



**Thirty First Regional Aviation Safety Group — Pan America Executive Steering Committee Meeting  
(RASG-PA ESC/31)**

Buenos Aires, Argentina 8 to 9 November 2018

**Agenda Item 5: Other business**

**Flight Incidents due to severe weather conditions on South American**

(Presented by Secretariat)

<b>EXECUTIVE SUMMARY</b>	
This working paper presents three incidents experimented by air commercial flight due to severe weather conditions in a short term and ask to the meeting, explore mitigation measures that could be applied to avoid accidents due to weather condition in route	
<b>Action:</b>	Suggested action presented in section 3.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> <li>• Safety</li> </ul>
<i>References:</i>	<ul style="list-style-type: none"> <li>• Annex 3 to the Convention on International Civil Aviation – Meteorological Services for international aviation</li> <li>• Annex 19 to the Convention on International Civil Aviation - Safety Management</li> </ul>

**1. Introduction**

1.1 Annex 3 — Meteorological Services for international aviation establish that the meteorological services providers function shall be to contribute towards the safety, regularity and efficiency of international air navigation.

1.2 Annex 19 — Safety Management establish that the Standards and Recommended Practices contained in this Annex shall be applicable to safety management functions related to, or in direct support of, the safe operation of aircraft.

1.3 When a safety authority observed a potential safety issue, is important to take measures to mitigate safety problems before successive incidents turn into an accident.

## **2. Discussion**

2.1 Annex 3 indicated that the weather conditions that is necessary to provide to flight crew, controllers and other aeronautical users, to contribute to the safe prosecution of a flight.

2.2 One of the offices established to provide the aeronautical meteorological services is the Meteorological Watch Office, whose main function is to warn about the weather conditions that could be dangerous, in all phases of flight. In order to advise the presence of thunderstorms and other severe meteorological phenomena, the Meteorological Watch Offices (MWO) must issue a SIGMET messages.

2.3 On June 5, 2016, a commercial flight that covered the Lima-Buenos Aires route suffered severe turbulence associated with mountain waves, and about twenty people were injured.

2.4 On 18<sup>th</sup> October, another commercial aircraft flying over the area located among southern of Bolivia, northern Argentina and western Paraguay, found several convective complex. This thunderstorm system causing severe turbulence that had triggered internal damage to the aircraft as well as some injuries. On 30<sup>th</sup> October, another commercial flight over the area located southern Paraguay and northern Argentina, in route found a mesoscale convective complex, which severely affected the aircraft with damage to the fuselage and windshields due to the hailstones that hit the aircraft.

2.5 Usually, during the briefing previous to fly, the meteorological services providers made a description regarding to meteorological system that could affected the aircraft in all flight phases.

2.6 Regarding the two last incidents, affected by convective systems (thunderstorm) the information regarding to severe storm were issued by the watch meteorological office of Resistencia (Argentina), La Paz (Bolivia), Asunción (Paraguay) and Curitiba (Brazil). The information about the system was available and, furthermore, satellite imagery showed the area that affected for de convective systems and the depth of the tops of the cumulonimbus.

2.7 The event of 5<sup>th</sup> June 2016 was difficult to forecast the mountain wave. For this kind of system, is very important to have a good forecast system supported the meteorological aeronautical services.

2.8 This events might merit further analysis. Annex 19 indicate that each State shall establish a mandatory incident reporting system to facilitate collection of information on actual or potential safety deficiencies to adopt mitigation actions.

## **3. Conclusion**

3.1 This working paper presented the Secretariat about the latest incidents that occurred on three flights due to weather conditions in a relative short time span.

3.2 Cooperation between State regulators, air navigation services providers and the industry provides a means to study these incidents to avoid repeating them or minimizing their effects. The pre-flight information provides a situational awareness of the area to the crews, and should be the starting point, the strengthening of this procedure, for a mitigation measure.

3.3 The Secretariat invite RASG-PA ESC to comment on the need to further explore this events or to analyze if the level of risk is acceptable or mitigation actions should be considered.

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