Case Study

Altimetry System Error Report (ASE-R) 055

Presented to: Altimetry System Error (ASE) Workshop

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Case Study  ASE-R 055

Why review this case?

- Typical cause of altimetry system error:
  - Component drift
  - Component wear / erosion
  - Modification

- This case was different
Introduction

- **Case Study**
  - Identification of unsatisfactory ASE / Notification
  - Identification of probable cause
  - Resolution
  - Verification

- **Lessons Learned**
  - Authorization process
  - Interface and coordination
  - ASE-R trigger criteria
Identification of Unsatisfactory ASE

Table 2. Recent ASE Performance of Subject Aircraft

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Figure 1. Aircraft Altimetry System Error History
Operator Notification

- Prepared ASE-R sent to operator’s CMO
- Team Airworthiness POC offered assistance
- Recommended approach

Review:
- RVSM Design Implementation
- Conformity
- Airworthiness
Identification of Probable Cause

- Cessna 560 Encore sn 560-05XX

  - TCDS lists S/N 560-0539 through 560-0750
  - Owner purchased new in 2004
  - RVSM authorized since 2005
  - In design, all required maintenance performed
  - No damage or modification history
  - Perform altimeter accuracy testing-
Identification of Probable Cause

• Contacted current design-holder (Textron)
  ▪ Aircraft had been customized and did not meet RVSM design requirements
  ▪ Modification performed prior to issuance of Certificate of Airworthiness
  ▪ Camera provisions had been added
Identification of Probable Cause
Resolution

- Airplane taken to factory service center
- Returned to standard configuration
Verification of Successful Resolution
ASE-R 055

- 11/5/2015 - Unsatisfactory ASE Identified
- 11/10/2015 - ASE-R Issued
- 11/10/2015 - Airplane Removed from Authorization
- 11/19/2015 - Service Center for Modification
- 2/25/2016 - Successful Monitoring
- 3/15/2016 - Airplane Back on Authorization
Lessons Learned

- **Time Frame 2004-2016**
  - Prior to implementation of domestic RVSM
  - Changes in manufacturing controls and processes
  - Evolution of LASER/ASE-R process
Lessons Learned

- **Authorization Process – Inspector Guidance**
  - FAA PAI makes determination aircraft meets requirements
  - Aircraft TCDS declaration acceptable
  - PAI checks for changes to type design

- Maintenance records begin at Standard Certificate of Airworthiness
Lessons Learned

- Interface and Coordination - Validation
  - Now send ASE-R to operator through CMO
  - CMO is FAA representative
  - Support from RVSM program office
Lessons Learned

• ASE-R Trigger Criteria
  ▪ On-going refinement
  ▪ Escape would not happen today
Questions?

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