

**How was disaster Information
Distributed
through Broadcasting
in the Great East
Japan Earthquake?**

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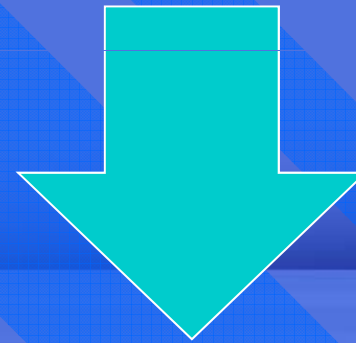
NHK broadcasting for saving lives and properties

**4 television
channels**

General (GTV)
Educational (ETV)
Satellite 1 (BS1)
Satellite Premium(BSP)

**3 radio
channels**

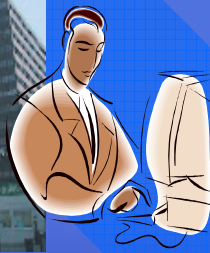
AM1(R1)
AM2(R2)
FM



- **All NHK channels will be switched to emergency programs in the case of a huge disaster.**
- **NHK continue emergency programs all day, suspending normal programs.**

JMA and NHK

Japan Meteorological Agency (JMA)

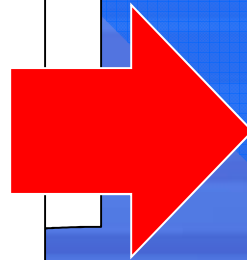


NHK



Automatic Picture Production System

- Earthquake early warning
- Earthquake information
- Tsunami warning
- Weather warnings
-



Automatic Picture Production System

The Japan Meteorological Agency

data

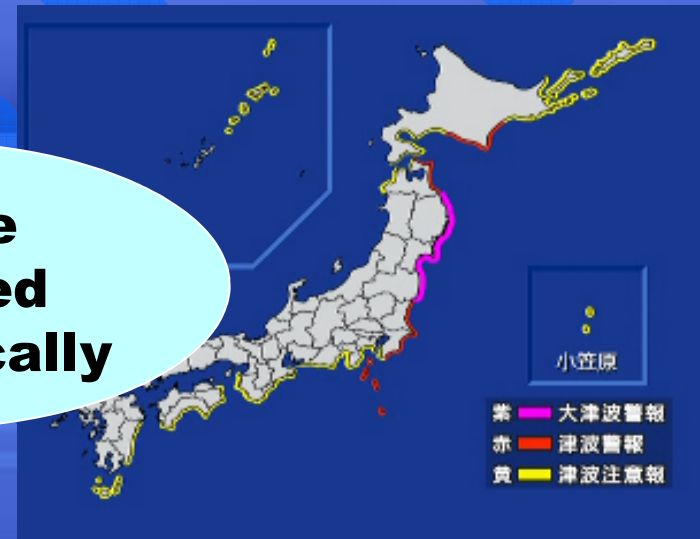
NHK

Earthquake information
(epicenter, magnitude, intensity)

Tsunami Warning
(height and arrival times)



Picture produced automatically



Earthquake Early Warning System

When strong tremors are expected,
the JMA issues
Earthquake Early warning.

JMA

High-performance
seismographs
detect the **P-wave**.

“Epicenter”, “Magnitude”
and “Seismic intensity” of
are estimated.



NHK announce
“possible strong
tremors”
before S-wave
arrival

**Estimate intensity after the quake
occurred → not a prediction**

Earthquake Early Warning System

- ◆TV 4 channels (GTV, ETV, BS1, BSP)
- ◆RADIO 3 channels (R1, R2, FM)
- ◆All over Japan

JMA



NHK



TV



Chime & Scripts



RADIO



Chime & Automatic voice

Broadcast **"automatically"**
within 1second.

Earthquake Early Warning System

Started in Oct. 2007

Before 3/11 17 times

After 3/11 108 times

No panic occurred with warnings



NHK original sound for Earthquake Early Warning

- NHK developed **original sound** for Earthquake Early Warning with specialists.



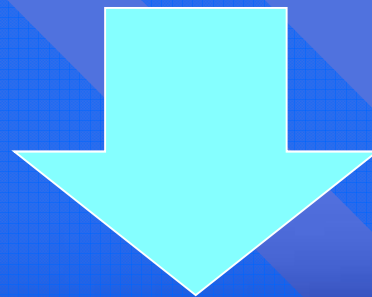
- 1) **Call attention** to strong tremors and encourage **evacuation**.
- 2) **Unique** sound never exist
- 3) **Easy** to hear for everyone

Broadcast tsunami warning

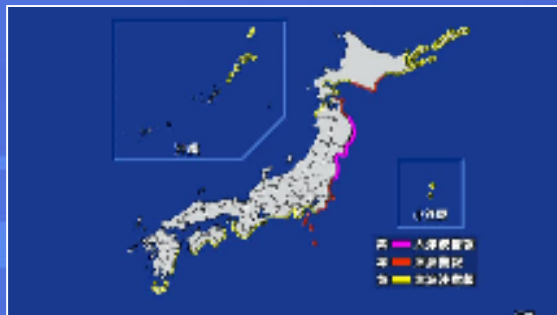
The Japan Meteorological Agency

Tsunami warning

Within 3 minutes after earthquake



Evacuate without delay!



NHK

観測された津波		すぐ避難を!
沼津	午後 3:37	5m20cm
伊豆大島	午後 3:40	5m10cm
御前崎港	午後 3:31	4m90cm
浜松舞阪	午後 3:41	3m80cm
尾鷲港	午後 3:49	-3m
館山	午後 3:50	-1m90cm
鳥羽	午後 3:55	1m50cm

- **Emergency warning** on all channels
- **Call for evacuation**

Emergency Warning System

● **NHK will transmit emergency warning signal in 3 emergency cases.**

- 1) **Declaration of the Great TOKAI earthquake prediction**
- 2) **Warning of large-scale tsunamis**
- 3) **Request by governors or mayors**

● **TV & radio will be automatically activated by the signal.**

● **Carried out 21 times since 1985. All of them for tsunamis.**



Improvement of Tsunami Warning Maps

- Tsunami Warning Map wasn't easily identified by **people with color-vision defects.**
- NHK changed colors of map with specialists of **the Color Universal Design Organization.**
- All commercial broadcasters use same colors.

Before



After



NHK broadcasting in 3-11

March 11, 2011

All 7 channels (TV, Radio) has been broadcasted same emergency program for 40 minutes since the quake occurred.

March 11-13

All 7 channels (TV, Radio) broadcasted each special programs about the disaster.

- Earthquakes & tsunamis
- Damages
- Situation of Fukushima nuclear plants
- Traffics
- Utilities
- Information of missing persons
- etc.

Role of each channels

After March 14

GTV

Disaster News & Special programs

BS1

ETV

**Information of missing persons
Information of relief service & supplies
Program for children & the handicapped.**

BS2

R(AM)1

Disaster News

R(AM)2

Normal programs

FM

Information of missing persons etc.

Information of missing persons

ETV, FM

From 6:45 pm on March 11 to 18

BS2

From March 14 to 18

- **Broadcasting lists of evacuees on TV**
- **Person finder systems on data broadcasting & website**

Information for disaster victims

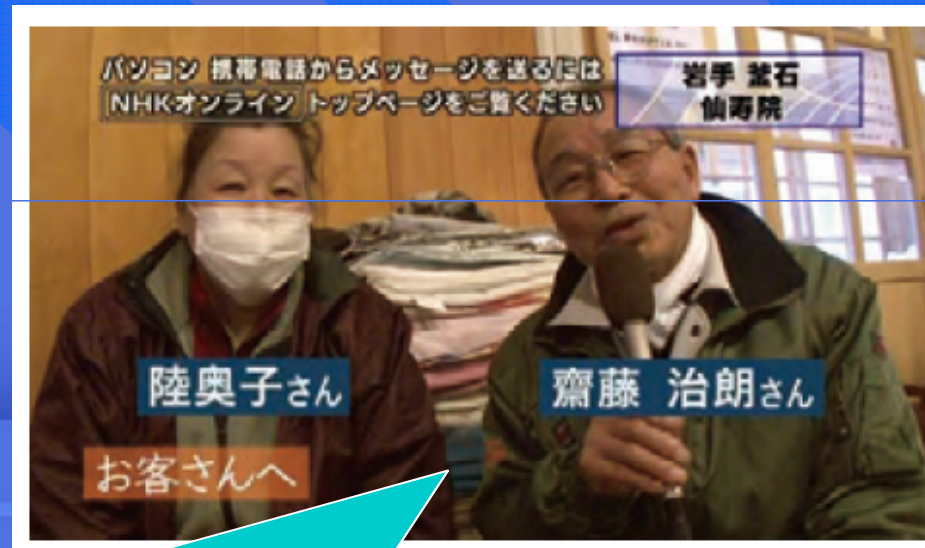
ETV, BS1,BS2

- **Various information for disaster victims through nationwide and local broadcasting**

- **Location of evacuation center**
- **Emergency supplies (water, foods etc.)**
- **Medical service**
- **Traffic (railways, highways etc.)**

Voices of disaster victims

- Broadcasting **voices of people** from disaster-hit area.

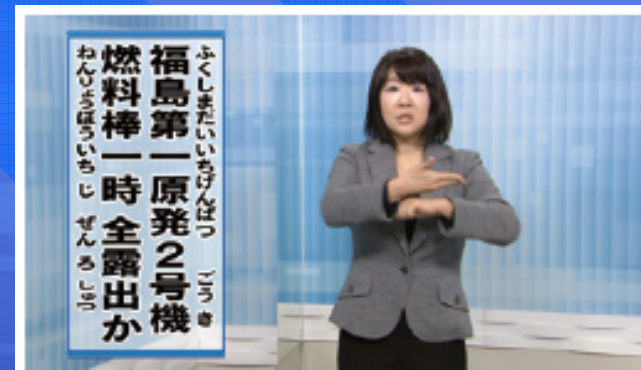


What kind of things we need now.

What kind of difficulties we have now.

Broadcasting for the handicapped

- **Superimpose subtitles** on screen in emergency news & disaster-related programs.
- Broadcast **sign language news program** fourth a day (usually twice).
- Live-broadcast of the Prime Minister press conference with **sign language**.



Broadcasting for foreign people

Multi-language Broadcast (TV second sound channel, R2)

- **Tsunami warning**

Emergency broadcast in 4 language
(English, Chinese, Korean, Portuguese)

- **News simultaneous interpretation**
(English)



Broadcasting for foreign people



NHK WORLD



- **English broadcast** in TV second sound channel
- Supply disaster-related contents to **local cable television stations.**
- Provide information on **website in 17 languages**

Various Services in Digital

TV **Radio**

**Data
broadcasting**



Live streaming

USTREAM

**YAHOO!
JAPAN**

**ニコニコ放送
NICO NICO LIVE**

**One-segment
broadcasting**



**Mobile-phone
website**



Website



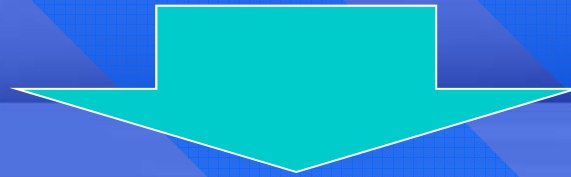
Lessons from 3·11

- Near 20,000 people dead or missing

- Death-rate per population 1.03%

- Handicapped** 2.06%

- (Iwate, Miyagi, Fukushima prefecture)



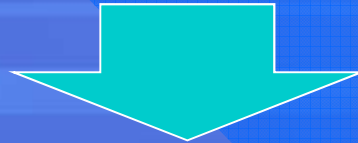
We have been asked to ourselves

“Why we couldn’t save more people?”

Lesson from 3·11

NHK reviewed 3·11 disaster broadcasting and improve our performance and systems.

- Reinforce broadcasting systems
against for next major quakes.
- Back-up & Redundancy to continue broadcasting
- Improve announce comments to early evacuation
- Provide various information with all channels.



Broadcast for hazard mitigation

Improvement for media accessibility

- **Superimpose subtitles** in live and local programs by automatic speech recognition technologies.
- **Audio description** in **second sound broadcasting**.
- **Increase sign language** programs in disasters.

Improvement for media accessibility

“NHK NEWS WEB EASY”

Started in April 2012.

Easy Japanese language news site
for children & foreign people living in Japan.





Information can save lives.

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