International Civil Aviation Organization

The Twentieth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/20)

Bangkok, Thailand, 26-29 May 2015

Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region

B787 AIRCRAFT ASE PERFORMANCE

(Presented by Australia)

SUMMARY

This paper provides the results of height-keeping monitoring of B787 aircraft by the AAMA. Results show that all 26 B787 in our sample have acceptable ASE within a normal distribution with mean 17ft and standard deviation 27ft.

1. INTRODUCTION

1.1 At the RASMAG/MAWG/2 meeting in December 2014, the RMAs discussed a range of monitoring activities related to a number of different aircraft types. As a result of these discussions the AAMA was requested to provide data on B787 type aircraft (MAWG/2 Action 2/3).

2. DISCUSSION

2.1 This paper considers Aircraft Altimetry System Errors (ASE) for B787 aircraft as captured by the AAMA using ADS-B data.

2.2 Twenty Six aircraft were found in the data set. ASE values with absolute values larger than 300ft were excluded as these are usually the result of inaccuracies in the interpolated weather data used to estimate the ASE. These abnormal results are usually clearly apparent as errors when considered with the data from other aircraft.

2.3 Figure 1 shows a density plot of the data which can be statistically fitted to a normal distribution with mean 17ft and standard deviation 28ft. The limited data sample implies the mean may occur within the values [8,25] ft and the standard deviation may be in the range [20,33] ft. In the figure this uncertainty is shown by the shaded red and green regions. Below the graph the actual ASE values for each aircraft are illustrated.

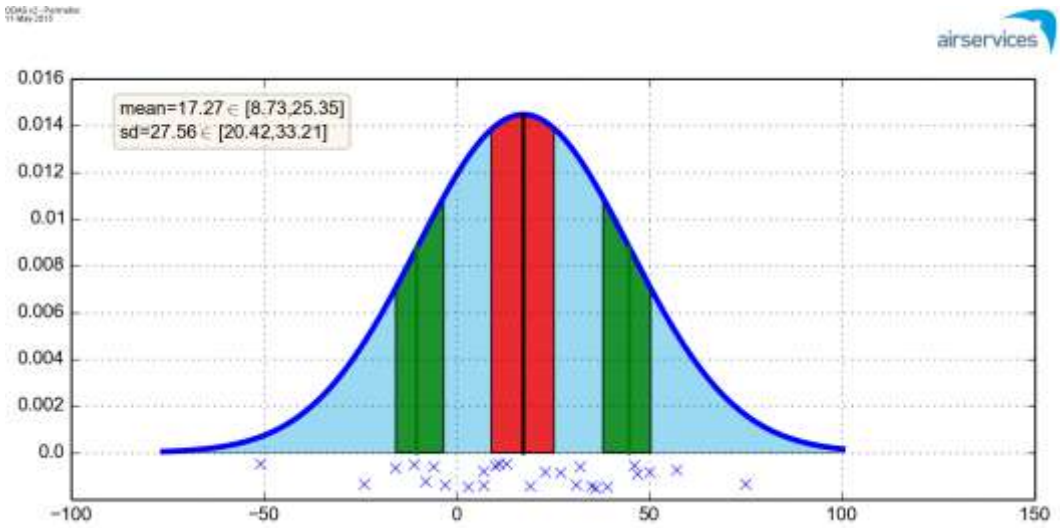

Figure 1: A normal density fit to the ASE data for B787 aircraft. The data is statistically well fitted by a normal distribution with mean 17 ft and standard deviation 27 ft. Red and green shaded regions indicate the uncertainty in this mean and standard deviation. One aircraft with ASE = -50 ft can be considered an outlier.

2.4 Figure 2 shows the time series for each aircraft ASE. None of the aircraft have a noticeable trend or variation. One aircraft has ASE of -50 ft which is at edge of distributed values.

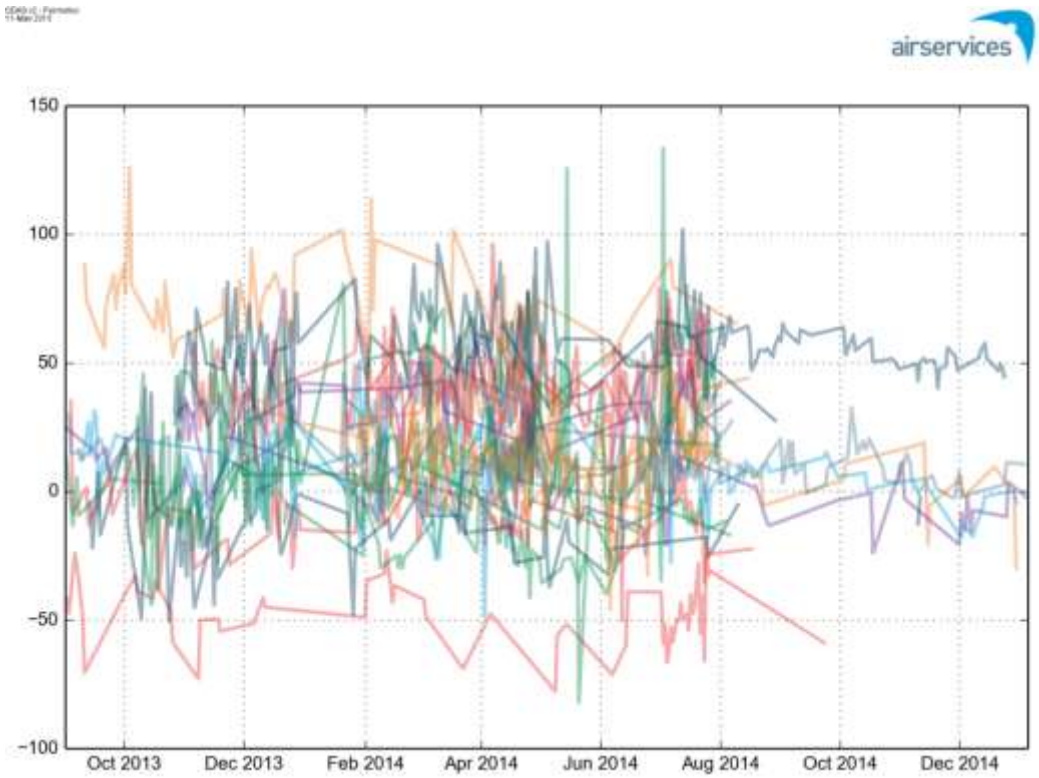

Figure 2: A time series plot of ASE for each aircraft. ASE is in feet.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note and discuss the data provided; and
b) Determine the availability of other comparative data from Regional RMAs.

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