

WHITE HOUSE COMMISSION ON AVIATION SAFETY AND THE NATIONAL CIVIL AVIATION REVIEW COMMISSION (NCARC)



1.1 ... Reduce Fatal Accident Rate ...



- •... Strategic Plan to Improve Safety ...
- •... Improve Safety Worldwide ...

CAST BRINGS TOGETHER KEY STAKEHOLDERS TO COOPERATIVELY DEVELOP AND IMPLEMENT A PRIORITIZED SAFETY AGENDA.



CAST GOAL

- CAST came together in 1997 to form an unprecedented industry-Government partnership.
 - Voluntary commitments, data-driven risk management, implementation-focused.
 - Goal:
 - Original
- Reduce the US commercial aviation fatal accident rate 80% by 2007.

83%

New Reduce the U.S. commercial aviation fatality risk by at least 50% from 2010 to 2025.



CAST SAFETY STRATEGY





RESOURCE COST VS. RISK REDUCTION



COST SAVINGS



Part 121 Aviation Industry Cost Due to Fatal/Hull Loss Accidents





STUDY PRIORITIZATION (FLEET RISK)





CAST – SAFETY ENHANCEMENTS





SAFETY PORTFOLIO MONITORING



SE	Title	Output	Lead Organization	Due Date
SE 127	Cargo - Cargo Fire Management	Output 5	JIMDAT	8/31/2017
SE 186	TCAS - Sensitivity Level Command	Output 4	FAA AJI	12/31/2017
SE 199	ASA - Training - Enhanced Crew Resource Management Training	Output 2	A4A	8/31/2017
SE 213	RNAV - Safe Operating and Design Practices for STARs and RNAV Departures	Output 2	FAA AFS/A4A	8/31/2017
SE 213	RNAV - Safe Operating and Design Practices for STARs and RNAV Departures	Output 3	FAA ATO	8/31/2017
SE 213	RNAV - Safe Operating and Design Practices for STARs and RNAV Departures	Output 4	FAA ATO	8/31/2017
SE 217	RE - Airline Operations and Training - Takeoff Procedures and Training	Output 2	A4A	7/31/2017
SE 218	RE - Design - Overrun Awareness and Alerting Systems	Output 3	A4A	6/30/2017
SE 219	RE - Air Traffic Operations - Policies, Procedures, and Training to Prevent Runway Excursions	Output 1	FAA ATO	6/30/2017
SE 219	RE - Air Traffic Operations - Policies, Procedures, and Training to Prevent Runway Excursions	Output 2	FAA ATO	6/30/2017
SE 227	TOMC - Air Carrier Procedures for Takeoff Configuration	Output 1	A4A	4/30/2017
SE 227	TOMC - Air Carrier Procedures for Takeoff Configuration	Output 3	FAA AFS-200	8/1/2017
SE 227	TOMC - Air Carrier Procedures for Takeoff Configuration	Output 4	AIA	4/30/2017
SE 228	TOMC - Airplane Design Features to Facilitate Proper Takeoff Configuration	Output 1	AIA	10/31/2017
SE 229	TOMC - Takeoff Configuration Warning System Maintenance and Operational Assurance	Output 1	AIA	10/31/2017

FATALITY RISK (EQUIVALENT FULL PLANELOADS)



CAST PORTFOLIO ASSESSMENT – CARGO OPERATIONS Implementation & Effectiveness

Fatal accidents review (6):

- Four accidents with common causal factors with passenger operations
- Two accidents with causal factors specific to all cargo operations
- Distinctions between cargo and passenger operations:
 - Operating environment
 - Logistics/support infrastructure
- Key Government and industry initiatives underway:
 - Cargo Focus Team
 - Loadmaster Certification Working Group
 - Cargo Ops Spec development
 - ► AC 120-85A being revised



CAST Deployed SEs Applicable to Cargo Accidents



Safety Enhancement	Air Tahoma 08/13/2004 FUEL	USA Jet 07/06/2008 CFIT	FedEx 03/23/2009 ARC	UPS 09/03/2010 F–NI	National Air 04/29/2013 RAMP	UPS 08/14/2013 CFIT
2. CFIT SOPs - One Project		\checkmark				\checkmark
3. CFIT PAI-Vertical Angles (PAI 1-7, 11)						\checkmark
10. CFIT Proactive Safety Programs (FOQA + ASAP)					\checkmark	\checkmark
11. CFIT CRM Training	\checkmark	\checkmark				\checkmark
12. CFIT Prevention Training - One Project						\checkmark
14. ALAR Policies (Safety Culture)-CEO and DOS more visible (1-2)					\checkmark	
15. ALAR Policies (Safety Culture)-Safety info into manuals (3)					\checkmark	
23. ALAR Flight Crew Training - One Project						\checkmark
26. LOC Policies and Procedures - SOP - One Project		\checkmark				\checkmark
27. LOC Policies and Procedures - Risk Assessment and Management - One Project						
29. LOC Policies and Procedures - Policies - Flight Crew Proficiency Program (2)						\checkmark
30. LOC Training - Human Factors and Automation - One Project						
85. Vertical Situation Display						
120. TAWS Improvements (GPS)						
121. Cargo Loading Training and SOPs					\checkmark	
131. Cargo Safety Culture						

Applicable



Applicable CAST SEs Not in Effect at Time of Accidents



Safety Enhancement	Air Tahoma 08/13/2004 FUEL	USA Jet 07/06/2008 CFIT	FedEx 03/23/2009 ARC	UPS 09/03/2010 F–NI	National Air 04/29/2013 RAMP	UPS 08/14/2013 CFIT
127. Fire Management						
194. ASA - Standard Operating Procedures Effectiveness and Adherence						
198. ASA - Scenario-Based Training for Go-Around Maneuvers						
199. ASA - Enhanced Crew Resource Management Training						
200. ASA - Virtual Day-VMC Displays						
216. RE - Airline Operations and Training - Flight Crew Landing Training						
219. ATO Policies and Procedures						
223. Cargo - Hazardous Material Fires - Prevention and Mitigation						
224. Cargo - Hazardous Material Fires - Enhanced Fire Detection Systems						
225. Cargo - Hazardous Material Fires - Containment and Suppression						
226. Cargo - Hazardous Material Fires - Enhanced Protection of Occupants and Aircraft						

Applicable





JIMDAT CARGO SUBGROUP

CAST SE portfolio is effective in reducing risk in cargo operations.

- JIMDAT portfolio assessment indicates a <u>lower level of effectiveness</u> when compared to passenger operations.
 - Continue subgroup activity to quantify differences in the cargo operating environment that may characterize a different risk signature the SEs may not be as effective in mitigating.



CARGO AND PASSENGER OPERATIONS

- Conventional wisdom: same aircraft, same airports, runways, taxiways, airspace, etc.
- ► What is the same for pilots:
 - Part 121 experience requirements.
 - Part 121 training requirements.
- Beyond that, some risk attributes may not be so intuitive.



AIRCRAFT DEMOGRAPHICS



- Aircraft technology generation
- In production vs. out of production
- Wide-body vs. narrow-body:
 - A Boeing 777 landing on an 8,000 ft. x 150 ft. runway looks different than a Boeing 737.

► Weights:

Are cargo aircraft operated closer to MAX T/O & LDG weights?

PILOT DEMOGRAPHICS

Is there different risk associated with pilot experience vs. operation when a new hire with no wide-body or international experience is a pilot for a cargo operator?

Career progression

Right to wide-body international

High turnover



SYSTEM FORM DIFFERENCES

- Hub and Spoke System (sort facilities make the network work)
- Freight moves at night
 - ▶ What is the day-night ratio of flying (~60% for cargo)?
- ► How does the risk change with reduced—
 - ► Air traffic services (radar update, HF, etc.)?
 - Tower operations (non-tower ops, pilot controlled lighting)?
 - Aircraft Rescue and Fire Fighting (requirements not based on cargo aircraft)?



ETOPS OXYGEN REQUIREMENTS

- Extended-range Twin-engine Operational Performance Standards (ETOPS) requirements are based on diversion time for the most time-limiting system (usually fire suppression).
 - Is the oxygen supply requirement for onboard persons matched against this fire suppression time?
- ► How is this requirement defined?

REGULATORY DIFFERENCES

- Aircraft Rescue and Fire Fighting (ARFF):
 - Based on largest passenger aircraft (by aircraft length and frequency).
 - Cargo aircraft often are the largest aircraft operating to/from an airport.
- Flight/Duty/Rest requirements:
 - ► How do the operational environments differ?
 - How is risk is characterized and mitigated?



► We welcome participation on the JIMDAT Cargo Subgroup.

- Need to ensure JIMDAT understands the differences in the cargo operating environment that may characterize a different risk signature the SEs may not be as effective in mitigating.
- CAST SE portfolio is available to you on the USB stick.
 - Please reach out to us if you have questions or thoughts.