

Rescue Operations at the Time of Train Derailment in Amagasaki, Hyogo



Amagasaki City Fire Department



Amagasaki City: Basic Facts

■ Area	49.80 km ²
■ Population	460,488
■ Number of Households	205,972
■ Population Density	9,260/ km ²



Accident Summary 1

- **Date and Time** Monday, April 25, 2005
9:18 a.m.
- **Recognition Time** 9:22 a.m.
- **Place** 3-27 Kukuchi, Amagasaki
Between Tsukaguchi Station and
Amagasaki Station
on the JR Fukuchiyama Line
- **Details** Five carriages of the seven-carriage train derailed, and two of the derailed carriages crashed into a condominium building.

Accident Scene, Viewing from North



April 25, 9:40 a.m. - 10:00 a.m.

Accident Scene, Viewing from North

to Osaka

The train derailed when
running on right hand
curve – R304m

Accident Summary 2

■ **Derailed Train**

- The JR rapid-transit train from Takarazuka Station in Hyogo (at 9:03 a.m.) bound for Doshisha-mae Station in Kyoto.
- Scheduled Arrival Time at Amagasaki Station (9:20 a.m.)
- Estimated Number of Passengers: 580

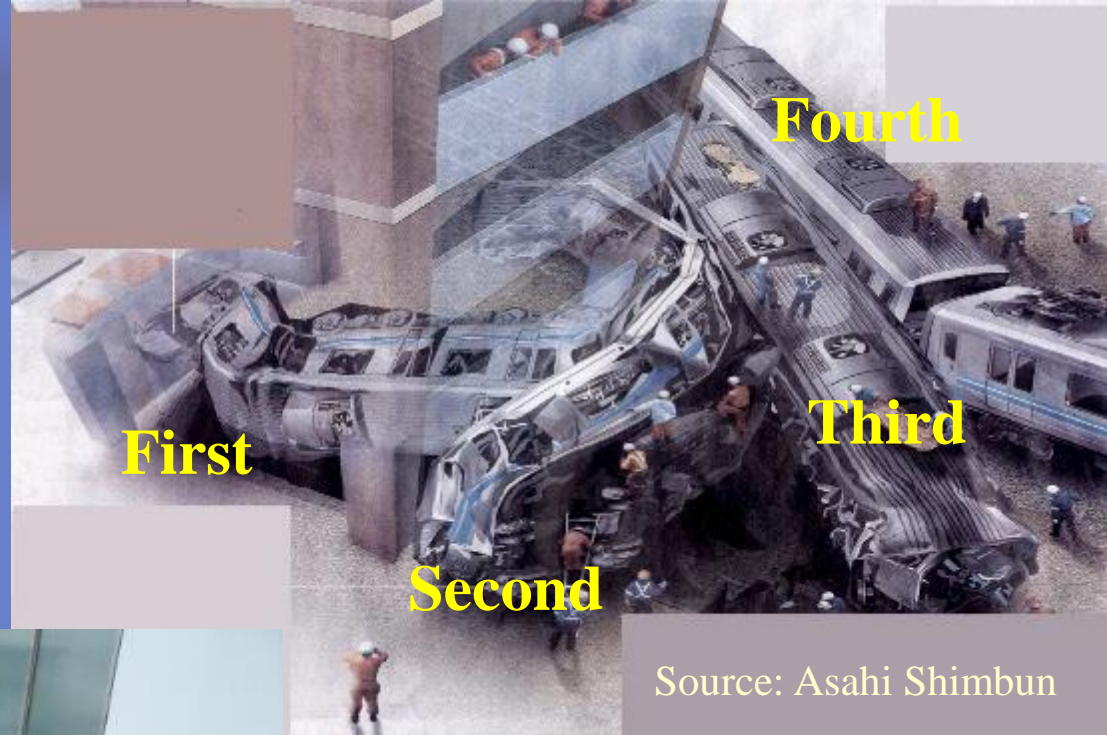
■ **Report of Accident** (from a resident of the nearby Condominium)

“It appears that a train has derailed and rolled.”

**Coordination Cell
for First Responders**



Rescue Vehicle



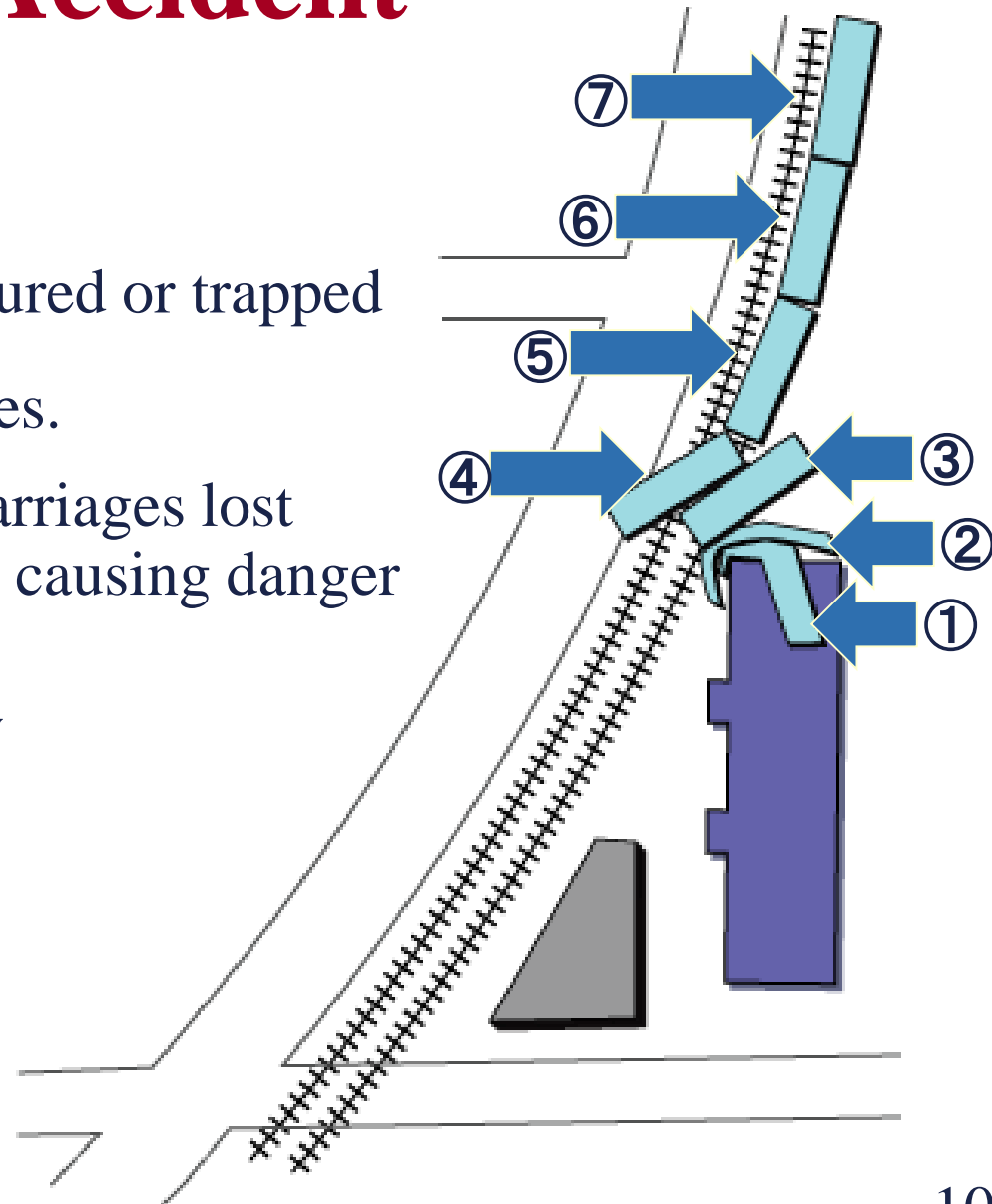
Source: Asahi Shimbun



The rescuers couldn't recognize the first vehicle at the initial phase. So the first rescue started at the head of the second vehicle.

Specifics of Accident

- So many passengers were injured or trapped in the badly damaged carriages.
- There was concern that the carriages lost its strength due to the crash – causing danger for rescue activities.
- Operations were restricted by gasoline leaks.



Accident Scene, Viewing from West



Progress of Operations

April 25

- ★ 9:18 The train derailed.
- 9:22 The Amagasaki City Fire Department learned of the accident.
- 9:22 First emergency response companies (nine cars) responded.
- 9:24 An advance team arrived at the scene of the accident.
- 9:33 The command center was set up at the scene of the accident.
- 9:35 The National Disaster Medical Center was asked to dispatch doctors.
- 9:38 Second emergency response companies (ten cars) responded.
- 9:41 The first aid station set up.
- 9:46 The fire departments of neighboring cities were asked to dispatch support units (Nishinomiya City and Itami City).
- 9:50 Kobe City was asked to dispatch support units based on the mutual aid agreement for wide-area fire service.
- 9:50 The Osaka City Fire Department was asked to dispatch support units.
- 10:30 The Amagasaki City Disaster Countermeasure Headquarters was set up.
- 10:40 Hyogo Prefecture requested FDMA to dispatch Emergency Fire Response Teams to the accident scene.



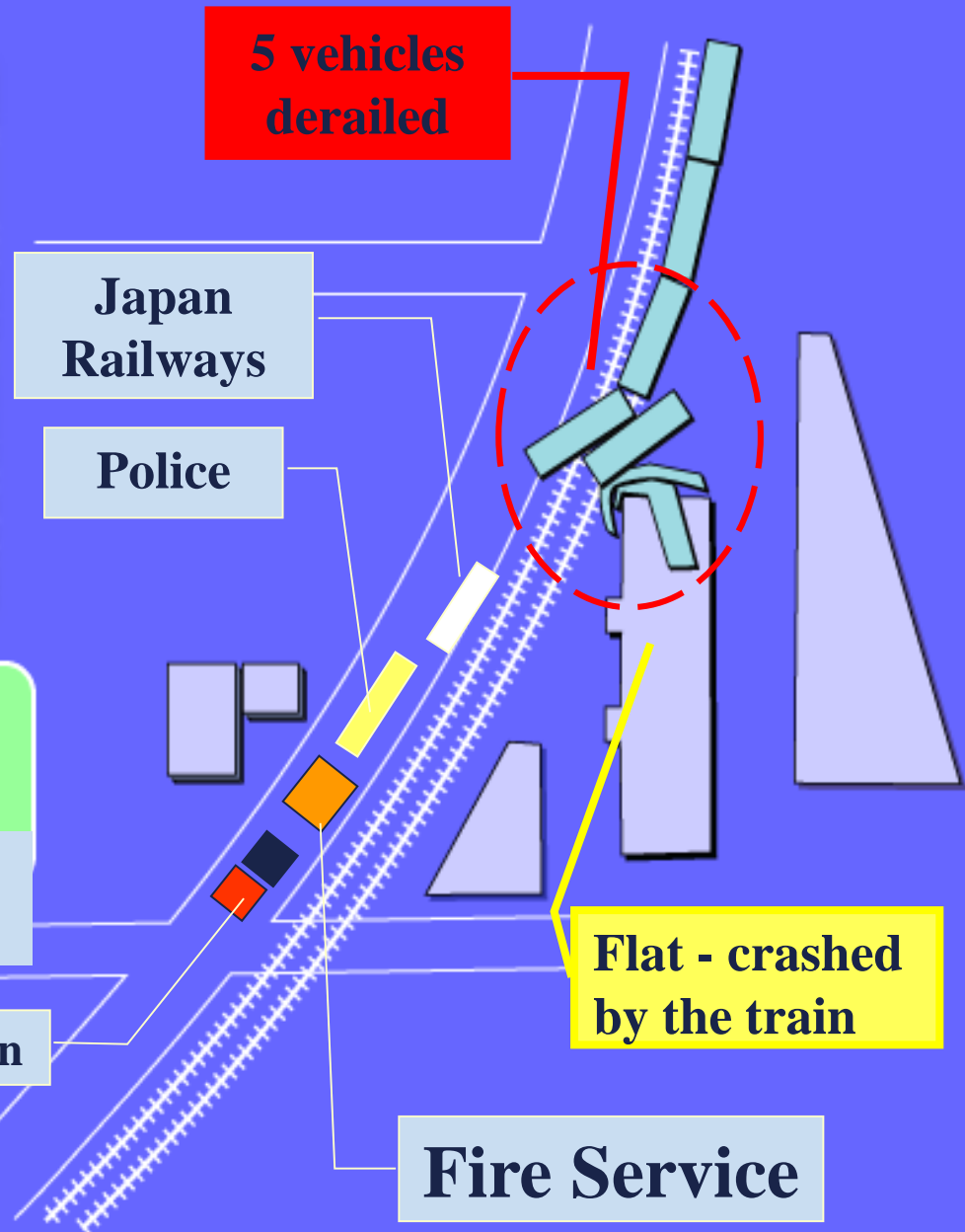
Characteristic Aspects in the Rescue Operation

- 400 and more casualties hospitalized in very short time
- 10 victims taken to hospitals by helicopters
- CSRM (Confined Space Rescue Medicine)
- First Responders collaboration on site – Fire Service, Police, Medical Team etc

Casualties

■ Deaths	107	
	Men	59
	Women	48
■ Injuries	562	
	Men	227
	Women	335

Field Command Post



April 25 12:00 a.m.



Third Carriage



**Internal space secured
at the third vehicle**

Rescue Operations in Second Carriage



Rescue Operations in Second Carriage

Set a fixed support at the 1st floor of the flat to carry out the rope rescue



Create a fixed support for the rope rescue on the train vehicle itself



Rescue Operations in Second Carriage



Rescue Operations in First Carriage

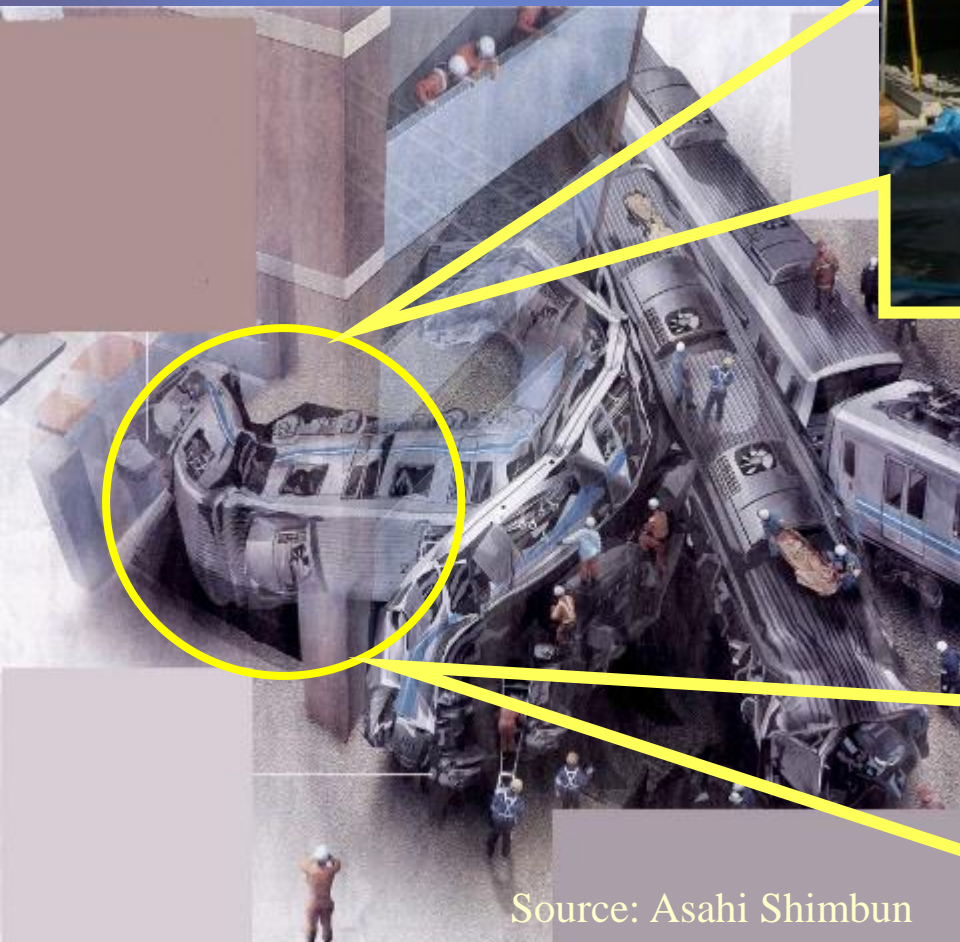
Ceiling

Floor



- The right side of the photo is floor of the 1st carriage and the left is the ceiling
- The vehicle 20m long, but just a space of 10m long alive at the center part while both of the heads - 5m each, completely crashed

Rescue Operations in First Carriage



Source: Asahi Shimbun

Rescue Operations in First Carriage



Rescue Operations in First Carriage



Confined Space Rescue Medicine



Rescue Operations



People rescued
or discovered
(on 25th)

- ① around 20
- ② around 20
- ③ around 10
- ④ around 30
- ⑤ around 40

(on 26th)

1st carriage 22

2nd carriage 23

(on 27th-28th)

1st carriage 10

**The rescuers got into through
the window – three alive and
20 in cardio pulmonary arrest**



Rescue of Survivors Trapped in First Carriage

25th 16:00 It was confirmed that four people were alive.



21:41	04:26
21:45	04:37
21:54	04:48
22:37	05:07
22:58	05:23
26th 00:06 (Alive)	05:54
00:39	05:58
02:50 (Alive)	06:16
03:25	06:51
04:10	07:06 (Alive)
04:16	07:31
04:21	A total of 23 people



- CSRM
- Doctor's infusion solution to prevent victims from crush syndrome - such as MEYLON (Sodium Hydrogen Carbonate) and Normal Saline



Life Detector

To find survivors in a collapsed area by detecting human heart pulse/lung work



**Shoring after the expert's examination,
as the core structure of the flat could
be heavily damaged due to the train
crash**









PTSD (Post Traumatic Stress Disorder)

Not every rescuer involved had experienced the rescue activities at frightful catastrophe like in Hanshin-Awaji Great Earthquake – one of the most extraordinary disasters in Japan and the epicenter of the earthquake close to Fukuchiyama accident scene. The fact above highlighted the concern about the rescuers' PTSD.

Mental Care

Emergency Mental Support Team – composed of 7 psychiatry experts and dispatched by FDMA, served for 24 rescuers, 7 ambulance crews and 4 firefighters who attended the accident scene and asked for the mental counselling.

Result

On one was found in serious condition, with no need to receive emergency treatment, but the follow-up was necessary as the mental illness may occur on them later. Below are the stress check result, before the doctor consultations

- Flashback 19 (54.3%)
- Nerves 14 (40.0%)
- Insufficient Sleep with Stress 11 (31.4%)
- Frequent Dream of Accident Scene 9 (25.7%)
- Reluctance to Conversation 3 (8.6%)
- None of Negative Sign 5 (14.3%)

Frame of Mind

- Keep on training while assuming that unprecedented disaster – even beyond imagination, can occur.
- A disaster happened somewhere – it means the same type of disaster can happen in our jurisdiction. Need to take it into mind when making preparedness for the future.
- Take pride of the profession and carry on stepping up the skill and the technic.



Thank you very much for listening.

