

Protecting the Systems that Protect Our Airways with Seismic Isolation

The Fukuoka Area Control Center is one of the Ministry of Land, Infrastructure, Transport and Tourism's four Area Control Centers nationwide. It monitors the aircraft flying in Japan's airspace. As opposed to control towers at airports, which manage departures and arrivals for each particular airport, Area Control Centers monitor the routes of every flight throughout Japan. The Fukuoka Area Control Center is located in western Japan and monitors the airspace from Kyushu to Osaka, including flights over the Pacific Ocean and the Sea of Japan.

When the control system goes down due to a natural disaster such as an earthquake, restrictions are put on planes flying in Japan's airspace. As a result, long delays for departures and arrivals occur at each airport, and in the worst cases, most of the planes flying between Kansai and Kyushu could get cancelled.

Furthermore, because these controls apply to any aircraft in Japanese airspace, this would also include flights flying to and from China or the American West Coast, as well as flights to Europe from the western part of the US. In other words, if something happens to our control system servers, its impact is not limited to Japan, but extends worldwide. Of course, in preparation for the unexpected, we make sure to have a backup system in at least two locations, such as the Air Traffic Management Center next door to our Area Control Center and the Tokyo Area Control Center, both of which have seismic isolation devices. The laws regarding seismic design criteria were revised in 1998 to mandate that information processing equipment located on the second floor of a building or higher must be on a floor with seismic isolation devices installed. In accordance with this, we equipped the floor of the server room at the Fukuoka Area Control Center with seismic isolation devices.

In these times of rapid IT integration throughout society, Area Control Center can no longer function without servers,



Akihiko Matsumine
Chief Air Traffic Safety Electronics Personnel
Fukuoka Area Control Center



Masanori Sokei
Assistant Air Traffic Safety Electronics Personnel
Fukuoka Area Control Center

which store systems and data. The air conditioning vent in the Fukuoka Area Control Center's server room is located on the floor, so we had to devise a way to prevent this vent from getting blocked after the installation of the seismic isolation devices. Because THK's seismic isolation devices can be customized to meet specific requests beyond the standards and conditions set by the Ministry of Land, Infrastructure, Transport and Tourism, which they already meet, we were able to get seismic isolation devices that were custom-designed to our desired dimensions.

In the Kumamoto Earthquakes this April, both of which had a magnitude of 7, Kumamoto Airport's control system servers made it through without incident thanks to their seismic isolation devices. Even in the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake, I heard no word that their servers broke. Seismic isolation devices are amazing things. Fukuoka is a region with a relatively low risk of earthquakes, but we never know when and how big the next major earthquake will be. If the worst were to happen, we expect that THK's seismic isolation devices will fulfill their purpose and contribute to keeping Japan's skies safe.



Server room equipped with custom-designed seismic isolation devices from THK



Fukuoka Area Control Center