# Chapter 7

# Japan: Toward the Establishment of a Dynamic Defense Force

The Great East Japan Earthquake of March 11, 2011, caused an unprecedented crisis for Japan. The largest earthquake ever recorded in Japan and the resulting tsunami caused massive damage mainly in the Tohoku region of the main island of Honshu and led to the loss of many lives. Furthermore, the accident at the Fukushima Daiichi Nuclear Power Station triggered by the tsunami caused the dispersal of a large amount of radioactive materials and many residents have been forced to live in evacuation facilities. Efforts to settle the nuclear accident are still underway.

The Self-Defense Forces (SDF) responded with all their might to this emergency facing Japan. The SDF conducted large-scale search and rescue operations immediately after the disaster, transported supplies and personnel, and provided support for daily living and assistance for the survivors. In response to the nuclear power station accident, the SDF mobilized all the forces at their disposal, conducting measurement of the nuclear power station's temperature by helicopter, spraying water over the cooling pools that were feared to be overheating, and conducting decontamination. These operations can be said to be the result of efforts for reform "from the SDF that exists to the SDF that functions" (White Paper: *Defense of Japan 2004*) with the "multi-functional, flexible, and effective" defense capabilities stipulated in the National Defense Program Guidelines for FY 2005 and beyond (hereinafter referred to as the "2004 NDPG"), which were laid out in December 2004. These efforts began with the inclusion of "response to large-scale disasters and various other situations" as one of the three roles of Japan's defense capabilities in the National Defense Program Outline for the period from FY 1996, which was formulated in 1995 to respond to the post-Cold War international security environment. Needless to say, the "Dynamic Defense Force" indicated in the National Defense Program Guidelines for FY 2011 and beyond (released in December 2010; hereinafter referred to as the "2010 NDPG") advances further in this direction, and the creation of highly effective defense capabilities with a focus on operations will continue to be pursued.

The year 2011 also saw further deepening of the Japan-US alliance, as exemplified by the updating of the "Common Strategic Objectives" between Japan and the United States, which marked the first revision in four years. The United States clearly took a stance of focusing on Asia in response to changes in the geopolitical balance in the Asia-Pacific region reflecting the rise of China. In particular, the realignment of the US armed forces and the strengthening of US

security cooperation with other countries in the region accord with the interests of Japan. By further deepening the alliance, Japan and the United States can be expected to engage in a more dynamic cooperative relationship toward ensuring stability of the regional security environment.

In addition to the above, various efforts have been made to take concrete steps to implement the vision of 2010 NDPG. These include strengthening the SDF's presence in the southwestern islands, promoting a network of alliances such as Japan-US-Korea and Japan-US-Australia trilateral security cooperation, reinforcing cooperative relationships between Japan and other countries in the region and cooperation through multilateral frameworks, and expanding international equipment cooperation based on revision of the Three Principles on Arms Exports. It will be essential to continue making efforts to promote readiness and sustainability and to build a dynamic defense force focusing on coordination with other countries in order to enhance the SDF's ability to respond effectively to the various situations that might occur in the future.

## 1. The Great East Japan Earthquake and the SDF

### (1) The SDF's Largest-ever Operation

At 2:46 p.m. on March 11, 2011, a massive earthquake of magnitude 9.0 occurred off the Sanriku coast of the Tohoku region of East Japan at a depth of twenty-four kilometers. During the earthquake that continued for almost two minutes, huge tremors with a seismic intensity of seven on the Japan Meteorological Agency scale were recorded in the northern region of Miyagi Prefecture and over six in the south central region of Miyagi Prefecture and in Fukushima Prefecture, Ibaraki Prefecture, and Tochigi Prefecture. It was not, however, the earthquake wave itself that caused the great damage. Massive tsunami occurred off the coast of Tohoku and struck the coasts of the Tohoku region, Hokkaido, and the Kanto region. At their highest, the waves exceeded forty meters, causing immense destruction to coastal areas.

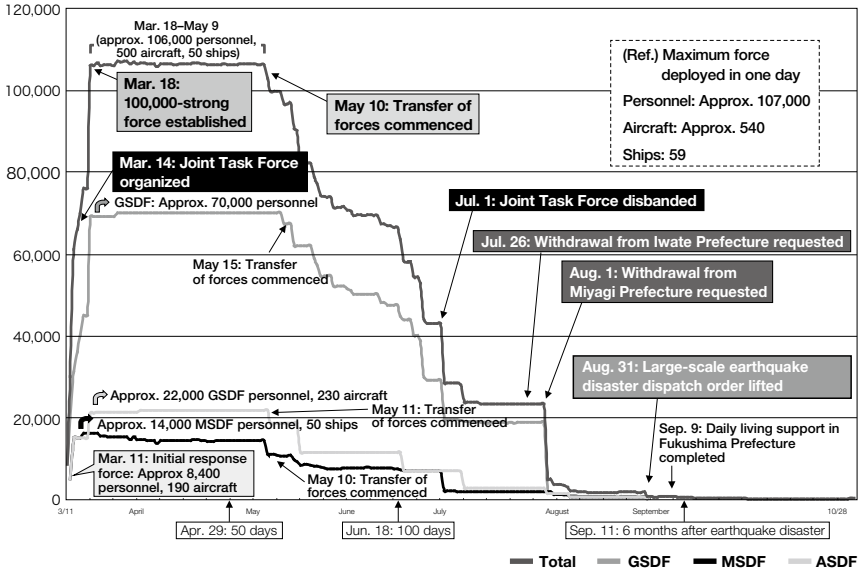
The Ministry of Defense responded immediately to the earthquake by setting up a Disaster Response Headquarters. One after another, local governments in each region requested the dispatch of the SDF, which threw all of its resources into the dispatch of units for disaster relief. The SDF commenced search and rescue operations immediately after the earthquake, committing all available

equipment and personnel and implementing a large-scale initial response, including the Ground Self-Defense Force's (GSDF) Camp Tagajo and the Air Self-Defense Force's (ASDF) Matsushima Airbase, both of which had suffered damage in the earthquake, such as the submerging of many aircraft and vehicles. By the middle of the night of March 11, 8,400 personnel, 190 aircraft, and 25 ships had been dispatched for disaster relief, and by the morning of March 12, 20,000 personnel had already been dispatched. After that, Prime Minister Naoto Kan ordered the deployment of 100,000 personnel and on March 14, a Joint Task Force was organized under the command of the GSDF commander for the Tohoku region. On March 19, 106,000 personnel, 209 helicopters, 321 fixed-wing aircraft, and 57 ships were dispatched for disaster relief. As a result of this mobilization of units from all parts of Japan, a total of 19,000 survivors were rescued. This was the largest ever operation by the SDF, involving a mobilization of personnel and equipment unparalleled in the postwar period. These responses demonstrated the very high readiness of the SDF. Despite the facts that the disaster was caused by an earthquake of which there was no prior warning, that all kinds of local infrastructure were destroyed by the tsunami, and that access to the affected areas was greatly restricted, the emergency response capabilities shown by the SDF were outstanding even compared to the responses of other countries' forces to recent natural disasters overseas. This series of operations by the SDF can be recognized as showing the effects of the "dynamic deterrence" displaying high defense capabilities through operations, as set forth in the 2010 NDPG.

The SDF also played a major role in the transportation of personnel and supplies. In addition to marine transportation to ports, the Maritime Self-Defense Force (MSDF) landed relief supplies using LCAC hovercraft carried by *Osumi*-class transport vessels for the region around Ishinomaki port, whose harbor facilities had been destroyed by the tsunami. It also transported supplies and fuel to outlying islands by destroyers carrying helicopters. As livelihood support for evacuees, the SDF provided

**GSDF personnel rescuing survivors** (Japanese Ministry of Defense photo)

**Figure 7.1. SDF personnel deployed in response to the earthquake disaster**




*Source:* Ministry of Defense

GSDF bathing equipment, bathing support using facilities in large vessels and bases of the MSDF and ASDF, and medical support by transporting medical officers in ship-based helicopters. The SDF also assisted in the removal of debris, setting up of temporary housing, and clearing of roads, clearing a total of 322 kilometers of road.

In response to this natural disaster of unprecedented magnitude, the international community also provided Japan with various kinds of aid. The fastest response came from the US armed forces stationed in Japan. Immediately after the disaster struck on March 11, Japan-US coordination centers were set up in accordance with the coordination mechanism stipulated in the Guidelines for US-Japan Defense Cooperation, and from March 13 the nuclear-powered aircraft carrier USS *Ronald Reagan* provided assistance for search-and-rescue and transportation operations. On March 14, the US armed forces named these disaster relief activities Operation Tomodachi ("friend" in Japanese). From March 21, they deployed the amphibious assault ship USS *Essex*, transporting supplies by helicopter, unloading important personnel and heavy equipment by landing craft

at outlying islands where harbor facilities had been destroyed, and deploying marines to remove debris and clear roads. In addition, the Australian armed forces dispatched C-17 aircraft, South Korean air force transport planes transported first aid teams, and Israel sent medical support. Many other countries dispatched first aid teams or provided capital support, making the Japanese people aware once again that they are an integral part of the international community.

### (2) Response to the Nuclear Accident in Fukushima

Among the operations conducted by the SDF in response to the Great East Japan Earthquake, the most difficult was its response to the nuclear accident in Fukushima. Of the six nuclear reactors at the power plant, reactors 1, 2, and 3 were in operation on March 11. As a result of the loss of external electric power due to the earthquake and the submerging of the emergency diesel generators by the tsunami, all functions for cooling these reactors were lost. In response to this situation, Prime Minister Kan declared a nuclear state of emergency at 7:03 p.m. on March 11. At 7:30 p.m. on the same day, the then Minister of Defense Toshimi Kitazawa issued an order to dispatch the SDF to a nuclear disaster. The GSDF's Central Nuclear Biological Chemical (NBC) Weapon Defense Unit and other units were immediately dispatched and commenced operations to deal with the nuclear accident in Fukushima.

The operations in response to the nuclear power plant accident were conducted mainly by the Central NBC Weapon Defense Unit under the Central Readiness Force, with other units of the GSDF, ASDF, and MSDF providing support as required. In addition to spraying water on the spent fuel pools, which received extensive media coverage, the SDF operations were wide-ranging. They included: evacuation assistance for nearby residents; provision of water using multipurpose support ships; transportation of necessary personnel and supplies; provision of information to naval vessels and news media, etc. through temperature measurement and


**LCAC hovercraft landing relief supplies in the affected area** (Japanese Ministry of Defense photo)

transmission of images from above the power plant by GSDF helicopters; aerial reconnaissance from above by ASDF reconnaissance aircraft and GSDF helicopters; dust collection flights by ASDF training aircraft; and aid in the search for missing persons in the coastal area near the nuclear power plant. The GSDF's Chemical Corps conducted measurement of radiation and decontamination of local residents and SDF personnel and firefighters engaged in relief operations and decontaminated aircraft and vehicles, etc. used in these operations. The SDF also played a leading role in coordination with related organizations and Tokyo Electric Power Company at the local coordination office set up in the J-Village facility in Naraha in Fukushima Prefecture.

**Helicopter for transporting medical officers, etc.**
(Japanese Ministry of Defense photo)

As a result of these various efforts of the SDF and other organizations involved, external power was restored to the nuclear reactors by the end of March and cooling functions were partially recovered, thereby avoiding the worst-case scenario that had initially been anticipated. After that, since it became possible to stably conduct cooling of the nuclear reactors by cyclic water injection, the Japanese government announced on December 16 that the nuclear accident in Fukushima had been brought to a state of "cold shutdown" and declared that the accident was now "under control." However, many victims are still suffering as a result of the mass evacuations and, as of the end of 2011, the efforts of those concerned to contain radioactive materials are continuing.

### (3) Lessons from the Great East Japan Earthquake—A Test Case of Complex Emergency Situations

The combination of earthquake and tsunami followed by the nuclear power plant accident was a unique, large-scale complex disasters that Japan had never experienced before. From this kind of special case of complex disasters, we can extract important implications and issues as lessons regarding Japan's security policies and crisis management, such as speed of decision making, collection and

sharing of information, contact and coordination between government ministries and agencies, official and private sectors, and with other countries, and various kinds of transportation. The response of the Ministry of Defense and the SDF was an unprecedented situation of executing normal duties while responding simultaneously to both the earthquake and tsunami disaster and the nuclear power plant accident. The lessons learned from this experience will therefore be valuable for the future.

In August 2011, the Ministry of Defense drew up a mid-term summary report titled *Lessons Regarding the Response to the Great East Japan Earthquake*, outlining the "situations, etc." and "lessons" under ten headings: decision making, operations, cooperation with other countries, communications, personnel and education, public relations, information, facilities, equipment, and organizational management. Caution is required in making generalizations about the lessons indicated in this report. However, considering that emphasis is placed on responding to multiple contingencies in Japan's national security policies, it would be useful to reconfirm several of these lessons for the future. Accordingly, to amplify the contents of the report, based on the circumstances outlined in (1) and (2) of this section, particular consideration is given below to decision making, joint operation, transportation of supplies, and response to the nuclear power plant accident, taking this complex disaster response as a test case of Japan's response to multiple contingencies.

### (a) Decision making: Thorough unification of information and speeding up of issuing of orders

Regarding decision making by the Prime Minister's office and the Cabinet, in addition to general crisis management problems such as insufficient sharing and transmission of information, it has already been pointed out that the Security Council of Japan was not convened concerning response to the emergency situation and that the declaration of a state of disaster emergency was not speedy enough. A Disaster Response Headquarters and Situation Room were set up in the Ministry of Defense and their functions proved useful. However, it is recognized that problems such as the unification of information and the need to improve unified information collection and sharing within the Ministry and between it and other ministries and agencies represent a challenge for the future.

Furthermore, although the initial responses of the Ministry of Defense and the

SDF were viewed as rapid, it is important to remember the need in the future for the timely and appropriate issuing of orders, such as major earthquake disaster dispatch orders and nuclear disaster dispatch orders.

### (b) Joint operation: Combination of emergency and ordinary tasks

In this case, a Joint Task Force comprising the three Self-Defense Forces (GSDF, ASDF, and MSDF) and consisting of 100,000 personnel was deployed in response to the earthquake and tsunami and the nuclear power plant accident. At the same time, warning and surveillance were carried out as usual, such as the patrolling and surveillance of Japan's coastal areas by P-3C maritime patrol aircraft and measures against the violation of Japan's airspace by fighters and other assets. However, it will be necessary from now on to consider situations assuming simultaneous response on multiple fronts and the possible prolongation of these situations when units are responding to various contingencies, while determining the impact on tasks such as international operations and defense and security. In particular, it will be important to consider: (1) preparing organization guidelines and plans at an early stage in readiness for the organization of a Joint Task Force over a long period in response to various hypothetical contingencies; (2) bearing in mind the relationship with operations and other fields, strengthening the functions of the Joint Staff Office (JSO) regarding the allocation of roles of the JSO and staff offices (SO) of the GSDF, MSDF, and ASDF and the JSO's operation coordination function; and (3) preparing unified coordination and control guidelines and an effective information sharing and collection system.

In the multiple contingencies that might arise in the future, these considerations are even more important in view of the need to respond to "mission creep"—the changing objectives and nature of tasks as a situation develops.

As far as joint operation is concerned, with the establishment of the JSO in March 2006, the Chief of Staff of the Joint Staff plays the centralized role of adviser to the Minister of Defense regarding SDF operations from a specialized military perspective. Regarding the allocation of roles of the JSO and SO, the former conducts SDF operations while the latter is responsible for maintenance and training of units. (See *East Asian Strategic Review 2007*, Chapter 8.) When a situation requiring joint operation arises, a Joint Task Force is organized centering on the headquarters of the main forces: the GSDF's district headquarters, the MSDF's Self-Defense Fleet, and the ASDF's Air Defense Command, and unified

command and control is carried out.

In the case of the earthquake and nuclear power plant disaster, the GDSF North Eastern Army was designated as the Joint Staff Office under the Minister of Defense and conducted command and control of the units dispatched in response to the disaster. In order to respond to the nuclear accident in Fukushima, operations were implemented by the Central Readiness Force through unified command of the various response capabilities, including ground, air, and maritime operations. This joint operation mechanism was indispensable for the efficient operation of the units dispatched in response to the disaster, which consisted of as many as 107,000 personnel. This complex disasters faced by the SDF five years after it first grappled with full-scale joint operation has reconfirmed the importance of joint operation and the need to strengthen the functions of the JSO, making their review an urgent task.

### (c) Transportation of supplies: Seabasing functions and effective use of helicopters

As we have seen, the SDF used helicopters to transport supplies to isolated regions. These operations were conducted through marine transportation by helicopters based on the DDH *Hyuga* and other helicopter destroyers. It was thus reconfirmed that the seabasing functions of the SDF's helicopter destroyers are also useful in the control of marine information collection and supplies transportation. On the other hand, the acceptance of support from the armed forces of the Unites States and Australia, among others, showed that the SDF's existing personnel and supplies transportation capabilities were still not sufficient, reconfirming the need to strengthen transportation capabilities by aircraft, ships, and helicopters.

In this case, a scheme was created whereby relief supplies received in urban and rural prefectures were collected at SDF posts nationwide and then transported by SDF aircraft, etc. Liaison with the government's Emergency Disaster Response Headquarters was conducted through the Joint Transportation Control Center. To further enhance the efficiency of coordination, guidelines for liaison with local governments and local disaster response headquarters, etc. should be considered and various kinds of training implemented. In particular, to prevent goods from being left unshipped, it is necessary to examine measures for the appropriate control of the flow of supplies. Since private sector transport facilities such as

ferries were also used after the earthquake, it will be necessary to consider in advance how to make use of private-sector transportation after a disaster occurs and to prepare guidelines for its coordination.

### (d) Response to the nuclear power plant accident: The need to create a system for integrating specialist knowledge

The response to the nuclear accident in Fukushima was a major test of the SDF's present capabilities. The dispatched SDF units implemented water spraying and other operations and conducted operations using their current equipment in a radioactive environment. It has also been pointed out that, at the initial stage of the nuclear power plant accident, problems arose among the Prime Minister's office, Ministry of Defense and SDF, and related ministries and agencies regarding grasping the situation, information sharing, and other matters.

In order to respond more effectively to a nuclear accident in the future, it is necessary to reconsider the various response plans in the Ministry of Defense and SDF, confirm liaison guidelines, participate in nuclear disaster management drills, review education and training systems regarding nuclear power, strengthen cooperation and liaison with other countries involved and establish a system for this cooperation. It is also important for the Prime Minister's office and related ministries and agencies to reconsider information sharing and guidelines for coordination in the immediate aftermath of a disaster.

Since the limitations of current equipment in responding to a case such as this have become clear, it is necessary to introduce equipment effective in a radioactive environment, such as drones and robots, and to establish a system for their use. It will also be essential to conduct studies regarding equipment decontamination guidelines and to conduct prior investigations with the ministries and agencies concerned.

### (e) Cooperation with other countries: Enhancing readiness for accepting aid

In response to the earthquake disaster, Japan-US coordination centers were set up in the Ministry of Defense, US Forces Japan (Yokota), the GSDF North Eastern Army (Sendai) according to the coordination mechanism outlined in the 2010 NDPG and combined operations were coordinated. In the beginning, the Japan-US coordination centers were insufficient for coordination and the roles of the coordination centers and channel for liaison with the United States in the Ministry

of Defense were not clear. Accordingly, in addition to reviewing the coordination mechanism and roles of US-Japan coordination centers, considering the enhancement of coordination center personnel and functions, and clarifying these functions, it will be necessary to make adjustments with our US counterparts regarding information sharing and coordination.

When disasters have occurred overseas, Japan has responded by dispatching units according to the requirements of the government of the affected country or international organizations and conducting international emergency aid operations. However, in the present case it was reconfirmed that, in the event of a major disaster, there are circumstances where aid from the international community is necessary in addition to Japan's own response. In general, Japan responded flexibly to each situation when accepting aid from overseas, but various issues can also be pointed out. These include more effective liaison with the ministries and agencies concerned regarding acceptance of aid from overseas armed forces, the matching of aid and aid requirements, grasping the operations of multiple armed forces in real time, and rapidly preparing coordination guidelines and English-language materials regarding joint operations by armed forces. It will also be necessary to conduct a more thorough examination of Japan's readiness to accept aid from overseas.

This is not only a problem for Japan but also a common challenge for all countries which may accept aid from overseas. It will be very significant for Japan to share this experience and its lessons with other countries and to put it to use in future international humanitarian aid and disaster relief operations. The SDF has already taken part in multilateral combined exercises such as the Disaster Relief Exercise (DiREx) conducted within the framework of the ASEAN Regional Forum (ARF), and it is important to make active use of such opportunities in the future.

In order to respond to multiple contingencies in the future, including those described above, it will be essential from now on to further exert our imaginations regarding multiple contingencies that might occur in the future, create systems that integrate different kinds of specialist knowledge, and make constant efforts to further improve responses to such situations and training. Regarding multiple contingencies in particular, it is important to assume situations where disasters occur together with instances of hostile intent such as a cyber attack or an attack by special forces at the time of a natural disaster.

## 2. Deepening the US-Japan Alliance and Reviewing the US Armed Forces' Posture

### (1) Deepening the US-Japan Alliance

The US-Japan alliance is an important basis of the United States' commitment to Asia. Since its formation, the alliance has played a major role in maintaining peace in the Asia-Pacific region from the Cold War era to the present day. There are various destabilizing factors in the current international environment, such as the attitude of North Korea following the death of its leader Kim Jong Il and the "power shift" occurring with the rapid economic development of emerging great powers such as China. In such circumstances, to ensure that the US-Japan alliance continues to play an important role, it will be necessary to promote collaboration on policies from medium-term and long-term viewpoints, including efforts to deal with issues relating to regional stability and global security. In recent years, cooperation between the United States and Japan has been conducted in various forms, such as the changes in US-Japan strategy with the publication of the 2010 NDPG and the 2010 Quadrennial Defense Review (2010 QDR), the response to the Great East Japan Earthquake, and cooperation in Haiti and off the coast of Somalia. To respond to the various destabilizing factors in the world today, it is necessary to further deepen Japan-US cooperation in view of these factors.

Accordingly, the Japan-US Security Consultative Committee ("2+2") meeting was held on June 21, 2011, as an important development in the deepening of the Japan-US alliance. In the meeting's Joint Statement, "Toward a Deeper and Broader US-Japan Alliance: Building on 50 Years of Partnership," the governments of the United States and Japan reviewed and reconfirmed the common strategic objectives outlined in the "2+2" meetings of February 2005 and May 2007, decided to deepen and broaden US-Japan security and defense cooperation in various fields, and reconfirmed the steady implementation of proposals for realignment stated in the United States-Japan Roadmap for Realignment Implementation in 2006.

The common strategic objectives listed in this Joint Statement state the general objectives of ensuring the security of Japan and strengthening peace and stability in the Asia-Pacific region and enhancing the capability to address a variety of contingencies affecting the United States and Japan, as well as indicating various specific objectives. These include encouraging China's adherence to international

norms of behavior and improving openness and transparency with respect to China's military modernization and activities. However, the common strategic objectives also state the need to discourage the pursuit and acquisition of military capabilities that could destabilize the regional security environment, although no particular country is specified in this respect. They also refer to the need for cooperation within a multilateral framework, such as strengthening trilateral cooperation with both Australia and the Republic of Korea and strengthening security cooperation with ASEAN and India. It is also important to note that they include capacity building, peacekeeping operations, defending the principle of freedom of navigation, and protection and access to space and cyberspace. Looking at these common strategic objectives in general, it is apparent that, while they do not mention any country specifically, the United States and Japan have a common awareness of the challenge of how to respond to China as it rises through expanding military power and rapid modernization, particularly regarding its pursuit of Anti-Access/Area Denial (A2/AD) capabilities.

As far as US-Japan security and defense cooperation is concerned, in addition to the refinement of bilateral plans and efforts toward extended deterrence, the Joint Statement indicated that US-Japan security and defense cooperation would be promoted through the expansion of joint training and exercises, further study of the joint use of facilities, and the expansion of information sharing and joint intelligence, surveillance, and reconnaissance (ISR) activities. It also referred to trilateral and multilateral cooperation, humanitarian assistance and disaster relief, and peacekeeping operations, as well as cooperation on space security and cyber security.

These strategic objectives and areas for cooperation were drawn up against the background of the common awareness expressed in the 2010 NDPG published in December 2010 and the 2010 QDR published by the United States earlier. The 2010 NDPG states that, "in addition to regional conflicts arising from ethnic and religious disputes, there are a growing number of so-called 'gray-zone' disputes—confrontations over territory, sovereignty and economic interests that are not to escalate into wars." Stressing the importance of "dynamic deterrence, which takes into account an operational use of the defense forces," it points out the need to build a Dynamic Defense Force to enable the active promotion of (1) more effective deterrence and response; (2) further stabilization of the security environment in the Asia-Pacific region; and (3) activities for improving the global

security environment (the three roles of the defense forces). The 2010 QDR states that "the future strategic landscape will increasingly feature challenges in the ambiguous gray area that is neither fully war nor fully peace," advocating the building of readiness to simultaneously conduct a stabilization operation, long-duration deterrence operations in more than one theater, and a medium-sized counterinsurgency operation. As a future direction of the US-Japan alliance based on this common awareness, it is important to promote a similarly dynamic direction for US-Japan cooperation together with the building of a Dynamic Defense Force in Japan, which can be expected to produce a synergy between the two. In particular, regarding effective deterrence and response, dynamic US-Japan defense cooperation is founded on the three pillars of joint and shared use of facilities, joint training and exercises, and joint ISR activities "in order to deter and respond proactively, rapidly and seamlessly to various situations in the region," as stated in the above-mentioned Joint Statement.

More specifically, in the field of joint use of facilities, this can be expected to lead to an increase in bases for SDF operations, enhancement of logistic support functions, strengthening of military bases, and improved interoperability; in the field of joint training and exercises, to the enhanced readiness and operational capability of units, improved interoperability, and demonstration of deterrence and response capability; and in the field of ISR activities, to dynamic deterrence functions as an effect of continuous surveillance and the securing of intelligence superiority. The promotion of these kinds of cooperation will enhance effective deterrence and response, as well as strengthening the US-Japan presence at ordinary times. This strengthening of US-Japan defense cooperation in a dynamic direction is very significant in terms of maintaining and enhancing effective deterrence and response capacity in the strategic environment of East Asia. At a meeting on October 25, 2011, between Japanese Minister of Defense Yasuo Ichikawa and US Secretary of Defense Leon Panetta, the two ministers agreed on "energizing the operations of units, demonstrating the presence and abilities of both Japan and the United States, and developing a dynamic relationship in terms of defense cooperation."

The fact that these "2+2" meetings have continued to be held after the change of government in Japan from the LDP to the DPJ in 2009, leading to dynamic US-Japan cooperation and many other positive results in the defense field, shows that a clear bipartisan consensus has been reached in Japan regarding the

importance of the US-Japan alliance in its efforts to tackle the basic problems of Japan national security. In this sense, the "2+2" Joint Statement can be described as a very important document.

### (2) The Review of the US Armed Forces' Posture and Japan's National Security

As well as implementing cuts in its national defense budget, the United States is reviewing the posture of its armed forces based on the three principles of (1) geographically distributed, (2) operationally resilient, and (3) politically sustainable (see Chapter 6). As was made clear in the Defense Strategic Guidance published in January 2012, it has set out policies that place emphasis on the Asia-Pacific region. The efforts to reduce the national defense budget are likely to have a great impact on the US armed forces, but they have to be evaluated comprehensively when measuring their impact on Japan and the security of the Asia-Pacific region.

In this respect it is important that the Defense Strategic Guidance sets out policies that clearly place emphasis on the Asia-Pacific region. Together with the supplementary budget, US national defense costs have doubled from US$350 billion immediately prior to the 9/11 terrorist attacks to the current level of US$700 billion, although it should be noted that, in the course of this rapid rise, the United States' highest strategic priority has been the global fight against terrorism. However, the United States is currently placing strategic priority on the Asia-Pacific region. At the meeting on October 25, 2011, between Japanese Minister of Defense Yasuo Ichikawa and US Secretary of Defense Leon Panetta, Defense Secretary Panetta stated that, despite the severe situation of the US defense budget, the United States would maintain and further strengthen its presence in the Asia-Pacific region. It will be necessary to observe closely how the aims stated in the Guidance are given concrete form, but the fact that strategic priority has been placed on this region even at a time when the defense budget is being reduced shows that it is very important with regard to peace and stability.

During the past decade of increasing national security costs, it has been important that much of the equipment of the US armed forces had already been modernized. The procurement of F-22 and C-17 aircraft was completed during this period. The US Navy has built the F/A-18E/F Super Hornet and *Arleigh Burke*-class Aegis destroyers, while the Marines have completed development of the MV-22 Osprey. The equipment procured by the United States during this

decade is likely to play a very important role in the security of the Asia-Pacific region and the United States is expected to maintain effective power in terms of actual military capability.

If the United States continues to deploy its armed forces with a commitment that emphasizes the Asia-Pacific region, US-Japan cooperation will have further potential for development, particularly in relation to the United States' realignment of its military posture. In the context of geographical distribution among the three principles of military readiness, the United States has been strengthening its presence in areas where it has been lacking, such as the South China Sea and Indian Ocean, as exemplified by the deployment of US Marines in Darwin. This will serve as a base when the US presence, for example, takes the form of rotating deployment in the South China Sea. Through increased opportunities for units deployed in rotation to conduct joint exercises with countries in the region, it will also strengthen cooperative relationships with these countries.

The 2010 NDPG also list the further stabilization of the security environment of the Asia-Pacific region as one of the three roles of Japan's defense forces with regard to regional security cooperation. It states that Japan will promote bilateral and multilateral security cooperation and exchange and multilayered joint training and exercises while further deepening the US-Japan alliance, and that it will also promote practical cooperation and the building and strengthening of regional cooperation frameworks in non-traditional security fields, as well as supporting the building of the capabilities of other countries in the region. These aims outlined in the 2010 NDPG and the strengthening of security cooperation with countries in the region, which the United States is thought to be promoting through the realignment of its military posture, can mutually reinforce each other. If Japan promotes joint training and exercises and practical cooperation in nontraditional security fields through the building of a Dynamic Defense Force together with the geographical distribution of US armed forces in regions where they were previously lacking, this can be expected to lead to the creation of opportunities for more dynamic US-Japan cooperation that can lead to the further stabilization of the regional security environment.

In relation to "effective deterrence and response" concerning Japan's state sovereignty, in view of the agreement incorporated in Joint Statement of the "2+2" meeting to make efforts to refine bilateral planning operations so that the US-Japan alliance can respond to the various regional challenges, US-Japan

cooperation can be expected to develop through synergy between US and joint US-Japan efforts regarding high-end contingencies and Japan's efforts toward dynamic deterrence. In order to respond to challenges that might arise in the current security environment, it is essential to establish a deterrence posture that has no deficiencies with respect to attempts to change the status quo at various levels. In this sense, the building of a Dynamic Defense Force including dynamic deterrence, the promotion of dynamic US-Japan cooperation, and the refinement of bilateral planning will each be required to display synergy in combination with the United States' realignment of its military posture.

## 3. Efforts to Realize the 2010 NDPG

### (1) The Future Presence of the SDF in the Southwestern Islands

The concept of Dynamic Defense Force outlined in the 2010 NDPG places emphasis on the active operational use of defense forces in each of their three roles. Since "utilization" is the main purpose of Dynamic Defense Force, in addition to mobilization and deployment of and response by units when an emergency occurs, deterrence and stabilization are pursued at ordinary times through the active use of defense forces. To this end, it is important to prepare capabilities for the continuous use of the SDF's various assets. In this light, the 2010 NDPG added readiness as a required characteristic of defense forces on top of mobility, flexibility, and versatility as specified in the 2004 NDPG. In this sense, sustainability may be called the most salient characteristic of Dynamic Defense Force.

In the 2010 NDPG and Mid-Term Defense Program based on them, in addition to indicating a direction that emphasizes these sustainable operations, a review of the deployment posture in the southwestern islands was conducted. This broadly consists of three pillars.

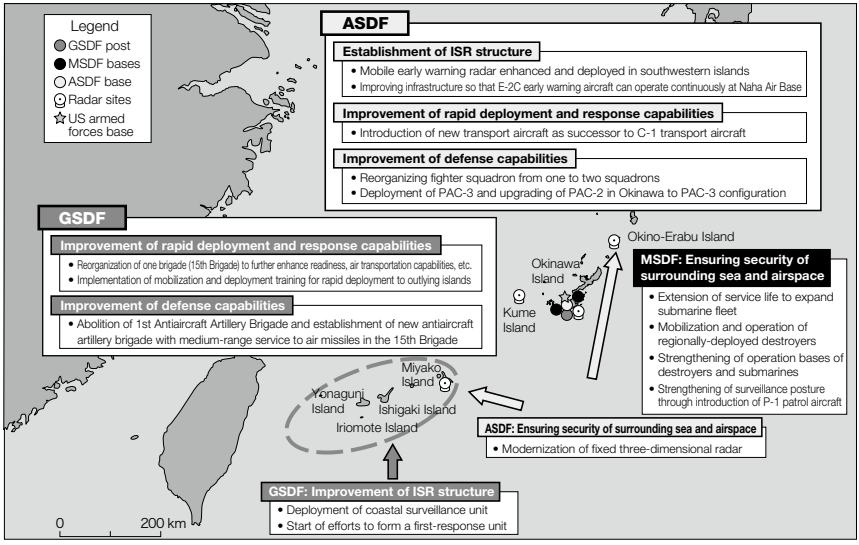
The first pillar is the strengthening of intelligence and surveillance capabilities. This will be achieved by deploying mobile early warning radar to the southwestern islands, modernizing the fixed three-dimensional radar at the radar sites on Miyako Island and Okino-Erabu Island, improving the maintenance infrastructure by strengthening radar surveillance so that steady-state continuous operations of E-2C early warning aircraft can be conducted in the islands, increasing the number of submarines from sixteen to twenty-two, and strengthening sea area surveillance

capabilities by developing P-1 patrol aircraft. Since the islands located west of Okinawa Island have been a gap in the GSDF's deployment, a coastal surveillance unit will be established to address this problem.

The second pillar is the strengthening of response capabilities. This will be achieved through by forming a first-response unit that will conduct reconnaissance when a contingency occurs, defend important facilities, and respond immediately in the event of a disaster, enhancing Naha Air Base by shifting one fighter squadron to the base as its second squadron, and strengthening defense capabilities through the modernization of surface-to-air missiles.

The third pillar is the strengthening of mobilization and deployment capabilities. In addition to deploying CH-47 transport helicopters and new transport aircraft as the successor to the current C-1 transport aircraft, mobilization and deployment training will be conducted to ensure the rapid deployment of units to the southwestern islands. In addition, in order to implement concrete measures for the building of a Dynamic Defense Force, the specifics of mobilization and deployment are being studied by the Joint Operation Subcommittee of the Committee for Promotion of the Structural Reform to Improve the Effectiveness of Defense Capabilities chaired by the Parliamentary Senior Vice-Minister of

**Figure 7.2. Defense force in the Southwestern Islands**




*Source:* Japanese Ministry of Defense

Defense. Particularly in view of the lessons of the Great East Japan Earthquake, it is considered necessary to promote the investigation of the strengthening of the SDF's own transportation capabilities and the utilization of US armed forces and private-sector transportation capabilities.

Among the Dynamic Defense Forces set forth in the 2010 NDPG, dynamic deterrence places particular emphasis on creating the perception of being "without deficiencies" through the regular, continuous, and strategic implementation of surveillance operations. However, in order create this perception, it is necessary not only to conduct surveillance operations but also to ensure a presence through a certain level of deployment of the SDF and US armed forces. The above-mentioned policy of redeploying the GSDF and ASDF in the southwestern islands is a measure designed to underpin operation-based dynamic deterrence by eliminating the gap in the SDF's presence in this region.

## Structural Reform of Defense Capabilities and the Capability-based Approach

The 2010 NDPG state that Japan will build a Dynamic Defense Force instead of the previous "basic defense force." To implement specific measures for this purpose, the Committee for Promotion of the Structural Reform to Improve the Effectiveness of Defense Capabilities, chaired by the Parliamentary Senior Vice-Minister of Defense, was set up and has been examining measures through mutual liaison with the Internal Bureau of the Ministry of Defense and the Staff Offices. The five main points under discussion are cross-service resource allocation, joint operation, human resource infrastructure, comprehensive procurement reform, and medical functions. Thirty working groups were set up to deal with these themes and a Road Map for Reform was published in August 2011.

As far as cross-service resource allocation is concerned, particularly in view of the current severe financial situation, it is necessary to assess common criteria for the current capabilities of the three Self-Defense Forces (GSDF, ASDF, and MSDF) and the defense capabilities they should possess and create a process for deciding the priorities for the allocation of resources based on an examination of the order of priority of services from a cross-service viewpoint beyond the frameworks of the three Self-Defense Forces.

As a method for achieving this, it is necessary to consider the introduction of the capability-based planning pursued by the Pentagon under Secretary of State Donald Rumsfeld during the George W. Bush administration. Capability-based planning has been adopted not only by the United States but also by NATO and Australia and is becoming a standard method among the United States and its

allies. Rather than maintaining defense capabilities based on separate scenarios for land, sea, and air operations, capability-based planning involves the setting of a capability assessment scenario common to all three based on an assumed contingency. An assessment of the capabilities required in this scenario is then made from a comprehensive viewpoint and the resource allocation that should be prioritized is decided according to an assessment of the shortages and surpluses of capabilities from a cross-sectional viewpoint covering the three military services.

Since it determines a common assessment scenario, capability-based planning has the merit of making it possible to conduct comprehensive assessment of the capabilities of the army, navy, and air force. However, when implementing capability-based planning, it is important to determine appropriate assessment criteria for judging the extent of capability shortages and surpluses, and this is not easy. The United States has gained experience in this through trial and error over the past decade, and NATO and Australia have been grappling with similar problems.

In view of this situation, Japan must also conduct investigations toward the full-scale introduction of this capability-based planning. By fully assimilating this method, Japan can focus on selecting resources for functions that are really necessary and open the way to achieving more results with limited resources. This will enhance the effectiveness of defense capabilities and make it possible to build even stronger SDF.

### (2) Development of multilayered security cooperation

In the 2010 NDPG, Japan's own efforts, cooperation with its allies, and multilayered security cooperation in the international community are listed as Japan's basic security policies. The 2010 NDPG lay particular stress on the importance of cooperation with South Korea and Australia, stating that "Japan will strengthen its cooperation with South Korea and Australia, which are allies of the United States and share basic values and many security-related interests with Japan, through bilateral initiatives and multilateral cooperation involving the United States." In the Asia-Pacific region, since the beginning of the Cold War era, the "hub-and-spokes" system of US-led bilateral alliances has been maintained instead of a single multilateral alliance such as the North Atlantic Treaty Organization (NATO) in Europe. This kind of bilateral cooperation with South Korea and with Australia and its strengthening into trilateral cooperation with the inclusion of the United States strengthens cooperation among the "spokes." As networks are developed, it can be expected to stabilize the region through the synergy of each alliance centering on the United States.

The cooperation between the GSDF and the Australian Army in Iraq from 2004

to 2006, provided a major opportunity for trilateral cooperation among the United States, Japan, and Australia. This led to increased opportunities for defense cooperation between Japan and Australia, and 2007 saw the publication of the Japan-Australia Joint Declaration on Security Cooperation, which included the inauguration of the Japan-Australia Joint Foreign and Defense Ministerial Consultations (2+2 meetings). Following this, discussions were commenced toward the conclusion of the Japan-Australia Acquisition and Cross-servicing Agreement (ACSA), which was signed by the governments of both countries in May 2010. As of December 2011, the ACSA has not yet come into effect because the necessary revisions to the Self-Defense Forces Act have not been made. However, since the ACSA is an important agreement that will enhance the infrastructure of Japan-Australia cooperation and promote further cooperation, it is hoped that it will come into effect in the near future.

As a natural extension of this cooperation between Japan and Australia, frameworks for trilateral cooperation among Japan, the United States, and Australia have also been developed. With the realization of the first Japan-US-Australia Defense Ministerial Meeting in 2007, the Japan-US-Australia Security and Defense Cooperation Forum (SDCF) was established as a director-general-level conference and trilateral exercises were subsequently conducted. After the Great East Japan Earthquake in 2011, Australian army C-17 transport aircraft provided transportation for the 15th Brigade from Okinawa (177 personnel and 68 vehicles) while coordinating closely with the SDF and US armed forces. Australian army C-17 transport aircraft also provided very useful cooperation by transporting relief supplies, pumps and other equipment in response to the nuclear power plant accident.


**Australian army C-17 transport aircraft providing aid after the earthquake** (US Air Force photo by Staff Sgt. Jonathan Steffen)

It is expected that security cooperation among Japan, the United States, and Australia will continue to be developed as the basis of regional cooperation over the whole of the Asia-Pacific region. Regarding the operational cooperation such as disaster relief and joint exercises and training

stipulated in the Japan-Australia Joint Declaration on Security Cooperation, the mutual operational capabilities of the three countries will be enhanced through trilateral implementation while utilizing the ACSA. At the same time, it is important to promote the development of shared awareness of the security environment through strategic policy dialogue, the coordination of policies, and the expansion of joint training at the operational level.

Defense cooperation among Japan, the United States, and South Korea is a particularly important framework for responding to the instability of North Korea. Indeed, opportunities for trilateral cooperation increased after North Korea's provocative actions in 2009 and 2010. Although a tripartite meeting was not held in 2011, Japan-US-South Korea defense ministerial meetings were held at the IISS Asian Security Summit (Shangri-La Dialogue) in Singapore in both 2009 and 2010. Cooperation among the United States, Japan, and South Korea has developed greatly in the past few years, with the participation of the United States and Japan in the naval interdiction exercises under the Proliferation Security Initiative (PSI) held in South Korea in 2010 and the dispatch of observers from South Korea to the US-Japan joint exercises and observers from Japan to the US-South Korea joint exercises in 2010.

The leader of North Korea, Kim Jong Il, died in December 2011 and it is not clear how smoothly the succession will proceed to the next regime. The possibility that this process may lead to great disorder cannot yet be ruled out. Even if the succession to the next regime proceeds smoothly, it seems unlikely that easy solutions will be found to the problems North Korea has caused up to now, namely stopping its development of nuclear missiles and resolving the abduction issue. At present, therefore, it is important to pursue risk management in readiness for the various uncertain situations that may arise in the future. To this end, it is necessary to establish a framework that makes it possible to respond to any sudden development. It is therefore vital both to strengthen trilateral defense cooperation among the United States, Japan, and South Korea and to enhance the level of coordination between the two US alliances in this region, the US-Japan alliance and the US-South Korea alliance. Regarding the strengthening of trilateral defense cooperation, it will be necessary to strengthen coordination between the two alliances based on the development of the US-South Korea alliance and the transfer of wartime operational control. Regarding the enhancement of coordination between the two alliances, the cooperative relationship between Japan and South

Korea will be indispensable. For example, at the meeting in January 2011 between South Korean Minister of National Defense Kim Kwan-jin and the then Defense Minister Kitazawa during the latter's visit to South Korea, the two ministers agreed on the importance of concluding the General Security of Military Information Agreement (GSOMIA) and the ACSA. In addition to operational cooperation such as the mutual dispatch of observers to military exercises, the conclusion of such official agreements between Japan and South Korea is essential not only for those two countries but also for strengthening their trilateral cooperation with the United States, and has great significance for Japan in that it strengthens this cooperative relationship in readiness for unexpected contingencies.

In recent years, Japan has also promoted bilateral and multilateral security discussions and defense exchange with countries such as India and the ASEAN. Regarding India in particular, a press release issued after the Japan-India Defense Ministerial Meeting in November 2011 announced that, in addition to promoting further exchange between the SDF and the Indian armed forces, the MSDF and Indian Navy would conduct joint trainings for the first time in 2012. In December, the first ever director-general-level trilateral strategic dialogue among Japan, the United States, and India was held, and opinions were exchanged on topics such as the regional situation and maritime security issues. As far as the ASEAN is concerned, an agreement to hold regular ministerial meetings was reached with Indonesia in June and a memorandum for defense cooperation and exchange was concluded with Vietnam in October. The Ministry of Defense has also participated in the expanded ASEAN Defense Ministers' Meeting (ADMM Plus), a high-level administrative meeting, and in related meetings of experts. These meetings admittedly did not go beyond the stage of the "defense exchange" conducted up to now, but it is hoped that continuous efforts will be made toward their development to the stage of "defense cooperation."

Japan is also strengthening its efforts to improve the global security environment. The SDF has already taken part in the United Nations Stabilization Mission in Haiti (MINUSTAH) and conducted operations off the coast of Somalia and in the Gulf of Aden. In addition to these operations, the Japanese government announced in September 2011 that the SDF would take part in the United Nations Mission in South Sudan (UNMISS), a UN peacekeeping mission in South Sudan, which became an independent state in July. The Cabinet decision to dispatch the SDF was made in December and on January 15, 2012, the 23-member main force of

advance troops of the GSDF arrived in the South Sudanese capital of Juba. The first main team comprising one hundred and several dozen personnel will be dispatched in mid-February. A second team is to be dispatched from around May, and it will commence full-scale operations such as road repairs. In his visit to Mongolia in January 2012, Minister of Defense Ichikawa, agreed with Luvsanvandan Bold, minister of defense of Mongolia, to examine the possibility of cooperation between Japan and Mongolia in South Sudan. It is expected that Japan will continue to promote these kinds of improvement in the global security environment through further cooperation with its allies and friendly nations.

### (3) Japan's Defense Industry and the Expansion of International Equipment Cooperation

As is well known, Japan imposes severe restrictions on exports of arms in accordance with the "Three Principles on Arms Exports" and their related policy guidelines. Since the market scale is limited with the Ministry of Defense and SDF as the only clients of Japan's defense industry, it is difficult for companies to establish themselves by specializing in defense sales. A distinctive feature of Japan's defense industry is that the dependence on defense sales of large companies that may become contract partners is much lower than that of similar companies in other countries. For example, according to 2010 data published in the specialty journal *Defense News*, Lockheed Martin (USA), which has developed the F-35 fighter, and British Aerospace, which manufactures the Eurofighter Typhoon, depend on defense sales for more than 90 percent of their total revenue. Even Boeing (USA), which produces a large number of civilian passenger aircraft, relies on defense sales for almost 50 percent of its revenue. In Japan, on the other hand, with the exception of IHI Marine, which manufactures destroyers (about 40 percent of total revenue), the percentage of defense revenue of the major companies is just under 10 percent for Mitsubishi Heavy Industries and Kawasaki Heavy Industries and less than 5 percent in the cases of Mitsubishi Electric and NEC (see Table 7.1.). Therefore, on an individual company basis, while the major companies that make up the defense industries of the United States and Europe virtually specialize in defense sales, private-sector sales account for most of the revenue of the major companies in Japan's defense industry.

This is one reason why the large mergers in the defense industries of the United States and Europe after the end of the Cold War hardly occurred at all in Japan.

Compared to companies that depend on defense sales, companies whose revenue come mainly from private-sector sales suffered relatively little impact to their business from the decrease in defense costs following the end of the Cold War. Moreover, in view of the size of the market, it is not easy for each company to cut off its department dealing with defense production and set up a company specializing in defense sales.

In fact, Japan began exporting weapons soon after the end of the Second World War. The trigger for the recovery of Japan's heavy industry in the post-war period was the special procurement needs from the United States during the Korean War, and from the 1950s to the 1960s Japan exported bullets and other military supplies to Thailand, the Philippines, Indonesia, and South Vietnam. From the

**Table. 7.1. Defense industry revenue rank (2010)**

**World**

| Rank | Company | 2010 defense revenue (US$10,000) | 2010 total revenue (US$10,000) | % of revenue from defense |
|---|---|---|---|---|
| 1 | Lockheed Martin | 4,280,000 | 4,580,000 | 93.4% |
| 2 | BAE Systems | 3,310,950 | 3,461,360 | 95.7% |
| 3 | Northrop Grumman | 3,118,100 | 3,475,700 | 89.7% |
| 4 | Boeing | 3,085,800 | 6,430,600 | 48.0% |
| 5 | General Dynamics | 2,662,200 | 3,246,600 | 82.0% |

**Japan**

| Rank | | Company | 2010 defense revenue (US$10,000) | 2010 total revenue (US$10,000) | % of revenue from defense |
|---|---|---|---|---|---|
| Domestic | World | | | | |
| 1 | 26 | Mitsubishi Heavy Industries | 303,940 | 3,501,620 | 8.7% |
| 2 | 57 | Mitsubishi Electric | 118,770 | 4,261,390 | 2.8% |
| 3 | 60 | Kawasaki Heavy Industries | 104,270 | 1,434,300 | 7.3% |
| 4 | 63 | NEC | 100,880 | 3,641,440 | 2.8% |
| 5 | 70 | IHI Marine | 91,770 | 233,680 | 39.3% |

*Source*: "Defense News Top 100 for 2010," *Defense News* (July 25, 2011).

beginning of the 1960s, however, it was argued that Japan should impose a fixed limit on arms exports in view of its status as a "peaceful nation." In 1967 the Eisaku Sato government established the Three Principles on Arms Exports, according to which exports of arms were prohibited to Communist bloc countries, countries to which the export of arms was prohibited by UN resolution, and countries involved in international disputes. However, this did not mean that the export of arms, etc. was comprehensively banned, except to countries under these three criteria. But in 1976, the Takeo Miki government adopted a policy of restraint regarding arms exports not only to the countries to which the Three Principles on Arms Exports applied but also to other countries. Thus the Three Principles on Arms Exports and their related policy guidelines, which stated that Japan would not export arms, etc. as a matter of principle across the board, became the basis of Japan's arms export policy.

After that, there was an increasing momentum towards making exceptions to this policy in specific cases. For instance, in the Statement of the Chief Cabinet Secretary issued in December 2004, it was stated that, if ballistic missile defense (BMD) systems were jointly developed and produced by the United States and Japan, the Three Principles on Arms Exports and their related policy guidelines would not be applied, provided that strict control was maintained.

The 2010 NDPG point out that, in contributing to peace and promoting cooperation in the international community, there are increasing opportunities to conduct effective cooperation activities through measures such as the utilization of heavy machinery and other defense equipment carried by the SDF and the provision equipment to disaster-stricken countries. Moreover, it has become the mainstream among developed countries to improve the performance of defense equipment and to deal with rising costs of equipment by participating in international joint development and production projects. In view of these changes, the 2010 NDPG state that Japan will "study measures to respond to changes in the international environment regarding defense equipment."

In response to this, the Statement of the Chief Cabinet Secretary, "On Guidelines for Overseas Transfer of Defense Equipment, etc.," was issued on December 27, 2011. According to this Statement, the government, in line with the individual exemption measures conducted so far regarding the Three Principles on Arms Exports and their related policy guidelines, would take comprehensive exemption measures regarding the overseas transfer of defense equipment, etc. and deal with

this matter in accordance with the following criteria: (1) Overseas transfer of defense equipment etc. related to peace contribution and international cooperation, will be strictly controlled, ensuring that defense equipment, etc. is not used for any other purpose than the agreed purposes and that it is not transferred to third parties without the prior consent of Japan; (2) International joint development and production of defense equipment etc. contributing to Japan's security will be conducted with countries in cooperating relationships with Japan and when joint development and production with such countries contributes to the security of Japan, and usage of defense equipment etc. apart from the intended purposes and transfer to third-party countries will be allowed on the premise that strict control is in place, including the requirement of prior approval by Japan; and (3) Exports other than the above-mentioned cases will continue to be dealt with carefully.

To summarize the Statement of the Chief Cabinet Secretary, in cases that contribute to peace and international cooperation, such as international peace cooperation, international disaster relief, humanitarian assistance, and response to international terrorism and piracy, as well as cases of international joint development and production with countries that have a cooperative relationship with Japan regarding security, the overseas transfer of defense equipment, etc. is possible on condition that strict control is maintained.

In terms of defense policy, these criteria extend the scope of security cooperation with other countries. They lead to the expansion of policy measures that Japan can take towards other countries in the region with regard to contribution to peace and international cooperation. At the same time, they can be said to open the way to the promotion of cooperation through international joint development and production with allies other than the United States, such as Australia and NATO countries, in forms different from the defense exchange and security dialogues conducted in the past. The formulation of these criteria thus created the potential for various new forms of international cooperation.

However, when promoting this kind of international cooperation regarding equipment, it will be necessary to make judgments based on strategic thinking about what kind of countries to cooperate with and what kind of technologies it is appropriate to share with these countries. It will also be essential to take even more careful measures than before concerning the prevention of proliferation of technologies. In order to comprehensively and strategically assess the impact of Japan's international cooperation on the regional security environment and global

security issues, it is important to enhance Japan's intelligence collection and situation analysis capabilities and its strategic planning capabilities.

Furthermore, through international joint development and production, the Japanese defense industry will be able to join not only the market created by Japan's defense demand, but also markets created by international defense demand. However, since this participation is essentially promoted through international joint development, it will not take the form of independent exports to international markets of equipment independently developed and produced by Japan. It will probably be similar to past research and development of ballistic missile defense systems, taking the form of participation in markets of equipment in part developed and produced through international cooperation. In view of this, there will be no great change regarding the fact that the main clients of Japan's defense industry are the Ministry of Defense and the SDF. However, the efficiency of the defense industry as a whole is expected to be enhanced by the increase in points of contact with overseas defense industries through international joint development and production and through competition in international markets as an indirect result of such development and production.

## The F-X Decision and Future National Security

On December 17, 2011, the Ministry of Defense decided to introduce the US F-35A as the ASDF's next-generation F-X fighter aircraft. This decision was made seven years after the acquisition of seven F-X fighters was planned as the successor of the F-4 fighter in the Mid-Term Defense Program of December 2004. During this period, studies were conducted on six types of fighter aircraft—the F-22A, F-35A, F-15FX, F/A-18E, Typhoon, and Rafale—finally resulting in a proposal for three types: the F-35A, Typhoon, and F/A-18E. The following four F-X selection criteria were indicated: (1) High-level performance, including effective response to high-performance aircraft with stealth and high situational awareness capabilities, sufficient ability to respond to cruise missiles, and the ability to effectively execute network-centric operations with components such as Airborne Warning and Control System (AWACS) and antiaircraft missiles; (2) To ensure high efficiency, the establishment at a reasonable cost of efficient and stable backup logistic support with outstanding reliability and serviceability; (3) The participation of domestic companies to promote the maintenance and development of the domestic defense industry and technological infrastructure; and (4) Consideration of life-cycle costs including costs of maintenance and operation after introduction. As a result of the comprehensive evaluation of these criteria, the F-35A was

chosen as the ASDF's F-X fighter aircraft.

The F-35A is a version that has been developed as a conventional takeoff and landing fixed-wing aircraft as part of an international joint project, the Joint Strike Fighter Project. The other versions are the F-35B short takeoff and vertical landing fighter and the dedicated aircraft-carrier-based F-35C. These fighters all have outstanding stealth, multi-purpose, and network capabilities, but all three versions have fallen behind their initial development schedules.

Considering that the F-35A is a replacement for the F-4, whose reduction has already commenced, it is feared that the great delay in the development schedule will have a serious impact on Japan's security. From this viewpoint, the F-35A development project has great significance for the security environment of the Asia-Pacific region and, from the standpoint of further enhancing the effectiveness of the US-Japan alliance too, it is necessary to overcome the difficulties in the development phase and complete its development on schedule.

## Cyber Threats and Japan's Security

2011 was a year in which awareness of cyber threats increased throughout the world. In July, the US Department of Defense published the Strategy for Operating in Cyberspace as an approach towards cyber threats. In November, an international conference to determine rules of behavior for cyberspace was held in London with the participation of sixty countries, and an agreement was reached to continue these discussions.

In Japan too, it has become clear that targeted e-mail attacks were made on Mitsubishi Heavy Industries, a major company in the defense industry, and on the both houses of the Diet, and the sense of crisis regarding the cyber threat rose to a higher level than ever before. These incidents involved attempts to steal important information via the Internet, but cyber threats can take various forms, including not only the theft of important information but also blocking access to networks or distorting information within networks and electronic attacks that cause the malfunctioning of important infrastructure. Accordingly, various kinds of response are required.

At present the efforts of the Ministry of Defense and the SDF to deal with cyber threats are based on the Outline of Comprehensive Measures Related to Responding to the Information and Communications Technology Revolution published in December 2000 by the then Defense Agency. This sums up the basic policy as follows: "To build secure and integrated advanced networks and, to gain information superiority through the advanced computerization of all sectors of the Ministry of Defense and SDF, including the enhancement of intelligence and command communication functions, to systematically build infrastructure for the comprehensive and organic operation of defense capabilities." Various measures have been implemented accordingly, including the establishment of a closed-system Defense Information Infrastructure (DII),

which is physically independent from the Internet, for the command chain, and an open-system DII, which is connected to the Internet but strictly monitored, for operations. The network information systems of the Ministry of Defense and the SDF are thus very strongly protected.

However, the cyberspace environment has changed considerably since this policy was formulated. At the time, most Internet access was by narrowband telephone lines, but now large volumes of data are sent via broadband connection by optical fiber or wireless LAN. In 2000, users who accessed the Internet via their own personal computers were mainly in the advanced countries of the West, but now this kind of access has spread explosively throughout the world, including developing countries. At the turn of the century, the use of e-mailing was just beginning to spread, but now the Internet has become an integral part of citizens' daily economic activities, such as Internet banking and e-commerce. The SDF also uses cyberspace for various purposes, such as command and control and intelligence gathering. SDF operations also strongly depend on the important infrastructures of civilian communication and transportation. If these important infrastructures were unable to use cyberspace securely, their functioning would be greatly impaired. In view of this, the secure use of cyberspace has become considerably more important than it was ten years ago. Accordingly, it is thought that the time has come for Japan to re-examine the significance of new cyber threats to its security and restructure its efforts to promote cyber security.

Japan's efforts to promote cyber security to combat cyber threats can be categorized into three frameworks. The first is the response to cyber threats viewed as crimes, which is basically a law enforcement issue conducted mainly by the police. The second is the response in the form of industrial policies, such as the standardization and regulation of codes and protection measures. In Japan these measures are taken mainly by the Ministry of Economy, Trade and Industry and the Ministry of Internal Affairs and Communications. The third is the response from the viewpoint of national security.

In promoting an effective response to cyber threats from the viewpoint of national security, the following four points are important. The first is protection of the SDF's networks themselves. This has already been conducted up to the present, but it is necessary to strengthen protection measures in response to the evolution of cyber threats and to promote cooperation with the US armed forces, among others. The second point is the need for measures to protect networks apart from SDF networks that are essential for the SDF's operations. In addition to the defense industry, this also includes the civilian infrastructures used in SDF operations, such as transportation and communications infrastructures. The protection of these civilian networks is also an important issue for future national security. The third point is the response to cyber threats to important social infrastructure, which might occur together with a physical attack at the time of an armed attack. Since there will necessarily be limitations to an approach based on enforcement of the law during an actual emergency, it is essential to formulate nationwide measures to deal with cyber threats in a form that differs from measures taken at "ordinary times." The fourth point is how to view and respond to cyber attacks that might occur in "gray-zone confrontations or disputes that are not to escalate into armed conflicts" (2010 NDPG). In particular, in a security crisis

that does not escalate into an emergency, an important question is how to respond a cyber attack which makes use of the "plausible deniability" stemming from anonymity and clearly puts pressure on Japan's policy decisions.

The debate concerning cyber threats tend to focus on "destructive" scenarios such as an attack on the control systems of important infrastructure that could lead to a nuclear power plant accident, or the rewriting of bank account data by large-scale hacking that could undermine confidence in the entire financial system. These are important issues, but it is important to pay attention not only to such highly organized attacks requiring specialist knowledge but also to Distributed Denial of Service (DDOS) attacks that can be done at much lower cost and have the potential to deal a serious blow to Internet banking and e-commerce. DDOS attacks are often carried out through "botnets"—networks of ordinary users' computers in which software for unauthorized access has been embedded and can then be engaged using a special trigger. The accumulated efforts not only of the government and corporations but also of every individual to enhance their own security will therefore contribute in the end to security from cyber threats.

It is also highly likely that continuous attacks will be made by standard e-mail, as has already come to light in Japan, in order to steal information that may be significant from a national security standpoint. It is practically impossible for commercial security software to protect computers from this kind of attack in which, for example, a file containing a hidden unauthorized code is sent by a person pretending to be an acquaintance. The only countermeasure is for every computer user to interact with cyberspace with great care and improve their own "cyber hygiene." Now that almost everyone has some contact with cyberspace, the accumulation of efforts regarding security at a personal level has become very important.

Since this is an issue that is closely linked to everyday life, it is essential for Japan as a whole to promote the secure use of cyberspace through a comprehensive approach in which, rather than focusing on one of the three frameworks of cyber crime countermeasures, industrial policies, and national security, a synergy is achieved through cumulative efforts under all three frameworks. To ensure the secure use of cyberspace, this kind of "seamless response" is absolutely vital.