SCENARIO-BASED TRAINING FOR PILOTS

STUDY TOPIC WRD WRONG RUNWAY DEPARTURES CICTT RISK AREAS RE, RI,

Section I

	SECTION I: SE OVERVIEW	RE, RI, LOC-I, NAV	
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	 CAST recommends the FAA— Develop policies, procedures, and implementation guidelines for pilot training programs prevent wrong runway departures. The outcome of this work will be as follows: Establishment of risk-based wrong runway departure training programs emphasis at carrier specific airports. Training and/or standardization programs emphasizing situational awareness, state operating procedures, and pre-flight planning. Emphasis on cockpit CRM and command leadership training skills to address the operating environment faced by pilots. Guidance for prioritization in a multitasking environment to emphasize situational awareness, ground operations, and use of all resources. Substantially reduce or eliminate the risk of wrong runway operations by the incorpod wrong runway operations training into flightcrew qualification, approved training, an training programs that were initiated by SE 60. This training will increase the pilot's a recognize and avoid situations leading to wrong runway departures. 	zing issues andard dynamic al ration of d other pilot	
Primary Risks Mitigated	Runway Excursion (RE), Runway Incursion (RI), Loss of Control-Inflight (LOC–I), Navigation E	rrors (NAV)	

······································					
Action	Organization(s)	Strategy	Description	Due Date	
Action 1	FAA AFS	Guidance	Distribute information highlighting the risks/contributing factors associated with wrong runway departures for education, training, and awareness of pilots	N/A	
	Comments: CAST closed this action.				
Action 2	FAA Runway Safety Program Office	Research	Identify, compile, and make available runway and taxiway safety materials for education, training, and awareness of pilots.	N/A	
	Comments: CAST closed this action.				



SCENARIO-BASED TRAINING FOR PILOTS

SECTION I: SE OVERVIEW			CICTT RISK AREAS RE, RI, LOC–I, NAV		
Action	Organization(s)	Strategy	Description	Due Date	
Action 3	FAA AFS	Guidance	Issue guidance as necessary regarding the increased significance of ground operation performance on all pilot flight training and discussing the issues of wrong runway operations.	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.



Page 2 of 9

STUDY TOPIC

WRD WRONG RUNWAY DEPARTURES

SE 179 **SCENARIO-BASED TRAINING FOR PILOTS**

TABLE OF CONTENTS

SECTION II: DETAILED ACTION INFORMATION

SE 179 consists of three actions, which this section lays out in detail.

- Action 1 (FAA AFS).....PAGE 4 • Distribute information highlighting wrong runway departure risks/contributing factors Action 2 (Runway Safety Program Office).....PAGE 6 Identify, compile, and make available runway/ taxiway safety materials
- Action 3 (FAA AFS, CAST)PAGE 7 Issue guidance regarding the increased significance of ground operation performance

SECTION III: SUPPLEMENTAL INFORMATION

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

This section provides a history of revisions to this SE.

STUDY TOPIC

WRD

WRONG RUNWAY

DEPARTURES **CICTT RISK AREAS** RE, RI,

LOC–Í, ŃAV

PAGE 4

PAGE 8

PAGE 9

Page 3 of 9

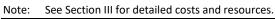


SCENARIO-BASED TRAINING FOR PILOTS

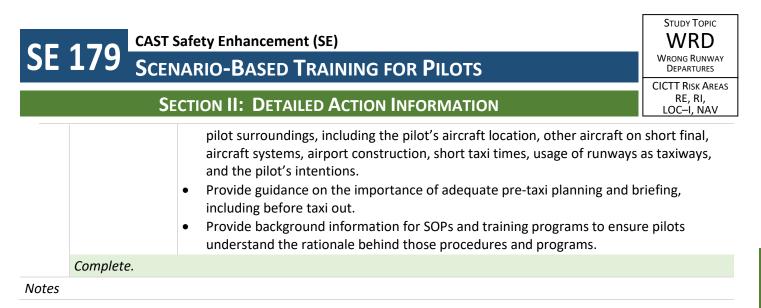
SECTION II: DETAILED ACTION INFORMATION

STUDY TOPIC WRD WRONG RUNWAY DEPARTURES **CICTT RISK AREAS** RE, RI, LOC–I, NAV

Action	1: Distrib	ute information highlighting wrong runway departure risks/contributing factors			
Primary Implementer FA		FAA Flight Standards Service, Safety Standards (AFS)			
Action Objective (SAF		AA AFS should distribute via Information for Operators (InFO) or Safety Alerts for Operators AFO) information highlighting the risks/contributing factors associated with wrong runway epartures for education, training, and awareness of pilots.			
Action	Timeline	Flow Time: 3 months Due Date: N/A			
	ne/Flow for Adopters	N/A			
CAST L	ead	FAA AFS-200			
#	Organizati	on(s) Detailed Steps			
1a	FAA AFS	Develop and distribute InFO or SAFOs.			
	Complete.				
1b	FAA AFS	 In the next revision of applicable advisory circulars (AC) (120–74A, 120–35C, and 120–51D) and written/practical test standards incorporate the following: Increase the number of surface movement tasks on all written and practical test standards. Methods to establish aircraft position using all available resources and tools (charts, air traffic control (ATC), inter/intra crew communication, electronic flight bag (EFB), or moving map). Provide guidance regarding situational awareness, including verbally announcing when a pilot is "heads down," knowledge and understanding of the relevant elements of the pilot surroundings, including the pilot's aircraft location, other aircraft on short final, aircraft systems, airport construction, short taxi times, usage of runways as taxiways, and the pilot's intentions. Provide guidance on the importance of adequate pre-taxi planning and briefing, including before taxi out. Provide background information for standard operating procedures (SOP) and training programs to ensure pilots understand the rationale behind those procedures and programs. 			
	Complete.				
1c	FAA AFS	 In the next revision of AC 91–73A and written/practical test standards incorporate the content of the InFO (subaction 1a) regarding wrong runway departures as it applies to the following: Increase the number of surface movement tasks on all written and practical test standards. Identify methods to determine aircraft position using all available resources and tools (charts, ATC, inter/intra crew communication, EFB, or moving map). Provide guidance regarding situational awareness, including verbally announcing when a pilot is "heads down," knowledge and understanding of the relevant elements of the 			









SE 179 CAST Safety Enhancement (SE) SCENARIO-BASED TRAINING FOR PILOTS

	SECTION II: DETAILED ACTION INFORMATION						
Action	2: Identify	, con	npile, and make available runway/taxiway safety materials				
Primary Implementer FAA Runway Safety Program Office							
Action Objective The FAA Runway Safety Program Office should identify and compile runway and taxiway safety Action Objective The FAA Runway Safety Program Office should identify and compile runway and taxiway safety Action Objective Defense (DOD) and make that material available for education, training, and awareness of p			epartment of				
Action	Timeline	Flow Time: 6 months					
Action	Timeline	D	Due Date: N/A				
	Timeline/Flow for Future Adopters N/S						
CAST Le	ead	ARI-1	L				
#	Organizatio	on(s)	Detailed Steps				
FAA Runway 2a Safety Program Office		•	Compile and publish an electronic reference library to be shared with industr made available on the Runway Safety Program website.	y users and			
Complete.							
Notes							



STUDY TOPIC

WRD WRONG RUNWAY DEPARTURES

SCENARIO-BASED TRAINING FOR PILOTS

STUDY TOPIC WRD WRONG RUNWAY DEPARTURES **CICTT RISK AREAS** RE, RI, LOC–I, NAV

SECTION II

Section II: Detailed Action Information				
Action 3: Issue guidance regarding the increased significance of ground operation performance				
Primary Implementer	FAA	Flight Standards Service, Safety Standards (FAA AFS)		
aviation safety inspectors Action Objective significance on ground op		AFS should issue guidance as necessary directing all Flight Standards District Offices (FSDO), tion safety inspectors (ASI), and principal operations inspectors (POI) to place increased ficance on ground operation performance on all pilot flight training and discuss the issues of ng runway operations and include those topics covered in the Information for Operators (InFO) on <u>1</u>).		
Action Timeline	Flo	ow Time: 9 months		
Action mineme	D	Due Date: N/A		
Timeline/Flow ; Future Adopter				
CAST Lead	FAA	AFS		
# Organi	zation(s)	Detailed Steps		
3a FAA AF	S	Republish Joint Flight Standards Information Bulletin (FSIB) for Aviation Transportation (FSAT 00–09) and General Aviation (FSGA 00–06) (Increased Surveillance and Testing of Surface Movement Operations) to include information included in the InFO (Action 1) without an expiration date and including a PTRS code for ASIs to document their increased surveillance and testing in these areas.		
Comple	ete.			
3b FAA AF	S	Communicate in writing to all FSDO managers and POIs the critical importance of rapid implementation with these bulletins.		
Comple	ete.			
3c CAST		Communicate in writing to all members and associated pilots the critical importance of rapid implementation with these bulletins.		
Comple	ete.			
Notes				



Note: See Section III for detailed costs and resources.

SCENARIO-BASED TRAINING FOR PILOTS

STUDY TOPIC WRD WRONG RUNWAY DEPARTURES EAS

	SCENARIO-I	BASED TRAINING FOR PILOTS	DEPARTURES
	SECTION	III: SUPPLEMENTAL INFORMATION	CICTT RISK AREA RE, RI, LOC–I, NAV
Source Study	Wrong Runway De	epartures Final Report (August 2007)	
Related Initiatives	N/A		
Total Cost	\$30,000		
Action 1	\$20,000		
Action 2	\$10,000		
<u>Action 3</u>	N/A		
	Organization	Resources Needed	
Direct Resource Overview – Government FAA AFS FAA AFS CAST members.			0
	Organization	Resources Needed	
Direct Resource Overview – Industry	N/A	N/A	
Indirect Resource	•	identified in this section are not expected to incur direct costs assoc SE, but they may incur indirect costs within their normal line of wo	
Overview	Organization	Description	
	N/A	N/A	





Page 8 of 9

SE 179 SCENARIO-BASED TRAINING FOR PILOTS

STUDY TOPIC WRD WRONG RUNWAY DEPARTURES **CICTT RISK AREAS** RE, RI, LOC–I, NAV

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	02/07/2007	
Original	2007	CAST adopted SE 179.



