SE 181 CAST Safety Enhancement (SE)

TAXIWAY AND RUNWAY CONFIGURATION

STUDY TOPIC
WRD
WRONG RUNWAY DEPARTURES

CICTT RISK AREAS
RE, RI, LOC–I, NAV

SECTION I

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.
SE Objective	The purpose of this SE is to determine risk factors associated with airport geometry and complexity. Airports that have multiple runway thresholds in close proximity may be a hazard that could be mitigated by physically moving the runway and/or taxiway.
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	FAA ARP	Guidance	Review and update FAA Advisory Circular 150/5300–13, to incorporate airport risk analysis to address confusing taxiway and runway geometry.	N/A
	Comments: CAST closed this action.			
Action 2	FAA ARP	Design	Develop and implement the Airport Geographic Information System for storage and maintenance of collected airport data.	N/A
	Comments: CAST closed this action.			

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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SECTION II: DETAILED ACTION INFORMATION

Action 1: Review/update FAA AC 150/5300–13 to address confusing taxiway and runway geometry

Primary Implementer	**FAA Office of the Associate Administrator for Airports (FAA ARP)**
Action Objective	FAA ARP should review and update FAA Advisory Circular 150/5300–13, Airport Design Standards, to incorporate airport risk analysis to address confusing taxiway and runway geometry.
Action Timeline	Flow Time: 12 months Due Date: N/A
Timeline/Flow for Future Adopters	N/A
CAST Lead	FAA ARP

#	Organization(s)	Detailed Steps
1a	FAA ARP	Review existing airport geometry at airports during the Airport Layout Plan review to determine conformance to FAA AC 150/5300–13, Airport Design Standards. Identify potential hazards, evaluate and mitigate risks, and document the process for followup.
	Complete.	

Notes

Note: See Section III for detailed costs and resources.

SECTION II: DETAILED ACTION INFORMATION

Action 2: Develop and implement the Airport Geographic Information System

Primary Implementer	**FAA Office of the Associate Administrator for Airports (FAA ARP)**
Action Objective	FAA ARP should develop and implement the Airport Geographic Information System (GIS) for storage and maintenance of collected airport data. The GIS ensures appropriate data is collected, processed, and made available for airport use and planning.
Action Timeline	Flow Time: 12 months Due Date: N/A
Timeline/Flow for Future Adopters	N/A
CAST Lead	FAA ARP

#	Organization(s)	Detailed Steps
2a	FAA ARP	Develop and implement Airport GIS.
	Complete.	*Website is online and actively collecting data (http:\\airports-gis.faa.gov).*

Notes

Programmatic Approach:

Product Development. This action requires validation that it will be compatible with the National Airspace System (NAS) and that it will address common threats found at complex airports.

Implementation Strategy. Once the advisory circular (AC) in Action 1 is updated, it will be distributed to all Airport District Offices (ADO) for use. The ADOs are participating in the AC update. The engineering standards address confusing airport geometry and will enable ADO engineers to evaluate those locations for planning purposes. The Airport GIS allows for the collection of accurate and approved survey data to assist in the planning of new airport geometry.

Organizational Strategy. Representatives from AAS–100 are leading committees to develop these efforts.

Implementation Activities. FAA ARP will work closely with local Airport District Offices to evaluate and incorporate risk mitigation strategies and make recommendations for improving how airport layout plans are reviewed and approved.

Note: See Section III for detailed costs and resources.

SECTION III: SUPPLEMENTAL INFORMATION

Source Study	Wrong Runway Departures Final Report (August 2007)
Related Initiatives	N/A
Total Cost	**N/A**

	Organization	Resources Needed
Direct Resource Overview – Government	N/A	N/A

	Organization	Resources Needed
Direct Resource Overview – Industry	N/A	N/A

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
2.0	09/17/2018	New SE format. Content reorganized and terminology updated. No substantive changes.
1.0	12/06/2007	
Original	2007	CAST adopted SE 181.