

## **Part IV Bases to Demonstrate Defense Capabilities**

### **Chapter 1 Measures on Defense Equipment, such as the Three Principles on Transfer of Defense Equipment and Technology**

While the security environment surrounding Japan is becoming increasingly harsh, our nation's fiscal circumstances remain difficult. Amid this situation, it is vital to maintain and strengthen Japan's defense production and technological bases, based on defense equipment related policies such as the Three Principles on Transfer of Defense Equipment and Technology, in order to stably develop defense equipment, which is becoming increasingly high-performance and complex.

This chapter explains the Ministry's initiatives in this area.

#### **Section 1 Defense Production and Technological Bases, and the Current Status of Defense Equipment Acquisition**

##### **1 Japan's Defense Production and Technological Bases**

###### **1 Attributes and Current Status of Japan's Defense Production and Technological Bases**

The term "defense production and technological bases" refers to the human, physical and technological bases for development, production, operation, maintenance, remodeling, and refurbishment of defense equipment required for MOD and SDF activities. As Japan has no national arsenal (state-owned munitions factory), the whole of the production base and most of the technological base is in the hands of companies that manufacture defense equipment and associated items (the defense industry). Broad and numerous small and medium-sized enterprises (SMEs) are involved in the production of defense equipment; for example, there are said to be approximately 1,100 companies involved with fighter aircraft, approximately 1,300 involved with tanks, and approximately 2,500 involved with destroyers. Moreover, the market for defense equipment is limited to the small amount of demand from the MOD, so manufacturing economies of scale cannot be expected. Furthermore, specialized, advanced technologies and skills are required in the development and manufacture of defense equipment, and it takes a great deal of effort to cultivate and maintain those technologies and skills.

Thus, the scale of Japan's defense industry is not large, and the value of production destined for the Ministry of Defense accounts for less than 1% of the overall value of production in Japan.

Moreover, the degree of reliance on defense sector demand (sales related to defense as a proportion of total sales by the company) among companies involved in the production of defense equipment and related items is around 5% on average, so for many companies, the defense business is not their main field of business. While some among the comparatively small-scale companies have a degree of reliance on defense sector demand in excess of 50%, fluctuations in procurement by the MOD have a major impact on such companies.

*See ▶ Fig. IV-1-1-1 (Scale of the Defense Industry in Japan and its Degree of Reliance on Defense Demand)*

## 2 Significance of Retaining Defense Production and Technological Bases Within Japan

Retaining such bases within Japan is significant in that it provides (1) bases to support the supply and use of the defense equipment required for the maintenance and improvement necessary so that defense equipment can be provided that are appropriate to the territorial and other characteristics of the country, and that Japan can wield its defense capabilities to the greatest extent possible, (2) a checking effect in terms of potential defense capabilities which can be autonomously strengthened, (3) a source of bargaining power (negotiating capability) so that the latest equipment and tools can be purchased at as low a price as possible when procuring supplies from other countries, and so that better terms can be drawn out during negotiations with other countries regarding international joint development and production, as well as (4) economic effects through the spinning off effect from defense equipment to industry overall, and to the creation of domestic employment opportunities.

## **2 Current Status of the Acquisition of Defense Equipment**

### 1 Unit Prices and Quantities in Procurement

The situation surrounding defense-related expenditures in Japan continues to be difficult. Since FY2005, the cost of maintenance and upkeep has overtaken the costs associated with the purchase of major items of equipment and materials, creating an additional strain on the procurement of new major items of equipment and materials. Moreover, the increasingly high-performance and complex nature of equipment and materials has brought about a rise in development and manufacturing costs, inflating the unit price of equipment and materials. These circumstances have brought about a decline in the quantity procured, leading to problems such as difficulties in maintaining and cultivating highly-skilled factory workers, as well as the emergence of companies withdrawing from the defense business altogether, due to the opaque outlook for the future.

*See ▶ Reference 61 (Change in Equipment Volumes Procured, by Procurement Method)*

### 2 The Current Status of Research and Development

In terms of the technical strength of the defense industry, trends in the research and development budget have a considerable influence over the maintenance and improvement of skills among engineers in public and private sectors, because such skills are maintained and cultivated by working on research and development projects. Moreover, although factors such as the increasing performance of equipment have resulted in an increasing trend in research and development costs, in recent years, the ratio of defense-related expenditure accounted for by research and development has leveled off.

*See ► Fig. IV-1-1-2 (Current Status of Research & Development Expenditure)*