



CIVIL AVIATION BUREAU OF JAPAN

Emergency ATC equipment

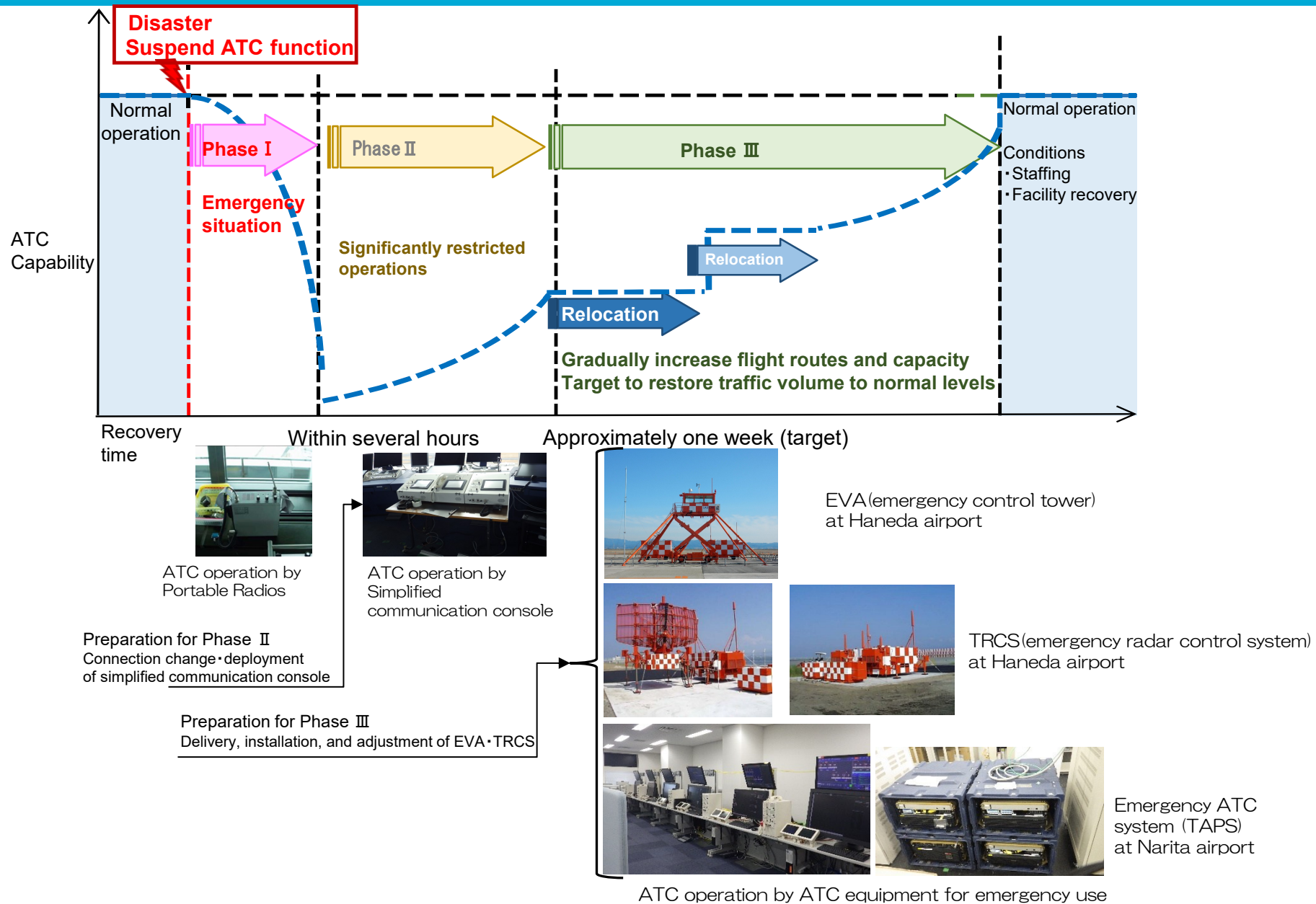
Air Traffic Safety Electronics Personnel

Tokyo Airport Office

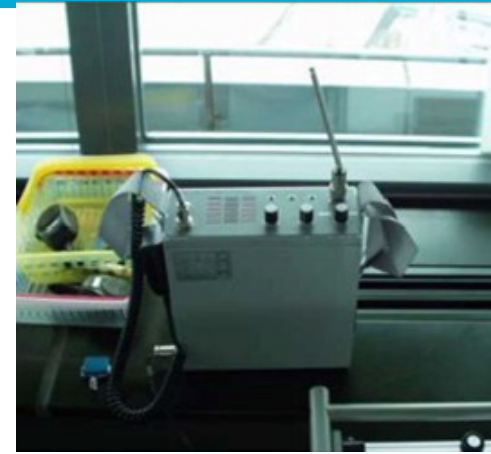
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Overview of Emergency ATC Equipment in Each Phase (1/3)



- **Phase1**
 - **Portable Radios Operation**
 - **Kept in ATC tower for immediate use**
- **Phase2**
 - **Simplified communication console Operation**
 - **Easy to transport and deploy using its transportable case**



Portable Radios



Transportable case



Simplified communication console

• Phase3

○EVA : Emergency VFR system for ATC／Ensuring Tower Control Operation

○TRCS : Transportable Radar Control System／Ensuring Radar Control Operation

These emergency systems provide essential ATC functions when tower control or radar control services become unavailable due to an earthquake, fire, or other disaster, and cannot be restored promptly.

JCAB owns three EVA (emergency control tower systems) and three TRCS (emergency radar control systems).

The systems are stored separately at Tokyo(Haneda), Osaka, and Fukuoka Airports to avoid the risk of all equipment being affected by a single disaster.

In the event of a disaster at airports nationwide, JCAB deploys the nearest available equipment.



EVA
(Emergency VFR system for ATC)



TRCS
(Transportable Radar Control System)



Emergency ATC Equipment Deployment Cases (1/3)

Case1. Miyako Airport Typhoon Response & Deployment Timeline

【Timeline】

Sep 11, 2003

- Maximum wind gust of 74.1 m/s recorded due to the Typhoon
- Control tower window damage occurred

Sep 12

- The Portable Radios activated on 2nd floor of the administrative office and AFIS (Aerodrome Flight Information Service) operations initiated
- The simplified communication console installed and AFIS operations possible from the console later the same day

Sep 13

- Determined location for EVA (emergency control tower)

Sep 13 – 15

- Function check of EVA at Osaka

Sep 15 – 17

- Transport of EVA from Osaka to Miyako

Oct 1

- ATC operations resumed at EVA



Damaged Control Tower



AFIS operations with the Portable Radios and the simplified communication console on 2nd floor of the administrative office



Deployed EVA
Maximum wind gust during deployment : 25m/s

Emergency ATC Equipment Deployment Cases (2/3)

Case2. Sendai Airport Earthquake Response & Deployment Timeline

【Timeline】

Mar 11, 2011

- Major earthquake occurred
- Tsunami disabled ATC systems, power facilities, and runways
- Air navigation services at Sendai Airport became unavailable



Damaged Airport

Damaged Radar control room

Mar 17

- Runway became usable
- Partial air navigation services resumed using Portable Radios



Portable Radios operation



Deployed EVA

Mar 31

- EVA (emergency control tower) operations began

Apr 11

- Simplified communication console deployed in the original control tower and backup capability established

Apr 13

- Airfield control operations resumed
- Civil aviation operations resumed

Apr 15

- ATC resumed with TRCS (emergency radar control system)



Deployed TRCS



Case3. Kumamoto Airport Earthquake Response & Deployment Timeline

【Timeline】

Apr 14, 2016

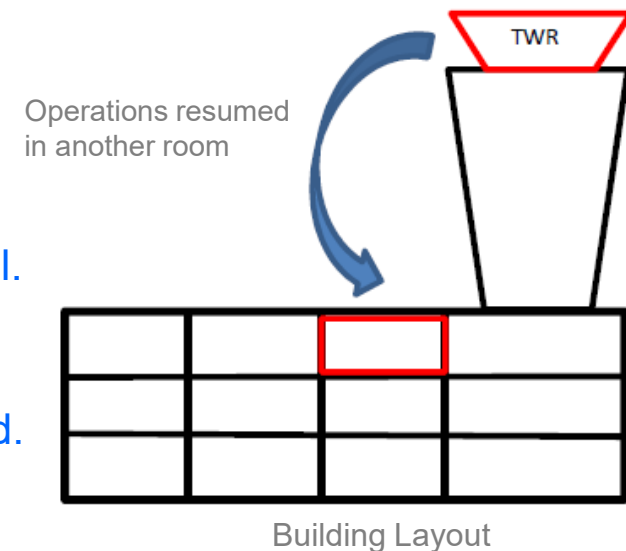
- Major earthquake occurred(foreshock)

Apr 16

- Major earthquake occurred(mainshock)
- The control tower became critically damaged and non-operational.
- ATC using the Portable Radios operation activated from the administrative building.
- Installation work for the simplified communication console started.

Apr 18

- ATC using simplified communication console started.
- EVA was transported from Fukuoka Airport, but was not used because ATC operations resumed in the original control tower.



Damaged Control Tower



Portable Radios and Simplified communication console operations from the administrative office



Thank you for your attention !

