



# Commercial Aviation Safety Team



## CAST Safety Portfolio for Air Navigation Service Providers

April 2020



## REVISION LOG

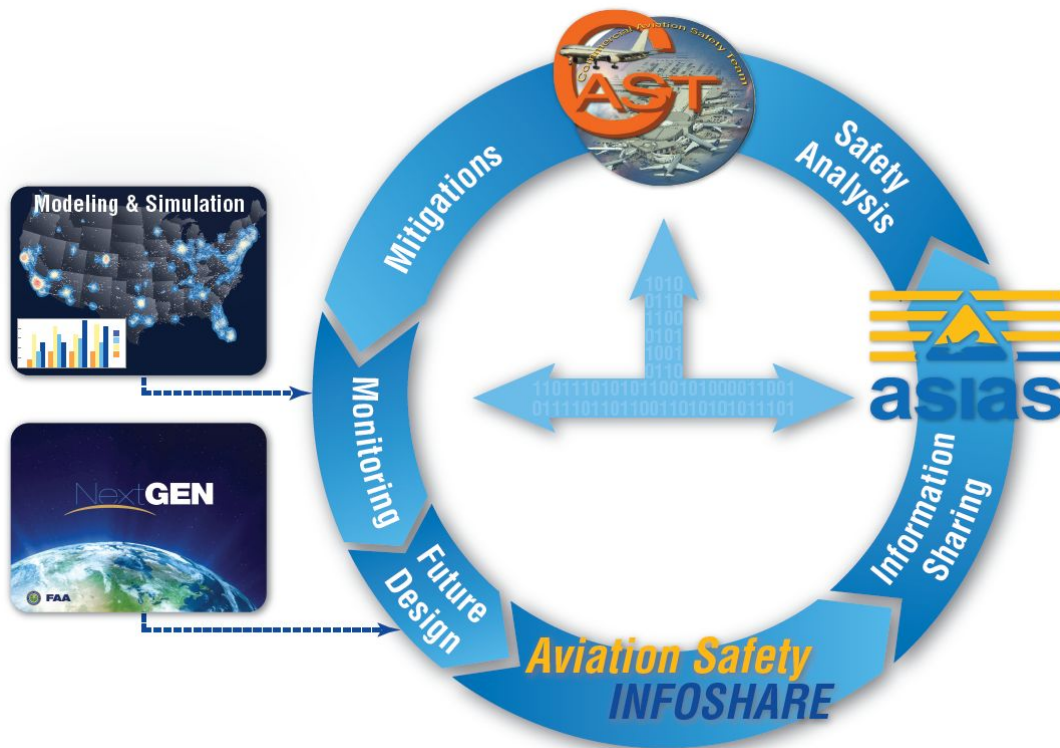
| Date       | Updates                                                                                  |
|------------|------------------------------------------------------------------------------------------|
| 02/04/2016 | SE 212 Action 2 completed and closed.                                                    |
| 06/02/2016 | SE 219 Actions 3 and 4 completed and closed.                                             |
| 08/04/2016 | No changes. SE decisions at the August 2016 CAST meeting do not affect this portfolio.   |
| 10/06/2016 | SE 215 Actions 1 and 4 completed and closed.                                             |
| 12/01/2016 | SE 213 Action 1 completed and closed.                                                    |
| 02/02/2017 | SE 215 completed.                                                                        |
| 04/06/2017 | No changes. SE decisions at the April 2017 CAST meeting do not affect this portfolio.    |
| 06/01/2017 | No changes. SE decisions at the June 2017 CAST meeting do not affect this portfolio.     |
| 08/03/2017 | SE 185 completed and closed.                                                             |
| 10/05/2017 | No changes. SE decisions at the October 2017 CAST meeting do not affect this portfolio.  |
| 12/07/2017 | SE 213 Action 3 completed and closed.<br>SE 219 completed and closed.                    |
| 02/01/2018 | SE 221 completed and closed.                                                             |
| 04/05/2018 | No changes. SE decisions at the April 2018 CAST meeting do not affect this portfolio.    |
| 06/07/2018 | No changes. SE decisions at the June 2018 CAST meeting do not affect this portfolio.     |
| 08/02/2018 | No changes. SE decisions at the August 2018 CAST meeting do not affect this portfolio.   |
| 10/04/2018 | No changes. SE decisions at the October 2018 CAST meeting do not affect this portfolio.  |
| 12/06/2018 | No changes. SE decisions at the December 2018 CAST meeting do not affect this portfolio. |
| 02/06/2019 | No changes. SE decisions at the February 2019 CAST meeting do not affect this portfolio. |
| 04/04/2019 | No changes. SE decisions at the April 2019 CAST meeting do not affect this portfolio.    |
| 06/06/2019 | No changes. SE decisions at the June 2019 CAST meeting do not affect this portfolio.     |

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|------------|------------------------------------------------------------------------------------------|
| 08/15/2019 | No changes. SE decisions at the August 2019 CAST meeting do not affect this portfolio.   |
| 10/03/2019 | SE 188 completed and closed.                                                             |
| 12/05/2019 | SE 212 completed and closed.                                                             |
| 02/06/2020 | No changes. SE decisions at the February 2020 CAST meeting do not affect this portfolio. |
| 04/02/2020 | No changes. SE decisions at the April 2020 CAST meeting do not affect this portfolio.    |

# 1. INTRODUCTION

As of April 2020, the Commercial Aviation Safety Team (CAST) has adopted 101 voluntary safety enhancements (SE), 88 completed and 13 underway. This portfolio describes the relationship the Federal Aviation Administration (FAA) has with CAST and the Aviation Safety Information Analysis and Sharing (ASIAS) system. It explains how Government and industry have worked together to voluntarily implement the SEs in the CAST Plan to improve aviation safety. This portfolio focuses on the 23 SEs in the CAST Plan with actions the FAA Air Traffic Organization (ATO) voluntarily agreed to take to continue improving aviation safety.

## CAST, ASIAS, AND INFOSHARE—A SYSTEM-WIDE SAFETY MANAGEMENT SYSTEM



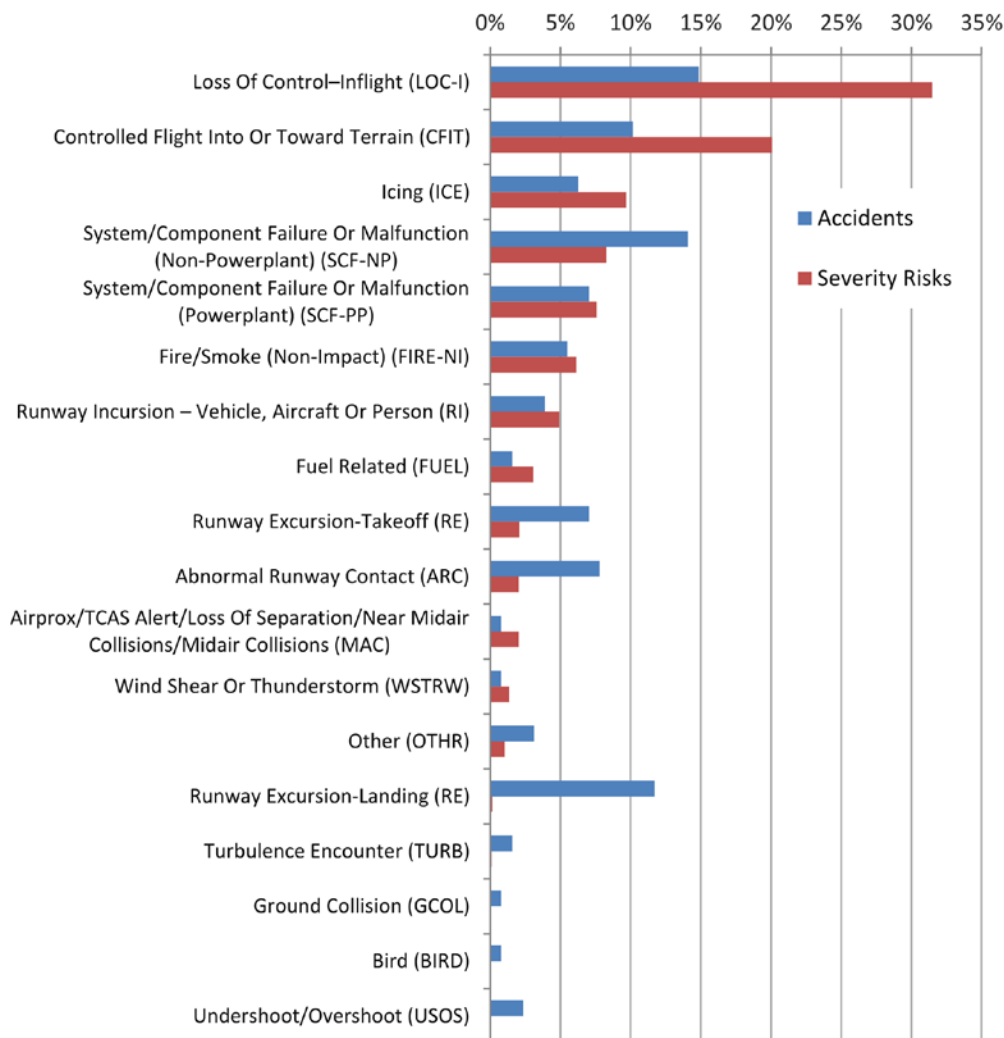
Aviation Safety InfoShare (InfoShare) is a semiannual event where air carriers and manufacturers come together in an open environment to voluntarily share safety findings and potential issues. InfoShare is a vital part of the aviation safety community.

CAST, ASIAS, and InfoShare together are part of the global Safety Management System (SMS) process. ASIAS uses all available data to study systemic issues raised at InfoShare and better understand the underlying contributing factors. When appropriate, ASIAS shares its directed studies with CAST for potential mitigation. CAST develops voluntary SEs to mitigate potential fatality risk threats. CAST also monitors implementation and effectiveness of its safety plan to ensure it is adopted in a manner consistent with the agreed-to plan and CAST goals. The ultimate goal is to generate corrective actions before new types of accidents emerge.

## CAST OVERVIEW

CAST is a Government and industry collaboration of major organizations sharing the common aviation safety mission to reduce the commercial aviation accident rate.

CAST uses an integrated, data-driven strategy to reduce the U.S. commercial aviation fatality risk<sup>1</sup> and promote new Government and industry safety initiatives throughout the world. CAST prioritizes its efforts based on historical accident risk. The following bar chart displays 1987–2011 U.S. Hull Loss and Fatal Accidents and the percent of the total for each associated contributing factor.<sup>2</sup>



<sup>1</sup> Fatality risk is the fatal accident rate computed in terms of equivalent fully fatal airplane loads. It does not include ramp or security-related fatalities. It does include cargo operations. An accident that is fatal to 50 percent of the people on board equates to a 0.50 fatality risk.

<sup>2</sup> CAST/International Civil Aviation Organization Common Taxonomy Team Aviation Occurrence Category definitions: <http://www.intlaviationstandards.org/Documents/CICTTOccurrenceCategoryDefinitions.pdf>.

CAST seeks to have industry and Government voluntarily implement the adopted SEs, which can be as effective as rulemaking, but take less time. Safety experts report the fatality risk for commercial aviation in the United States has been reduced by 83 percent from 1998 to 2008. Voluntary implementation of the CAST portfolio contributed to this reduction.

Current CAST goals include—

- Reducing the U.S. commercial aviation fatality risk by at least 50 percent from 2010 to 2025.
- Continuing to work with our international partners to reduce fatality risk in worldwide commercial aviation.

## ASIAS OVERVIEW

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The FAA created ASIAS to provide a national resource for data analysis to discover common, systemic safety problems spanning multiple aspects of the global air transportation system. ASIAS uses safety data collected from the public sector and internal FAA databases, and proprietary data from industry stakeholders (air carriers and manufacturers) to assess identified safety issues and monitor multiple data sources for potential high-risk safety vulnerabilities. Proprietary ASIAS data is governed by policies that protect the interests of the supplier(s) while allowing the broader aviation community to benefit from aggregate data analysis. Data from the public sector is available online at <http://www.asias.faa.gov>. Additional data is available on the ASIAS extranet portal after requesting an individual account through any of the following methods:

- Accessing <https://extranet.asias.faa.gov/>.
- Calling ASIAS directly at 1-800-842-8736 extension 34247.
- Emailing ASIAS directly at [ASIAS@faa.gov](mailto:ASIAS@faa.gov).

The FAA Office of Accident Investigation and Prevention (AVP) acts as a facilitator and is an available resource to FAA personnel. AVP analysts are available to assist FAA personnel with accessing proprietary ASIAS data and information beyond what is publicly available.

## PORTFOLIO LAYOUT

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This portfolio summarizes 23 of the 101 CAST voluntary SEs. This portfolio will be updated after each CAST meeting (typically every 2 months) to reflect the status of SEs in the CAST Plan. The summaries in this portfolio are intended to clearly explain each SE as it pertains to air traffic. A complete listing of all CAST SEs, in their original formatting and language, is available at the website:

[http://www.skybrary.aero/index.php/Portal:CAST\\_SE\\_Plan](http://www.skybrary.aero/index.php/Portal:CAST_SE_Plan).

Each SE may involve several actions needed from multiple sources, such as regulators, manufacturers, or air carriers, for successful implementation. This portfolio focuses on all SEs with ATO actions.

Three SEs in this portfolio are considered “underway.” Specific actions of these SEs may already be complete; however, the SE as a whole is not.

Twenty SEs in this portfolio are considered “completed.” Because CAST SEs are voluntary, the classification “completed” does not mean the SE has been implemented as specified.

Section 2 of this portfolio includes a summary of the following CAST voluntary SEs, with associated ATO actions.

| <b>Topic</b>                                                                                                  | <b>Completed</b> | <b>Underway</b> |
|---------------------------------------------------------------------------------------------------------------|------------------|-----------------|
| <a href="#"><u>SE 9: Minimum Safe Altitude Warning (MSAW)</u></a>                                             | X                |                 |
| <a href="#"><u>SE 10: Airline Proactive Safety Programs (FOQA &amp; ASAP)</u></a>                             | X                |                 |
| <a href="#"><u>SE 13: ATC Controlled Flight Into Terrain (CFIT)</u></a>                                       | X                |                 |
| <a href="#"><u>SE 46: Air Traffic Control Training</u></a>                                                    | X                |                 |
| <a href="#"><u>SE 47: Air Traffic Control Training</u></a>                                                    | X                |                 |
| <a href="#"><u>SE 53: Situational Awareness Technologies for Air Traffic Control</u></a>                      | X                |                 |
| <a href="#"><u>SE 55: Air Traffic Control Procedures</u></a>                                                  | X                |                 |
| <a href="#"><u>SE 59: Air Traffic Control Procedures</u></a>                                                  | X                |                 |
| <a href="#"><u>SE 159: Airspace Design</u></a>                                                                | X                |                 |
| <a href="#"><u>SE 165: TCAS Policies and Procedures</u></a>                                                   | X                |                 |
| <a href="#"><u>SE 176: Runway Safety Action Team Evaluations</u></a>                                          | X                |                 |
| <a href="#"><u>SE 180: Scenario-Based Training for Tower Controllers</u></a>                                  | X                |                 |
| <a href="#"><u>SE 182: Air Traffic Control Clearance Procedure Review</u></a>                                 | X                |                 |
| <a href="#"><u>SE 184: Minimum Vectoring Altitude Reevaluation</u></a>                                        | X                |                 |
| <a href="#"><u>SE 185: TAWS and RNAV Visual or Other Procedures</u></a>                                       | X                |                 |
| <a href="#"><u>SE 186: TCAS-Sensitivity Level Command</u></a>                                                 |                  | X               |
| <a href="#"><u>SE 188: Modifying Airspace Design and ATC Procedures</u></a>                                   | X                |                 |
| <a href="#"><u>SE 212: Equipment and Procedures To Improve Route Entry for RNAV Departures</u></a>            | X                |                 |
| <a href="#"><u>SE 213: Safe Operating and Design Practices for STARs and RNAV Departures</u></a>              |                  | X               |
| <a href="#"><u>SE 215: Landing Distance Assessment</u></a>                                                    | X                |                 |
| <a href="#"><u>SE 219: Policies, Procedures, and Training To Prevent Runway Excursions</u></a>                | X                |                 |
| <a href="#"><u>SE 221: Policies and Procedures to Mitigate Runway Excursion Consequences and Severity</u></a> | X                |                 |
| <a href="#"><u>SE 226: Hazardous Material Fires – Enhanced Protection of Occupants and Aircraft</u></a>       |                  | X               |

## FEEDBACK

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If you have questions or suggested changes on the utility of the information, please email your feedback to [ASIAS@faa.gov](mailto:ASIAS@faa.gov).



## 2. SAFETY ENHANCEMENTS

### SE 186: TCAS-SENSITIVITY LEVEL COMMAND (UNDERWAY)

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*This SE is underway. Aspects of this SE are being worked on and will be altered from this draft version once they are complete.*

This SE is designed to reduce the rate of unnecessary Traffic Alert and Collision Avoidance System (TCAS) alerts at high-altitude airports.

#### *Action 1*

ATO chartered a working group to conduct a study and draft a report identifying the necessary infrastructure to change the functionality of TCAS at high-altitude airports. The TCAS ASIAs Directed Study was written in December 2010, and CAST accepted the study as fulfilling this action on February 2, 2011.

#### *Action 2*

ATO reviewed the TCAS ASIAs Directed Study and developed a prioritized list of airports for implementation of TCAS Sensitivity Level Command.

Completed and closed December 1, 2011.

#### *Action 4*

Develop changes in operating practices at Denver International Airport (DEN) to reduce TCAS Resolution Advisories (RA). These changes should consider altitudes, merge points, distance between aircraft, and the potential operational impact on the traffic flow.

Through the metroplex process, ATO, Safety and Technical Training Services (AJI) and Mission Support Services (AJV) will coordinate efforts with the local Denver Terminal Radar Approach Control (TRACON) representatives, other air traffic representatives, and operators to implement a solution.

### SE 213: SAFE OPERATING AND DESIGN PRACTICES FOR STARS AND RNAV DEPARTURES (UNDERWAY)

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*This SE is underway. Aspects of this SE are being worked on and will be altered from this draft version once they are complete.*

This SE is designed to mitigate errors on Standard Terminal Arrival Routes (STAR) and RNAV departures through FAA and industry collaboration to develop and implement safe operating and design practices for these procedures.

### *Action 1*

The FAA and industry will review relevant information including recent or proposed revisions to FAA Order JO 7110.113, Procedures for Issuing Automated Clearances, and FAA Order JO 7110.65, Air Traffic Control, and the problems identified in the Joint Safety Analysis and Implementation Team (JSAIT) final report on STAR and RNAV departures.

The FAA and industry will develop guidance for each of three communities (flightcrews, air traffic service providers, and procedure/chart designers) to address common problems with a coordinated approach.

This guidance will contain a statement of problems to be addressed and an outline of commonly accepted safe operating practices relating to each of the three communities.

Completed and closed December 1, 2016.

### *Action 3*

ATO, with air carrier input, should develop commonly accepted safe operating practices for ATC of STARs and RNAV departures.

ATO should develop, review, and amend ATO training syllabuses to incorporate these practices and emphasize policies and procedures relating to STARs and RNAV departures.

Completed and closed December 7, 2017, based on release of FAA ATO training videos.

### *Action 4*

ATO, in collaboration with air carriers and industry aeronautical chart providers, should develop and implement guidance for improved safe procedure design and charting to mitigate operational errors on STAR and RNAV departures.

ATO should—

- Modify procedure design, charting, and implementation processes as needed to incorporate these practices.
- Modify training materials that reflect commonly accepted safe operating practices for procedure design and charting.

Conduct training on a recurring basis to increase awareness of the commonly accepted safe operating practices for procedure design and charting.

Completed and closed December 7, 2017, based on publication of FAA orders and follow-up plans with charting providers.

## **SE 226: HAZARDOUS MATERIAL FIRES – ENHANCED PROTECTION OF OCCUPANTS AND AIRCRAFT (UNDERWAY)**

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*This SE is underway. Aspects of this SE are being worked on and will be altered from this draft version once they are complete.*

This SE is designed to improve the outcome of accidents and incidents due to cargo fires involving hazardous materials, including lithium batteries, and to enhance the protection of occupants and aircraft, by encouraging air carriers to install the following, as feasible:

1. Crew smoke mask/oxygen systems employing a single full face mask that can accommodate glasses and is equipped with state-of-the art communications technologies;
2. Systems to maintain pilots' view of necessary flight information and, where possible, visual references outside the aircraft in dense continuous smoke conditions; and
3. A system to upload emergency route information to aircraft using Controller Pilot Data Link Communications (CPDLC).

### **Action 3**

Air carriers, in conjunction with FAA ATO and FAA AFS, will study the feasibility of implementing systems for current and anticipated aircraft in their fleet that use CPDLC to upload emergency route information to the aircraft.

## **SE 9: MINIMUM SAFE ALTITUDE WARNING (MSAW) (COMPLETED)**

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This SE is designed to improve aviation and preclude future controlled flight into terrain (CFIT) accidents by—

1. Ensuring ground-based radars and their associated byproducts provide the necessary levels of terrain avoidance protection to aircraft in all phases of flight operating in and around U.S.-controlled airports, including all domestically identified high-risk/special airports.
2. Ensuring air traffic controller MSAW training is adequate, current, uniformly conducted, and appropriate to operate and use MSAW systems.

To correct any deficiencies identified above, ATO may need to revise the documents listed in the following actions:

### **Action 3**

FAA Order JO 3120.4L,<sup>3</sup> Air Traffic Technical Training, June 22, 2005,  
<http://www.faa.gov/documentLibrary/media/Order/ND/3120-4L.pdf>

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<sup>3</sup> Revision L to this order was current at the time the SE was underway; the current version is revision P.

#### *Action 4*

FAA Order 6310.6, Primary/Secondary Terminal Radar Siting Handbook, Change 1, May 13, 1982, <http://www.faa.gov/documentLibrary/media/Order/6310.6.pdf>)

#### *Action 5*

FAA Order 6340.15, Primary/Secondary En Route Radar Siting Handbook, May 31, 1983, [http://www.faa.gov/regulations\\_policies/orders\\_notices/index.cfm/go/document.information/documentID/8969](http://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/8969))

### **SE 10: AIRLINE PROACTIVE SAFETY PROGRAMS (FOQA & ASAP) (COMPLETED)**

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This SE is designed for air carriers to develop and implement a mutually agreed upon methodology to use deidentified FOQA and ASAP information to proactively identify safety-related issues and corrective actions.

#### *Action 1*

FAA AFS and the Office of the Chief Counsel (AGC) worked with industry groups to draft and issue a notice of proposed rulemaking (NPRM) preventing use of data collected under FOQA and ASAP programs in certificate actions against the airlines or their employees. This NPRM resulted in Title 14, Code of Federal Regulations § 13.401 on May 9, 2002.

Employee groups should work with operators to draft contractual language to prevent the use of FOQA or ASAP information as a basis for disciplinary actions.

Operators worked with employee groups to develop legislative language to exempt FOQA and ASAP information from disclosure under the Freedom of Information Act of 1966 § 552 of Title 5 of the United States Code (U.S.C.) and prevent misuse of FOQA and ASAP information. This legislative language resulted in 49 U.S.C. § 44735, Limitation on Disclosure of Safety Information.

#### *Action 2*

A FOQA steering committee and ASAP policy subcommittee comprised of Government and industry representatives, endorsed by FAA, provided guidance to operators regarding the implementation of FOQA and ASAP programs (mentoring). Each steering committee was responsible for the development and establishment of standards for FOQA and ASAP programs. In addition, each steering committee documented standards for FOQA and ASAP programs.

The FAA convened a group to draft and coordinate ASAP AC 120–66B and FOQA AC 120–82. A re-draft of the ASAP AC is in production.

(See AC 120–66B, Aviation Safety Action Program (ASAP), November 15, 2002, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC120-66B.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC120-66B.pdf))

(See AC 120–82, Flight Operational Quality Assurance, April 12, 2004, [http://rgl.faa.gov/Regulatory and Guidance Library/rgAdvisoryCircular.nsf/list/AC%20120-82/\\$FILE/AC120-82.pdf](http://rgl.faa.gov/Regulatory%20and%20Guidance%20Library/rgAdvisoryCircular.nsf/list/AC%20120-82/$FILE/AC120-82.pdf))

### *Action 3*

The FAA convened a group of the referenced organizations to draft HBAT guidance regarding approval of FOQA and ASAP programs. FAA AFS was the lead organization for HBAT development.<sup>4</sup>

### *Action 4*

Air carriers and manufacturers developed a process to identify and communicate “Hot Topic” items of focus or review that could be monitored for a specific period.

Currently, ASIAs handles the sharing of trend information and corrective actions from FOQA and ASAP programs.

### *Action 5*

The Flight Safety Foundation promoted and advertised FOQA overview documentation.

Air carriers, through the FOQA Task Force, drafted and coordinated documentation outlining suggested methods and procedures regarding key components of analysis and trend identification programs and suggested items to monitor in FOQA and ASAP programs.

FAA and the National Aeronautics and Space Administration (NASA) published results of studies reviewing existing FOQA and ASAP programs and the analysis tools those programs employ.

NASA undertook studies to develop analytical tools and methods that both large and small operators could apply to FOQA and ASAP information.

## **SE 13: ATC CONTROLLED FLIGHT INTO TERRAIN (CFIT)—TRAINING (COMPLETED)**

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This SE is designed to reemphasize and/or make slight modifications to current training procedures.

### *Action 1*

ATO published an Air Traffic Bulletin (ATB) article, “Controlled Flight into Terrain (CFIT) Avoidance,” in Issue 99–3 SUMMER 1999, to improve aviation safety by reinforcing current safety alert procedures and good air traffic operating practices.

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<sup>4</sup> HBAT guidance was used when this SE was originally underway. HBAT guidance was cancelled and replaced by FAA Order 8900.1, as revised.

Through the use of ATBs, air traffic controllers now receive required initial and annual recurrent ATC CFIT training.

#### **SE 46: AIR TRAFFIC CONTROL TRAINING (COMPLETED)**

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This SE is designed to ensure training of basic ATC skills, resource management skills, situational awareness, and teamwork, through the use of high-fidelity tower simulators, memory aids, on-the-job training (OJT), and computer based instruction (CBI).

This SE will improve air traffic controllers' knowledge, skills, and proficiency through exposure to updated training programs and course curriculums. The training will support and enhance system efficiency and increase safety by fostering a higher level of air traffic controller situational awareness.

##### **Action 1**

ATO will survey nationally available resources and requirements for use of memory aids, techniques, and tools.

ATO will determine best practices by evaluating the survey findings and will distribute the best practices to the field.

##### **Action 2**

ATO developed a computer-based course, "ATC Memory Guide," to assist in supplementing memory capabilities. The computer-based course is mandatory for all ATC tower controllers. Additionally, ATO reviewed course requirements for tower controllers, revised the material, and mandated the following training:

- "Wake Turbulence," Course Number 57030, Rev. 10/2003,  
[https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57030&REV\\_DTE=10/24/2003&TYPE=COURSE](https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57030&REV_DTE=10/24/2003&TYPE=COURSE);
- "Preventing Runway Incursions," Course Number 57061, Rev. 10/2003,  
[https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57061&REV\\_DTE=10/24/2003&TYPE=COURSE](https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57061&REV_DTE=10/24/2003&TYPE=COURSE);
- "Situational Awareness (Tower)," Course Number 57062, Rev. 10/2003,  
[https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57062&REV\\_DTE=10/24/2003&TYPE=COURSE](https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57062&REV_DTE=10/24/2003&TYPE=COURSE);
- "Reducing Runway Incursions Tower Communications," Course 12 Number 57063, Rev. 10/2003,  
<https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57063>; and
- "Runway Separation Minima," Course Number 57093, Rev. 10/2003,  
[https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57093&REV\\_DTE=10/24/2003&TYPE=COURSE](https://www.academy.jccbi.gov/catalog/courseDetail.asp?CID=FAA57093&REV_DTE=10/24/2003&TYPE=COURSE).

### **Action 3**

ATO will analyze and modify as necessary current course curriculums for tower controllers to ensure emphasis on scanning techniques, anticipated separation, and prioritization of control actions.

## **SE 47: AIR TRAFFIC CONTROL TRAINING (COMPLETED)**

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This SE is designed to increase teamwork in the tower cab environment by all tower controllers receiving a course similar to crew resource management (CRM) for pilots.

### **Action 1**

ATO required all tower controllers to complete “Air Traffic Teamwork Enhancement” training. This training was conducted in 2003 under FAA99846, AIR TRAFFIC TEAMWORK ENHANCEMENT TRAINING.

## **SE 53: SITUATIONAL AWARENESS TECHNOLOGIES FOR AIR TRAFFIC CONTROL (COMPLETED)**

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This SE is designed to develop and implement technology tools including data link that will provide and/or enhance airport surface situational awareness for air traffic controllers.

### **Action 1**

The FAA is developing an airport surface technology roadmap that includes sensor systems, display systems, and communications systems. This roadmap should be consistent with future updates of the National Airspace System (NAS) Architecture Plan (current version 4.0).

The FAA should define the operations for surface movement in accordance with the Operational Evolution Plan (OEP) released in June 2001.

The FAA and industry should continue their collaboration in implementing the key elements of the airport surface modernization roadmap as outlined in the RTCA, Inc., document “Government/Industry Operational Concept for the Evolution of Free Flight, Addendum 3.1: Surveillance.”

## **SE 55: AIR TRAFFIC CONTROL PROCEDURES (COMPLETED)**

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This SE is designed to substantially reduce runway incursions and improve aviation safety through the use of nationally standardized procedures that focus on situational awareness in the control tower.

### **Action 1**

ATO will review applicable ATC procedures and implement national standardized requirements for tower positions to ensure uniform, effective, and sustained situational awareness practices relating to surface operations. The implementations will be made to eliminate unnecessary distractions in the operating quarters.

The Office of Runway Safety incorporated this SE into its 2002–2003 Runway Safety Blueprint (Objective 3.2). Objective 3.2 of the Runway Safety Blueprint was closed in December 2002, thus closing SE 55.

The national situational awareness requirements are outlined in FAA Order JO 7210.3Z, Facility Operation and Administration, Change 2, November 10, 2016, <https://www.faa.gov/documentLibrary/media/Order/7210.3Z.pdf>.

## **SE 59: AIR TRAFFIC CONTROL PROCEDURES (COMPLETED)**

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This SE is designed to ensure a clear understanding of specific control instructions through the use of mandatory readbacks of any clearance to enter a specific runway; hold short of a specific runway; or “taxi into position and hold” (TIPH)<sup>5</sup> instructions.

### **Action 1**

ATO will require a readback for control instructions to enter a specific runway and to hold short of specific runway, and for all taxi-into-position and hold instructions.

Regulators will initiate the regulatory and procedural process to require pilots to read back (1) any clearance to enter a specific runway, (2) any instructions to hold short of a specific runway, or (3) TIPH instructions.

The FAA issued the following to ensure readback of all ATC instructions or clearances in the above three specific areas:

- AC 120–74B, Parts 91, 121, 125, and 135 Flightcrew Procedures During Taxi Operations, July 30, 2012, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC%20120-74B.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%20120-74B.pdf), and
- AC 91–73B, Parts 91 and 135 Single Pilot, Flight School Procedures During Taxi Operations, July 30, 2012, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC%2091-73B.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%2091-73B.pdf).

(See the Aeronautical Information Manual, October 12, 2017, for ATC readback requirements. [https://www.faa.gov/air\\_traffic/publications/media/AIM\\_Basic\\_dtd\\_10-12-17.pdf](https://www.faa.gov/air_traffic/publications/media/AIM_Basic_dtd_10-12-17.pdf))

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<sup>5</sup> “Taxi Into Position and Hold” was the phraseology when SE 59 was underway, and has since been replaced by “Line Up and Wait” operations in FAA Order N JO 7210.754, Line Up and Wait (LUAW) Operations, September 30, 2010, <http://www.faa.gov/documentLibrary/media/Notice/N7210.754.pdf>, now incorporated in FAA Order JO 7210.3, as revised.

## **SE 159: AIRSPACE DESIGN (COMPLETED)**

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This SE is designed to prevent midair collisions by improving the depiction of Class B airspace on VFR charts and reviewing the process for adequate and timely coordination of airspace design changes.

### ***Action 1***

In October 2009, ATO submitted a charting recommendation to the Government/Industry Aeronautical Charting Forum recommending changes to enhance the recognizability of Class B airspace, VFR checkpoints, and transition route symbols.

ATO coordinated with the Aircraft Owners and Pilots Association (AOPA) to review existing charts, and identified issues and corrective actions regarding multiple angles and clutter.

ATO will continue to publish improved charts in accordance with the standard chart issuance schedule.

### ***Action 2***

ATO will review the existing airspace design change process and ensure adequate and timely coordination of changes with all airspace users.

ATO will coordinate with airspace branch managers from all three service areas.

ATO reviewed FAA Order JO 7400.2, Procedures for Handling Airspace Matters, to ensure adequate and timely coordination and notification of airspace design changes with all airspace users. ATO implemented modifications identified during its review and published FAA Order JO 7400.2J.

(See FAA Order JO 7400.2J,<sup>6</sup> August 22, 2013,  
<http://www.faa.gov/documentLibrary/media/Order/AIR.pdf>)

## **SE 165: TCAS POLICIES AND PROCEDURES (COMPLETED)**

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This SE is designed to prevent midair collisions by encouraging air carriers to require flightcrews to follow TCAS RA, even in the presence of contravening ATC instructions. It also establishes recommended procedures for TCAS range setting, and recommends TCAS capable simulators and flight training devices be used for training TCAS responses and maneuvers.

### ***Action 1***

ATO reinforced and strengthened guidance in AC 120–55B for flightcrew compliance with TCAS RAs, even in the presence of contravening ATC instructions.

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<sup>6</sup> Revision K to this order became effective July 24, 2014:  
[https://www.faa.gov/documentLibrary/media/Order/7400.2K\\_w\\_Chg1\\_dtd\\_7-24-14.pdf](https://www.faa.gov/documentLibrary/media/Order/7400.2K_w_Chg1_dtd_7-24-14.pdf)

(The above AC has been updated. See AC 120–55C, Air Carrier Operational Approval and Use of TCAS II, Change 1, February 23, 2011, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_120-55C\\_CHG\\_1.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_120-55C_CHG_1.pdf))

ATO revised FAA Order JO 7110.65 to reflect guidance material with full consideration of Annex 2 to the Convention on International Civil Aviation, Chapter 3, General Rules, Tenth Edition, July 2005.

(See FAA Order JO 7110.65W, Air Traffic Control, December 10, 2015, <http://www.faa.gov/documentLibrary/media/Order/ATC.pdf>)

## **SE 176: RUNWAY SAFETY ACTION TEAM EVALUATIONS (COMPLETED)**

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This SE is designed to incorporate the findings from the Wrong Runway Departures report including the Part 139 Airport Threat Assessment into the Runway Safety Action Team (RSAT) process to enable the identification of contributing factors and threats in the airport environment that have led to wrong runway departures.

An RSAT is established at either the regional or local level to develop a Runway Safety Action Plan for a specific airport. The RSAT's primary purpose is to address existing runway safety problems and issues. The RSAT's secondary purpose is to identify and address potential runway safety issues.

As identified in the Wrong Runway Departures report, a coordinated effort involving representatives from regional flight standards, air traffic, airports, airway facilities, user groups, airport authorities, and NAS implementation divisions offers the most effective solution to preventing wrong runway departures.

The RSAT evaluations are a very effective method for the FAA, industry, and airport operators to proactively identify areas at airports that need improvement and propose mitigations. The contributing factors and threats in the airport environment identified in the Wrong Runway Departures report have a close correlation to runway incursion contributing factors. Some mitigation strategies will need to be airport-specific solutions, and the RSAT teams provide an opportunity for localized expertise to be leveraged in developing solutions.

### ***Action 1***

ATO will provide regional and local RSAT teams with the findings from the Wrong Runway Departures report and will include a copy of the report in the RSAT materials provided to each member of the regional/local teams.

(See Wrong Runway Departures, July 2007, [http://www.cast-safety.org/pdf/asias\\_wrong\\_rwy\\_report\\_2007.pdf](http://www.cast-safety.org/pdf/asias_wrong_rwy_report_2007.pdf))

## **Action 2**

ATO will incorporate the Part 139 Airport Threat Assessment into the airport selection process for RSAT evaluations and provide regional and local Runway Safety Program managers with a copy of the Part 139 Airport Threat Assessment report.

All RSAT teams have received and incorporated both documents into their airport environments evaluation process.

## **SE 180: SCENARIO-BASED TRAINING FOR TOWER CONTROLLERS (COMPLETED)**

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This SE is designed to ensure training for controllers to gain knowledge of precursors to wrong runway departures events.

### **Action 1**

All tower controllers will complete training that emphasizes contributing factors that have led to wrong runway departures and effective mitigation strategies that may be used by controllers. The training will focus on operations in complex airports, airport geometry, communications, taxi/departure clearances, understanding and managing fatigue and time pressures, TIPH, and situational awareness, as described in the Wrong Runway Departures report.

(See Wrong Runway Departures, July 2007, [http://www.cast-safety.org/pdf/asias\\_wrong\\_rwyr\\_report\\_2007.pdf](http://www.cast-safety.org/pdf/asias_wrong_rwyr_report_2007.pdf))

ATO will ensure all tower controllers complete the training, which emphasizes contributing factors that have led to wrong runway departures and effective mitigation strategies that may be used.

## **SE 182: AIR TRAFFIC CONTROL CLEARANCE PROCEDURE REVIEW (COMPLETED)**

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This SE is designed for ATC to conduct a review of the procedure for clearances that specify all runways to be crossed before reaching the departure runway and restrict early takeoff clearances when flightcrews must cross multiple runways before reaching the departure runway.

In addition, the FAA TIPH<sup>7</sup> policy should be reviewed for appropriate limits or prohibition depending on airport characteristics.

Any policy change will have to take into consideration any impact on airport capacity.

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<sup>7</sup> TIPH was replaced by Line Up and Wait (LUAW) operations in 2010. TIPH was current when this SE was underway.

### **Action 1**

ATO will require each tower facility to evaluate potential changes to the policy and procedures specific to the local airport environment for issuance of early takeoff clearances as applicable that require the crossing of multiple runways before reaching the departure runway.

ATO will develop effective mitigation strategies to reduce wrong runway departures where ATC clearances were a contributing factor. All changes will take into consideration the impact on airport capacity.

### **Action 2**

ATO reviewed the TIPH policy for appropriate limits or prohibition depending on airport characteristics.

(See Taxi into Position and Hold (TIPH)—Guidance for Pilots

<https://www.faa.gov/files/gslac/library/documents/2007/Feb/14277/TIPH%20info%200705.pdf>)

ATO required each tower facility to evaluate the policy and procedures for issuing TIPH depending upon specific runway operations.

ATO implemented procedures to provide progressive taxi instructions to all aircraft, and to prohibit issuing a takeoff clearance until the aircraft has crossed all intersecting runways.

(See FAA Order JO 7110.65W, Air Traffic Control, Change 2, November 10, 2016,

[https://www.faa.gov/documentLibrary/media/Order/7110.65\\_ATC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7110.65_ATC_Chg_2_dtd_11-10-16.pdf))

ATO also established procedures requiring each facility to consider the risks identified in the Wrong Runway Departures report before authorizing TIPH clearances.

(See FAA Order JO 7210.3Z, Facility Operation and Administration, December 10, 2015,

<https://www.faa.gov/documentLibrary/media/Order/7210.3Z.pdf>, and Wrong Runway Departures, July 2007, [http://www.cast-safety.org/pdf/asias\\_wrong\\_rwyr\\_report\\_2007.pdf](http://www.cast-safety.org/pdf/asias_wrong_rwyr_report_2007.pdf))

## **SE 184: MINIMUM VECTORING ALTITUDE REEVALUATION (COMPLETED)**

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This SE is designed to reevaluate minimum vectoring altitudes (MVA) at prioritized sites identified in the CAST TAWS study to reduce the number of TAWS alerts.

### **Action 2**

ATO conducted a study of MVA at prioritized sites identified in the CAST TAWS study.

FAA Associate Administrator, Air Traffic Organization (ATO-1) directed appropriate air traffic facilities to use ASIAs to accomplish a study of MVAs at prioritized sites identified in the CAST TAWS study.

ATO identified MVAs for modification based upon the evaluation.

### **Action 3**

Based on the results of the study, ATO implemented the MVA changes identified by the MVA evaluation.

Affected FAA air traffic facilities implemented the MVA changes in a prioritized manner as soon as practicable.

ATO immediately took action and issued a notice for all managers around the country to evaluate their MVAs when JIMDAT identified an issue with the MVA procedures. The study and all associated changes to MVAs were completed in 2009.

## **SE 185: TAWS AND RNAV VISUAL OR OTHER PROCEDURES (COMPLETED)**

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This SE is designed to reduce terrain awareness warning system (TAWS) alerts and provide better clearance from terrain by providing Area Navigation (RNAV) Visual Flight Procedures or other procedures to mitigate known TAWS and terrain issues.

### **Action 1**

ATO and the Flight Standards Service (AFS) Flight Technologies and Procedures Division (AFS-400) will develop a process and tools for evaluation of RNAV Visual Flight Procedures and other procedures that reduce unnecessary terrain alerts while maintaining adequate terrain clearance.

ATO and AFS-400 will incorporate the ability to evaluate TAWS occurrence rates into their procedure development tools.

Completed and closed September 30, 2011. Superseded by Action 4.

### **Action 4**

Inventory all recently developed or scheduled improvements at identified hotspot airports [airports with at least 3 TAWS warning events and a rate greater than 5 per 100,000 flights within the previous 12 months]. This inventory will include all FAA ATO Instrument Approach Procedures (IAP) commissioned within the previous 6 months or proposed to be commissioned in the next 15 months and air carrier-implemented RNAV Visual approach flight procedures over the same time period. Timeframes may be adjusted for the review windows as appropriate.

If new procedures were commissioned or are proposed, other SE 185 teams will measure the effectiveness of the new procedures for reducing TAWS warnings. If no new procedures were commissioned or are proposed, other SE 185 teams will work with a lead carrier to develop RNAV Visual approach flight procedures. See the SE 185 Detailed Implementation Plan for additional details.

Completed and closed August 3, 2017, because TAWS warnings have decreased at all airports being monitored under this SE; JIMDAT will continue to monitor TAWS alerts and will work with air carriers to develop RVFP as needed.

## **SE 188: MODIFYING AIRSPACE DESIGN AND ATC PROCEDURES (COMPLETED)**

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This SE is designed to reduce the rate of TCAS alerts by implementing new or modified air traffic control (ATC) procedures and airspace design processes. The SE will reduce or eliminate the number of TCAS alerts between instrument flight rules (IFR) and visual flight rules (VFR) traffic operating at current air traffic separation standards by adjusting the lateral or vertical distance between planned IFR and VFR traffic.

### ***Action 1***

Using ASIAs data, develop a prioritized list of locations where changes in existing ATC procedures and/or airspace design could provide the changes necessary to minimize the interaction between IFR and VFR traffic.

Completed and closed February 28, 2011.

### ***Action 2***

Complete a safety validation using the prioritized list completed in Action 1 reviewing the impact of the necessary airspace and procedural changes.

Completed and closed February 28, 2013.

### ***Action 3***

ATO organized an Optimization of Airspace and Procedures in the Metroplex (OAPM) team to develop an implementation plan for changes in the existing procedures and/or airspace design to minimize the interaction between IFR/VFR traffic at prioritized locations.

As of December 2012, ASIAs maintained collaboration with OAPM to ensure the team had safety data for its redesign efforts.

As of April 2013, ATO agreed to coordinate with ASIAs to use the TCAS Emulator Tool to further work on Action 3.

Completed and closed February 28, 2014.

### ***Action 4***

ATO developed an OAPM workgroup charter for a team to complete a study and determine how current airspace design and alteration processes and procedures could be modified to minimize the impact on TCAS alerting for future airspace design.

CAST approved the OAPM workgroup charter.

The Joint Implementation Measurement Data Analysis Team (JIMDAT) provided the OAPM workgroup the digital signature of TCAS issues identified in the ASIAs TCAS Directed Study.

The OAPM workgroup drafted modifications to the current airspace design/change procedures and presented recommended modifications to CAST for approval.

Completed and closed December 31, 2011.

#### **Action 5**

ATO and AFS will conduct a study to implement processes and procedures to minimize the impact on TCAS alerting during future airspace design or alteration of air traffic procedures.

ASIAS continues collaboration with OAPM to conduct studies and to ensure the team has safety data for its redesign efforts.

As of July 30, 2012, Aerospace studies were completed in Washington, DC; north Texas; Charlotte, NC; northern and southern California; Houston, TX; Atlanta, GA; south-central Florida; and Phoenix, AZ.

Two TCAS hotspot areas studies were conducted in southern California and New York.

Final implementation for all areas is scheduled for the fourth quarter of 2017.

Completed and closed December 31, 2013.

#### **Action 6**

ATO should monitor metroplex progress through the collaborative OAPM/ASIAS dashboard to evaluate if the CAST-identified risk areas were mitigated.

Completed and closed October 3, 2019.

### **SE 212: EQUIPMENT AND PROCEDURES TO IMPROVE ROUTE ENTRY FOR RNAV DEPARTURES (COMPLETED)**

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This SE is designed to reduce the frequency of crew errors during initial flight management system (FMS) programming of departure routes. Air carriers should take steps to address issues concerning pre-departure clearances (PDC) and pre-departure route changes.

#### **Action 1**

ATO should coordinate with air carrier dispatch organizations to review and update procedures to minimize the changes by ATC to the filed routing.

To improve the likelihood that air carrier dispatch files a route that is not changed in the cleared route of flight, ATO should ensure that published departure routes are updated and used to issue PDC.

Completed and closed June 2, 2015.

### **Action 2**

ATO should update and standardize the format of guidance for PDC in FAA Order JO 7110.113D, Procedures for Issuing Automated Clearances, with input from air carrier dispatch organizations.

Completed and closed February 4, 2016. FAA Order JO 7110.113E was published in April 2015.

### **Action 3**

ATO should implement tower ability to provide DataComm Clearance Delivery (DCL).

Completed and closed December 5, 2019, based on implementation at 65 airports as of 2019. CAST will continue to monitor airport and operator implementation.

## **SE 215: LANDING DISTANCE ASSESSMENT (COMPLETED)**

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This SE is designed to improve flightcrew awareness of their landing distance margin and the factors and variables that can affect those margins.

### **Action 1**

AFS developed guidance material incorporating the Takeoff and Landing Performance Assessment (TALPA) Aviation Rulemaking Committee (ARC) recommendations addressing procedures for conducting a landing distance assessment. Manufacturers are providing AFS a standardized set of landing distance performance data, which will support the new landing distance calculation standard as defined by the guidance material.

(See AC 71–79A Chg 1, SAFO 16009, FAA Notice N8900.374, and FAA Notice N8900.375.)

Completed and closed October 6, 2016.

### **Action 4**

ATO AJV modified ATC procedures and training to implement standardized braking action terminology in accordance with the recommendations of the TALPA ARC and in coordination with AFS guidance material from Action 1.

To implement the recommendations of the TALPA ARC, AJV published revisions to FAA Order JO 7110.10, FAA Order JO 7110.65, FAA Order JO 7210.3, the Aeronautical Information Manual, the United States of America Aeronautical Information Publication, and the Pilot/Controller Glossary.

Completed and closed October 6, 2016.

## SE 219: POLICIES, PROCEDURES, AND TRAINING TO PREVENT RUNWAY EXCURSIONS (COMPLETED)

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This SE is designed to reduce the risk of runway excursion accidents through the development or modification by ATO of policies, procedures, and training related factors that contribute to the risk of runway excursions.

### *Action 1*

AFS-400 will establish tailwind and crosswind maximums by revising FAA Order 8400.9, National Safety and Operational Criteria for Runway Use Programs, by conducting an Operational Safety Assessment (OSA) that considers the impact of procedural changes that would require air traffic controllers to change an airport's configuration when tailwind conditions exceed the following:

- Three knots (including gusts) if the runway is contaminated and the available runway length is less than 8,000 feet long,
- Five knots (including gusts) if the runway is contaminated and the available runway length is greater than 8,000 feet long,
- Ten knots (including gusts) if the runway is not contaminated (that is, wet or dry).

Upon completion of the OSA, ATO Air Traffic Services (AJT) should develop procedural changes for all towered air traffic facilities either through—

- Revised procedures within FAA Order JO 7210.3, Facility Operation and Administration, and/or FAA Order JO 7110.65, Air Traffic Control, establishing a local team of aviation stakeholders to develop a runway use program using the guidance set forth above, or
- Approved waivers with documented safety assessments for airports where implementing the maximums outlined above may result in an adverse impact.

ATO should track implementation and report progress and completion to JIMDAT and CAST.

(See FAA Order 8400.9, National Safety and Operational Criteria for Runway Use Programs, <http://www.faa.gov/documentLibrary/media/Order/8400-9.pdf>)

(See FAA Order JO 7210.3Z Facility Operation and Administration, Change 2, November 10, 2016, [https://www.faa.gov/documentLibrary/media/Order/7210.3\\_FAC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7210.3_FAC_Chg_2_dtd_11-10-16.pdf))

(See FAA Order JO 7110.65W, Air Traffic Control, Change 2, November 10, 2016, [https://www.faa.gov/documentLibrary/media/Order/7110.65\\_ATC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7110.65_ATC_Chg_2_dtd_11-10-16.pdf))

Completed and closed December 7, 2017, based on preparation of several FAA orders that establish Runway Selection Safety Teams to determine local criteria for airport configuration.

## *Action 2*

ATO AJV should consider revising FAA Order JO 7110.65, Air Traffic Control, and/or FAA Order JO 7210.3, Facility Operation and Administration, to clarify that air traffic controllers should report the most adverse wind information available from wind sensors specifically associated with the intended arrival/departure runway, when multiple wind sources are available. ATO should review current wind reporting procedures and practices and available wind sensor information to make a determination of feasibility of the revision.

If revisions are implemented, ATO should coordinate with FAA Office of Airports (ARP), National Air Traffic Controllers Association (NATCA), and Airports Council International–North America (ACI–NA) to perform a gap analysis of airport wind measurement and reporting instrumentation for capability to support updated wind reporting procedures and develop an implementation plan to close gaps.

ATO should track implementation and report progress and completion to the JIMDAT and CAST.

(See FAA Order JO 7210.3Z Facility Operation and Administration, Change 2, November 10, 2016, [https://www.faa.gov/documentLibrary/media/Order/7210.3\\_FAC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7210.3_FAC_Chg_2_dtd_11-10-16.pdf))

(See FAA Order JO 7110.65W, Air Traffic Control, Change 2, November 10, 2016, [https://www.faa.gov/documentLibrary/media/Order/7110.65\\_ATC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7110.65_ATC_Chg_2_dtd_11-10-16.pdf))

Completed and closed December 7, 2017, based on preparation of several FAA orders that establish Runway Selection Safety Teams to determine local criteria for airport configuration.

## *Action 3*

ATO AJI, in cooperation with NATCA and in consultation with AFS, FAA Aircraft Certification Service (AIR), and industry should develop and implement training for air traffic controllers on the following significant factors that can contribute to the risk of runway excursions:

- Adverse winds effects, including but not limited to—
  - Tailwind effects on airplane ground speed at touchdown and associated stopping distance;
  - Tailwind effects on airplane handling characteristics and contribution to float and long landing; and
  - Crosswind effects on airplane lateral control in the air and directional control on the runway, particularly when combined with wet or contaminated runway conditions.
- Runway surface conditions, including but not limited to—
  - The effect of wet and contaminated runway conditions on airplane braking capabilities and the nonlinear increase in stopping distance associated with decreasing friction; and
  - The importance of providing pilot reports of runway surface condition to departing or approaching airplanes from airplanes of similar size, weight, and configuration.

- Unstable approach factors, including but not limited to—
  - Air traffic controller understanding of generally applicable approach gates that facilitate stable approaches (for example, “10,000 ft and 250 kts @ 30 nm from the airport”);
  - Holding airplanes high or fast until late in the approach to facilitate air traffic flow into airports;
  - Arrivals with multiple speed and altitude crossing restrictions and their impact on flightdeck workload and airplane performance; and
  - Late clearances or runway changes and their impact on flightcrew planning and use of automation in executing approaches.

ATO should track implementation and report completion to JIMDAT and CAST.

Completed and closed April 7, 2016.

#### **Action 4**

ATO should encourage reporting by both flightcrews and air traffic controllers of approach procedures where flightcrews often refuse clearances, and periodically review the resulting data to identify and correct potential systemic issues with those approaches.

Completed and closed June 2, 2016.

### **SE 221: POLICIES AND PROCEDURES TO MITIGATE RUNWAY EXCURSION CONSEQUENCES AND SEVERITY (COMPLETED)**

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This SE is designed to reduce the consequence of runway excursion events. Airport operators and ARP should modify policies and procedures regarding the following:

- Improvement of runway safety areas, including but not limited to, implementation of Engineered Materials Arresting System (EMAS), as appropriate; and
- Improved communication between ATC, flightcrews, and aircraft rescue and firefighting (ARFF) personnel after a runway excursion occurs.

#### **Action 2**

ATO AJT will direct all tower facility managers to review their letters of agreement (LOA) that involve Airport Emergency Plans, as required by FAA Order JO 7210.3, Facility Operation and Administration, to consider the following to aid in airport emergency response:

- Include possible use of a common, dedicated emergency radio frequency, for communication between air traffic controllers, ARFF response personnel, and flightcrews involved in an accident, as recommended by Advisory Circular (AC) 150/5210-7D, Aircraft Rescue and Fire Fighting Communications, and

- Effective communication of an accident location on the airport property—including recommended use of airport grid maps as described in AC 150/5200–31C, Airport Emergency Plan—to minimize time needed for ARFF to reach the scene.

ATO will track implementation and report to JIMDAT and CAST.

Completed and closed December 3, 2015.

(See FAA Order JO 7210.3Z Facility Operation and Administration, Change 2, November 10, 2016, [https://www.faa.gov/documentLibrary/media/Order/7210.3\\_FAC\\_Chg\\_2\\_dtd\\_11-10-16.pdf](https://www.faa.gov/documentLibrary/media/Order/7210.3_FAC_Chg_2_dtd_11-10-16.pdf))

(See AC 150/5210–7D, Aircraft Rescue and Fire Fighting Communications, April 14, 2008, [http://www.faa.gov/documentLibrary/media/advisory\\_circular/150-5210-7D/150\\_5210\\_7d.pdf](http://www.faa.gov/documentLibrary/media/advisory_circular/150-5210-7D/150_5210_7d.pdf))

(See AC 150/5200–31C, Airport Emergency Plan, June 19, 2009, [http://www.faa.gov/documentLibrary/media/Advisory\\_Circular/150\\_5200\\_31c.pdf](http://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5200_31c.pdf))