

## BOOK REVIEW

**H. Binnendijk (ed), *Transforming America's Military*, Center for Technology and National Security Policy, National Defense University, Washington, DC, 2002.**

Reviewed by Michael Ryan

In the context of the military, transformation is about the creation of a revolution of military affairs with the aim of evolving concepts, processes, organisations and technologies to enable war to be conducted in dramatically new ways. Over the years there have been a number of revolutions in military affairs, from the institution of universal military obligation, the Industrial Revolution of the mid-nineteenth century, the managerial revolution of the late nineteenth century, the mechanized revolution between 1919–1939, the scientific revolution that led ultimately to the development of nuclear weapons, and the information revolution since the early 1970s. These revolutions were assisted by particular advances in technology such as the stirrup, breech-loaded weapons, indirect-fire artillery, the battle tank, the radio, battleships, the submarine, the fighter and bomber, precision-strike weapons, and computers, to name just a few. The introduction of a new technology does not in itself constitute a revolution in military affairs, however—it must be accompanied by appropriate processes (doctrine) and organisations. Perhaps one of the best examples of the synergy between those aspects is the German ‘blitzkrieg’.

While there are a number of technologies involved, it is generally agreed that we are currently involved in a revolution in warfare based on the introduction of Information-Age technologies and the concept that the dominant factor in war is the ability to collect, analyse, disseminate and act upon battlefield information. Indeed, much effort has been expended on the utilisation of these technologies in the development of such concepts as *network-centric warfare* and the doctrine of *information warfare*, *information operations*, and *command and control warfare*.

The information revolution within the military seems to be dogged, however, by two main issues. First, there seems to be the overriding presumption that the introduction of information-age technologies must surely enhance warfighting. Second, until recently, there appears to have been little recognition that the implementation of any particular technology cannot occur from the bottom up—rather implementation must occur in a balanced integrated way in concert with the requisite adaptation of associated processes and organisations.

Further, it is not widely recognised that the implementation of a new technology, process or organisation often brings with it undesirable (and often unforeseen) side effects. While this has always been the case, it has never been more significant than in the Information Age. We can all imagine the advantages of networked forces in terms of the reduction in sensor-to-shooter times. We can implicitly understand the advantages of precision-guided munitions to modern warfare. We are therefore relatively easily persuaded to agree that the

billions of dollars devoted to Information-Age technologies represent good value for money. We must also be mindful, however, that the introduction of a network into a force makes that force more vulnerable from a broader range of threats from a wider range of locations—information warfare is not one-sided. We must also remember, for example, that much of the precision of the Information-age force relies on the position-location information provided by the Global Positioning System (GPS) which, if not hardened, can be disturbed dramatically by the most unsophisticated of enemies.

Modern forces must therefore be very careful in their transformation to Information-Age forces. In that regard, *Transforming America's History* provides essential reading to all those interested in understanding how modern technologies can be applied to warfighting. It is a well-balanced, thoughtful book that provides an integrated, top-down approach to the analysis of transformation issues.

After an excellent introduction to the topic and the book's structure, the remainder of the book is organised into four parts. In Part I, the foundations of transformation are examined through an exploration of the nature of the related new missions, new technologies and new operational concepts. This background is essential in a top-down approach to the analysis of transformation issues. Within that context Part II appraises the transformation programmes within America's military services.

Part III looks forward and addresses the integration of existing transformation programs and then transforming jointly. Additionally, the difficult task of coordinating with NATO allies is considered. Part IV then broadens the discussion and addresses homeland security, the strategic equation, the control of space, the protection of the vulnerabilities of cyberspace, the maintenance of the technological lead over adversaries, and, importantly, the logistics effort required to sustain transformation.

Although *Transforming America's History* has twenty authors, the effort has been well orchestrated and edited, which eases the task of moving between chapters from different writers. Each chapter presents a balanced, reasoned discussion of the pertinent subject area in the context of the book's overall framework. The issues are discussed clearly and concisely without the jargon and zeal that often accompanies discussion of revolutions in military affairs and almost any aspect of the Information Age. The result is an excellent book that is essential reading for anyone wishing to understand the complexities of the current transformation debate.