

## JTSB Safety Recommendation to the FAA

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September 25, 2014

Aircraft Serious Incident – JA16AN (Boeing 737-700)

Operated by Air Nippon Co., Ltd.

Occurred at an altitude of 41,000 ft about 69 nm east of Kushimoto, Japan  
on September 6, 2011

It is highly probable that this serious incident occurred in the following circumstances: During the flight, the first officer erroneously operated the rudder trim control while having an intention of operating the switch for the door lock control in order to let the captain reenter the cockpit. The aircraft attitude became unusual beyond a threshold for maintaining the aircraft attitude under the autopilot control. The first officer's recognition of the unusual situation was delayed and his subsequent recovery operations were partially inappropriate or insufficient; therefore, the aircraft attitude became even more unusual, causing the aircraft to lose its lifting force and went into nosedive. This led to a situation which is equivalent to "a case where aircraft operation is impeded."

Of these, it is probable that the similarities between the switch for the door lock control of the Boeing 737-500 series aircraft and the rudder trim control of the Boeing 737-700 series aircraft in their shape, size and operability contributed to the first officer's erroneous operation of the rudder trim control with an intention of operating the switch for the door lock control.

In view of the results of the investigation of this serious incident, the Japan Transport Safety Board recommends the Federal Aviation Administration (FAA) of the United States of America to urge the aircraft designer and manufacturer involved (the Boeing Company) to take the following measures:

The aircraft designer and manufacturer shall study the need to reduce or eliminate the similarities between the rudder trim control and the switch for the door lock control of the Boeing 737 series aircraft, in terms of the shape, size and operability as mentioned in this report. In particular, it shall consider the effectiveness of changing the shape and size of the rudder trim control to the design adopted for the rudder trim control for Boeing models other than those of the Boeing 737 series, in which the switch has a cylindrical shape about 50mm in diameter without a brim, so that the difference of the size and shape can be recognized only with a touch.