Other Approaches to Civil-Military Integration: The Chinese and Japanese Arms Industries

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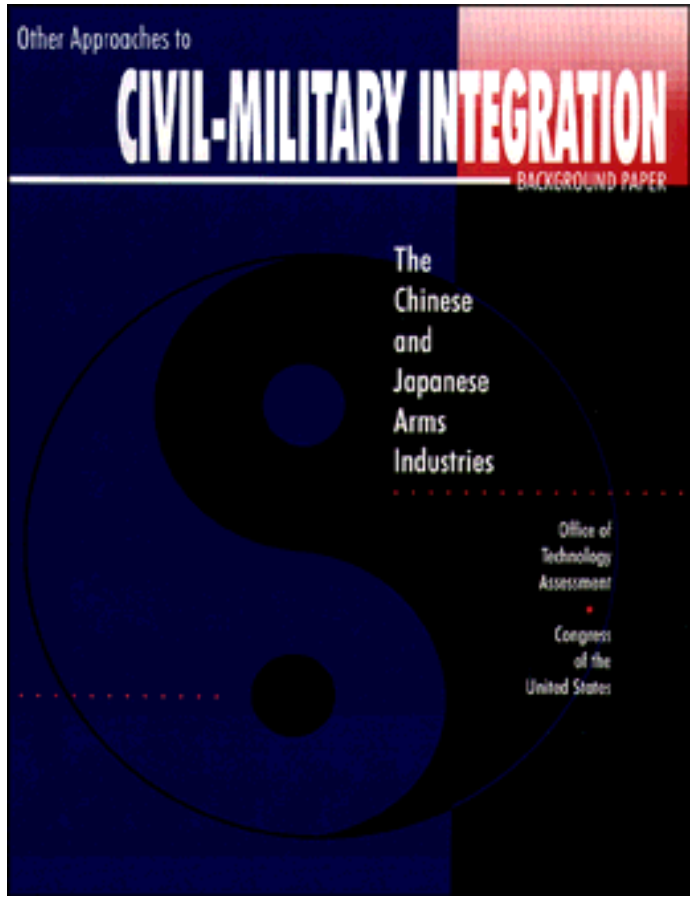

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Foreword

As part of its assessment of the potential for integrating the civil and military industrial bases, the Office of Technology Assessment considered how the People's Republic of China (PRC) and Japan, two Asian states with sizable defense industries, have succeeded in achieving significant levels of civil-military integration (CMI).

CMI involves the sharing of fixed costs by promoting the use of common technologies, processes, labor, equipment, material, and/or facilities. CMI can not only lower costs, but in some cases, it can also expedite the introduction of advanced commercial products and processes to the defense sector.

The paper is divided into two sections, one on the PRC and one on Japan. Each section describes the structure and management of the respective defense industrial base and then compares it with its U.S. counterpart. The paper then assesses the degree to which lessons from the PRC and Japanese cases can be applied to the U.S. defense technology and industrial base (DTIB).

Although the political and security situations of the PRC and Japan, as well as their CMI objectives, differ from those of the United States, several interesting observations can be made. The Japanese, for example, with a limited defense market and an American security guarantee, emphasize dual-use design as well as the commercial aspects of many defense developments. Dual-use design and high quality are enhanced in some instances by Japanese personnel policies that combine design and manufacturing personnel into product groups that understand the entire design, development, and manufacturing process.

The PRC's experience appears to have less application to the United States because its defense technology is far less sophisticated and large segments of the Chinese economy, and almost all of the Chinese DTIB, remain under state control. Still, the PRC's CMI effort is of interest in its potential impact on economic modernization of the PRC and the potential for technology transfer into the future PRC defense structure.

This report responds to a request from the House Armed Services Committee to investigate the potential for deriving lessons from foreign states to further American efforts at increasing integration in the American DTIB. As with all OTA studies, the content of this background paper is solely the responsibility of the Office of Technology Assessment.

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Preface

America's national security and economic well-being have long rested on its technological and industrial prowess. Over the four-decade-long Cold War, the nation's defense technology and industrial base (DTIB) became isolated from the commercial base. That isolation raised the cost of defense goods and services, reduced the Department of Defense's access to commercial technologies with potential defense application, and made it difficult for commercial firms to exploit the results of the nation's extensive defense science and technology investments.

The integration of defense and commercial technology and industry (often termed civil-military integration—CMI) is advocated as a means to preserve the U.S. defense capability in the face of budget reductions. Under CMI, common technologies, processes, labor, equipment, material, and/or facilities are used to meet both defense and commercial needs.

This background paper examines how the People's Republics of China and Japan, two countries with sizable defense industries, have succeeded in achieving significant levels of CMI.

It is a supplement to a full report, *Assessing the Potential for Civil-Military Integration*, released in September 1994, that assesses the potential for greater CMI in the United States, its benefits, and implementing steps.

Despite several previous initiatives to promote integration, much of the U.S. DTIB remains isolated. Concerns over possible costs and risks to modifying government acquisition to implement CMI have hindered change. The report *Assessing the Potential for Civil-Military Integration* considers three broad policy areas—policies to increase commercial purchases and practices, policies to increase integrated processes, and policies to improve operations in that portion of the DTIB likely to remain segregated—that might lead to greater CMI.

OTA found that some technologies, industrial sectors and product tiers are more amenable to integration than others, and indeed, integration is already occurring in many of the tiers and technologies most amenable to CMI. Increasing CMI will depend in part on the product, process, and tier involved. Prime contractors performing systems integration are less able to integrate their products and processes with commercial counterparts than are producers of components and subcomponents. On the other hand, services appear particularly amenable to commercial purchases.

There are clear benefits to increasing CMI. OTA's analysis indicated significant cost savings resulting from increased use of commercial items and integrating R&D, production, and maintenance processes. Even greater savings might come from changes in military systems design. Further, CMI may improve defense access to new technology in the future.

There are, however, obstacles to further CMI. One major obstacle is the sheer complexity involved. Inmost instances, the barriers to CMI are sufficiently intertwined to demand a comprehensive (and complex) set of policies if projected benefits are to accrue. Efforts to promote integration therefore carry costs and risks as well; one of the most discussed risks is that commercial goods and services may fail in military operations. Increased CMI may also result in greater dependence on foreign goods and services. Changes in oversight might result in increased instances of fraud and abuse. Alternatives exist to deal with such risks, but efforts to increase CMI must carefully balance expected benefits to the DTIB and the economy with potential pitfalls resulting from those same policies.

Assessing the Potential for Civil-Military Integration outlines three strategies for consideration. A Readjustment Strategy involves the least risk but may generate the fewest benefits. It seeks to increase CMI modestly while retaining many of the current procedures for oversight of defense expenditures. It includes increasing commercial purchases for defense needs. The Federal Acquisition Streamlining Act of 1994 (FASA), signed in October 1994, provides the legislative basis for implementing much of the commercial purchase portion of a Readjustment Strategy. A Reform Strategy, building on a Readjustment Strategy, seeks to foster CMI more actively; changing rules to promote the integration of both R&D and production of defense and commercial products. Finally, a Restructuring Strategy that incorporates the two earlier strategies might gain the maximum potential CMI benefits, but would demand major changes in future military acquisition policy, system design, and force structure. This strategy would present correspondingly greater risks.

Both the main report and this background paper found that successful implementation of CMI requires a long-term commitment. It involves careful design and planning of systems, components, and subcomponents, and extends to all tiers and throughout the planning and production process. While the potential benefits are significant, they will take time to accrue. Patience and a steady effort are paramount requirements for successful CMI.

Copies of the full report, *Assessing the Potential for Civil-Military Integration*, are available from the U.S. Government Printing Office for $13.00 (200 pp, S/N **052-003-01394-1). Call GPO at (202) 512-1800.**

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