



*International Civil Aviation Organization*

**FOURTH MEETING OF THE ASIA PACIFIC ACCIDENT INVESTIGATION GROUP  
(APAC-AIG/4)**

*Tokyo, Japan, 1-2 September 2016*

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**Agenda Item 5: AIG Development in Member States**

**AIG DEVELOPMENT REPORT IN JAPAN**

*(Presented by Japan)*

**SUMMARY**

This paper presents the reviews of activities by Japan Transport Safety Board (JTSB) in 2015. There were 27 accidents and nine serious incidents in that year, resulting in 72 cases to which JTSB was mandated to investigate. Out of 72 cases, JTSB has complied 29 reports and make recommendations to a serious incident case involving a Bombardier CL-600.

Action by the meeting is at Section 3.

**1. INTRODUCTION**

1.1 In 2015, 27 accidents occurred than last year, including an accident where an Airbus A320-200 veered off a runway while landing, leading to injuries for the passengers and crew in April; and the crash of a privately-owned Piper PA-46-350P into a residential area in Chofu City, Tokyo, catching fire and leading to casualties for people on board and residents of the area in July. Japan Transport Safety Board (JTSB) conducted 49 accident investigations during the past year, including the ongoing 22 investigations carried over from the previous year. In addition, nine serious incidents occurred, such as a serious incident that occurred on a runway of Naha Airport involving two departures and one arrival in June. JTSB conducted 23 serious incident investigations during the past year, including the ongoing 14 investigations carried over from the previous year.

1.2 JTSB made recommendations to a manufacturing company and an aircraft operator on the serious incident of a Bombardier CL-600-2B19.

**2. DISCUSSION**

Investigations of Aircraft Accidents and Serious Incidents

2.1 JTSB carried out investigations of aircraft accidents and serious incidents in 2015 as follows: 22 aircraft accident investigations had been carried over from 2014, and 27 accident investigations were additionally launched in 2015, thus 49 cases in total. Among the 49 accidents, 18 investigation reports were published in 2015, and thereby 31 accident investigations were carried over to 2016.

2.2 In regard to serious incidents, 14 aircraft serious incident investigations had been carried over from 2014, and nine serious incident investigations were additionally launched in 2015, thus 23 cases in total. Among the 23 cases, 11 investigation reports were published in 2015, and thereby 12 serious incident investigations were carried over to 2016.

Category	Carried over from 2014	Launched in 2015	Total	Published investigation reports	(Recommendations)	(Safety recommendations)	(Opinions)	Carried over to 2016	(Interim report)
Aircraft accident	22	27	49	18	(0)	(0)	(0)	31	(0)
Aircraft serious incident	14	9	23	11	(1)	(0)	(0)	12	(0)

2.3 Among the 29 reports published in 2015, one report contained recommendations.

#### Aircraft Accidents and Serious Incident in 2015

2.4 The number of aircraft accident and serious incident investigations launched in 2015 included 27 aircraft accidents, which is 10 case increase from the 17 cases for the previous year, and nine aircraft serious incidents, which is five case increase from the four cases for the previous year.

2.5 By aircraft category, three accidents were related to large aeroplanes, nine cases were to small aeroplanes, three cases to ultralight planes including one gyro plane, three to helicopters and eight to gliders. The aircraft serious incidents included six cases involving large aeroplanes, two cases involving small aeroplanes, and four cases involving helicopters.

#### Statistics of Number of Casualties (aircraft accident)

(Persons)

2015							
Aircraft category	Fatalities		Missing		Injured		Total
	Crew	Passenger-s and others	Crew	Passen- gers and others	Crew	Passenger-s and others	
Large aeroplane	0	0	0	0	2	25	27
Small aeroplane	1	2	0	0	1	8	12
Ultralight plane	1	1	0	0	1	0	3
Helicopter	2	2	0	0	0	1	5
Glider	1	0	0	0	3	1	5
Total	5	5	0	0	7	35	52
	10		0		42		

#### Published Aircraft Accident and Serious Incident Investigation Reports

2.6 The number of investigation reports of aircraft accidents and serious incidents published in 2015 was 29, consisting of 18 aircraft accidents and 11 aircraft serious incidents.

2.7 Looking at those accidents and serious incidents by aircraft category, the accident reports involved three large aeroplanes, six small aeroplanes, one ultralight planes, two helicopters and six gliders. The aircraft serious incident reports involved eight large aeroplanes, one small aeroplane and five helicopters.

#### Recommendation Issued by JTSB in 2015

2.8 There were recommendations to a single case, issued by JTSB in 2015, which case involved a Bombardier CL-600-2B19 (Recommended on February 26, 2015).

#### *Summary of the Serious Incidents*

2.9 On Monday, May 6, 2013, a Bombardier CL-600-2B19 took off from Oita Airport as a scheduled flight and landed on Runway 32R at Osaka International Airport. While the aircraft was taxiing on a taxiway after landing, a caution message was displayed for a right engine fire detection system failure at around 12:15 Japan Standard Time (JST: UTC+9hr), and subsequently a warning message was displayed for a right engine fire. While the crew were responding to the engine fire warning message, the aircraft continued to taxi and entered the parking spot.

#### *Probable Causes*

2.10 It is highly probable that the cause of this serious incident was that the coupling nut connecting the right engine fuel manifold (fuel supply piping) and fuel injector (fuel injection nozzle) No. 14 was loose, fuel leaked from this area and was ignited by the heat of the engine, which resulted in fire in the designated fire zone.

#### *Recommendations to the Engine Maintenance Organization*

2.11 When conducting engine overhauls, reconfirm that the system ensures that important work for safety is surely carried out, including the tightening of the coupling nuts connecting the injector and manifold.

#### *Recommendations to the Aircraft Operator*

2.12 Reconsider the contents of training in response to an outbreak of fires.

#### *Actions Taken in Response to the Recommendations*

2.13 JTSB received the following report on the actions taken in response to the recommendations.

#### *Actions Taken by the Engine Maintenance Organization in Response to the Recommendations*

2.14 Identification of content for re-examination

- (1) Examinations will be conducted whether records can be kept whether the tightening work of the coupling nuts, which is considered to be important for safety, has been reliably and duly performed according to the manual, or whether appropriate preventive measures, such as design that can prevent loosening, have been performed.
- (2) All the tasks marked with "CAUTION" in the manual will become targets of examination in order to ensure that work important for safety is carried out reliably, and re-examinations shall be performed regarding whether the work can be duly performed according to the manual, whether records indicating that it has been reliably performed can be indicated, and whether appropriate preventive measures are carried out in subsequent steps, etc.

*Actions Taken by the Aircraft Operator in Response to the Recommendations  
(Completion Report)*

2.15 Response to “Enhance education and training involving important system functions for safety.”

Re-confirmation and thorough communication of procedures regarding system details on the special nature of situations where notification messages transition from “CAUTION” (cautionary message for malfunctions in fire detection equipment) to “WARNING” (fire alarm message), as occurred in this case, were also carried out.

[Specific Measures in Response to the Recommendations]

Educational training materials on “FIRE PROTECTION” were newly created for E170 in addition to those for CRJ, for use in the Japanese fiscal year 2015 CRJ/E170 regular training (during lectures and simulator training), to address both models and to apply to all flight crew members. Furthermore, the content was revised so that items which previously only consisted of system explanations were expanded to cover items up to emergency escape (implemented from the March 3, 2015 training, held once a year for all flight crew members).

2.16 Response to “Reconsider the contents of training in response to an outbreak of fires.”

[Actions Taken After this Serious Incident]

Actions in response to a fire occurring at the tires while on the ground were implemented in regular training (simulator practice) for both the CRJ and E170 in Japanese Fiscal Year 2013. In Fiscal Year 2014, training in response to each of the conditions consisting of a fire occurring at the tires while on the ground for the CRJ equipment, and a fire occurring at the auxiliary power unit (APU) for the E170 equipment, were implemented.

[Specific Measures in Response to the Recommendations]

For the CRJ equipment in particular, the situation where the “CAUTION” alarm message shifts to “WARNING” was replicated in simulators, it was specified that training would be carried out in a more realistic environment to master quick action in accordance with the AOM, and such training was started (started on the same day of March 21, 2015).

**3. ACTION BY THE MEETING**

3.1 The Meeting is invited to note the information contained in this paper.

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