

# Great Eastern Japan Earthquake: “Lessons Learned” for Japanese Defense Policy

Yuki Tatsumi



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Yuki Tatsumi

Stimson  
1111 19<sup>th</sup> Street, NW, 12<sup>th</sup> Floor  
Washington, DC 20036  
Telephone: 202.223.5956  
Fax: 202.238.9604  
[www.stimson.org](http://www.stimson.org)

## Executive Summary

The Great Eastern Japan Earthquake (GEJE) on March 11, 2011 was the worst disaster in the nation's recorded history. The triple combination of an earthquake, tsunami, and meltdown of the Fukushima Dai-ichi Nuclear Power Station dealt a severe blow to northeastern Japan, resulting in the largest and fastest mobilization of the Japanese Self-Defense Force (JSDF) since its establishment in 1954 and unprecedented cooperative relief activities with the US armed forces.

Within 72 hours of the earthquake, the Ministry of Defense (MOD) mobilized the JSDF and activated its reserve units. Additionally, the JSDF established a Joint Task Force (JTF) in order to coordinate the relief activities by Ground, Air, and Maritime Self-Defense Forces, with Lt. General Eiji Kimizuka as JTF commander, and made Chief of Staff of the Joint Staff General Ryoichi Oriki ultimately responsible for operations related to the GEJE. At its operational peak, the JSDF mobilized 106,000 personnel to provide support for: (1) rescue and recovery, (2) transport assistance, (3) livelihood assistance, and (4) emergency rehabilitation assistance. Additionally, the JSDF troops helped cool the reactors and spent fuels, decontaminate the personnel and equipment, and monitor the radiation and temperature around Fukushima.

The US military also responded with a considerable show of force, initially under the leadership of United States Forces Japan (USFJ) commander Lt. General Burton Field, and subsequently under United States Pacific Fleet commander Admiral Patrick M. Walsh. Under their leadership, US military conducted *Operation Tomodachi* as the Joint Support Force (JSF). The US forces at its operational peak had 24 naval ships, 189 aircraft, and approximately 24,000 personnel supporting the disaster relief efforts. Specifically, the US offered key capabilities to the JSDF, including Marines that were specially trained for chemical, biological, radioactive, nuclear (CBRN) response and UAVs to gather intelligence on the state of the Fukushima Dai-ichi Nuclear Power Station. The cooperative operations between the JSDF and the US military also led to the establishment of coordination cells known as Bilateral Coordination Action Teams (BCATs) in Ichigaya, Yokota, and Sendai.

The GEJE marked a series of firsts for the JSDF. It was the first time that the JSDF faced a “complex disaster (*fukugou jitai*).” It was also the first time that its three services had to work side-by-side in a real-time large-scale operation. It also marked the first time that the JSDF conducted a large-scale cooperative operation with the US military during a real emergency. The JSDF's commendable efforts in the face of these challenges demonstrated the incredible strength of the JSDF and the US-Japan alliance. However, the unprecedented nature of this disaster response also generated a number of “lessons learned” as the JSDF and MOD consider the future of JSDF capabilities. Among these “lessons learned,” several deserve to be highlighted:

## 1. Capabilities

- › C4ISR (command and control, communications, computers, intelligence, surveillance and reconnaissance), including intelligence-gathering/processing: JSDF’s heavy dependence on private sector for its daily telecommunication needs presented a question of the survivability of its communication systems in time of emergency. In addition, the lack of joint C4ISR capability greatly handicapped JSDF’s relief operation.
- › Transport/logistics: JSDF’s transport and logistics capabilities are inadequate to sustain its large-scale mobilization for longer than a couple of months. Where appropriate, JSDF should pursue joint transport/logistics capabilities. In addition, while easier said than done, MOD is advised to consider establishing contractual relationship with private transportation companies that allows JSDF to gain access to their vehicles in emergency situations.
- › A broader capability to respond to nuclear accidents: given Japan’s policy of keeping its nuclear power for civilian use only, MOD has not been treated as one of the stakeholders in Japan’s nuclear power safety. However, the experience in Fukushima proved that MOD/JSDF will have to be included in the discussion of Japan’s nuclear safety.

## 2. Institution

- › Enhanced jointness among three JSDF services: amendments to the SDF Law to add elements that are similar to the 1986 Goldwater-Nichols Act should be considered to incentivize JSDF services to promote jointness. Reorganization of the Joint Staff Office, including potential recalibration of the responsibility of Chief of Staff of Joint Staff, must be a key component of the effort.
- › Necessity to reconsider a JGSDF organization change, including the creation of Ground General Command (*rikujo soutai*): the issue was picked up when MOD was revising its National Defense Program Guidelines (NDPG) in 2010, and may be worthwhile to resume the discussion.
- › Mental health: it is imperative for JSDF to establish a sustainable process to provide proper care for its personnel who suffers with Post-Traumatic Stress Disorders (PTSDs) and other emotional/mental disorders following their participation in the high-stress missions.

## 3. US-Japan cooperation

- › Limitations of the existing 1997 US-Japan Guidelines for Defense Cooperation: the United States and Japan need to establish a process to launch bilateral defense coordination mechanism in case of non-combat emergencies (such as large-scale disaster)
- › Appropriate balance between JSDF’s relationship with USFJ and PACOM: the role of USFJ in non-peacetime, non-contingency operation such as *Operation Tomodachi* needs to be clarified to their Japanese counterpart.

The performance of the JSDF in the wake of the GEJE has won it strong support from Japanese citizens. Furthermore, the success of *Operation Tomodachi* considerably boosted the image of the US-Japan alliance in Japan. The MOD has already begun to act on some of its “lessons learned,” including the acquisition of improved transportation/logistics assets. US and Japanese officials are also discussing ways in which their forces can better coordinate in times of crises. However, many challenges loom ahead. Fiscal restraints will prove the most challenging, as Japan’s defense budget is likely to remain flat. Directing funds towards less tangible assets such as C4ISR enhancements can be also difficult. Drastic institutional reform may also be necessary in order to enhance jointness within the JSDF. Ultimately, the Japanese defense establishment must strive to successfully implement these lessons learned in order to truly develop the JSDF into a “dynamic defense force.”



# Acknowledgment

First and foremost, I would like to thank US and Japanese government officials as well as US military officers and Japanese Self-Defense Force (JSDF) officers to take time to share their perspectives. Since I promised them that the interviews would be conducted on background bases, I cannot thank individually for their inputs. Nonetheless, I am deeply thankful for their frankness with which they shared their thoughts. Many of them have also taken time to review earlier drafts and provided valuable feedback, which I am also very thankful for.

My research and analytic activities at Stimson's Japan program has not been possible without gracious support from a number of US and Japanese corporations who share my belief that the US-Japan relationship is a critical bilateral relationship in the Asia-Pacific region and beyond. A few among them deserve specific reference to make this particular research possible: Fujitsu Ltd, ITOCHU Aviation, Lockheed Martin, Mitsubishi Heavy Industries of America, and Raytheon Company.

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Finally, my deepest condolences as well as respect go to all those who lost their loved ones, dislocated from their home, and yet trying their best to move beyond the tragedy of 9/11.

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Yuki Tatsumi

Senior Associate, East Asia program



# Introduction

On March 11, 2011, the Great Eastern Japan Earthquake (*Higashi Nihon Dai-shinsai*, GEJE) hit Japan. With an earthquake magnitude of 9.0—the greatest in Japan’s recorded history—followed by a tsunami that engulfed a large part of northeastern Japan, and combined with the nuclear meltdown at the Fukushima Dai-ichi Nuclear Power Station, the GEJE was clearly the worst disaster that Japan has endured in its history. Approximately 16,000 lives were taken by this triple-disaster and its aftershocks.<sup>1</sup> While Japan has demonstrated an extraordinary recovery from the tragedy, those who lived in the northeastern region—the most severely damaged—and those that relocated following the disaster continue to struggle.

In response to the disaster, the Japan Self-Defense Force (JSDF) was mobilized at an unprecedented level. The total of approximately 100,000 personnel from the Ground, Air and Maritime Self-Defense Force—about two thirds of their total personnel—were mobilized to rescue survivors, recover the remains of those otherwise, and provide relief and comfort to the survivors who were dislocated from their homes. The JSDF also assisted the Tokyo Power Electric Company (TEPCO), National Police Agency (NPA), and fire departments of local governments to contain the damage from the accident at the Fukushima Dai-ichi Nuclear Power Station.

Overall, the people of Japan overwhelmingly approved of the JSDF’s response to the GEJE. In particular, they praised the dedications by its personnel engaged in relief activities, its close cooperation with US armed forces that executed *Operation Tomodachi* to support JSDF’s relief effort, demonstrating the strength of the US-Japan alliance during a time of suffering, generated a great deal of goodwill toward the JSDF and the US armed forces. Japanese public’s strong approval of JSDF activities and *Operation Tomodachi* also provided a much-needed boost to the political atmosphere that surrounds the US-Japan alliance which had suffered setbacks in the previous two years. They all should help in facilitating the discussion within in Japan on the role of JSDF in the society, and the future of defense cooperation between the US military and JSDF.

When examined closely, however, the experience in the GEJE left the JSDF (and Japan Ministry of Defense [MOD] writ large) an important set of “lessons learned” for the future. These “lessons learned” suggest that JSDF, although is no doubt among one of the best-equipped and best-trained militaries in the world, still has much room for improvement in order to operate more effectively and efficiently in emergency situations. While the JSDF operation in GEJE was not a combat mission, the lessons learned point to the important capability gap that JSDF must address.

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1 National Police Agency. “Heisei 23 nen (2011) Tohoku Taiheiyou-oki Jishin no Higai Joukyou to Keisatsu Sochi (the damage from the 2011 earthquake off the coast of Northeastern Pacific and police response).” January 10, 2012. <http://www.npa.go.jp/archive/keibi/biki/higaijokyo.pdf> Accessed January 12, 2012. This figure includes those who lost lives from the aftershocks in April and November 2011.

This monograph consists of three parts. The first section provides an overview of JSDF activities in response to the GEJE. The second section attempts to shed light on how US military responded to the GEJE, and how the US military and the JSDF coordinated their activities. Discussion of the key “lessons learned” for the JSDF and MOD and their impact on Japan’s future planning of its defense capabilities will follow. The monograph ends with a discussion of prospects and challenges.

The monograph is based on publicly available information, as well as information obtained from a series of background interviews that the author conducted with US and Japanese civilian government officials, as well as officers in the US military and JSDF based on anonymity. However, the assessments made in this paper are based solely on the author’s own analysis, and therefore, their shortcomings entirely rest with her.

## I. JSDF Response to the GEJE—Overview

At 2:46 PM on March 11, 2011, a natural disaster of unprecedented scale hit Japan. First, an earthquake of magnitude 9.0—the highest in Japan’s recorded history—hit a vast area that included Tokyo, Chiba, Ibaragi, Tochigi, Miyagi, Fukushima, Iwate, and Aomori.<sup>2</sup> In addition, a wide area from eastern to northwestern parts of Japan was almost simultaneously hit by a tsunami. Having reached a height of 40.5 meters (approximately 133 feet) in the most severely affected area<sup>3</sup>, the tsunami washed away cities and towns, devastating the area and taking lives of many. In addition, the earthquake and tsunami triggered accidents and malfunctions at Fukushima Dai-ichi Nuclear Power Station. In short, the Great Eastern Japan Earthquake (GEJE) hit Japan with a triple disaster of an earthquake, tsunami, and the most serious nuclear accident in Japan’s history. The Japanese government had to respond to this complex crisis immediately. While it required a government-wide response, the Ministry of Defense (MOD), the Japan Self-Defense Force (JSDF) in particular, was at the frontline in the early days.

MOD responded to this unprecedented disaster as quickly as realistically possible. Article 83 of the Self-Defense Force (SDF) Law authorizes JSDF mobilization to assist local authorities in disaster relief efforts, as well as nuclear accidents upon the request from the governors of the affected prefectures.<sup>4</sup> MOD's two JSDF deployment orders—one for disaster relief, and the other for responding to nuclear accidents at Fukushima Dai-ichi and Dai-ni Nuclear Power Stations—were issued based on this clause as well as relevant administrative directives (*kunrei*).

## 1. Disaster Relief Operations

The JSDF mobilized at 6:30 PM on March 11, 2011 following the initial deployment order.<sup>5</sup> On March 14, 2011, MOD issued a follow-on order to define the command structure for the JSDF disaster relief operations. The order designated the Chief of Staff of the Joint Staff to be ultimately responsible for JSDF operations associated with the GEJE relief activities. It further ordered the first-ever establishment of a Joint Task Force (JTF) and designated the Commanding General of Japan Ground Self-Defense Force (JGSDF) Northeastern Army, Lieutenant General (Lt. Gen) Eiji Kimizuka, as the JTF commander (Kimizuka was dual-hatted as the commander of the JTF ground

2 Heisei 23 (2011) *nen Touhoku Chihou Taiheiyō oki jishin ni tsuite (Dai 15 hou)* (Regarding the 2011 earthquake off of Northeastern/Pacific Coast—Bulletin No. 15). Japan Meteorological Agency, March 13, 2011. <http://www.jma.go.jp/jma/press/1103/13b/kaisetsu201103131255.pdf> Accessed September 1, 2011.

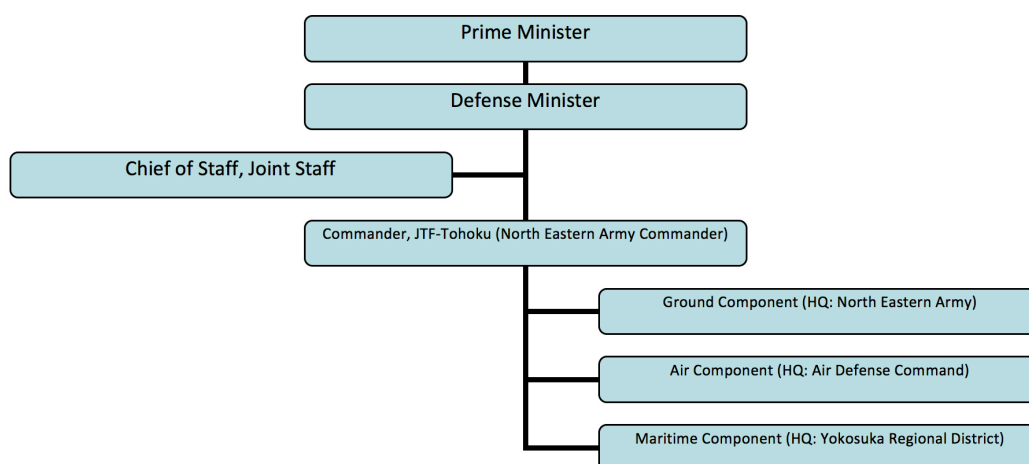
3 “Tsunami no toutatsu-ten ha saikou 40.5 metoru: Senmonka team sokuryou (the tsunami peaked at 40.5 meters high in some locations: an experts group measured)” *Asahi Shimbun*, May 30, 2011. <http://www.asahi.com/national/update/0530/OSK201105300115.html> Accessed September 1, 2011.

[illegible]

5 Ministry of Defense. *Daijin Rinji Kisha Kaiken Gaiyou* (Defense Minister's Special Press Conference Executive Summary). March 11, 2011. <http://www.mod.go.jp/j/press/kisha/2011/03/11a.pdf> Accessed March 20, 2011.

component).<sup>6</sup> The March 14 order also directed the Commander of Japan Maritime Self-Defense Force (JMSDF) Yokosuka Regional District to command the JTF maritime component, and the Commander of Japan Air Self-Defense Force (JASDF) Air Defense Command (ADC) to command the JTF air component.<sup>7</sup> (Chart 1-1):

**Chart I-1-1. The Command Structure of JSDF in GEJE Relief Operation**



(Source: Ministry of Defense. “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features; Response to the Great Eastern Japan Earthquake)” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012.)

The pace at which the JSDF mobilization expanded was unprecedented as was the total number of personnel eventually involved. When the initial deployment order was issued in the evening of March 11, approximately 8,000 personnel were immediately mobilized and began to move into the affected area. By March 15, approximately 70,000 were already mobilized<sup>8</sup>, and the mobilization reached its peak at 106,000 by March 18, 2011.<sup>9</sup> In addition to the active-duty JSDF personnel, the MOD also activated two groups of reservists—*Sokuou Yobi Jieikan* (Ready Reserve) and *Yobi Jieikan* (Reserve)<sup>10</sup>—to support JSDF operations throughout northeastern Japan. It was the first time for MOD to activate the reservists since the system was created in 1954.<sup>11</sup>

6 Ministry of Defense. *Heisei 23-nen (2011 nen) Touhoku Chihou Taiheiyoku oki Jishin ni taisuru Daikibo Shinsai Saigai Haken no Jisshi ni kansuru Jieitai Koudou Meirei* (JSDF operation order in regard to large-scale disaster relief in response to the 2011 earthquake off of the Pacific Coast in Northeastern Japan). March 14, 2011. <http://www.mod.go.jp/j/approach/defense/saigai/tohokuoku/20110314a.html>. Accessed March 20, 2011.

7 *Ibid.*

8 Ministry of Defense. *Daijin Rinji Kisha Kaiken Gaiyou* (Defense Minister’s Special Press Conference Executive Summary) March 15, 2011. <http://www.mod.go.jp/j/press/kisha/2011/03/11a.pdf>. Accessed March 25, 2011.

9 Ministry of Defense. *Daijin Rinji Kisha Kaiken Gaiyou* (Defense Minister’s Special Press Conference Executive Summary) March 19, 2011. <http://www.mod.go.jp/j/press/kisha/2011/03/19.pdf>. Accessed March 25, 2011.

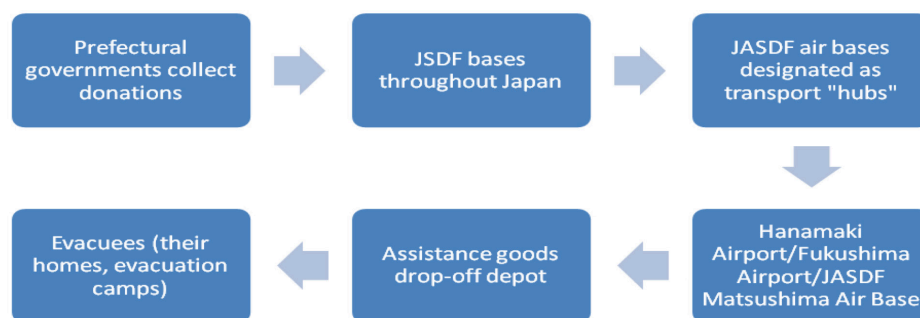
10 Both Ready Reserves and Reserves are retired JSDF personnel. In addition, MOD created *Yobi Jieikan-ho* (Assistant Reserve) that are civilian with various expertise (i.e., language, public health, medicine). Ground Self-Defense Force. *Yobi Jieikan Seido no Gaiyou* (Reserve System: Overview) <http://www.mod.go.jp/gsdf/reserve/yobiji/index.html>. Accessed August 20, 2011.

11 Following the initial establishment of Reserve System, Ready Reserve was introduced in 1997, and Assistant Reserve was introduced in 2001. Ground Self-Defense Force. *Yobi Jieikan Seido 50-nen no Ayumi* (Reserve System and its 50-year history). <http://www.mod.go.jp/gsdf/reserve/yobiji/ayumi.html>. Accessed August 20, 2011.

Deployed JSDF troops engaged in four main activities.

1. Rescue and recovery operations:<sup>12</sup> The JSDF worked with local police, the Japan Coast Guard, and fire departments to search for survivors who were stranded, transporting them to evacuation camps and other safe locations. In addition to devoting six full days to intensive search and recovery, the JSDF continued these efforts as a part of their daily routine until they concluded the operation. Finally, until the capacity of local authorities and businesses was restored, the JSDF also took on funeral-related activities, including the cremation and burial of the remains. They saved the lives of 19,286 survivors—about 70 percent of the total survivors found—and recovered 9,500 bodies—approximately 60 percent of the total number of people who died.<sup>13</sup>
2. Transport assistance:<sup>14</sup> JSDF transportation assistance not only included moving those who evacuated from their homes to the evacuation shelters, but also included medical evacuation for those who fell ill, as well as bringing in the Disaster Medical Assistance Team (DMAT) to the affected areas. The JSDF also played a critical role in orchestrating the collection and distribution of various assistance goods that were donated by nongovernment organizations (NGOs) as well as corporations and individuals from other parts of Japan. Designated JSDF bases functioned as the “hubs” for collecting assistance goods (including donations) from the local governments throughout Japan. These goods, after first being transported to major JSDF air bases throughout Japan, were flown into the civilian airports in Hanamaki and Fukushima, as well as JSDF Matsushima Air Base. From there, the assistance goods were delivered to the designated drop-off depots, and distributed to the evacuees (Chart 1-2).

**Chart I-1-2. Process of Transporting Assistance Goods by JSDF**



(Source: Ministry of Defense “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features; Response to the Great Eastern Japan Earthquake).” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012).

12 Ministry of Defense “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features; Response to the Great Eastern Japan Earthquake).” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012.

13 Ministry of Defense. *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) p. 443. [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/pdf/23shiry0.pdf](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/pdf/23shiry0.pdf). Accessed September 1, 2012.

14 Ministry of Defense “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features; Response to the Great Eastern Japan Earthquake).” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012.

3. Livelihood Assistance (*Seikatsu Shien*):<sup>15</sup> After the initial rescue and transport assistance, the JSDF dedicated most of its energy and personnel to providing what it called “*Seikatsu Shien* (Livelihood Assistance)”. JSDF troops assisted the survivors by providing water, food, and fuel. JSDF also provided medical services, both by making their hospitals, usually only open to JSDF and its dependents, available to the survivors and by sending its doctors and nurses to visit survivors in their own homes as well as at evacuation centers. The JSDF also provided sanitation services.
4. Emergency Rehabilitation Assistance:<sup>16</sup> In the immediate aftermath of the earthquake and tsunami, the JSDF, in consultation with local authorities, conducted emergency repair to roads, bridges, and seaports. The JSDF worked closely with US forces that engaged in *Operation Tomodachi* to open Sendai Airport, as well as the ports in Hachinohe, Miyako, and Kesenuma. Other rehabilitation activities included cleaning the schools, installing water pumps to pump out the sea water, and constructing emergency overpasses where the roadways were submerged in water.

JSDF’s disaster assistance operation in northeastern Japan continued over five months. After deployment surged to 100,000 personnel on March 18, 2011, the JSDF maintained that number for the first two months.<sup>17</sup> The disaster assistance in the northeastern Japan was considered a joint operation among Air, Ground, and Maritime Self-Defense Forces until July 2011. After that, the JGSDF Northeastern Army alone was put in charge of continuing the assistance. The disaster relief operation concluded on August 31, 2011.

## 2. Support to the response to the Fukushima Dai-ichi Nuclear Power Station accidents

It quickly became apparent that Fukushima Dai-ichi Nuclear Power Station had suffered serious damage from both the earthquake and tsunami and was in extremely dangerous condition. Based on the Special Measures Law in regard to the Response to Nuclear Disaster (*genshiryoku saigai taisaku tokubetu sochi-ho*), then-Prime Minister Naoto Kan declared a “Nuclear Disaster Emergency (*genshiryoku saigai kinkyyuu jitai*)” at 7:20 PM on March 11, and requested JSDF deployment.<sup>18</sup> The Self-Defense Forces (SDF) Law authorizes the JSDF to be mobilized to attend to “nuclear disaster (*genshiryoku saigai*)”<sup>19</sup>. Although MOD directives for JSDF’s assistance in nuclear accidents have been in place since 2006<sup>20</sup>, it was the first time that the JSDF was actually dispatched for this purpose.

15 *Ibid.*

16 *Ibid.*

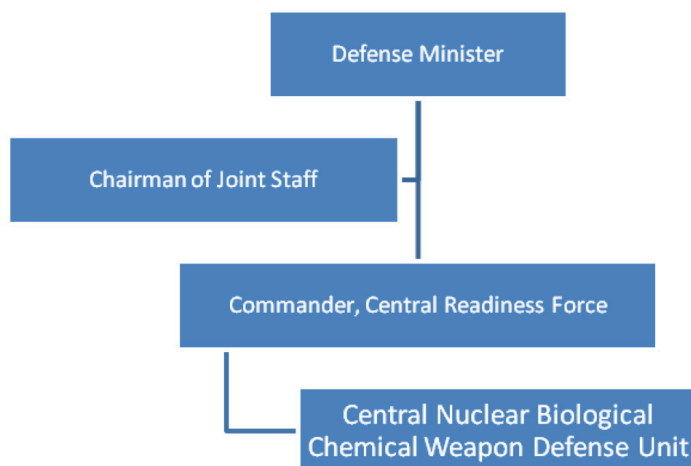
17 Ministry of Defense. *Heisei 23-nen (2011 nen) Touhoku Chihou Taiheiyoku oki Jishin ni okeru Jieitai no Katsudou joukyou* (JSDF activities in response to the 2011 earthquake off of the Pacific Coast of Northeastern Japan). May 10, 2011. <http://www.mod.go.jp/j/press/news/2011/05/10a.html>. Accessed January 3, 2012; Ministry of Defense. *Heisei 23-nen (2011 nen) Touhoku Chihou Taiheiyoku oki Jishin ni okeru Jieitai no Katsudou joukyou* (JSDF activities in response to the 2011 earthquake off of the Pacific Coast of Northeastern Japan). May 11, 2011. <http://www.mod.go.jp/j/press/news/2011/05/11a.html>. Accessed January 3, 2012.

18 *Genshiryoku Saigai Taisaku Tokubetsu Sochi ho* (Special Measures Law in regard to the Response to Nuclear Disaster) Article 15-2, Article 20-4. <http://www.bousai.go.jp/jishin/law/002-1.html>. Accessed January 5, 2012.

19 *Jieitai ho* (The Self-Defense Forces Law) Article 83-3. <http://law.e-gov.go.jp/htmldata/S29/S29HO165.html>. Accessed January 5, 2012.

20 The guidance was first set in 2000, and revised in 2006 as the JSDF adopted joint operational system.

**Chart I-2. Command structure MOD/JSDF assistance in response to the nuclear accident at Fukushima Dai-ichi Nuclear Power Station**



(Source: Ministry of Defense. “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features: Response to the Great Eastern Japan Earthquake).” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012).

The mobilization order issued on March 12 designated the Chief of Staff of Joint Staff to be in charge of the operation, leaving the day-to-day operational authority with the commander of Central Readiness Forces (CRF). Within the CRF, the Central Nuclear Biological Chemical Weapon Defense Unit (*chuo tokushu buki bogo tai*, CNBC), played a central role in JSDF response to the Fukushima accident (Chart I-2.)

The JSDF efforts in response to the Fukushima accident included three types of operations:

1. Cooling of the reactors and spent fuel pool: the Fukushima Dai-ichi Nuclear Power Station lost electricity due to the damage by the earthquake and tsunami. With the loss of electricity, it was critical that the temperature of the nuclear reactor and spent fuel pool were kept under control in order to prevent the situation from deteriorating. The JSDF, alongside “Hyper Rescue Team” from the Fire Department of Tokyo Metropolitan Government, engaged in the efforts to cool the reactors and spent fuel pool. The JSDF flew CH-47 helicopters over the power station to pour water on the reactor. It also mobilized its own fire engines to spray water on the reactors.
2. Decontamination: The JGSDF’s Nuclear Biological Chemical Weapons Defense Units engaged in the decontamination of JSDF and Fire Department personnel who participated in the cooling operations described above, as well as the residents who lived in the proximity of Fukushima Dai-ichi. The JSDF also decontaminated the equipment (aircraft, helicopters, vehicles, etc) that were used in the cooling operations.
3. Radiation and temperature monitoring: since the outbreak of the accident at Fukushima Dai-ichi, the JSDF continuously monitored the radiation level in the atmosphere around Fukushima Dai-ichi. The JSDF also continued to measure the temperature of the area. Furthermore, the JSDF assisted in collecting water samples and plumes to measure the radioactive contamination

level of the area near Fukushima Daiichi. The JSDF also helped map out the extent of radioactive contamination in the area by mobilizing its surveillance platforms.

In addition to the above efforts to contain the damage from the Fukushima Dai-ichi accident and managing its aftermath, the JSDF also provided livelihood assistance to those who evacuated from the areas quarantined by the Japanese government. Finally, the JSDF also engaged in search and rescue/recovery of the victims in the vicinity of the power station.<sup>21</sup>

JSDF support activities in response to the Fukushima Dai-ichi Power Station accident—the monitoring of radioactive levels, in particular—continued for a considerable period after the disaster relief assistance concluded. Based on the request made by the governor of Fukushima, the JSDF concluded its operation in this area on December 26, 2011.<sup>22</sup>

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21 Ministry of Defense “*Tokushu: Higashi Nippon Daishinsai heno Taiou* (Special Features: Response to the Great Eastern Japan Earthquake).” *Heisei 23-nen do ban Bouei Hakusho* (2011 Defense White Paper) [http://www.clearing.mod.go.jp/hakusho\\_data/2011/2011/index.html](http://www.clearing.mod.go.jp/hakusho_data/2011/2011/index.html). Accessed January 5, 2012

22 Ministry of Defense.”*Higashi Nihon Dai-shinsai ni kakaru Saigai Haken no Shuuryou ni tsuite* (Regarding the conclusion of disaster relief dispatch relating to the Great Eastern Japan Earthquake)” December 26, 2011. <http://www.mod.go.jp/j/press/news/2011/12/26b.html>. Accessed March 3, 2012.

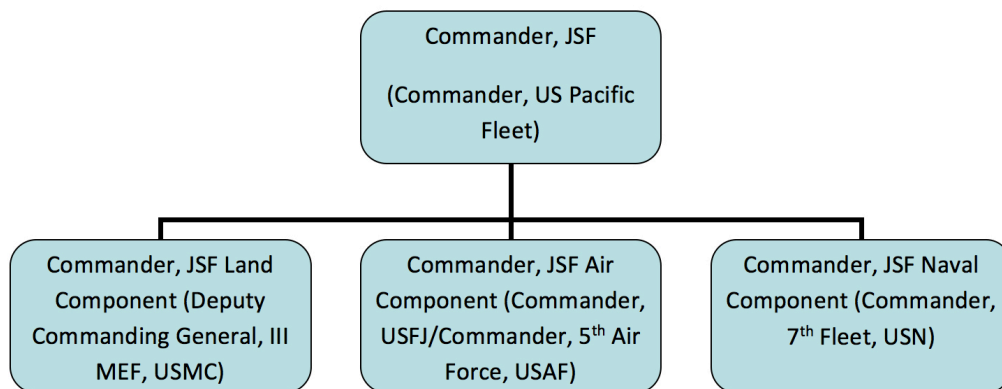
## II. US Military Response

The US military responded to the GEJE with a formidable show of force. Initial support was provided under the leadership of the United States Forces Japan (USFJ) commander, Lt. Gen Burton Field. On March 12, 2011, US Pacific Command (PACOM) activated elements of Joint Task Force (JTF) 519, which augmented the USFJ staff. Its mission was to form a Joint Support Force (JSF) “to support the Government of Japan with disaster response” in the aftermath of the Great Eastern Japan Earthquake.<sup>23</sup> Following the activation of JTF 519, Admiral Patrick M. Walsh, commander of US Pacific Fleet, assumed the role of JSF Commander for the duration of the operation.

Under *Operation Tomodachi* (Operation Friends), US military mobilized assets in III Marine Expeditionary Force (III MEF), Fifth Air Force, US Army Japan, Naval Forces Japan, and the Seventh Fleet. At its operational peak, 24 naval ships, 189 aircraft, and approximately 24,000 personnel were mobilized. The activities of the JSF during *Operation Tomodachi* were twofold—to support the Japanese government and the JSDF in providing disaster relief and humanitarian assistance, and to closely monitor developments at Fukushima Dai-ichi Power Station so that it could provide assistance in consequence management if necessary.<sup>24</sup>

Under the command of USFJ and then JTF 519, the US military supported JSDF disaster relief operations by putting III MEF, Fifth Air Force, and Seventh Fleet in charge of Land, Air, and Naval components of the JTF 519 (Chart II-1):

**Chart II-1. Structure of US Joint Support Force for Disaster Relief**



(Source: Interviews with US military officers, August 30, 2011, and February 23, 2012.)

23 US Forces Japan. “Joint Support Force: Mission”. <http://www.usfj.mil/JSF/Mission.html>. Accessed February 1, 2012.

24 US Forces Japan. “Joint Support Force: Mission”. <http://www.usfj.mil/JSF/Mission.html>. Accessed February 1, 2012.

III MEF from Okinawa, 3d Marine Expeditionary Brigade (3d MEB) and the Marines assigned to Camp Fuji comprised the core of the land component that was deployed to Tohoku. Marines were particularly quick in their response—they were put on alert as early as March 11, and the first group of the Marines, primarily from those who were assigned to Okinawa and Camp Fuji, deployed via air and surface with command and control, engineering assets and humanitarian assistance to Sendai Airport and the headquarters of JGSDF Northeastern Army on March 12 to lay the groundwork for bilateral coordination. After being formally activated on March 13 for the JTF 519 mission, the first group of Marines arrived in the area on March 13.<sup>25</sup> Better communications equipment that was brought by the 3d MEB personnel allowed them to “reach-back” to the personnel and assets in Okinawa, Tokyo, and elsewhere in the Asia-Pacific region. Army personnel stationed in Camp Zama also participated in the disaster relief.

The 7th Fleet played the central role in the US Navy’s relief activities. In particular, the USS Ronald Reagan Carrier Strike Group, making a detour following a joint naval exercise with the Republic of Korea, arrived in Japan on March 13 and played a critical role in the first two weeks, providing humanitarian assistance to northeastern Japan. In particular, USS Ronald Reagan served as a refueling base for US and Japanese search and rescue/recovery operations.<sup>26</sup> Additional vessels included 7th Fleet’s command ship USS Blue Ridge and the Amphibious Ready Group ships: USS Essex, USS Harpers Ferry, and USS Germantown, with Marines from the 31st Marine Expeditionary Unit (MEU) deployed in Southeast Asia redirected to Japan as early as March 11.<sup>27</sup>

The 5th Air Force comprised the core of air support that the US Air Force (USAF) provided to Japan. It supported JSDF’s efforts in gathering intelligence, monitoring the damaged area, and transporting relief goods to the survivors. Also, it was the USAF’s special force that first landed at Sendai Airport with the personnel and equipment that cleared the debris and re-opened Sendai Airport a week later.

US military also supported the JSDF by offering key capabilities to JSDF’s efforts to mitigate the damage from the Fukushima Dai-ichi Nuclear Power Station accident. At the request of PACOM, Marines in the US national response force specially trained in Chemical, Biological, Radioactive, Nuclear (CBRN) response, deployed experts to USFJ headquarters, forming the core of Joint Task Force Civil Support (JTF-CS). The team provided data, information, and threat assessments associated with the radiation level around the Fukushima Dai-ichi Nuclear Power Station to both US and Japanese government leaderships. The team also responded to the questions raised by both the US military and the JSDF that operated in the area.<sup>28</sup> The unmanned surveillance assets provided by the US Air Force, in addition to providing critical information for the US government that needed to assess the situation at Fukushima Dai-ichi Nuclear Power Station in order to make a judgment on the evacuation of US citizens in Japan, also provided valuable real-time information

25 An interview with US officials, Okinawa, Japan, August 30, 2011; an interview with a US military officer, Washington, DC, February 23, 2012.

26 “US Military Joins in Quake-Relief Effort” *Wall Street Journal*, March 14, 2011. <http://online.wsj.com/article/SB10001424052748704893604576200183092822382.html> (Accessed August 30, 2011).

27 National Bureau of Asian Research. “Chronology of Operation Tomodachi.” <http://www.nbr.org/research/activity.aspx?id=121>. Accessed May 1, 2012.

28 Maj. Jamie Stowe and Maj. Alan Hale, “Department of Defense’s Response to Fukushima: Abstract” [http://www.nationalrep.org/2012/Session%208\\_Abtract-Bio.pdf](http://www.nationalrep.org/2012/Session%208_Abtract-Bio.pdf) Accessed May 16, 2012.

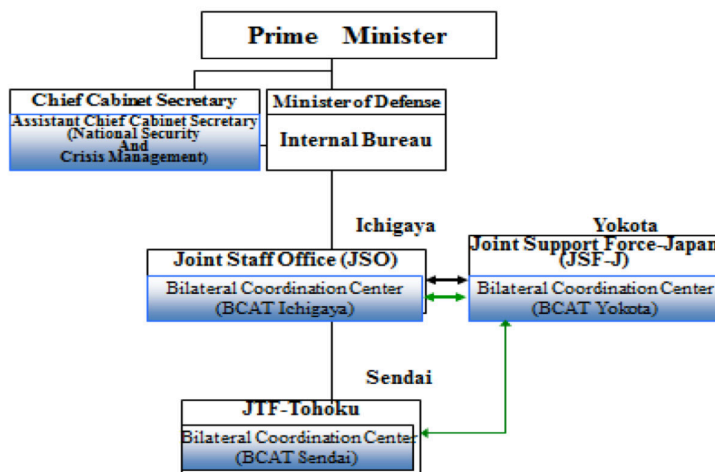
to the JSDF, who was assisting other Japanese government agencies to contain the damage from the accident in Fukushima.

As the US military continued to support the JSDF in disaster relief and response to the Fukushima Dai-ichi Nuclear Power Station accident, the US Department of State decided to approve voluntary departure of the families and dependents of designated personnel on March 17, with Pentagon following the suit. Lt. Gen. Kenneth Glueck, Commanding General of III MEF, was designated as the commander of JTF-519 for the departure planning and execution activities.<sup>29</sup> Over 7,500 personnel were flown to designated safe havens.

In conducting disaster relief operations and responding to the Fukushima Dai-ichi accident, the US military and the JSDF worked closely together. In order to facilitate better communication between them, three bilateral coordination cells were established based on the provisions in the 1997 *Guidelines for US-Japan Defense Cooperation*. It was the first time in the history of the US-Japan alliance that JSDF and US forces engaged in cooperative operations in a real emergency. Similarly, this was the first time that bilateral coordination centers were established.

These coordination cells were called Bilateral Coordination Action Teams (BCATs). Altogether, they were set up in three locations—Ichigaya (BCAT-Ichigaya), Yokota Air Force Base (BCAT-Yokota), and Sendai (BCAT-Sendai). In addition, a JSDF officer who was assigned to the office of the Assistant Chief Cabinet Secretary in charge of National Security and Crisis Management also helped with the communication between JMOD and Prime Minister's office (Chart II-2).

**Chart II-2. Coordination Mechanism for JSDF-US Military Coordination (Simplified)**



(Adopted from Col. Naoyuki Taura, *JSDF's logistics capability: Lessons Learned from 3-11* Presented at Stimson Center, March 16, 2012. <http://www.slideshare.net/MoonKJun/jsd-fs-logistical-capability-lessons-learned-from-3-11>. Accessed April 1, 2012.) Liaison cell in J-Village in Tokai-mura is not included in this chart.

29 Lt. Gen. Burton M. Fields, "Message from Lt. Gen. Burton M. Field" March 17, 2011. [http://www.pacom.mil/web/Site\\_Pages/Home\\_Page/AssistedDeparture-2011/Documents/Message-from-Lt\\_Gen\\_Field\\_18\\_%20Mar\\_11.pdf](http://www.pacom.mil/web/Site_Pages/Home_Page/AssistedDeparture-2011/Documents/Message-from-Lt_Gen_Field_18_%20Mar_11.pdf). Accessed November 1, 2011.

BCAT-Ichigaya was established at the Japan Ministry of Defense (JMOD) headquarters, and headed by the head of J-5 in JMOD. US forces sent military liaison officers, who worked very closely with JMOD’s Joint Staff Office.

BCAT-Yokota was established at the USFJ headquarters, and was headed by ADM Patrick M. Walsh, Commander of US Pacific Fleet. JSDF sent a small team of liaison officers headed by then-MG Koichiro Bansho to Yokota. In addition to a daily video conference and frequent phone calls between JSF senior leaders and General Ryoichi Oriki, then-Chief of Staff of Joint Staff of JSDF, the presence of these officers facilitated communication between JMOD HQ in Ichigaya and the leadership of US forces.

BCAT-Sendai was established around March 15 and was co-headed by the colonel-level officers from the US Marine Corps and the JGSDF. Reporting to Lt. Gen. Eiji Kimizuka, the JTF-Tohoku commander, their main task was to coordinate the disaster assistance operations that were conducted by both US and Japanese forces. For the first week, their work focused on establishing a system by which they could streamline their activities, so that together the two forces could cover more ground and operate efficiently. It took them about seven days to institutionalize the coordination mechanism in Sendai. They settled on a coordination scheme under which they held joint operational briefs twice a day—one in the morning to share the situational awareness and confirm the list of the tasks for the day, the other at the end of the day to check on the progress on the tasks assigned in the morning.

### III. Lessons Learned

The operations in response to the GEJE—both disaster assistance and assistance in the nuclear accident at the Fukushima Dai-ichi Power Station—were unprecedented for the JSDF in many ways.

First, it was the biggest JDSF mobilization since its official establishment in 1954. In the first 72 hours after the disaster, approximately 50,000 personnel were mobilized. Within a week, over 100,000 personnel were mobilized for the disaster relief and nuclear emergency response operations, making it the largest-scale SDF operation in its history. The JSDF maintained the mobilization level of 100,000 personnel for the first month. Needless to say, the primary responsibility of the JSDF—and the goal toward which the JSDF builds its capability—is the defense of Japan. A humanitarian assistance/disaster relief (HA/DR) operation, regardless of its scale, is technically regarded as a secondary mission. Still, the mobilization that took place after the earthquake and tsunami, in its size, missions, and the assets mobilized, was as close as it could get to JSDF mobilization for a major homeland defense operation.

Second, it was the first-ever JSDF deployment (domestic or overseas) for which a JTF was established.<sup>30</sup> When the Japanese government revised its National Defense Program Guidelines (NDPG)—its mid-term policy planning document requires the approval of the Cabinet—in December 2004, the JSDF announced its transition to a joint operation system (*togo unyou taisei*),<sup>31</sup> with the administrative protocols that officially granted the Chief of Staff of Joint Staff with commanding authority of all JSDF operations (including the operations commanded by the JTF) going into effect in March 2006<sup>32</sup>. Under this structure, the Chief of Staff of Joint Staff and his staff in the Joint Staff Office (JSO) has become the force user, and each Self-Defense Force service has become a force provider.

Prior to the GEJE, however, the JSDF had limited experience in operations with more than two services participating. For example, when the JASDF was dispatched to Iraq to participate in the coalition operation, while the Chief of Staff of Joint Staff was technically responsible for its operation, the actual operation itself was a JASDF operation, with the commanders on the ground reporting to the JASDF Commanders of Air Defense Command and Air Logistics Command. While there was a ground component (such as force protection, surveillance on the ground,

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30 Ministry of Defense. *Heisei 23-nen Tohoku Chihou Taiheiyoku oki Jishin ni taisuru Daikibo Shinsai Saigai Haken no jissai ni kannsuru Jieitai Koudou Meirei* (The Action Order in regard to a large-scale disaster relief in response to the earthquake off the coast of Northeastern Pacific) March 14, 2011. <http://www.mod.go.jp/j/approach/defense/saigai/tohokuoki/20110312a.html>. Accessed March 20, 2011.

31 Government of Japan. *Heisei 17-nendo ikou ni kakawaru Bouei Keikaku no Taikou ni Tsuite* (National Defense Program Guidelines for FY 2005 and after) December 10, 2004. <http://www.mod.go.jp/j/approach/agenda/guideline/2005/taiko.pdf>. Accessed August 20, 2011.

32 Joint Staff Office. *Aratana Tougou Unyou Taisei ni tsuite* (The New Joint Operation System) March 27, 2006. [http://www.mod.go.jp/jso/Joint-Staff/pdf/tougou\\_unyou.pdf](http://www.mod.go.jp/jso/Joint-Staff/pdf/tougou_unyou.pdf). Accessed August 24, 2011.

and counter-intelligence) in the dispatched personnel, the operation only involved the JASDF personnel. The JGSDF and the JMSDF are currently working together in the anti-piracy operation in Djibouti, but the scale of operation is very small, with its mission narrowly focused on the anti-piracy patrol for the JMSDF and the policing of the JSDF facility on the ground for the JGSDF. In other words, the response to GEJE was the first time that three JSDF services had to work side-by-side in a real-time large-scale operation.

Third, as described in the previous section, it was the first time that the JSDF worked with US military forces in a large-scale operation in a real emergency. Throughout the history of the US-Japan alliance, the JSDF have established close cooperation through frequent bilateral joint exercises and consultations, and expansive personnel exchanges. Today, each JSDF service holds bilateral joint exercises with its US counterpart on a regular basis (i.e., *Team Yamasakura* between the JGSDF, US Army, and US Marine Corps; *Keen Sword* between the JGSDF and the US Marine Corps). The JSDF also participates in the multilateral exercises hosted by PACOM such as RIMPAC and Cobra Gold. In addition, JSDF service chiefs will meet their US counterparts almost every year. JSDF liaison officers are assigned at not only the key US military bases in Japan, but also to PACOM, as well as other US military bases in the continental United States. JSDF and the US military also exchange instructors at their respective service academies, sending their officers to each other’s officer training courses such as the Command and General Staff (CGS) course. Up to now, however, the Japanese constitutional prohibition against the JSDF engaging in combat has limited JSDF’s opportunity to operate side-by-side with their American counterparts in real operations. Prior to the GEJE, Japan had not engaged with the US military in real-time cooperative emergency response operations, aside from the US-Japan-India-Australia cooperative disaster relief operation in the aftermath of the tsunami off the coast of Sumatra in December 2004. Finally, the GEJE was the first large-scale “complex disaster (*fukugou jitai*)” that the JSDF faced. The JSDF has responded to many large-scale disasters both in and outside Japan over the last 50-plus years of its history. The situation they have faced in the past, however, has been natural disaster, with the focus of the operation on post-disaster rescue, recovery, and assistance efforts. This was the first time that the JSDF had to respond to a complex crisis; two large-scale natural disasters that took place one right after the other (earthquake followed by tsunami), while also having to respond to the evolving situation in the most serious nuclear accident in Japan’s history.

The experiences in the GEJE—both in disaster relief and in the Fukushima nuclear accident—provided the JSDF with a number of valuable lessons. In August 2011, the MOD published an Interim Report on its own “lessons learned” from the GEJE. The “lessons learned” identified in the report are far-reaching, some of which go well beyond the MOD’s own jurisdiction (i.e., inter-agency coordination, government-wide crisis management system).

Narrowing the focus onto the “lessons learned” specifically targeted for the JSDF and its defense posture, one can identify three important areas—capability, institutional framework, and cooperation with the United States.

## 1. Capability

The 2010 National Defense Program Guidelines (NDPG)—a MOD defense planning document—proposed that the “dynamic defense (*douteki boueiryoku*)” concept would guide the planning of JSDF capabilities for at least the next five years. In order to achieve a “dynamic defense” force, the 2010 NDPG identified the following capabilities as “priority areas” for future JSDF planning: command and control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR); maritime surveillance; air defense; countering ballistic missiles; and transport.<sup>33</sup> There appears to be a consensus within the MOD that JSDF’s experience in the GEJE largely validated the “dynamic defense” concept in the 2010 NDPG. That said, a couple of the areas identified in the 2010 NDPG are particularly noteworthy as among the most important “lessons learned” for the JSDF.

### › C4ISR

The GEJE experience challenged the JSDF’s C4ISR capacity in terms of its hardware as well as its capacity to share and distribute the acquired information among relevant parties including decision-makers.

In regard to the capacity of the JSDF communications system, the biggest challenge it faced in the immediate aftermath of the earthquake was loss of power, and the loss of communications measures that immediately followed. During peacetime, the JSDF heavily relies on private telecommunications companies for its communications needs. For instance, in the case of the JGSDF, it relies on Nippon Telegraph and Telephone Corporation (NTT) for approximately 30 percent of its telecommunications needs and nearly 100 percent of its internet needs. When the blackout occurred after the earthquake and tsunami, the parts of JSDF communications that relied on the private sector became extremely vulnerable. As a result, in most cases, when the emergency power source ran out, the JSDF suffered considerable loss in its communications capacity.<sup>34</sup>

The lack of a common platform for the three JSDF services in joint operations, compounded by the diversity of the equipment they use, also presented a serious challenge in communication, and also with the US forces. In the JGSDF alone, three generations of communications equipment coexist today, sometimes within the communications units that belong to the same regional Communications Group. This makes communication among different units *within* the JGSDF a difficult task, let alone communication with JASDF and JMSDF, or with US forces. One JGSDF officer who was part of the regional Communications Group that was deployed to the disaster-hit area to support the disaster relief operations put it simply: “We were fortunate that everyone in our regional Communications Group used the same equipment. Otherwise, we might not have been able to talk to each other during the

33 Government of Japan. *Heisei 23-nendo ikou ni Kakawaru Bouei Keikaku no Taikou ni truite* (National Defense Program Guideline (NDPG) for FY 2010 and thereafter) December 17, 2010. p.13. <http://www.mod.go.jp/j/approach/agenda/guideline/2011/taikou.pdf> (Accessed June 20, 2012).

34 An interview with a JSDF officer, Tokyo, Japan. August 31, 2011.

operation. But it was a sheer luck—there was no ‘grand plan’ to ensure that all the units in the same regional Communications Group use common equipment.”<sup>35</sup>

Therefore, when all three SDF services engaged in the operation, inter-service communications presented a serious obstacle. A JMSDF officer who commanded the vessels that participated in the operation attested that they “could not communicate with the JGSDF troops that engaged in the relief operation right where we could see them. The only communications ‘equipment’ that worked was our cell phone.”<sup>36</sup> Also, the dramatic increase in the volume of communications overwhelmed the JSDF communications system. In the days after the earthquake and tsunami, communications among the JSDF surged five times more of that in peacetime. The JSDF relied on “borrowed” circuits and bandwidths from the private sector to fill its capacity gap. However, many in the JSDF pointed out that the JSDF’s current communications infrastructure may lack the capacity to handle an extremely high volume of communications, particularly “secure communications” that would be generated during the national security emergencies.<sup>37</sup>

The GEJE also exposed the limits in JSDF’s intelligence-gathering capacity. Today, the JSDF lacks a system that can synthesize the information that was collected by each JSDF service and turn it into a common operational picture (COP) that can be shared across all SDF services. As a result, each JSDF service was dependent on its service-specific communications infrastructure and the information that its US counterparts provided for the information necessary for its activities.

The lack of joint C4ISR capability was very problematic. It prevented the JGSDF Northeastern Regional Army, serving as JTF headquarters for the relief operation, from having information on the relief activities that each JSDF service engaged in. It also caused a delay for the JGSDF Northeastern Army to be able to locate the available assets and means for relief activities across the three JSDF services. For instance, the Northeastern Regional Army has a map that only contains information about its areas of responsibility. Therefore, it did not have other information it needed, such as the location of relief goods and enabling assets outside northeastern Japan for their relief operation. It also presented a challenge as the troops from other parts of Japan, unfamiliar with the geography of the damaged area, joined the relief operation.

More importantly, the GEJE challenged the traditional JSDF/MOD mindset about intelligence, which had been to try to acquire as close to 100 percent of the required intelligence as possible before making decisions. In particular, the JSDF commanders on the ground were forced to make critical decisions (i.e., the areas to send his/her troops for search and rescue missions) in the first 72 hours when he/she was unsure whether the adequate amount of information was at hand. Even after the first 72 hours had passed, in responding to the Fukushima nuclear accident and in conducting ongoing relief operations, the commanders on the ground as well as those who were coordinating operations in BCATs

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35 *Ibid.*

36 An interview with a JMSDF officer, Tokyo, Japan. June 22, 2012.

37 An interview with a JSDF officer, Tokyo, Japan. June 1, 2011.

had to analyze the “incomplete” information they possessed, share the results of their analyses with relevant parties, and make operational decisions. Some senior MOD officials and JSDF officers attest that experiencing this in real operations, particularly during the emergency situation, was a valuable lesson for the JSDF regarding its lack of war fighting experience due to the constitutional constraint.<sup>38</sup>

Finally, the absence of unmanned ISR assets, particularly unmanned aerial vehicles (UAV)s, limited JSDF’s ability to provide around-the-clock surveillance over the damaged area. It also handicapped JSDF’s operation in its response to the Fukushima Dai-ichi Nuclear Power Station crisis by making it dependent on the limited (and often inadequate) information provided by the Tokyo Power Electric Company (TEPCO) and Nuclear Industry Safety Agency (NISA), which made the assessment of the situation on the ground extremely challenging during the first few days of the accident.

### › **Transport/Logistical Support**

The 2010 NDPG identified “mobility” as one of the priority investment areas for the JSDF.<sup>39</sup> In fact, the 2004 NDPG, had already identified “mobility (*kidouryoku*)” as one of the essential capabilities for the JSDF.<sup>40</sup> The mobilization for the GEJE confirmed for the JSDF leadership that the prioritization made under the 2004 and 2010 NDPG was indeed appropriate. The experience in the GEJE demonstrated to both JSDF and MOD’s civilian leadership that augmenting the JSDF’s mobility should have been given higher priority.

In particular, it was clear to the JSDF leadership that the JSDF capacity in long-range transport was grossly inadequate. The damage to the JGSDF Base in Tagajo in Miyagi Prefecture—designated hub for disaster relief in the Miyagi prefecture and its vicinity—by the earthquake and tsunami severely handicapped JGSDF’s capacity in the initial search and recovery efforts, as well as humanitarian relief operations. Because the major roads leading to Northeastern Japan were damaged by the earthquake and therefore not passable, the JGSDF could not surge its people, equipment, and relief supplies in large quantities for the first 48 hours. The JGSDF was finally able to begin to move its assets into the affected area when the major roadways were opened to emergency vehicles on March 13.. As a result, the JGSDF had to rely on the US military’s transport capability in many cases. For instance, Western Army asked for US Marine Corps’s assistance in transporting a part of the unit that was ordered to deploy to a disaster-hit area, and Northern Army turned to the US Navy to bring their units to the disaster area.

The JASDF also found its lift capacity insufficient to respond to the increased transport needs that the relief operation generated. The loss of its assets at JASDF Matsushima Air Base in Higashi-Matsushima delayed JASDF’s relief activities, as the assets needed to be brought in from other parts of Japan, including JASDF Hyakuri Air Base. Further, the

38 An interview with a senior MOD official, Tokyo, Japan. June 2, 2011.

39 Government of Japan. *Heisei 23-nendo ikou ni Kakawaru Bouei Keikaku no Taikou ni truite* (National Defense Program Guideline (NDPG) for FY 2010 and thereafter) December 17, 2010. p.13. <http://www.mod.go.jp/j/approach/agenda/guideline/2011/taikou.pdf> (Accessed June 20, 2012).

40 Government of Japan. *Heisei 17-nendo ikou ni kakawaru Bouei Keikaku no Taikou ni Tsuite* (National Defense Program Guidelines for FY 2005 and after) December 10, 2004. <http://www.mod.go.jp/j/approach/agenda/guideline/2005/taiko.pdf> Accessed August 20, 2011.

recovery of Matsushima Air Base had to wait until JASDF Iruma Air Base, with support from Air Training and Education Command in Hamamatsu, was able to send in their people and assets via ground to recover its base function.<sup>41</sup> The JMSDF, whose assets were the least impacted by the GEJE, was able to utilize its assets to engage in various relief activities. However, the JMSDF was not able to offer lift capacity to other SDF services that might have been benefited from its lift capacity.

These limits on transport capacity very much complicated JSDF’s ability to provide reinforcement personnel and equipment for their operations in a timely manner. The earthquake and tsunami damage to the major roadways that connected the disaster-hit area to other parts of Japan hindered JSDF’s efforts to mobilize its people and assets to northeastern Japan to support disaster relief operations. Even after the major roadways became accessible to vehicles, the experience of JSDF services exposed limitations in its own transport capacity to establish an effective system of providing logistical support for the troops on the ground. For instance, the GEJE experience taught JGSDF leadership that they had severely limited reach-back/replenish capacity. They also realized that they could not have adequately responded to the situation if the situation on the ground had continued to evolve in a way similar to military contingencies.<sup>42</sup>

For the JASDF, the lack of transport and capacity meant that it could not ask other services (such as the JGSDF) to help recover its damaged air base in Higashi-matsushima. Indeed, the JASDF Iruma Air Base (located in Saitama Prefecture), with the support from Air Education and Training Command in Hamamatsu (in Shizuoka Prefecture), shouldered the primary responsibility in supporting the recovery of the JASDF Matsushima Air Base. Approximately 50 percent of the logisticians and other administrative staff at JASDF Iruma Air Base were dedicated to this effort.<sup>43</sup>

Since JASDF aircrafts were mostly dedicated to disaster-relief and the monitoring of the nuclear accident in Fukushima, these support personnel had to travel via reopened roads. The first decision made by the senior officer at JASDF Iruma Air Base after receiving the order to mount a disaster relief operation was to dispatch his bookkeeper with the unit going to Higashi-matsushima. The bookkeeper’s task was to stop at all the gas stations along the highway to sign contracts to purchase gas in bulk so that the logistics units could refuel along the way.<sup>44</sup> But in the meantime, the JGSDF was also using its own vehicles to mobilize people into the disaster-hit area, and sometimes even relied on US forces to transport its personnel.<sup>45</sup> The JMSDF was also on its own. These testimonials suggest that the logisticians in each JSDF service operated *independently* of one another for fuel and other supplies rather than *in collaboration* to ensure that *all* three JSDF services were adequately equipped to the extent possible—clearly the fuel reserve the JSDF had turned out to be inadequate.

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41 An interview with a JASDF officer, Tokyo, Japan, September 1, 2011.

42 An interview with a JGSDF officer, Tokyo, Japan, June 1, 2011.

43 An interview with a JASDF officer, Tokyo, Japan, September 1, 2011.

44 *Ibid.*

45 Interviews with JGSDF officers, Tokyo, Japan, August, 2011.

## › **Capability Gap to Respond to Nuclear Accident**

Japan has long carefully shielded its civil nuclear power sector from Tokyo's national security community. This has to do with the reality that the renunciation of nuclear weapons has been an integral part of Japan's postwar identity. As such, unlike the United States where both the Department of Energy (DOE) and the Department of Defense (DOD) oversee and manage the country's nuclear program including national laboratories, the Ministry of Defense (MOD), including the JSDF, plays no role in the development, management, and security of Japan's civilian nuclear power program. In Japan, there are two non-defense ministries that are primarily responsible for overseeing civil nuclear energy program in Japan:

1. Ministry of Economic, Trade and Industry (METI) and its subsidiary agency (the Nuclear Industry Safety Agency)—holds regulatory authority for the civil nuclear power industry in Japan.
2. Ministry of Education, Science and Technology and Sports (MEXT) —regulates research and development (R&D) efforts conducted by universities and corporate laboratories.

Therefore, the response to the major accident at nuclear power plants has never been part of JSDF's capability planning.

To be sure, JSDF has limited in-house capabilities against nuclear, biological, chemical, and radioactive weapons. These capabilities reside primarily in JGSDF's Central Readiness Force and the JGSDF Chemical School, with transport and other logistical elements provided by other services of JSDF. But the existing JSDF capabilities in this area have been developed according to MOD directives for nuclear disaster response. As described in the previous section, SDF Law authorizes JSDF to assist national and local governments to respond to the accidents at nuclear power station.<sup>46</sup> The details of JSDF activities that are allowed under Article 83-3 of JSDF Law are defined in the MOD directive issued in March 2006. Under this directive, JSDF troops assigned to respond to nuclear accidents are engaged in:

- › Providing assistance in monitoring of the accident site and its vicinity
- › Assessing the damage
- › Evacuation support
- › Search and rescue
- › Extinction of the fire
- › Emergency medical services
- › Transport of people and materials
- › Securing and elimination of high-risk material
- › Other tasks as appropriate<sup>47</sup>

<sup>46</sup> *Jieitai ho* (The Self-Defense Forces Law) Article 83-3. <http://law.e-gov.go.jp/htmldata/S29/S29HO165.html>. Accessed January 5, 2012.

<sup>47</sup> Ministry of Defense. *Jiei-taino Genshiryoku Saigai Haken ni Kansuru Tatsu* (Directives in regards to JSDF dispatch for nuclear power accidents). March 27, 2006. [http://www.clearing.mod.go.jp/kunrei\\_data/h\\_fd/2005/hy20060327\\_00022\\_000.pdf](http://www.clearing.mod.go.jp/kunrei_data/h_fd/2005/hy20060327_00022_000.pdf). Accessed October 30, 2012.

As one can see, the activities identified as JSDF’s responsibility are focused on post-incident management such as detection, monitoring, clean-up, evacuation, and search and rescue. In other words, mobilizing JSDF to stabilize nuclear power plants that are on the verge of having serious accidents has not been anticipated. The experience in the GEJE demonstrated that such an assumption was too optimistic. Rather, the nuclear accident at Fukushima Dai-ichi Nuclear Power Station revealed that the military institutions such as the JSDF are often the only institution that is capable of trying to stabilize an evolving nuclear power accident.

## 2. Institutional Challenges

### › Jointness

The 2010 National Defense Program Guidelines (NDPG) places a premium on progress in JSDF jointness (*tougou*) as an indispensable component for the “dynamic defense” that Japan seeks to develop over the next 10-15 years. In particular, the 2010 NDPG puts emphasis on developing “infrastructure for joint operations” that includes C4ISR, education, and training.<sup>48</sup> Indeed, such an emphasis on jointness was to be expected: the need for greater jointness among the three JSDF services was identified as one of the priorities for JMSD/MOD as early as in the National Defense Program Outline issued in 1995.<sup>49</sup> The 2004 NDPG further identified JSDF jointness as one of the critical ingredients that was required to achieve “a multi-functional, elastic, and effective defense force that has readiness, mobility, flexibility, and multi-purposes and is supported by cutting-edge technology and superior information”<sup>50</sup>. As such, the JSDF has been slowly developing the institutional framework for stronger JSDF jointness since 1995. In 1998, a series of institutional changes was made to enable better jointness among three JSDF services during the peacetime. Furthermore, the MOD enacted a major institutional reorganization in March 2006 in which the JSDF transitioned to a “joint operation system” (*togo unyou taisei*).

Under the “joint operation system” established in 2006, the Joint Staff Council (JSC) was reorganized into Joint Staff Office (JSO). Its chairman—who used to hold the title of the Chairman of Joint Staff Council and who functioned merely as a coordinator among three JSDF service chiefs—is now called Chief of Staff of the Joint Staff and designated as the “force user”, being put in charge of all the JSDF operations. The JSO expanded in size to support the new role of the Chief of Staff of the Joint Staff. The three JSDF services chiefs, defined as “force providers” under the new system, have been assigned responsibility to equip and train their personnel.<sup>51</sup>

48 Heisei 23 *nendo ikou ni kakawaru Bouei Keikaku no Taikou* (National Defense Program Guideline for FY 2012 and thereafter) December 17, 2011. <http://www.mod.go.jp/j/approach/agenda/guideline/2011/taikou.pdf> (Accessed August 31, 2012).

49 Heisei 8 *nendo ikou ni kakawaru Bouei Keikaku no Taikou* (National Defense Program Outline for FY 1996 and thereafter). November 28, 1995. <http://www.ioc.u-tokyo.ac.jp/~worldjpn/documents/texts/docs/19951128.O1J.html> (Accessed August 31, 2012).

50 Heisei 17 *nendo ikou ni kakawaru Bouei Keikaku no Taikou ni suite* (National Defense Program Guidelines for FY2005 and thereafter) December 10, 2004. <http://www.kantei.go.jp/jp/kakugikettei/2004/1210taikou.pdf> (Accessed August 31, 2012).

51 Ministry of Defense. *Defense of Japan 2011*. pp.217-220. [http://www.mod.go.jp/e/publ/w\\_paper/pdf/2011/29Part3\\_Chapter1\\_Sec1.pdf](http://www.mod.go.jp/e/publ/w_paper/pdf/2011/29Part3_Chapter1_Sec1.pdf) (Accessed June 1, 2012).

MOD assesses that the joint operation both in the disaster relief and the response to the Fukushima nuclear accident was by and large successful.<sup>52</sup> The Interim Report on the “lessons learned” from the GEJE released by the MOD in August 2011, while pointing out the problems during the operation (e.g., information-sharing among three JSDF services, inadequate support for enabling joint operations), also seems to provide a positive overall evaluation on how the operation proceeded.<sup>53</sup>

Yet, how the JSDF approaches the concept of “jointness (*tougou*)” is probably one of the biggest “lessons learned” by the JSDF from the GEJE experience. There is almost a near consensus among those who participated in the operation that the execution of JSDF operation in the GEJE—particularly in the disaster relief operation—was far from “joint”, and “parallel” at best.<sup>54</sup> A senior JSDF officer, asked how he would rate the JSDF operation in the GEJE from the perspective of jointness, said he would rate it at a “maximum of 70 percent, if you consider the level of jointness within US military as 100 percent”<sup>55</sup>.

Many others within the JSDF have a far more critical assessment of their jointness. Their assessment very much echoed that of the evaluation by the United States: they observed the operation as being “parallel” rather than “joint” or “integrated.” Some even argued that there was no effective oversight of the disaster relief operation either from the Joint Staff or from JTF-Tohoku.<sup>56</sup> The contributing factors to such observations were identified as the limited connectivity between C4ISR assets of three JSDF services and the absence of joint pre-planning for logistical support in preparation for a large-scale SDF mobilization.

Indeed, while extremely sympathetic to the severity of the challenges that Lt. Gen. Kimizuka faced, many within the JSDF were critical of the role he played. It was suggested that, while designated as the commander of JTF-Tohoku, he was only able to command only the ground component of the JTF, with little authority to command JASDF and JMSDF assets during the relief operation. To some in the US military as well as the JSDF, this leads to the criticism of other two JSDF services for choosing first and foremost to work with their US counterparts rather than trying to coordinate their activities with Lt. Gen. Kimizuka and his staff.<sup>57</sup>

There was also criticism within the JSDF over the fact that it took three days to establish JTF-Tohoku. In a time of disaster relief, the first 72 hours are considered to be most critical for saving lives. There is a great sense of frustration that the first 72 hours had already passed before the JTF got up and running—in other words, there was very little coordination

52 Ministry of Defense. *Heisei 24 nen-ban Bouei Hakusho* (Defense White Paper 2012) (Japanese language version) pp.206-213. [http://www.clearing.mod.go.jp/hakusho\\_data/2012/2012/pdf/24030101.pdf](http://www.clearing.mod.go.jp/hakusho_data/2012/2012/pdf/24030101.pdf) (Accessed July 25, 2012).

53 Ministry of Defense. *Higashi Nihon Dai-shinsai heno Taiou ni kansuru Kyoukun Jikou nit suite (Chuukan Torimatome)* (“Lessons learned” from the response to the Great Eastern Japan Earthquake, Interim Report). August, 2011. [http://www.mod.go.jp/j/approach/defense/saigai/pdf/k\\_chukan.pdf](http://www.mod.go.jp/j/approach/defense/saigai/pdf/k_chukan.pdf) (Accessed September 2011).

54 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011, August 31-September 2, 2011; Kumamoto, Japan, June 11, 2011; Okinawa, Japan, August 29, 2011.

55 An interview with a senior JSDF officer, Tokyo, Japan, September 2, 2011.

56 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011, August 31-September 2, 2011; Kumamoto, Japan, June 11, 2011; Okinawa, Japan, August 29, 2011.

57 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011; Interview with US officials, Washington, DC, February 23, 2012.

among three JSDF services (and the US military, for that matter) in their rescue efforts during this time.

Finally, there were questions about the current structure of the JSO, and the appropriate role to be played by the Chairman of the Joint Staff in time of a large-scale emergency such as the GEJE. Under the current system, Chief of Staff of the Joint Chiefs is dual-hatted—he is ultimately responsible for all the JSDF operations, while he also serves as the most senior military advisor to the Minister of Defense. Throughout JSDF’s response to the GEJE, where his primary responsibility should lie—either as the JSDF’s commander or the defense minister’s advisor—increasingly came into question. Many attest that Gen. Ryoichi Oriki, then-Chief of Staff of Joint Staff, had to spend considerable time in the role of advising the defense minister and other senior civilian MOD officials at the expense of necessary time as his role of commander. Many in the JSDF, including those assigned to JSO, agree that the JSO currently is not staffed to support the Chairman in both functions, and that the JSO needs to be staffed differently in order to adequately support Chairman for both of his responsibilities.

#### › **JGSDF Organizational Structure**

As discussed above, it was apparent that Lt. Gen. Kimizuka struggled to gain his footing as the commander of JTF-Tohoku. Many noted that not only did he not have control over the air and naval components of JTF but he also needed considerable assistance from the Ground Staff Office (GSO) in Tokyo.<sup>58</sup> Indeed, it was often the officers sent from the GSO who played important roles in augmenting the staff support for Lt. Gen. Kimizuka, particularly in the US-Japan coordination at BCAT-Sendai. Lt. Gen. Kimizuka also had to rely considerably on GSO for the information about the location of available forces and their preparedness, relief supplies, etc. In other words, while JGSDF North Eastern Army was expected to orchestrate disaster relief efforts conducted by three JSDF services, it often did not even have adequate control over its own service, let alone the other two JSDF services.

Many attributed such a constraint to the position of Lt. Gen. Kimizuka within JGSDF’s organization. The JGSDF is led by Chief of Staff who is a four-star general. Under Chief of Staff, there are five three-star generals who serve as commanding officers of five (regional) armies—North, Northeast, East, Middle, and West. Each of the five armies is responsible for defending different parts of Japanese territory, without a central command that is vested with the authority to command all five armies. This is very different from JASDF and JMSDF’s organization, both of which have the commands—Air Defense Command (ADC) for JASDF and Self-Defense Fleet for JMSDF—that have the authority to mobilize and direct all the assets of their respective services.

Simply put, the current JGSDF organization presents a problem when the JGSDF is designated as the service to head JTF. Under the current system, a JTF commanding authority is given to the JSDF service that is deemed to play a central role in the operation that the JTF is set

58 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011, August 31-September 2, 2011; Kumamoto, Japan, June 11, 2011; Okinawa, Japan, August 29, 2011.

up for. When the JASDF or JMSDF is granted JTF commanding authority, this authority is exercised by ADS or Self-Defense Fleet. In the case of JGSDF, however, the JTF command authority is assigned to one of the five JGSDF Armies depending on the area where an operation takes place because JGSDF does not have the organization parallel to the ADC and Self-Defense Fleet. Since the commanders of the five JGSDF Armies are considered peers, it is very difficult for a commander of a JGSDF army, even when he is designated as a JTF commander, to maintain control over the personnel and assets held the other four armies. In addition, because commanding generals of JGSDF Armies have a limited geographical area of responsibility (AOR), they do not have an awareness of the capability, whereabouts, and availability of JGSDF assets outside his AOR. In case of the GEJE, Lt. Gen. Kimizuka was not well informed about JGSDF personnel and assets outside northeastern Japan: only the JGSDF Chief of Staff was privy to this information.<sup>59</sup> The experience of the GEJE begs the question of whether the JGSDF needs to resume the discussion of creating Ground General Command (*rikujou soutai*) that would have a similar function to JASDF's ADC and JMSDF's Self-Defense Fleet.

In addition, some in the JGSDF suggest that the JGSDF has to re-think the balance of investment between those dedicated to the force on the frontline and those dedicated to logistics. Up to the present, the JGSDF has primarily planned its force posture on the assumption that its main operation area is the Japanese homeland. This meant that its force planning had been done on the assumption that it could obtain necessary logistical support items (i.e., food, water, medication, fuel) in Japan and therefore would not have to invest much in prepositioning and storage of such items. However, the GEJE experience demonstrated that a logistical support structure based on the premise of the civil sector being unaffected by the emergencies was not practical, even in Japan. Many JSDF officers acknowledged that the JGSDF must seriously think about how it can sustain its operation over a longer period of time, and what kind of logistical support system would be required to that end.<sup>60</sup>

## › Contingency Planning with the Private Sector

GEJE reminded the JSDF of its reliance on the private sector for its activities. As discussed above, it depends a great deal of its communications infrastructure on the service provided by Nippon Telegraph and Telecommunications (NTT). The JSDF was also reminded that it lacks the capacity to fulfill the demands for transport in emergencies. It had to rely on the capabilities offered by the US and Australian militaries as well as the private transport sector (such as ferry boats) to fill the capacity gap. Given the unlikelihood of a large increase in Japan's defense budget, the MOD, in its post-operation study, called for the establishment of a closer relationship with private/commercial sectors to build a framework in which the JSDF can lease their ships and cargo planes in case of large-scale disasters.<sup>61</sup>

59 *Ibid.*

60 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011, August 31-September 2, 2011; Kumamoto, Japan, June 11, 2011; Okinawa, Japan, August 29, 2011; Yokosuka, Japan, August 24, 2012.

61 Ministry of Defense. *Higashi Nihon Dai-shinsai heno Taiou ni kansuru Kyoukun Jikou nit suite (Chuukan Torimatome)* ("Lessons learned" from the response to the Great Eastern Japan Earthquake, Interim Report). August, 2011. [http://www.mod.go.jp/j/approach/defense/saigai/pdf/k\\_chukan.pdf](http://www.mod.go.jp/j/approach/defense/saigai/pdf/k_chukan.pdf) (Accessed September 2011).

The JSDF seems to acknowledge the need to cooperate with the private sector in the above areas in time of emergencies. However, many JSDF officers question the feasibility of such a cooperative relationship, particularly in the case of large-scale emergencies (including disasters) that directly impact Japan. Particularly in the area of transport, many in the JSDF suggest that the creation of such a cooperative framework with the private sector would be easier said than done, as private companies, such as commercial airlines, ferry companies, or home delivery companies with a big number of trucks and vans, may not want to jeopardize their company assets (e.g., their vehicles) at the risk of being damaged or incapacitated, thus negatively impacting their revenue. Those who speak cautiously about cooperation with the private industry point out that, in order to alleviate the concerns of those companies, the Japanese government will likely have to agree to an insurance-like contract that will alleviate the companies’ concerns for revenue loss by guaranteeing a certain level of compensation when the government must use their vehicles.<sup>62</sup>

## › Mental Health

The experience in the GEJE exposed lack of in-house capacity to attend to the mental health of JSDF soldiers who participated in the disaster relief operation and nuclear accident response. In particular, relief operations after the earthquake and tsunami were traumatic experiences for many JSDF soldiers and sailors. Many of these JSDF soldiers had never seen, let alone handled, corpses or human remains prior to the GEJE. And yet, their duty during the operation included searching and recovering those who perished, most of whose bodies were heavily damaged. The JSDF personnel whose hometowns were in the disaster-hit areas had to conduct the relief operation, instead of accounting for their own family members. As time passes, how to care for the mental health of personnel who may suffer from post-traumatic stress disorder (PTSD) from their experience in the GEJE is a crucial issue in maintaining morale within the JSDF.

Unfortunately, the mental health system for the JSDF personnel is one of the areas that remain underdeveloped. In 2000, the MOD (then called Japan Defense Agency) formed a task force that looked into how MOD can address the mental health issues associated with the JSDF. In its recommendation issued in October 2000, the task force called for a “comprehensive approach” to the mental health of JSDF personnel. Specifically, it proposed to make mental health care (such as counseling) more accessible to JSDF personnel as well as create a mental health rehabilitation facility that can care for JSDF personnel suffering from PTSD and other emotional disorders. The task force also suggested a process of decompression for JSDF personnel who return from potentially stressful assignments, such as peacekeeping operations or disaster relief activities.<sup>63</sup> Following the Task Force

62 Interviews with JSDF officers, Tokyo, Japan. June 1-2, 2011, August 31-September 2, 2011; Kumamoto, Japan, June 11, 2011; Okinawa, Japan, August 29, 2011; Yokosuka, Japan, August 24, 2012.

63 Ministry of Defense. *Jiei tai-in no mentaru herusu ni kansuru teigen no youshi* (Summary of the recommendation by the Task Force on the mental health of JSDF personnel). October 6, 2000. <http://www.mod.go.jp/j/approach/agenda/meeting/mental/houkoku/hokoku01.html>. Accessed October 2, 2012.

recommendations, MOD has begun to develop in-house capacity for mental health care, as well as establishing a system to bring in outside specialists.<sup>64</sup>

However, the measures that MOD had undertaken up to the time of the GEJE was based on the assumption that the number of JSDF personnel affected by PTSD would be limited, and that the majority of the mental health care needs would lie in tending to JSDF personnel's grievances on how to address office problems, domestic issues, and so on. Treating a large number of JSDF personnel with PTSD symptoms, or providing the environment in which they can decompress after stressful operations was not anticipated. "This is an area we have never been in before. And yet, this is so critical if we want to ensure that our soldiers sustain the resilience required to engage in high-intensity operations," a senior JSDF officer said.<sup>65</sup>

### 3. US-Japan Cooperation

As reviewed earlier in this article, the United States and Japan together conducted the largest bilateral operation in the history of the US-Japan alliance to respond to the GEJE. The three BCATs established in Ichigaya, Yokota and Sendai all proved to be useful coordination mechanisms during *Operation Tomodachi*. First and foremost, the BCATs facilitated the communication between the JSDF and US forces. This being the first time that the two armed forces operated together in a real emergency, there was a great risk of miscommunication and misunderstanding between the two. Three BCATs considerably mitigated such a risk. Furthermore, it ensured that the JSDF and US forces were "on the same page" in their awareness of the situation, and the sense of priority among the tasks that needed to get done. Finally, BCATs gave the two forces the valuable opportunity to coordinate their operations in a real emergency, which will be important assets for the two forces as they continue to deepen their defense relations and prepare themselves for various contingencies.

However, the experiences with three BCATs also illustrated the shortfalls of the existing Japanese legal framework that triggered the US-Japan bilateral defense coordination mechanism under the existing *1997 US-Japan Guidelines for Defense Cooperation*. Specifically, in the existing Japanese legal framework that authorizes JSDF mobilization in emergencies (known as *yuuji hosei* [contingency legislation]), bilateral defense planning can *only* be triggered when the emergency in question is determined to be a "contingency," which is defined as either "an armed attack against Japan" or where an armed attack against Japan is considered imminent. A large-scale natural disaster such as GEJE, no matter how devastating it may be, does not fulfill the *legal* requirement to enable the Japanese government to establish formal bilateral defense planning bodies. Therefore, BCATs were established *according to* the provisions under *the 1997 US-Japan Defense Guidelines*, but it was "purely an *ad hoc* measure."

In addition, intra-BCAT communication was often challenging. "Because the BCATs themselves were *ad hoc* entities, there was not a clear understanding regarding the relationships among the three BCATs," said a US official. "Therefore, it was really up to each BCAT to maintain good

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64 Ministry of Defense. *Defense White Paper 2007*. [http://www.clearing.mod.go.jp/hakusho\\_data/2007/2007/html/j34c7000.html](http://www.clearing.mod.go.jp/hakusho_data/2007/2007/html/j34c7000.html). Accessed October 2, 2012.

65 An interview with a JSDF officer, Tokyo, Japan. June 1, 2011.

communications among themselves, which sometimes was a problem.”<sup>66</sup> Generally speaking, however, once the initial search and rescue phase had evolved into disaster relief operations, the attention of both US and Japanese leadership turned to the nuclear accident at the Fukushima Dai-ichi Nuclear Power Station. As a result, after the first two weeks, there was a general division of the roles in which the BCAT-Sendai primarily focused on relief operations while BCAT-Ichigaya and BCAT-Yokota focused almost exclusively on efforts to coordinate US and JSDF operations to respond to the Fukushima accident.

Finally, there is a growing question on how three JSDF services should balance their existing relationship with USFJ headquarters and their growing relationship with their counterpart services attached to US Pacific Command (PACOM). The fact that the senior officers from US Pacific Fleet quickly came to Japan to head US JSF (JTF 519) impressed upon many in JSDF that their real operational counterpart may be PACOM.

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66 An interview with a US military officer, Washington, DC, February 23, 2012.

## Conclusion

The JSDF performance in the GEJE is very highly regarded by not only the Japanese public, but the citizens of the countries around the world. Through the GEJE, the Japanese public who had been unfamiliar with the JSDF have gained greater understanding, awareness, and appreciation of JSDF's role in Japan. This has resulted in a positive surge of JSDF's image among the Japanese public. In the biennial opinion poll on the JSDF and defense issues conducted by the Japanese government in January 2012, the percentage of the respondents who had a positive image of the JSDF reached its all-time high at 91.7 percent—a nearly 10 percent increase from the last survey in January 2010.<sup>67</sup> Furthermore, when asked about their evaluation of JSDF activities in the aftermath of the GEJE, 97.7 percent of the respondents said they had a positive evaluation of JSDF operations.<sup>68</sup>

By the same token, the swift and considerable assistance provided by US military also reminded the ordinary Japanese of the value of the US-Japan alliance and also, in a tangible manner, probably for the first time in the history of the US-Japan alliance, of the value of the US military presence in Japan. In the same opinion poll, 79.2 percent of the respondents assessed that *Operation Tomodachi* was effective.<sup>69</sup> Furthermore, over 80 percent of the respondents in this poll support the US-Japan alliance as a means to ensure Japan's safety—the highest support for the US-Japan alliance since the survey began in 1978.<sup>70</sup> These are all valuable positive impacts.

A close examination of how JSDF operations in the GEJE were executed suggests that the JSDF lacks some key capabilities. Since the JSDF engaged primarily in humanitarian assistance and disaster relief operations in the GEJE, not all the “lessons learned” are applicable to help the JSDF develop warfighting capabilities that is required for major homeland defense operations against potential adversaries. Still, many of the “lessons learned” identified from the GEJE above point to the proposition that the JSDF, as it is currently structured, cannot sustain high-intensity operations beyond six to eight weeks, regardless of the mission.<sup>71</sup> This presents a serious challenge for the JSDF in homeland defense as well as in regional contingencies.

Among JSDF's capabilities, C4ISR and transport/logistics are the areas whose vulnerabilities were most exposed through the experience in GEJE. In the area of C4ISR, JSDF must explore ways to improve the survivability of its communication systems and to address the lack of joint C4ISR capability in earnest. It may force each JSDF service to make a tough decision to invest in the enabling capabilities that will allow the existing C4ISR infrastructure to have better interoperability and connectivity at the expense of accepting a cut in the acquisition of other weapon systems.

67 Cabinet Affairs Office of Japan. *Jieitai Bouei Mondai ni kansuru Yoron Chosa* (Public Opinion Poll on the JSDF and Defense Issues). January 2012. <http://www8.cao.go.jp/survey/h23/h23-bouei/2-2.html>. Accessed September 1, 2012.

68 *Ibid.* <http://www8.cao.go.jp/survey/h23/h23-bouei/2-4.html>. Accessed September 1, 2012.

69 *Ibid.*

70 *Ibid.* <http://www8.cao.go.jp/survey/h23/h23-bouei/zh/z24.html>. Accessed September 1, 2012.

71 An interview with a senior JGSDF official. Tokyo, Japan. August 31, 2011.

In area of transport/logistics, JSDF pursue augmentation of its transport/logistics capacity jointly whenever possible. Given that the limited budget makes it very likely for the JSDF to fulfill its transport/logistical support requirements in-house, MOD should consider establishing contractual relationship with private sector to allow JSDF to gain access to their vehicles and other equipment in emergency situations. In such a process, it is imperative to engage Ministry of Finance in the consultation, as it has the authority to either allow or deny the establishment of new government contractual processes.

The capacity to respond to large-scale nuclear accidents is another area in which the JSDF capability needs to be enhanced and expanded. Given Japan’s policy of keeping its nuclear power for civilian use only, MOD so far has not been treated as one of the stakeholders in Japan’s nuclear power safety. However, the experience in Fukushima proved that the JSDF is much more likely to be called in to respond when the situation is very serious. Therefore, MOD/JSDF will have to be included in the discussion of Japan’s nuclear safety as one of the key stakeholders.

Institutionally, JSDF should intensify its efforts in facilitating jointness. Such efforts should include amendments to the SDF Law that incorporate the elements that are similar to the 1986 Goldwater-Nichols Act in order to incentivize the jointness. Reorganization of the Joint Staff Office, including potential recalibration of the responsibility of Chief of Staff of Joint Staff, must be a key component of the effort. In the context of streamlining the organizations and authorities, reconsideration of a JGSDF organizational change, including the creation of Ground General Command (*rikujo soutai*), given that it had been discussed at the time of revising NDPG in 2010, may be worthwhile to be resumed.

While less recognized, mental health of JSDF personnel is also another important institutional capacity required of the JSDF. It is imperative for JSDF to establish a sustainable process to provide proper care for its personnel who suffers with Post-Traumatic Stress Disorders (PTSDs) and other emotional/mental disorders following their participation in the high-stress missions as early as possible.

In regards to the cooperation with the United States, Japan must begin the consultation with the United States to alleviate the limitations of the existing 1997 US-Japan Guidelines for Defense Cooperation. In particular, the two governments need to establish a process to launch bilateral defense coordination mechanism in case of non-combat emergencies (such as large-scale disaster). In this context, an appropriate balance between JSDF’s relationship with USFJ and PACOM, as well as the role of USFJ in non-peacetime, non-contingency operation such as *Operation Tomodachi* needs to be thought through.

Already, MOD has begun to incorporate some of their own “lessons learned” from the GEJE into its defense programming. In order to augment its lift capacity, MOD is planning to proceed with the acquisition process of the following transport assets in FY2012:

- › C-2
- › DDH
- › CH-47A
- › MH-101

It also plans to begin investing in the communications systems that would better connect the existing communications infrastructure of the three JSDF services. In addition to JGSDF's request to purchase UAVs and a remote-controlled surveillance system with the intention to field it among its CNBR units, the Joint Staff Office is also said to be accelerating its consideration of acquiring unmanned systems for surveillance purposes, and have been looking into how to resource such an acquisition seriously. MOD is also reorganizing the JSO to augment the staff that supports the Chairman in maintaining oversight over JSDF operations, including the creation of the J3 Deputy Director position, who is primarily responsible for assisting the Chief of Staff of the Joint Staff in overseeing joint operations.<sup>72</sup>

US and Japanese defense officials also have begun the consultation on ways to enable better coordination between the US military and the JSDF in time of emergency operations. In the US-Japan defense ministerial meeting in Washington, DC held on August 3, 2012, US Secretary of Defense Leon Panetta and Japanese Minister of Defense Satoshi Morimoto agreed to begin the discussion to update *the 1997 US-Japan Guidelines for Defense Cooperation*.<sup>73</sup> As the US begins to distribute its forces more widely throughout the Asia-Pacific region, it is important for the two allies to update the procedures that trigger the bilateral defense coordination mechanism and re-identify the areas of cooperation in peacetime, regional contingencies, and direct military threats to Japan. Equally important is the ongoing bilateral discussion on roles, missions, and capabilities (RMC), also discussed in the August 3 US-Japan defense ministerial.<sup>74</sup> Defense officials in Tokyo and Washington need to discuss the division of roles between the US military and the JSDF in various scenarios, and how such division of roles might shift as the situation becomes more militarily intense.

Challenges loom as Japanese defense officials tackle the task of optimizing these “lessons learned” for the JSDF. The most formidable will be the fiscal challenge. The Japanese defense budget has been essentially flat (even a slight decline) for much of the last two decades.<sup>75</sup> But the efforts to augment the capabilities that have been identified as critical for the JSDF since the 1990s (and reaffirmed with the experience in the GEJE) require significant investment. When Japan devotes less than 20 percent of its annual defense spending on acquisition, and even less than that in research and development<sup>76</sup>, Japanese defense officials are hard-pressed to identify the resources for investment. Sooner rather than later, MOD will have to make a convincing case for a defense spending increase, which may not be politically palatable, especially when the Japanese government continues to struggle with a high-debt ratio and sluggish economy. Even with the seemingly broadening public support for the JSDF, driven largely by JSDF operations in the GEJE but also propelled by the heightened sense of insecurity among the public, the Japanese government has not demonstrated its will to make a stronger case for larger defense spending. Rather, it seems to assume that the public will not support such an increase in the face of continued economic stagnation.

72 Ministry of Defense. *Heisei 24 nen-ban Bouei Hakusho* (Defense White Paper 2012) (Japanese language version) p.211. [http://www.clearing.mod.go.jp/hakusho\\_data/2012/2012/pdf/24030101.pdf](http://www.clearing.mod.go.jp/hakusho_data/2012/2012/pdf/24030101.pdf) (Accessed July 25, 2012).

73 US Department of Defense. *Joint Press Conference with Secretary of Defense Panetta and Japanese Minister of Defense Morimoto from the Pentagon*. August 3, 2012. <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=5097> (Accessed August, 10, 2012).

74 *Ibid.*

75 *Asian Defense Spending, 2000-2011* (Center for Strategic and International Studies, October 2012) p. 16.

76 *Ibid.* p. 18.

Moreover, it is not enough to simply increase defense spending. A conscious decision to invest in the key capabilities identified as “lessons learned”—C4ISR, transport, readiness for nuclear accidents—also matters, and it requires serious commitment from MOD and JSDF leaders. Too often and too long, the MOD has prioritized investment in more tangible platforms—aircraft, ships, artillery, tanks, to name a few—over the capabilities (such as C4ISR and transport) that are less visible but critical for the sustainability of the operation. For instance, while the 2010 National Defense Program Guidelines (NDPG) emphasizes the significance of C4ISR (some in the JSDF call it “ISR *Taikou* [ISR-centric NDPG]”),<sup>77</sup> the 2010 Mid-Term Defense Program continues to invest in the modernization of tangible platforms, with investment in less tangible areas addressed in more ambiguous terms.<sup>78</sup> Although it is encouraging to see that MOD has budgeted for the acquisition of the communications system that can improve connectivity among the communications networks of three JSDF services<sup>79</sup>, a sustained commitment to these types of investment is critical.

Similarly, a more drastic institutional reform may be necessary for the JSDF to improve its jointness. One can certainly argue that JSDF’s joint operation may never be as integrated as US operations. In fact, a senior JSDF officer suggested that JSDF’s joint operation will look more like a collaborative operation among three JSDF services under a single chain of command.<sup>80</sup> Even so, more comprehensive efforts to realign authorities between the Chief of Staff of the Joint Staff and the three JSDF service chiefs is necessary. For instance, the three JSDF services are responsible for equipping their own forces today. Moving forward, JSDF leaders should carefully consider which capabilities can be more efficiently acquired jointly, and which areas require more tailored approach by each JSDF service. For instance, merely adding a position in JSO is simply inadequate. Creating of any new position with appropriate authority in JSO should come as a result of consolidating the responsibility between JSO and the Staff Office of each JSDF service.

Thanks to the laudable JSDF efforts in the GEJE, the Japanese public is more receptive to the JSDF than at any time in Japan’s postwar history. In addition, the success of *Operation Tomodachi* showed the tangible benefit of the US-Japan alliance to the Japanese public. The rise of tensions and uncertainty in the East Asian security environment over the last three years has also made the Japanese public more interested in national security issues. If the political leaders in Tokyo make a convincing argument for a defense spending increase or institutional reforms of Japan’s defense establishment, they may find the public more receptive to such ideas than at any time in postwar history. Japanese leaders should capitalize on such an opportunity and do their utmost to move forward with building the “dynamic defense force” that they aim to achieve.

77 An interview with a JSDF officer, Tokyo, Japan, September 2, 2011.

78 *Chuuki Boueiryoku Seibi Keikaku (Heisei 2nendo ~ 27nendo) ni suite* (Mid-Term Defense Program 2011-2015) December 17, 2010. <http://www.mod.go.jp/j/approach/agenda/guideline/2011/chuuki.pdf>. Accessed October 1, 2012.

79 Ministry of Defense. *Heisei 24 nen-ban Bouei Hakusho* (Defense White Paper 2012) (Japanese language version) p.211. [http://www.clearing.mod.go.jp/hakusho\\_data/2012/2012/pdf/24030101.pdf](http://www.clearing.mod.go.jp/hakusho_data/2012/2012/pdf/24030101.pdf) Accessed July 25, 2012.

80 An interview with a JSDF officer, Tokyo, Japan, September 2, 2011.