Response of Tohoku Regional Bureau, MLIT, to the Great East Japan Earthquake
Outline of the Great East Japan Earthquake

Date/Time:
March 11 14:46, 2011

Magnitude:
9.0

Place:
The coastal area on the Pacific Ocean
(about 130km ESE from Oshika peninsula)

Depth:
Approximately 24km

Seismic Intensity:
Max 7(Kurihara, Miyagi)

http://www.aob.geophys.tohoku.ac.jp/info/topics/20110311_news/index_html
Tsunami Flooded Area

Tsunami affected vast areas extending 500km (310 mi) north-south.
Total population of the affected cities is some 3.9 million, which is equivalent to the Population of Los Angeles City or the State of Oregon.
Before the disaster

Rikuzen-Takata Station

Rikuzen-Takata, Iwate
After the Disaster

Rikuzen-Takata Station

Rikuzen-Takata, Iwate

Before and After the Disaster (Rikuzen-Takata City)
Before and After the Disaster (Rikuzen-Takata City)

Before the disaster

The Rikuzen-Takata station square

A shopping street in front of the Rikuzen-Takata station

After the disaster

The Rikuzen-Takata station square
Before the disaster

Ishinomaki, Miyagi
Before and After the Disaster (Ishinomaki City)

After the disaster

Ishinomaki, Miyagi
Before the Disaster (Ishinomaki City)

Before the disaster

Ishinomaki, Miyagi

Nakase, Ishinomaki City (Former Kitakami River)
Before and After the Disaster (Ishinomaki City)

After the disaster

Ishinomaki, Miyagi

Nakase, Ishinomaki City (Former Kitakami River)

Former-Kitakami River
Road clearing and reopening for creating rescue routes and reconstruction were critically important.
The Tohoku Regional Bureau of MLIT provided direct support to local governments and victims because of the extensive damage over coastal areas.
Tohoku Regional Bureau’s Helicopter “Michinoku” took off from the Sendai Airport for disaster investigation at 3:23pm (37 minutes after the earthquake).

A monitoring helicopter “Michinoku” took off from the Sendai Airport for disaster investigation at 3:23pm (37 minutes after the earthquake).
Videoconference with the Minister of MLIT
Operation Comb

1st Step: North-south inland routes
  (Tohoku Expressway, National Highway 4)

2nd Step: 16 East-west routes
  3/12: 11 routes cleared
  3/15: 15 routes cleared

3rd Step: Coastal route
  (National Highway 45 and 6)
  97% cleared (Mission completed)
Road Clearing

National Highway 340 (Rikuzen-Takata, Iwate)  
Source: Iwate Pref.
Clearing and Reopening Land, Sea and Air Routes

○ Land Routes

By Mar 15, 15 of a total 16 east-west routes were opened with the cooperation of local construction companies (52 teams) based on prior disaster agreements.

○ Sea Routes

By Mar 23, all 10 ports on the pacific coast were back in operation to accommodate receiving emergency goods.

○ Air Routes

Drain-pump vehicles were intensively mobilized for the “restoration of the Sendai Airport”.
What Made the Swift Road Clearing Operation Possible?

① The implementation of reinforcement measures to bridges, before the earthquake, mitigated the damage in this disaster.

② MLIT intensively mobilized its resources on carefully selected 16 routes in “Operation Comb.”

③ Local construction companies immediately provided support, based on prior disaster agreements.
By March 14, the Tohoku Bureau could communicate with 16 local municipalities by providing them its satellite communication equipment. At the peak of the response, MLIT mobilized 192 disaster operation vehicles in the affected localities. 70% of them were brought in from other regional bureaus.

- **Drain-pump vehicles**
- **Satellite phones**
- **Disaster operation vehicles**
- **Ku-sat**

Origin of 192 disaster operation vehicles mobilized for the Tohoku Earthquake (April 15)
On the day of the earthquake, 10 persons were sent as liaisons from the Tohoku Regional Bureau to 4 affected prefectures (Aomori, Iwate, Miyagi and Fukushima).

By March 23, 31 municipalities in the 4 prefectures had received liaison support.

At the peak (March 23), 60% of total 96 personnel were sent in from other regional bureaus.

60% (54 liaison personnel) came from outside the Tohoku Region.

A Liaison from Kyusyu Regional Bureau reports to the mayor of Kamaishi City on the assessment of securing power for the Kamaishi Municipal Clean Center.

MLIT liaisons performs an on-site assessment to prepare for the removal of the tank in Iwate. (Iwate Office of River and National Highway)

Number of persons sent from regional bureaus across the country (as of 3/23)
Relief Supplies

▲ Minamisanriku Temporary City Hall

▲ Temporary lavatories

▲ Tents

▲ Daily Commodities
Outreach Activities

- A total of **11 million** members of the Self-Defense Forces worked in the affected areas after the disaster (**110 thousand** members at the peak of the recovery effort).
- Some **1 million** volunteers have assisted.
- Up to **25 thousand** US Forces kindly got involved in the outreach activities.

<table>
<thead>
<tr>
<th></th>
<th>Number of people involved</th>
<th>Highest number on a single day</th>
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</thead>
<tbody>
<tr>
<td>SDF</td>
<td>10,580,000</td>
<td>107,000</td>
</tr>
<tr>
<td>Police</td>
<td>922,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Volunteers</td>
<td>958,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Civil servants (excl. SDF and Police)</td>
<td>152,000</td>
<td></td>
</tr>
<tr>
<td>US Forces</td>
<td></td>
<td>24,500</td>
</tr>
<tr>
<td>Total</td>
<td>12,612,000</td>
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Number of people involved in outreach activities on site

(Reference: Ministry of Defense (MOD), National Police Agency (NPA), Ministry of Internal Affairs and Communications and Japan National Council of Social Welfare websites)

SDF’s activities
(Reference: MOD website)

Volunteers activities
(Reference: Japan National Council of Social Welfare website)

U.S. Forces activities
(Reference: Ministry of Foreign Affairs of Japan)
1 **Unified Organization and Mission**  
   Establishment of a structurally flat chain of command with accurate information sharing

2 **Resiliency of a Disaster Management Organization**  
   Durability of the disaster operation center and communication systems

3 **Collaboration with Related Organizations**  
   Prefectural and municipal governments, SDF, Coast Guard and NEXCO

4 **Nationwide Organization**  
   TEC-FORCE, liaison and disaster operation vehicles from other regional bureaus  
   Cooperative agreements with oil companies to maintain fuel

5 **Collaboration with Construction Industries**  
   52 support teams formed overnight for “Operation Comb”  
   Prompt relief supply procurement by construction industries  
   (Japan Federation of Construction Contractors and the Japan Road Contractors Association)
Lessons Learned

○ Provided support, considering needs of affected populations.

○ Responded to the affected localities’ requests beyond the Bureau’s jurisdiction.

○ Made decisions based on collected and analyzed information.

○ Intensively mobilized MLIT’s human and equipment resources (Operation Comb).

○ Maintained spirit of professionalism in the relief delivery and supporting activities.
Lessons Learned

1. Deploying field personnel on the “front lines”, whether or not an emergency has occurred

2. Communication on a routine basis among NEXCO, SDF, Prefectural and municipal governments, Coastal Guard and related organizations

3. A sense of responsibility and attachment to a region, and empathy with victims

4. Having a field staff capable of taking the initiative and working on their own
High-Standard Highways in the Tohoku Region

Tohoku region has many missing links

<table>
<thead>
<tr>
<th>Arterial High-standard Highways</th>
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<tbody>
<tr>
<td>(in service)</td>
</tr>
<tr>
<td>(under construction)</td>
</tr>
<tr>
<td>(contemplated)</td>
</tr>
</tbody>
</table>
Lessons Learned

What the national government needs to improve:

- Secure “energy resources” and “communication systems” that will function in the event of a catastrophic disaster covering wide regions.

- Development of a transportation system providing alternative modes in the event of a disaster, including multilayered road networks covering wide regions (redundant road networks).