The Great East Japan Earthquake - Damage to Logistics Systems and Their Recovery

Submitted by: Japan
The Great East Japan Earthquake
- Damage to logistics systems and their recovery -

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A massive earthquake of magnitude 9.0 occurred Friday, 11 March, off the Pacific coast of the northeastern part of the Japanese mainland. (Tohoku Region)

An almost 10 meter high tsunami hit ports on the Pacific coast.
The earthquake and tsunami caused **US$210 B of damage.***

*1: Cabinet office estimate.
*2: Damage by the nuclear accident is not included.

(1 US$=76 yen As of September 10)

### Human losses
- Dead: 15,636 people
- Missing: 4,808 people
- Injured: 5,699 people
- Evacuees: 91,552 people

### Buildings
- Collapsed: 110,570
- Half-collapsed: 132,494
- Partially broken: 476,008

※As of July 26

### Damage to Transport Infrastructure

#### Roads
- Joban Expressway

#### Airports
- Sendai Airport

#### Railways
- Damage Summary:
  - 5 locomotives
  - 169 freight cars
  - 1200 containers
  - collapsed station facilities

#### Ports
- Damage Summary:
  - 5,575 trucks
  - 578 business offices
  - (complete collapse)

#### Trucks
- Sendai City

#### Commercial Warehouses
- Damage Summary:
  - 299 load shifts
  - 272 business facilities
  - (complete collapse)

Estimated Damage:
- Approximately 70 B yen (complete collapse)
- Approximately 32.6 B yen (only in Tohoku region)
Progress of transport infrastructure restoration

Major transport infrastructure restored within 2 months.

- Shinkansen (990km)
- Expressways (979km) <Used for emergency traffic>
- 13 Airports <Used for emergency traffic>
- 13 Airports <General Use>
- National Highways <Under MLIT’s management>
- 15Ports <General Use>
- 15 Ports <Used for emergency traffic>

Emergency Headquarters

Restoration of Sendai Airport

To resume the function of Sendai Airport, a flooded water discharge operation was executed with intensively arranged pumper trucks. The operation of passenger planes restarted on April 13.

Discharging water around Sendai Airport

- March 13
- March 24

On March 17, the pumper trucks began collective draining
The damage and restoration of the Tohoku Shinkansen Line

**Damage**

All running trains stopped without a single derailment and there were no casualties among passengers and crews.

No critical destruction, such as the collapse of viaducts, bridges, stations and tunnels, was caused.

Damage to railway facilities was caused in about 1,200 places.

- Broken, leaning, or cracked electrification masts (about 540 places)
- Severed power lines (about 470 places)

**Restoration**

Train services on the whole of the Tohoku Shinkansen Line were restored 49 days after the Great East Japan Earthquake.

**Restoration of Freight Train Service**

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- : in operation
- : out of operation
- : alternate transportation

Seismic scale: 4 - 5 - 6 - 7
The trunk railway from Tokyo to Tohoku Region stopped. Fuel oil was delivered to the affected areas through a route along the Sea of Japan.

Emergency Relief Goods Distribution

To supply relief goods smoothly from local depots to shelters, logistical experts were dispatched to the depots operated by affected prefectures and municipalities through cooperation with private logistics companies.
Information updates on recovery status

Information updates on the recovery status of transport networks has been posted on MLIT’s website since the 4th day after the earthquake.

MLIT’s website
(http://www.mlit.go.jp/page/kanbo01_hy_001411.html)

Logistic Issues highlighted by the Crisis

- Speedy restoration of major transport networks
- Flexible development of alternate routes
- Dispatch of logistics experts to depots in affected areas

Summary: Development of relief goods distribution

Points to be discussed b/w Public and Private sectors

(1) The establishment of cooperation schemes through agreement b/w public and private sectors for relief goods distribution
(2) The securing of locations available for the storage and handling of relief goods
(3) The standardizing of the information needed by transport companies among the parties involved in distribution