

Learning and Improvement Team (LIT)

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Safety I and Safety II



Intro to LIT

Timeline

- December 2018: Two team members tasked to stand up program
- May 2019: Team expanded to add a third member

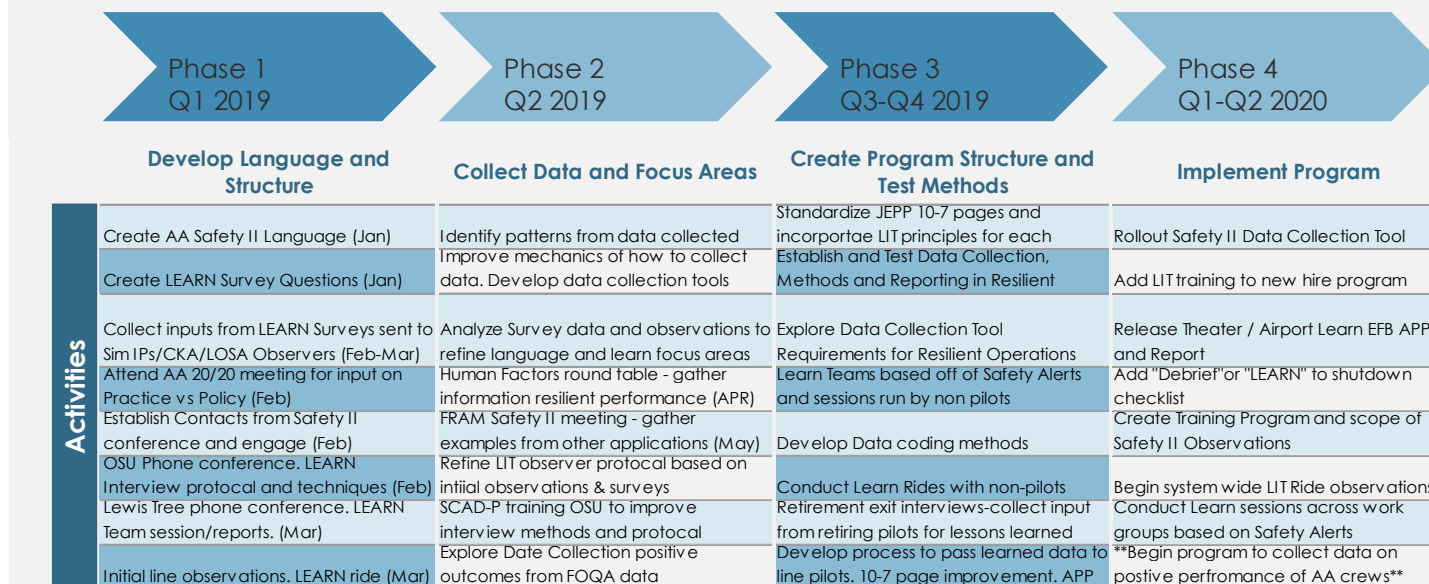
Process

- Separate from current natural behavior audit program LOSA
- Generate new name and team to differentiate and identify program

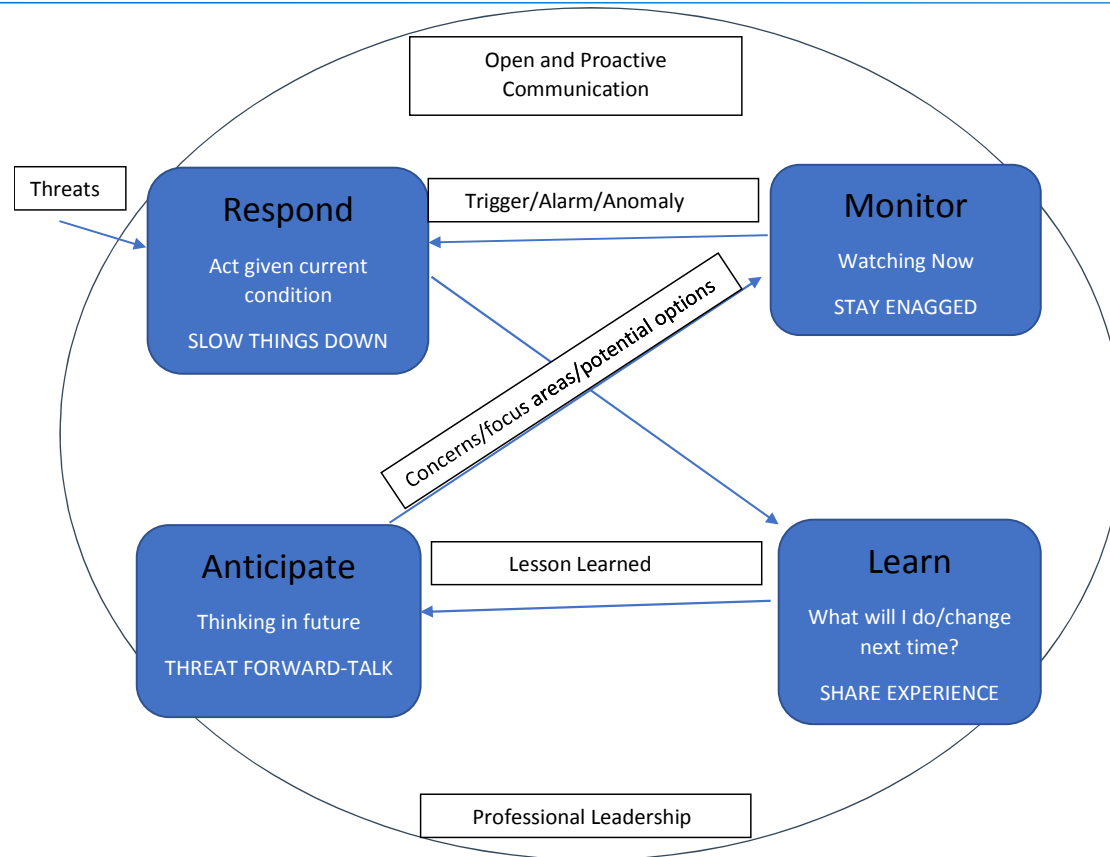
Goal

- Define Safety-II as it relates to AA operations
- Develop a program and team that can focus on and implement Safety-II concepts
- Early observation rides and data collection show great opportunity to bridge experience turnover and promote a learning culture

AA Learning and Improvement Team Roadmap



AA LIT Language



Definition of Terms

Monitor

- *Proactively* watch for normal triggers, alarms, threats and anomalies

Respond

- *Effectively react* to normal triggers, alarms, threats and anomalies

Learn

- *Active process* of improving future performance
- When I was last here, X happened, and this time I will do Y

Anticipate

- *What could happen?* What ifs

Communicate

- Proactive and open environment

Leadership

- Professional and builds a team effectively

CKA and LOSA Observer Survey

Response Summary: Monitor

What are the best Pilot Monitoring behaviors and actions you have observed, other than those outlined in SOPs?

- PM follows along closely via FMS/charts/CAMI to “fly” along with PF
- Assertive backup that is spoken
- Always engaged
- Speaks up to ask PF what the plan is if unsure
- Anticipate threats and ATC needs before being asked by PF

CKA and LOSA Observer Survey

Response Summary: Respond

How do crews deal with feeling rushed and compressed for time?
How do they slow things down or other positive behaviors when task loading increases?

- Create more time by stopping or slowing down
- Use color coding language
- CA sets tone to bring everyone back into green
- Delegate
- Be aware of task loading of other pilot

CKA and LOSA Observer Survey

Response Summary: Learn

Do crews ever discuss with each other past events they have learned from? How do they implement these lessons learned?

- Opportunity to improve in this area, culturally challenging
- Some pilots do report learned behaviors
- When do they talk about previous experiences?
 - during departure/arrival briefings
 - when asked by another pilot, in conversation

CKA and LOSA Observer Survey

Response Summary: Anticipate

How do crews best anticipate what could happen before departure, enroute, and before arrival?

- Leverage experience
- Use engaged threat forward briefing
- Verbalize what ifs
- Constantly collecting info and processing with understanding of cause and effect relationships

CKA and LOSA Observer Survey

Response Summary: Communicate

If high performing crews communicate more effectively than others, what makes their communication more effective? What do they do best?

- Open communication
- CA sets tone at start
- Encourage assertiveness
- Create an environment where speaking up is not seen as criticizing or second-guessing pilot
- Rapport is built
- PF tells plan and thinks out loud so PM knows when something is not going according to plan and can intervene

CKA and LOSA Observer Survey

Response Summary: Leadership

How do leaders on the flight deck best influence others?

- Starts with the CA but FO can exert leadership traits as well
- Establishes role with humility, shows servant level leadership traits
- Professionally explains philosophy and goals during introduction
- Ensures all pilots have the same shared mental model
- Captain levels the authority gradient to enhance open communication
- Solicits and encourages input and feedback from other crew members
- Builds rapport and delegate where appropriate
- Acknowledges and thanks crew members for their efforts

CKA and LOSA Observer Survey

Response Summary: Leadership

How do leaders on the flight deck best influence others?

- Starts with the CA but FOs can exert leadership traits as well
- Builds and supports an effective team
- Establishes role with humility and encourages feedback and input
- Uses all resources available to expand the team enhance info
- Builds rapport and shows servant level leadership traits
- Professionally explains operational philosophy and goals during initial introduction to other crew member
- Delegate where appropriate
- Solicits inputs from other crew members
- Captain levels authority gradient to enhance open communication
- Ensure all pilots have the same shared mental model
- Acknowledge and thank crew members for efforts

LIT Observation Data Capture

	A	B	C	D	E
1	LIT Ride Observation Form				
2	Month:	May-19			
3	Aircraft Type:	A330-200			
4	Route:	KCLT-LEMD 07:06 Flight time			
5	Sequence Info:	Leg one of 3 day Intl Flight KCLT-LEMD-KCLT			
6	Weather:	VMC at origination and destination: KCLT 30010G18KT P6SM FEW050 LEMD 05008KT CAVOK Very experienced CA (15 years in A330) and very senior FOs. Met crew at the D concourse briefing spaces after coordinating day prior with CA for permission. Crew seemed rested and familiar with each other. FO was new to aircraft and going into LEMD for first time. Crew briefed in D concourse briefing spaces before going to the gate. Weather enroute was forecasted to be good with light turbulence approximately 3 hours into flight. Filed route was random waypoints for oceanic crossing.			
7	Introduction Narrative:				
8					
9	LIT Observation Data Collected:				
10					
11	Phase of Flight	Abilities	Competency	Description	
12	Pre-flight	Trustworthy	Reliability	FO stated "heads down" during taxi out on G while performing before takeoff flow.	
13	Post-flight	Reliability	Reliability	During climb through FL230 weather cell was ahead and appeared to be in climb path. CA (PM) asked FO (PF) if comfortable with weather ahead. FO (PF) stated he would like to deviate and CA (PM) requested clearance from ATC. Aircraft passed 5nm to north and approximately 2,000' above the cell.	
14	Post-flight	Reliability	Reliability	After leveling in cruise at FL360 CA (PM) collected divert weather from dispatch and via ACARS ATIS. Weather then briefed as suitable for divert if needed.	
15	Taxi out to runway	Communicate	Communicate	CA (PM) spent about 15 minutes approximately 15 minutes into cruise by reviewing and highlighting 10-7 pages and other arrival info for LEMD.	
16	Takeoff and climb to top of SID	Leadership	CA empowered FO to make decisions regarding flight	During cruise at FL360 FB and FC shared lessons learned with FO (PF) about LEMD	
17	Cruise	Monitor	Takes initiative before being asked to do something by PF		
18	Cruise	Anticipate	Visually reviews company 10-7 pages for info specific to airport		
	<div> <div>KCLT-LEMD MAY</div> <div>LEMD-KDFW MAY</div> <div>KCLT-KJAX-KCLT APR</div> <div>KORD-PVR-KORD MAR</div> <div>+</div> </div>				

LIT Takeaways

LIT is Value Added

- Bridge gaps in experience
- Mitigate high pilot turnover (50% in the next 10 years)

Crew Knowledge Elicitation

- Understand how they think and make decisions that are key to learning
- Challenge is creating protected time for those conversations

Positive behaviors and best practices identified through LIT Surveys are very compelling

- Disseminate to pilots
- How else can we use this data?
- How can we improve our data capture?

LIT Opportunities

Investigate positive FOQA outcomes

Interactive line observations (learning rides?)

Learning teams to explore hot topics, e.g. clean ramp, runway incursions, etc.

- Round table discussions with pilots
- Non-pilot facilitators

How does your organization...



...Create and use *learning teams*?

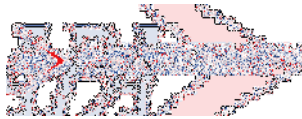
...Conduct a *debrief* or post work discussion?

...Gather *workforce support* for Safety-II?

Foundational Resources



<https://www.skybrary.aero/bookshelf/books/2437.pdf>
<https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20190001429.pdf>
<http://erikhollnagel.com/A%20Tale%20of%20Two%20Safeties.pdf>



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CKA and LOSA Observer Survey

Response Summary: Interruptions

What barriers have you seen regularly employed to prevent distractions and interruptions? How do crews deal with them?

- Tell external influence to wait
- Use nonverbal communication
- Create space and time
- Delegate or delay duties