrition rates, that is, the proportion of the force, or any of its particular components, that can be expected to leave at any given point in time.[4] Normal attrition results from the release of members whose contractual engagement periods (or conscription obligations) have expired or who reach the age of retirement. Unlike attrition in civilian employment, however, where individuals may freely leave their employment at any time, normal military manpower attrition rates, or their complement, reen-

[3] Villani provides an interesting example of this problem in his description of Italy's complete overhaul of the entire personnel structure of the armed forces that followed the decision to move from a conscript based force to a professional force. The transition period from the passage of the initial law to the attainment of a new steady state force structure was expected to last for 20 years. During this time, at least initially, there would continue to be an excessive number of officers and non-commissioned officers, despite the fact that some had been given early retirement and others – employment with other government departments. See Domenico Villani, "Recruitment in a Period of Transformation: the Italian Experience," in *Service to Country: Personnel Policy and the Transformation of Western Militaries*, ed. Curtis Gilroy and Cindy Williams (Cambridge, Mass.: MIT Press, 2006), 381-396.

[4] The section is based partly on concepts discussed in A.R. Smith, "Defence Manpower Studies," *Operational Research Quarterly* 19, no. 3 (September 1968): 257-273.

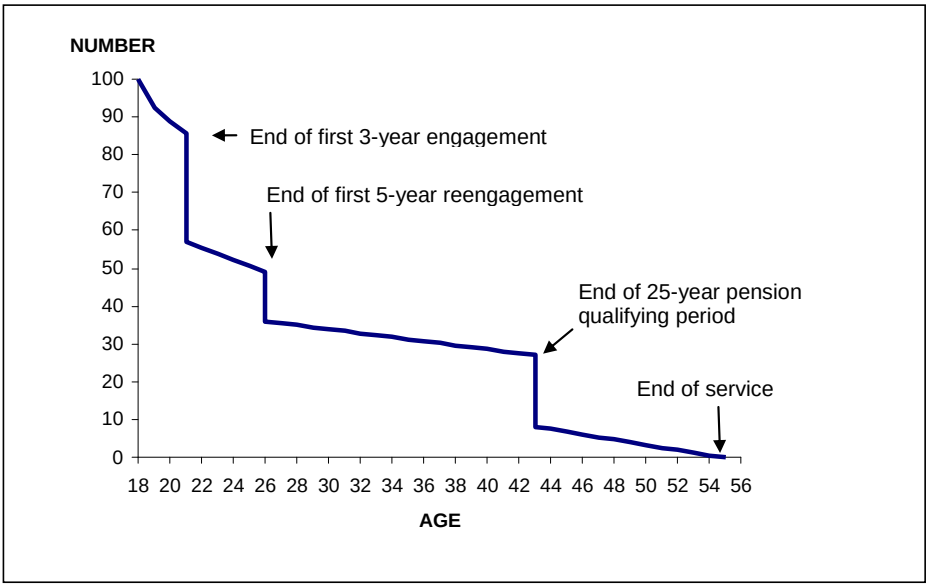

Figure 2: Hypothetical Attrition Profile.

gagement rates, are reasonably stable and predictable, especially in the aggregate as military persons are generally compelled by law to complete their engagement periods. Nevertheless, normal attrition rates tend to vary with age, experience, training, occupational category and rank, and therefore, to be useful in planning manpower requirements, they need to be specific in terms of each of these attributes. In addition to this normal attrition, unexpected attrition can also occur for a number of reasons, including voluntary release through purchase or on compassionate grounds, for death or injury, for discharge on grounds of unsuitability or criminal activity, and so on. While this type of attrition is more random than normal attrition, it can be expected that it will include some statistical regularity and thus some predictability should be possible. Good information on these attrition rates, both normal and unexpected, is the basis of effective manpower planning and thus an essential management tool has to be the availability of appropriately detailed and continuously updated personnel databases.

Combining normal attrition and unexpected attrition rates can provide an attrition time profile for each rank and occupational category that indicates how the inventory of personnel in each of these categories changes over time. As an example, Figure 2 indicates a hypothetical attrition profile for 100 recruits within a manning cycle that includes an initial three-year engagement period, a possible follow-on 5-year reengagement period, a period of indefinite engagement, a 25-year pension qualifying period and a compulsory retirement age of 55. Normal attrition thus occurs in this example at the third, fifth, and thirty-seventh year of service. The pension qualification at twenty-

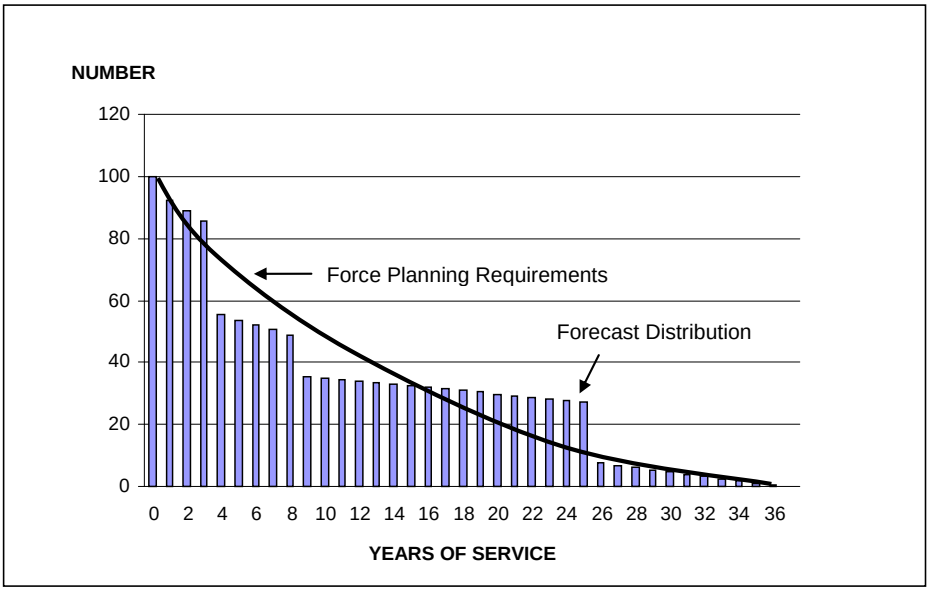

Figure 3: Hypothetical Steady State Distributions.

five years of service would also be expected to induce a sharp, discontinuous number of departures. Unexpected attrition will take place between these milestones and is represented in the diagram by trend values, with steeper trends occurring within the initial engagement periods, becoming less steep as pension qualification approaches and perhaps becoming steeper again as the compulsory retirement age approaches.

This attrition profile also provides some insight into the steady state population that can be achieved through a particular rate of recruitment. For this hypothetical example, Figure 3 indicates that a continuous annual intake of 100 recruits in a specific occupational category would eventually generate a steady state population of approximately 1200, as 100 18-year old recruits annually compensate for 100 leavers at various other age levels. The steady state annual exit rate is therefore 8.3 percent. In terms of years of service, this steady state population would have a distribution that included 100 individuals with no experience (recruits), 93 with one year of service, 89 with two years and so on. The average age of this population would be approximately 28 years.

Comparison of this steady state population with the forecast of numbers required to sustain the planned force structure provides estimates of the adjustments that need to be addressed through recruiting, retention, promotion and release programmes. Figure 3 provides an example. Ideally, the forecast distribution should match the force planning requirements. In this case, however, significant shortages emerge in the period between 4 and 14 years of service while surpluses appear in the period between

17 and 25 years of service. However, because military manpower systems are generally closed systems, they take in few recruits above the basic entry level and hence are unable to fill downstream shortages with lateral recruiting. Higher rates of initial recruiting would of course eventually cover these shortages but they cannot on their own resolve the underlying mismatch between requirements and availability since they, in turn, would create unwanted new surpluses or intensify already existing surpluses. Similarly, militaries are generally contractually obligated to keep individuals in the surplus categories. Involuntary separation decisions could of course be used to eliminate these surpluses but their overuse, an unsatisfactory management practice in itself, could create morale-destroying issues of breach of contract that might have wider implications for recruiting and retention in general. Without changes in the attrition profile, therefore, these types of shortages and surpluses are effectively built into the force structure. It follows then that the continuing challenge for manpower supply management is to find a set of incentive structures that will produce an attrition profile that matches the forecast force distribution to the required force distribution. This is challenging enough but, as noted, manpower managers will also have to cope with force planning requirements that themselves are becoming increasingly volatile as militaries focus on new types of operations and new types of military capabilities. In terms of Figure 3, this means that the requirements distribution itself is changing and shifting through time, suggesting that the management of manpower supply, with all of its internal challenges, must also deal with a moving target.

Recruiting the Force

Given the time profile of force requirements and good estimates of attrition rates, the determination of initial recruiting targets is reasonably straightforward.[5] Indeed, mathematical models are widely employed in defence ministries to estimate recruiting requirements.[6] However, as discussed, forecasts of these types are critically dependent on the assumed attrition rates. And while these rates generally tend to be stable, they can and will change because of specific changes in conditions of service, including pay and other benefits, education opportunities, the intensity of deployment rotations, especially as these are compared against opportunities elsewhere, and more generally

[5] For the basic arithmetic of calculating the enlistment requirement for a steady-state force see John T. Warner and Beth J. Asch, "The Economics of Military Manpower," in *Handbook of Defense Economics*, Volume 1, ed. Keith Hartley and Todd Sandler (Amsterdam: Elsevier, 1996), 350.

[6] For a dated but comprehensive overview of the use of military manpower planning models see David L. Jaquette, Gary R. Nelson, and R.J Smith, *An Analytical Review of Personnel Models in the Department of Defense*, Report prepared for Defense Advanced Research Projects Agency (Santa Monica: Rand, 1977).

because of larger and unpredictable social and economic changes. As a result, mathematically generated forecasts of recruiting numbers must be interpreted on the basis of solid experience with managing military manpower.

Having decided on numbers and required qualifications, the next stage in the manpower supply management process is to decide on the source of the required new intakes. The major potential sources are conscription, where it exists, and more commonly the recruiting of untrained manpower. In both cases the recruiting pool is predominantly made up of secondary level school-leavers. Other potential sources, though rarely exploited, might include the recruiting of partially trained manpower, which would include persons possessing skills required by the military, usually technical or administrative skills, but who lack military training, as well as fully trained manpower, which would include persons who have both the necessary skills and previous military service. The latter category could also include persons currently serving in the military but who could be retrained and transferred to other occupational categories.

Whether a particular country uses conscription as a major source of untrained manpower depends on a wide variety of factors, including its culture, its history and possibly its geostrategic position, especially if it has a need for large mobilizable forces for territorial defence. However, it will also depend upon perceptions of the comparative cost-effectiveness of conscript and voluntary forces. The single most important advantage of conscription is the availability of a reliable supply of manpower at apparently low cost, at least to the military. It has other apparent advantages. It can, for example, be an effective tool of nation-building and social cohesion, especially through the notion of shared sacrifice. It can also be an effective recruiting tool for the professional armed forces by introducing young people to the opportunities associated with military service.[7]

But conscription also has its disadvantages. For one thing, though it is certainly not always the case, conscripts can be less than enthusiastic about military service and hence might not make the most effective soldiers. For another, the relatively short periods they are normally required to serve is probably inadequate to provide the skills and experience necessary to deal with the complexities of modern warfare, not only in the use and maintenance of high-technology weapons systems, but also in the types and variety of missions that are currently demanded of military forces. Moreover, the continuous turnover generated by conscription generates high and costly demands on training resources, placing in considerable doubt the argument that it really is a low-

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[7] Gerhard Kümmel suggests that for Germany in recent years about half of career soldiers and many short- and long-term volunteers have been recruited from those serving as conscripts. See Gerhard Kümmel, "An All-volunteer Force in Disguise: On the Transformation of the Armed Forces in Germany," in *Service to Country: Personnel Policy and the Transformation of Western Militaries*.

cost source of manpower. But manpower may still appear to be relatively cheap, especially in budgetary terms. Budgets, however, fail to recognise its true opportunity cost, above all in terms of its alternative use and value elsewhere in the economy. The burden of this loss is borne by conscripts themselves, since they are effectively being taxed in the amount of the difference between what they could earn in the civilian economy and the usually very low wages they are paid as a conscript.[8]

Conscription may also be potentially damaging to force structuring. With abundant, apparently cheap labour available, for example, commanders may have little incentive to modernise and may well be encouraged to substitute labour for capital. As a result they may end up adopting large, labour-intensive forces when the apparent direction of contemporary military organisation would seem to be towards smaller, more efficient and highly mobile forces. While acknowledging its potential social contribution, it would appear that conscription is inconsistent both with the requirements of modern war-fighting and with the realities of modern economies and societies. It would appear, then, that preferred solutions to meeting military manpower requirements lie in the direction of voluntary enlistment, with the aim of generating a skilled, experienced and longer-service professional force.

The decision to enlist voluntarily is a highly personal one and involves considerations beyond those normally associated with occupational choice. Young people, for example, may be looking for adventure or simply to do something different with their lives before embarking on further education or a civilian career. They may also be inspired by the prestige of a military career, by patriotism, by the camaraderie of military service, and, for some, by the attractions of a disciplined life. But the decision will also be based on normal considerations of pay and other benefits, training and educational opportunities, working conditions and pension rights. And given the peculiarities of military life, there will be an interest in individual and family support arrangements, including the availability of housing, schooling, medical and recreational facilities. The enlistment decision will of course also include consideration of the perceived disadvantages of military service, including the discipline, the restriction on personal free-

[8] A more comprehensive comparison of the social costs between conscription and voluntary recruitment would include the relative distorting effects of taxes required to pay for each. Because the supply curve or enlistments is assumed to be rising, the marginal cost of each additional enlistment exceeds what he is paid and hence the total cost and deadweight tax loss of voluntary forces rises exponentially. However, because the supply curve for conscript forces is horizontal, additional personnel are added at a marginal cost equal to the conscript wage and hence the total cost and deadweight losses associated with conscript forces rise only linearly. As a result, for the same size force, voluntary forces imply higher deadweight losses than do conscript forces. See Asch, Hosek, and Warner, “New Economics of Manpower in the Post-Cold War Era,” 1122.

dom, the discomforts, the frequency of deployments and the potential dangers to life and limb.

These advantages and disadvantages of enlistment will be weighed against those of the alternative choices available to potential recruits. In the recruiting age cohort these alternatives would generally be either to continue with their education or to seek employment in the civilian economy. In this cohort, continuing with education usually means completing secondary levels and then subsequently either entering the workforce, continuing on to post-secondary levels, or possibly enlisting. Those who do not complete secondary school will either enter the civilian labour force or enlist. And while this group has historically been an important source of recruits, given the increasing military demand for educated manpower, it may no longer be able to provide sufficiently qualified candidates. In any event, given the rising wage premiums paid in the private sector to university graduates, increasing numbers in the recruiting cohort are completing secondary school and going on to higher levels of education rather than entering the workforce or enlisting in the military. Those that do continue their education are at the same time also acquiring qualifications that would make them less inclined to think of enlisting upon completion of their studies, especially since enlisted compensation is rarely competitive with the salaries typically earned by university graduates. This difficulty is compounded by the increasing convergence of military and civilian technologies, especially information technologies, which creates a demand within militaries for the same types of persons who are highly sought after in civilian labour markets.

The supply of military manpower, whether based on conscription or voluntary enlistment, is conditioned as well by the size and age distribution of a nation's population. Many countries are currently experiencing significant shifts in these distributions. As birth rates fall and life expectancies increase, populations are aging and in some cases even beginning to decrease. While less of an issue in immigrant countries such as the United States, Canada and Australia, many countries, especially in Europe, are seeing diminishing numbers of persons in the age cohorts from which military recruits are normally drawn. When it is considered that significant proportions of these diminishing age groups will be unsuitable for military service, for medical or other reasons, that an increasing number of them will go on to postsecondary education and that other sectors of the economy are competing for the same type of individual, the challenge of recruiting adequate numbers of qualified individuals becomes clear. It becomes even more difficult as the military becomes less visible as an important institution in national life or, worse, where it may not enjoy particularly high public esteem.

It might appear that the implications of demographic change for military recruiting are exaggerated, especially with the trend to smaller and more professional forces, where turnover can be expected to diminish significantly. Annual recruiting require-

ments will consequently diminish and the expectation would be that they will continue to represent a very small, possibly decreasing fraction of the relevant recruiting age cohort, and hence easily manageable. However, this can be misleading. Consider a hypothetical example based on German data. Assuming that the relevant recruiting age group can be approximated by the statistical age cohort 15 to 24, then Germany will see its prime recruiting base diminish from 9.4 million in 2008 to 7.6 million in 2025 and to 7.1 million in 2050.[9] If, for illustrative purposes only, Germany is assumed to eventually shift to an all volunteer force at its current strength of approximately 250,000 and assuming conservatively that the steady state exit rate is 10 percent—it could well be higher—then in the year 2050 Germany will require a recruiting success rate of approximately 3.5 per thousand members of the relevant age cohort. Evidence suggests, however, that plausible success rates for recruiting in Europe are currently closer to 2 per thousand.[10] Applying that rate to the German cohort suggests a maximum feasible force size of only 142,000.

The answer to the recruiting challenge necessarily lies in a combination of efforts to exploit the non-pecuniary interests of potential recruits in a military experience and at the same time to provide pay and other benefits, including potential educational and career opportunities that are sufficient to compensate for the higher pay and other benefits of civilian employment or continued education. In other words, the military has to ensure that it is clearly seen as a desirable employer. And the critical time to do this is when individuals leave secondary school. Once they are settled in civilian careers or university studies few individuals are prepared to consider enlisting. Volunteers at this critical point may be persuaded to defer education by the promise of education subsidies at the end of the enlistment period or they may be offered specific training and experience in a particular field in preparation for post-enlistment employment. Other schemes would see volunteers, especially officer candidates, offered immediate university level programmes, in either civilian or military universities, in exchange for a commitment to a future period of service. Still other incentives would include the payment of enlistment bonuses, the choice of post-training assignments, or guarantees with respect to service component or geographical area. But where the military does not enjoy wide public recognition, or even esteem, recruiting must go beyond simply devising attractive pay and educational schemes and must be supported by broad

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9 United States, Census Bureau, Population Division, *International Data Base*, www.census.gov/ipc/www/idb/country/gmportal.html#DI.

10 Rickard Sandell, "Coping with Demography in NATO Europe: Military Recruitment in Times of Population Decline," *Service to Country: Personnel Policy and the Transformation of Western Militaries*, 78. Sandell finds exit rates in the range of 11-13 percent for Spain, the United Kingdom and the Netherlands.

public information campaigns that bring the military to national attention and in the most beneficial light.

Retaining the Force

After initial recruiting, the major task of manpower management is to sustain the force structure through retention of the appropriate numbers with the appropriate qualifications. In the first instance this effectively means managing attrition rates such that both shortages and surpluses of personnel are avoided in each of the rank, occupation, qualification and experience categories. Manpower managers must be continuously focused on incentive strategies that encourage retention when shortages appear and early departure when there are surpluses. Ideally, the key to doing this would be a manpower management system that is able to quickly and effectively reconcile the interests and preferences of the individual with those of the military as an institution. Within such a system, the individual would be motivated by pay, reenlistment bonuses and other benefits, including the non-pecuniary benefits of military service, relative to those available to him elsewhere, to opt to remain in the military as long as there remains a demand for his services. When those services are no longer required, he must be motivated by pay comparisons and other benefits, including separation payments, to leave. To be effective, such a system would also be structured to retain only the most competent individuals through rewarding individual performance and encouraging the less competent to voluntarily leave.

Managing attrition rates depends to a great extent on the particular enlistment term structure in effect. One such structure, for example, might include a series of fixed, renewable enlistment periods, say of three or five years each, which carry on from initial recruitment through to retirement. Another might include one or two short initial enlistment periods, again of three or five years for example, which are followed by an enlistment period in which the service member can continue to serve indefinitely but where he has the right to resign at any time, usually after having given some minimum period of notice. Or, indeed, a mix of structures may coexist, with some members engaged on the periodic reenlistment model and others on the indefinite or 'tenure' model. Each type of structure has advantages and disadvantages for both the military and the individual. In the reenlistment model, the military has the clear advantage of being able to shape the force distribution in terms of age, occupation, experience, qualification, rank and performance level almost on a continuous basis by deciding to accept or reject reenlistment applications. But that advantage is clearly dependent on the readiness of individuals to apply for reenlistment. The intangibles such as patriotism, shared sense of purpose, group solidarity, leadership opportunities and a sense of calling clearly remain of the highest importance in motivating individuals to continue with a military career, but reenlistment bonuses and concessions with regard to future

assignments, locations and education and training opportunities will also be important management instruments in convincing them to do so.

The clear disadvantage to the individual of the reenlistment model is that it creates some concern for job security, a consideration that may not be overly important for younger members but becomes increasingly important with years of service.[11] With the uncertainties of continuing employment, it may be that highly qualified individuals may forego reenlistment in favour of more secure long-term employment elsewhere. The tenure model avoids this problem. It also has the advantage of increased predictability for the military. But it has the distinct disadvantage that it can lead to the retention of individuals who may not perform to their full potential and who can only be released with great difficulty. The actual choice of an enlistment structure will depend on a careful trade-off among all of these factors but a model that included, for example, a sequence of two initial enlistment periods, say a shorter one of two or three years and a longer one of five years for selected individuals, who in turn could be further selected for an indefinite period of employment, would seem to offer a number of advantages. For one thing it would provide the military with ample time to identify the most promising individuals and at the same time make it easier to retain those individuals through the ability to offer them long-term employment. It would also provide needed management flexibility in matching numbers and skills with requirements.

In terms of the hypothetical example discussed above, the shortages in the critical four to fourteen years of service could be addressed by increasing pay and other benefits over that period. The surpluses in the fifteen to twenty-five years of service, which are directly related to the assumed 25-year pension eligibility period, could be eliminated by reducing that period (and the pension) to say 15 years, or less, and using pay adjustments to maintain the desired numbers beyond that period. If this pension is non-contributory, and hence really a conditional deferment of pay, it will have little effect on the retention of younger individuals, who presumably have higher rates of time preference than older individuals, but will be highly important to individuals as they approach the qualification threshold and will provide both an incentive to remain in the military until that threshold has been reached and a further incentive to leave immediately afterwards. The result is the sharp discontinuity in retention shown in Figure 3. A preferable solution to managing the attrition profile in this case would be to

[11] In shifting from a conscription based force to an all volunteer force, Italy initially experienced considerable difficulty in recruiting because of concerns that not every member could be guaranteed a permanent position with the military or other government departments after the initial enlistment period of three years. Subsequent legislation provided that every individual who completed an initial one-year volunteer term and was selected for reenlistment into a second term of four years would be guaranteed permanent employment. See Villani, "Recruitment in a Period of Transformation: The Italian Experience."

eliminate this type of pension altogether and reallocate the funds to raising current pay, especially to younger members. This would encourage the retention of younger members and would provide resources for establishing alternative pension arrangements, including contributory schemes with relatively short vesting requirements, with less potential for distorting attrition rates.

In addition to age and years of service, incentives for remaining in the military may also be related to a service member's status with regard to dependents. Pay and other benefits, for example, may depend upon marital status and numbers of children. The additional pay and benefits tied to dependents are of course not directly related to performance and retention incentives, though, where they exit, there will obviously be some incentive for members with dependents to remain in the military for longer periods than those without. In addition, pay and benefit differentials will likely provide some incentive to acquire dependents, with the combined result that the military will tend to become relatively heavily dependent intensive. For the military, this implies additional costs for moving, education and other family support services. Thus the true costs associated with dependents will be greater than pay differentials themselves would seem to indicate. High dependency ratios in a military force may also complicate readiness issues. They certainly raise equity considerations with regard to otherwise similar members who do not have dependents. On the other hand, as part of the incentive packages required to attract and retain service members, especially given the unique circumstances of military life, effective family support programmes are clearly necessary. Pay differentials based on dependent's status, however, would appear to be clearly unjustified and many militaries make no provision for them.

Attrition rates of course respond to more than pay and pension considerations. Issues of human justice are just as important, if not more so. Indeed, retention of qualified and professionally motivated individuals will only be possible if the work environment is unambiguously characterised by a culture of fairness, such that all military members of the same status are treated equally with respect to promotion opportunities, personal support, discipline and work assignments. This may not be easy to achieve, especially with regard to assignments and postings, where it will always be the case that some are more attractive than others. Clearly, individuals who are dissatisfied with their assignments will have little incentive to perform well or even to continue their military service. As previously, however, this type of problem should be addressed by aligning individual preferences with military requirements. One way of doing this would be to offer both financial and non-financial incentives—attractive follow-on assignments, more leave, etc.—to fill less attractive assignments with volunteers. An even more precise way would be to open a bidding system whereby individuals would indicate the minimum additional payment they would be willing to accept to take specified hard-to-fill positions. Based on the individual's qualifications and other con-

siderations such as time remaining in his current enlistment, manpower managers would then be able to accept the lowest bid, theoretically at least satisfying both the interests of the individual and the needs of the service. Capturing individual preferences in this way and giving military members the ability to influence their own assignments and careers would seem to have the potential to improve retention and motivation throughout the entire force.[12]

While making the military attractive to the individual, the manpower management system has to go beyond a simple concern with maintaining adequate numbers. It must also ensure that the interests of the military are well served in terms of retaining the right individuals with the right skills. Reenlistment should therefore be offered as a privilege and not as a right, giving the military a clear opportunity to eliminate non-productive and ineffective individuals. Only those with demonstrated competence and high levels of performance should be allowed to reenlist. The promotion system should be used to similar effect, selecting those with demonstrated ability, personal qualities and potential for higher rank and rejecting those who do not.

Changing the Paradigm: Opening Up the System

Whatever attrition management strategies are selected, they will have to be targeted differently across different occupational categories, perhaps significantly, since each category can be expected to have its own distinctive attrition profile. Combat expertise, for example, has little alternative applicability outside the military. It can be expected therefore that the reenlistment decisions of combat specialists are not highly sensitive to pay differentials with the civilian economy. For other occupations, however, such as information specialists, technicians, pilots and engineers, whose skills are much more transferable to alternative employment, pay differentials can be expected to be more heavily weighted in reenlistment decisions. Military skills also have different lifecycles of effectiveness. Combat skills, which rely significantly on youth and vigour, may be effective for perhaps ten to fifteen years while those of technicians, engineers and medical doctors could be effective for several decades. This introduces a difficult contradiction. On the one hand, those with the least economically valuable skills—measured only in terms of their alternative employment opportunities—will have little incentive to leave the military once their physical capabilities have peaked and their effectiveness has begun to decline. On the other hand, those with the best alternative opportunities, and who simultaneously are those whose contribution to the military would have the longest expected lifespan, will have little incentive to remain, should pay and

[12] The US military has experimented with a number of auction schemes of this type. See Donald J. Cymrot and Michael L. Hansen, “Overhauling Enlisted Careers and Compensation,” in *Filling the Ranks*, 137-142.

other benefit differentials with civilian employment be sufficiently high. Rigid pension schemes and inflexible pay scales can therefore blunt the military's capacity to compete for people who have attractive alternatives in the private sector. To retain specialists in these categories, and also to maintain the occupational balance in the total force structure, requires competing with pay and other benefits available for equivalent positions in the civilian sphere.[13] But with a common military pay and benefits package, this would mean overpaying those in less needed roles, and would indeed exacerbate occupational and age imbalances by further encouraging them to remain.

The resolution of this contradiction clearly lies in the establishment of more flexible pay and personnel systems within military forces. More generally it would seem to demand an increased differentiation of military career models, differentiated, that is, across the entire spectrum of recruiting, training, deployment, promotion and conditions of service, including pensions, pay and benefits. Even at the entry level training and pay schemes should provide for recruiting at different skill and educational levels. Different occupational categories would have different assignment lengths, different criteria for promotion and different mandatory retirement dates. Pay structures could be differentiated to track pay levels in similar private sector occupations. Pension schemes, for example, could be structured such that combat specialists would find it more beneficial to retire at an earlier age than other specialists.

At the same time, career differentiation would also seem to demand closer alignment of military careers with their equivalents in the civilian economy. In other words, career patterns would simultaneously have to become more vertically differentiated within the military itself but more horizontally integrated into the economy as a whole. A technician, for example, would have a career path and conditions of service very different from a pilot, as he does to a certain extent now, but these differences would now reflect their respective alternative opportunities in the civilian economy. For the combat arms components, which have fewer close civilian equivalent occupations, career models would emphasise pay, promotion and retirement schemes that reflect the need for rapid turnover at junior levels while at the same time motivate the most capable to rise to high levels of command.

These notions of career reconstruction reflect the reality of the changing demographic, economic and strategic context of contemporary society, especially the increasing decentralisation and fluidity of human affairs being brought about by globalisation. Decentralisation does not fit well with traditional military ideas of centralised hierarchies, the integrity of command, and standardisation, but it would appear that even

[13] This would imply significantly increasing the variability of military pay levels across individuals to match the much wider distribution of compensation in civilian employment. This may have morale implications since a sense of shared compensation and shared sacrifice is an essential part of the military ethos.

warfighting, particularly in the guise of network enabled operations, is also evolving in exactly that direction. Nevertheless, the introduction of widely different career structures and differential pay and benefits schemes raises difficult challenges for military manpower managers. For one thing, it would introduce much greater variability in pay scales across occupations for the same rank level than has traditionally existed in military organisations. And this lack of variability has apparently served an important purpose. Military organisations, for all of their emphasis on hierarchy, are in fact team-oriented production organisations and are apparently becoming more so as military transformation progresses. But since the essence of team production is cooperation and not competition, it would appear that differentiated motivational rewards, which in cooperative activities should logically be for team effort rather than individual benefit, could well undermine cooperative efforts.

Similarly, differential pay scales based on occupation could result in situations where low-ranking specialists, say in information technology or aircraft maintenance, are paid much more than their perhaps less technically qualified superiors. This would seem to undermine the very concepts of command authority and responsibility through which militaries necessarily function, especially if the higher paid member is able to leave the military and easily move to an equally well-paying job. But mechanisms should be available that disconnect pay from rank and authority and still leave that rank and authority intact. Businesses and universities do it as a matter of course, recognising this as yet another manifestation of the management dexterity required to attract the right talent in an age of increasingly flexible labour markets. For the military not to seek similar solutions would leave it out of step with its own high-technology ambitions.

The idea of differentiated career structures together with the closer alignment of those structures with the civilian economy fundamentally challenges the conventional model of the military as a closed system. It is a very short leap from alignment to interchangeability, a concept that would seem to encourage a more open system, one that would permit more fluid, lateral movement between military and civilian employment. In such a system, manpower managers would be permitted to fill shortages by recruiting suitably qualified individuals directly from the civilian labour market. Conceivably, too, under normal circumstances, serving members would be freer to transfer to civilian employment, or further education, as they saw fit, and they would do so without prejudice to their reentry at some later date should they so decide.

It is a concept with some clear benefits for the military. For one thing it turns what was previously described as a military disadvantage—the intense competition in recruiting the high technology specialists required for modern warfighting—into a potential advantage. As skills become more readily transferable between the private sector and the military, the military could rely more on lateral transfers to promptly fill short-

ages that under the closed system might take years to accomplish. In addition, it reduces the need for the military to devote resources to providing training and education that are widely available elsewhere, especially in technological and administrative fields. Indeed, given the leading role of civilian industry in research and development, particularly in the fields of electronics and information technologies that are so critical to emerging military requirements, some expert knowledge may actually be better cultivated outside of the military than within it. In such areas a career model that cycles employment through phases of military duty and private-sector employment may be the best, perhaps the only solution, to meeting both the preferences of the individual and the needs of the military.[14]

Despite these theoretical advantages, increased integration of military and civilian occupational structures raises difficult practical issues, especially in career management and leadership. How do you fit a recruit with desired skills but no military experience into the rank hierarchy? How can you expect an officer to become a general if he began his military career as a colonel? But even more importantly, increased integration would seem to dangerously undermine the critical notions of corporateness and military ethos that sustain effective warfighting capabilities. How, for an example, would an army of specialists work as an effective team?

Most of these issues can be resolved. First of all, different professional specialties would have to have different career models with different polices about lateral entry or reentry but each would require some minimum basic training that orients new entrants, of whatever level, towards the military ethos and way of life. Subsequently, at different stages of their 'military-civilian careers,' they would participate in collective training to ensure that they can effectively apply their skills as part of an operational team. Refresher training for persons reentering the military would be tailored to occupational categories and would become as routine as basic training. Moreover, internal occupational transfers and reassignment should be widely accepted, again based on matching individual preferences to military requirements, possibly through retraining within the military but also with the options of allowing the applicant to seek retraining on his

[14] Asch and Warner suggest that the career rigidity characteristics of the conventional model can also have negative effects on the military's compensation and promotion systems. By barring lateral entry, the military profession requires a higher-quality pool at the entry level to ensure that it will have enough qualified individuals at higher levels. Because true ability is unobservable at entry, the only way to hire higher-ability individuals is to raise entry pay and improve the average ability of the applicant pool. This in turn makes the organisation's entire pay scale seem flat in comparison to organisations without the lateral entry constraint. Beth J. Asch and John T. Warner, "A Theory of Compensation and Personnel Policy in Hierarchical Organizations with Application to the United States Military," *Journal of Labor Economics* 19, no. 3 (July 2001): 523-562.

own through civilian training facilities or even through civilian employment. Reclassification of this sort has the added bonus of broadening the knowledge base and hence the flexibility of the force.

The scope for transferability of combat specialists to the civilian economy would appear to be more limited. However, the concept of military operations is changing. Though combat obviously remains their focus, militaries are increasingly involved with stabilisation and reconstruction activities, and these, by their nature, require coordination and cooperation with civilian agencies. There would seem to be considerable advantage, therefore, in having combat specialists broaden their experience by permitting them to move laterally between the military and civilian agencies doing similar work. Moreover, since the command and control of these more complex force arrangements would likely have to remain within the purview of senior combat specialists, the lateral movement of these specialists between the military and senior executive positions in private business, government or international organisations would pay huge dividends in developing their management skills.

Reserve forces would appear to have an important, perhaps crucial, role in the implementation of manpower structures that encourage the integration of military and civilian employment. For most countries the role of reserve forces has changed significantly over past decades. Traditionally, they have formed a mobilisation base, generally for territorial defence, while the professional regular forces provided the training, administrative and command framework required to activate and deploy this mobilisation base. In this age of globalisation, however, where security for most countries is defined in terms of international stability, few countries consider territorial defence to be a major concern. As a result, reserve forces have largely evolved into reservoirs of personnel with specialised skills, including combat skills that can be called upon to fill deficiencies and shortages in regular forces as required. In some instances, this might be on a unit basis but the practicalities of collective training for reserve units at a sufficiently intensive level seem to preclude this option, particularly in the case of combat units. However, anecdotal evidence seems to indicate that reserves with specialist skills used in their civilian occupations can be highly valued assets in actual operational situations.[15]

Reserve force members combine civilian careers with part-time military careers such that they are able to practice their own civilian professions but at the same time continue their military association. This association makes possible the maintenance of basic military skills and, importantly, continues their immersion in the military ethos. It also affords the opportunity to adapt their particular skills to military requirements. Thus an individual building a career structure that interspersed periods of military ser-

[15] Correspondence with serving members of the United States Marine Corps serving in Iraq.

vice with civilian employment would find the reserve force participation the ideal vehicle for doing so. Reserve force units then become a kind of transfer station facilitating the movement of specialists into and out of regular force employment. They would also be ideally situated for identifying and recruiting individuals having both the particular skills required by force planners and the willingness and flexibility to pursue a looser career of alternating civilian and military employment. As such, they become the essential element in making the military more competitive in the market for specialist skills and at the same time provide it with needed flexibility in the management of manpower supply.

There are of course other ways of achieving this flexibility when conventional recruiting and training cannot react quickly enough. One option is to use civilian government employees in military roles, especially in administrative and other non-combat roles, either on a short-term or permanent basis. The obvious advantage of this alternative is that individuals with the requisite skills can usually be obtained quickly, provided that government hiring bureaucracies are reasonably efficient. The disadvantage is that they can only be obtained quickly because they usually lack the necessary military skills, knowledge and acclimatisation. Of course, if these attributes are not essential for a particular position, then it would make sense to civilianise that position altogether.

Another option, and one that has become very familiar in recent years, is the contracting out not of specific positions but of specific tasks to civilian firms. The great advantage of this alternative is that it can provide necessary skills that can be targeted on a specific operation and in a timely manner. It can also be less costly than internal provision of specific services by either military or civilian employees since firms as a rule must compete for contracts on a lowest cost basis and at the same time are usually able to exploit economies of scale unavailable to governments. Contractors may also be able to use sources of labour that are less expensive than government employees, though when needed skills are in short supply, or services must be provided under dangerous conditions, contractors will have a flexibility to pay even higher wages that is normally not available to government bureaucracies. However, the use of contractors raises other issues, including difficulties of control and the renegotiation of contracts when circumstances change. Reliability is also an important issue, particularly when civilian contractors are able to walk away from threatening situations with the prospect of nothing more than financial liability, an opportunity obviously not available to military persons. There are also issues of the legal status of civilian contractors which may well constrain just what services they are able to contribute to military operations. At best, then, given their limitations, the use of civilian employees and contractors to provide flexibility in manpower supply can only be considered to be stopgap measures. A more enduring remedy would be to exploit increasing labour market fluid-

ity and devise a scheme of career-long alternating transfers of skilled individuals between military and civilian employment through the intermediation of a robust reserve system.

Conclusion

Globalisation and technology are making it imperative that militaries change their organisational structures, their concepts of operation and their equipment inventories, all with a view to achieving the agility and responsiveness needed to deal with a world of uncertain threats. As manpower is the medium through which all of these changes have to be achieved, it is essential that manpower management becomes equally agile and responsive. By design, however, military systems are closed throughput systems. Left alone, they require long periods of time to reconfigure themselves to meet changing circumstances, especially in eliminating shortages and surpluses in manpower, both in terms of numbers and in terms of specific occupational skills. At the same time demographic change and the growing convergence of skill requirements in the military and civilian sectors are intensifying the competition for similar kinds of manpower. Both of these factors—the internal structural inertia of traditional military manpower systems and the external competition for skills—represent major challenges to the successful transformation of military forces and underline the requirement for innovative force management concepts that will allow for the swift matching of manpower supply to shifting manpower requirements.

Increasing the responsiveness of military manpower structures to changing military requirements means enhancing the incentives that individuals have to enter, remain and leave the military voluntarily as the demand for their services changes. This means having a manpower management system that is flexible enough to shape such things as pay, retirement schemes, reenlistment and separation bonuses, posting incentives and educational opportunities that can help to reconcile the interests and preferences of the individual with those of the military. It means, too, that pay and other benefits must remain competitive with pay and benefits in the private sector. Manpower management systems must also become more innovative in other ways, particularly in exploiting the increasing flexibility of labour markets and becoming more open to the lateral movement of skilled individuals between military and civilian employment. In providing a conduit for such movements, reserve forces can become catalysts for dramatically enhancing the flexibility of manpower supply; as a consequence they become essential elements in broader military transformation.

No matter how innovative, however, manpower management can never be successful unless it is completely integrated into an effective defence planning and budgeting system which rationally links all resources to military strategy and continuously assesses the pattern of resource use against that strategy. Only in this way it is possi-

ble to logically define the demand for military manpower, not only in terms of numbers but in terms of the entire spectrum of required attributes, including occupational skills, age, experience, and rank levels. Accordingly, the planning of manpower requirements should ideally be incorporated into defence planning over a series of integrated time horizons. At the strategic level, say 20 years into the future, the focus will be on broad planning parameters based on judgments about what the emerging strategic environment and emerging technologies imply for the kinds of military forces that will likely be required in the future. Planners at this stage will also be concerned with the broad implications of the emerging demographic, economic, and social environments for the ways in which future forces can be raised and organised and with what changes will be required in manpower management systems to accommodate them. Long-term planning, say with a time horizon of 10 to 15 years, will begin to put hard numbers against manpower requirements as force structures and equipment acquisition plans become solidified. On the supply side, future requirements for manpower will be compared with forecast availability to identify emerging shortages and surpluses and will formulate the policy options needed to deal with them. Operational planning, with a time horizon of say 3 to 5 years, will be concerned with identifying specific organisational requirements while on the supply side the search will begin for specific individuals to fill those requirements. To achieve the agility and responsiveness required to ensure that manpower supply does in fact continue to match changing requirements requires that these three manpower planning phases – the strategic, the long-term, and the operational – be harmonised and carried out on a rolling annual basis.[16]

As with other aspects of military transformation, reforms in manpower management will inevitably run into institutional and political barriers that stand in the way of change. It is of course in the nature of change that it always brings forth natural resistance, and this is useful because change for the sake of change can be expensive and can have unpleasant and irreversible consequences. Nowhere is this more so than in the military, where the consequences of change gone wrong can be truly devastating. What is necessary above all, then, as with other aspects of military transformation, is careful experimentation and testing of new manpower management concepts. Experimentation can serve to test their claimed advantages, provide information on their costs, throw light on the practicalities of their implementation, coax out unanticipated consequences and ultimately suggest refinements. More importantly, however, if experimentation is successful in validating new manpower management concepts, it can lead to buy-in by authorities capable of implementing them, by those who will have to execute them and by those who will be affected by them. Ultimately, however, man-

[16] For an example of such a planning structure see Canada, Department of National Defence, *Military HR Strategy 2020* (Ottawa: Minister of National Defence, 2002), www.forces.gc.ca/hr.

power management practices are more about people and the military cultures that they inhabit than they are about systems. It will therefore be the pace of cultural change and not that of technological or doctrinal change that drives the pace of manpower management reform. The important thing is that this change is in the right direction.