

SECTION I: SE OVERVIEW

Study Topic Overview Summary

Following a wrong runway departure accident on August 27, 2006, in Lexington, Kentucky, ASIAs initiated a study to gather wrong runway event reports from several databases and found 117 reports of attempted or actual wrong runway takeoffs involving airplanes operating under 14 CFR part 121 between 1981 and 2006. A panel from CAST member organizations reviewed the reports to identify common factors and proposed mitigations. After the CAST panel eliminated duplicate reports and reports without sufficient information to determine contributing factors, 80 reports remained. The panel review identified several contributing factors, including crew resource management (CRM) deficiencies, airport geometry/complexity issues, human factors issues, and communications deficiencies. CAST adopted seven SEs as a result of the study, five of which were directed at airports and air traffic control. The remaining two SEs were targeted toward air carriers for aircraft equipment and flightcrew training.

SE Objective

The purpose of this SE is to a) reduce wrong runway departures and runway incursions by encouraging the installation of own-ship moving map display and/or runway awareness systems (such as the Honeywell Runway Awareness and Advisory System), and b) encourage the FAA to expedite the development of standards for integration of class I, class II, and class III electronic flight bags (EFB) with the aircraft systems.

Primary Risks Mitigated

Runway Excursion (RE), Runway Incursion (RI), Loss of Control-Inflight (LOC-I), Navigation Errors (NAV)

Action	Organization(s)	Strategy	Description	Due Date
Action 1	Air Carriers	Equipment	Implement a suitable system for moving map display and/or runway awareness systems to provide crews with on-ground airport position information.	10/31/2019
<i>Comments: CAST closed this action based on the 2019 MITRE avionics survey indicating 92 percent of the U.S. part 121 fleet is capable of displaying own-ship position on the ground.</i>				
Action 2	CAST	Outreach	Encourage the FAA to expedite the development of standards for integration of class II EFBs.	N/A
<i>Comments: CAST closed this action.</i>				
Action 3	AIA	Report	Establish a joint Government/industry team to review and make recommendations related to class II EFBs.	N/A
<i>Comments: CAST closed this action.</i>				
Action 4	FAA	Guidance	Evaluate the report and, if necessary, revise guidance material.	6/30/2009
<i>Comments: CAST closed this action.</i>				
Action 5	CAST	Equipment	Ensure the technology installed from this SE is incorporated as part of an integrated solution for the next generation of the NAS.	N/A
<i>Comments: CAST closed this action.</i>				

See section II of this SE for detailed action descriptions.

References: The detailed analysis in the Wrong Runway Departures Final Report (August 2007) is available through CAST.



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SE 183 consists of five actions, which this section lays out in detail.

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- **Action 5 (CAST)**.....PAGE 7
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SECTION III: SUPPLEMENTAL INFORMATION

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This section contains the following additional information that may be of interest to implementers:

- Source Study
- Related Initiatives
- Total Cost / Resource Overview

SECTION IV: REVISION LOG

PAGE 9

This section provides a history of revisions to this SE.



SECTION II: DETAILED ACTION INFORMATION

Action 1: Implement moving map displays and/or runway awareness systems

Primary Implementer

Air Carriers

Action Objective

Air carriers implement, as feasible, a suitable system for moving map display and/or runway awareness systems to provide crews with on-ground airport position information.

Action Timeline

Flow Time: Evaluation to be completed within 1 year from SE 183R2 revision approval date; implementation within 5 years from SE 183R2 revision approval date; JIMDAT will monitor implementation annually

Due Date: 10/31/2019

Timeline/Flow for Future Adopters

CAST expects air carriers will consider moving map and/or runway awareness system capabilities when assessing aircraft and/or electronic flight bag (EFB) technologies. The timeline/flow will be in consonance with the operator's technology deployment plans.

CAST Lead

Airlines for America (A4A)

#	Organization(s)	Detailed Steps
1a	Air Carriers	Review the latest version of Advisory Circular (AC) 120–76 and other applicable ACs that enable use of moving map display in conjunction with company implementation of electronic flight bags.
<i>Complete.</i>		
1b	Air Carriers	Evaluate all available runway awareness systems for forward fit and retroactive implementation. Air Carriers should consult with original equipment manufacturers and third-party suppliers for detailed costs and technical capabilities of any system that provides airport position and/or aural warnings and alerts for airport runways.
<i>Complete.</i>		
1c	Air Carriers	Install and implement moving map displays and/or runway awareness systems and activate the software to provide crews with knowledge of aircraft position during taxi operations.
<i>Complete. Closed based on the 2019 MITRE avionics survey indicating 92 percent of the U.S. part 121 fleet is capable of displaying own-ship position on the ground.</i>		

Notes

Note: See Section III for detailed costs and resources.



SECTION II: DETAILED ACTION INFORMATION

Action 2: Draft letter to FAA

Primary Implementer **CAST**

Action Objective CAST should encourage the FAA Aircraft Certification Service Aircraft Engineering Division to expedite the development of standards for integration of class II electronic flight bags (EFB) with the aircraft systems.

Action Timeline Flow Time: 90 days
Due Date: N/A

Timeline/Flow for Future Adopters N/A

CAST Lead CAST

#	Organization(s)	Detailed Steps
2a	CAST	Draft a letter to the FAA.
		<i>Complete.</i>

Notes



SECTION II: DETAILED ACTION INFORMATION

Action 3: Establish joint Government/industry team to make recommendations on class II EFBs

Primary Implementer	Aerospace Industries Association (AIA)
Action Objective	AIA should establish a joint team consisting of industry and Government members to review and make recommendations related to issues including, but not limited to, connectivity, capability growth, egress, location in field of view, and display size of class II electronic flight bags (EFB).
Action Timeline	Flow Time: 6 months Due Date: N/A
Timeline/Flow for Future Adopters	N/A
CAST Lead	AIA

#	Organization(s)	Detailed Steps
3a	AIA	Determine the members of the team and obtain commitments to participate. <i>Complete.</i>
3b	Industry and Government Team	Conduct meetings and develop recommendations. <i>Complete.</i>
3c	Industry and Government Team	Produce a report and submit it to AIA for distribution to the industry. <i>Complete.</i>

Notes

SECTION II

Note: See Section III for detailed costs and resources.



SECTION II: DETAILED ACTION INFORMATION

Action 4: Evaluate report and revise guidance material

Primary Implementer **FAA**

Action Objective The FAA will evaluate the report and, if necessary, make revisions to guidance material.

Action Timeline Flow Time: 6 months (upon completion of [Action 3](#))
Due Date: 6/30/2009

Timeline/Flow for Future Adopters N/A

CAST Lead FAA Aircraft Certification Service (AIR)

#	Organization(s)	Detailed Steps
4a	FAA	Evaluate the Aerospace Industries Association (AIA) report. <i>Complete.</i>
4b	FAA	Revise applicable guidance material. <i>Complete.</i>

Notes

SECTION II

Note: See Section III for detailed costs and resources.



SE 183

CAST Safety Enhancement (SE)

COCKPIT MOVING MAP DISPLAY AND RUNWAY AWARENESS SYSTEM

STUDY TOPIC

WRD

WRONG RUNWAY DEPARTURE

CICTT RISK AREAS

RE, RI, LOC-I, NAV

SECTION II: DETAILED ACTION INFORMATION

Action 5: Ensure technology is incorporated

Primary Implementer **CAST**

Action Objective CAST will coordinate with the Joint Planning and Development Office (JPDO) to ensure the technology installed from SE 183 is incorporated as part of an integrated solution for the next generation of the National Airspace System.

Action Timeline Flow Time: 30 days
Due Date: N/A

Timeline/Flow for Future Adopters TBD

CAST Lead CAST/JIMDAT

#	Organization(s)	Detailed Steps
5a	CAST	Provide a briefing and guidance to JPDO on Wrong Runway SE (specifically SE 183).
		<i>Complete.</i>

Notes

SECTION II

Note: See Section III for detailed costs and resources.



SECTION III: SUPPLEMENTAL INFORMATION

Source Study Wrong Runway Departures Final Report (August 2007)

Related Initiatives Advisory Circular 120-76

Total Cost \$1,002,000

[Action 1](#)

[Action 2](#) \$1,000

[Action 3](#) \$500,000

[Action 4](#) \$500,000

[Action 5](#) \$1,000

	Organization	Resources Needed
<i>Direct Resource Overview – Government</i>		

	Organization	Resources Needed
<i>Direct Resource Overview – Industry</i>	Air Carriers	<ul style="list-style-type: none"> Action 1: Small financial impact for air carriers that is incremental to existing EFB implementation plans.

Indirect Resource Overview The organizations identified in this section are not expected to incur direct costs associated with implementing this SE, but they may incur indirect costs within their normal line of work.

	Organization	Description
	N/A	N/A



SECTION IV: REVISION LOG

Major revisions (whole numbers) represent CAST-approved changes to SE language. Minor revisions (decimals) represent minor changes to target dates or completion notes that do not affect implementer actions.

Revision	Date	Description
3.1	12/05/2019	Action 1 closed based on the MITRE avionics survey indicating 92 percent of the U.S. part 121 fleet is capable of displaying own-ship position on the ground.
3.0	09/17/2018	New SE format. Content reorganized and terminology updated. No substantive changes.
2.0	12/04/2014	Action 1 revised; due date extended from 10/31/2014 to 10/31/2019. Action 2 closed at June 2008 CAST meeting. Action 3 closed at April 2009 CAST meeting. Action 4 closed at August 2009 CAST meeting. Action 5 closed at December 2008 CAST meeting.
1.0	12/06/2007	
Original	10/04/2007	CAST adopted SE 183.

