

# SAFETY RESOURCE: LOSS OF CONTROL INFLIGHT

## REDUCING THE RISK OF LOSS OF CONTROL INFLIGHT (LOC-I)



### The Good News – LOC-I Training Saves Lives

"LOC-I training saved my life – If I didn't have LOC-I training I would have died. Not only did the training save my life but a good preflight brief of the flight also proved to be instrumental in a successful outcome."  
– U.S. Navy C-12 Pilot

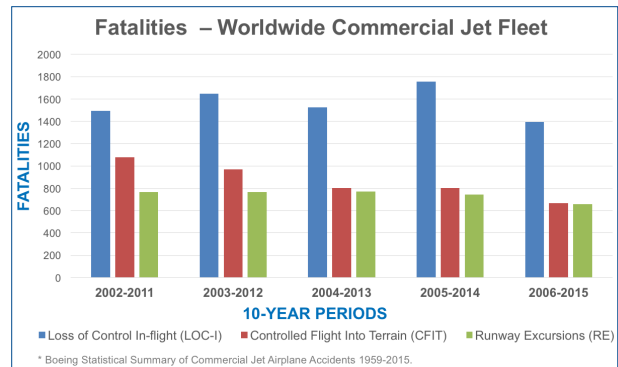
ICAO, regulators and industry have come together to thwart the LOC-I threat through:

- [Global LOC-I Alignment: ICAO Manual on Aeroplane Upset Prevention and Recovery Training \(UPRT\)](#)
- [Training videos](#)
- [Training programs](#)

### The Bad News – The LOC-I Threat

LOC-I is an extreme manifestation of a deviation from intended flight path or an adverse flight condition placing an airplane outside of the normal flight envelope with an inability of the pilot to control the airplane.

LOC-I can happen to any pilot at any time. The most severe consequences of a LOC-I is a fatal mishap. LOC-I mishaps continue to exceed those of Controlled Flight Into Terrain (CFIT) and Runway Excursions (RE), as shown in the adjacent chart.



## DEFINING THE RISKS OF LOSS OF CONTROL INFLIGHT (LOC-I)



### The Good News – Pilots Can Learn to Recognize Precursors

LOC-I is almost always preceded by an airplane upset, but airplane upsets always have *precursors* which are *conditions* that can be managed in reducing the risk of LOC-I. Through dedicated focus on increasing awareness of conditions (precursors) leading to an upset, the development of skills and disciplines to recognize the upset early in its develop or taking definitive action to recover from the airplane upset is the central Critical Concept for pilots to overcome LOC-I.

ICAO, regulators and industry have come together to thwart the LOC-I threat through training materials such as:

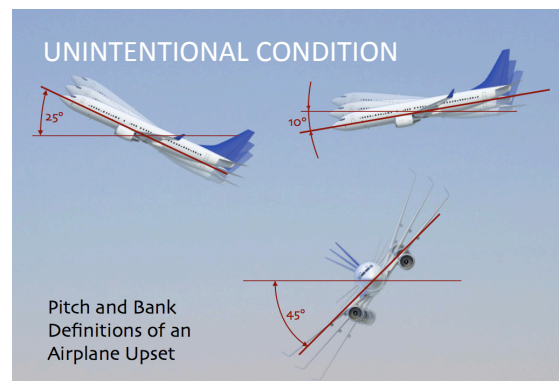
- [URPT Implementation Best Practices](#)
- [Training videos](#)
- [Training programs](#)

### The Bad News – Airplane Upset Condition

The term "airplane upset" means an *unintentional*:

- Pitch attitude more than 25 degrees nose up
- Pitch attitude more than 10 degrees nose down
- Bank angle more than 45 degrees
- Flight within these parameters at airspeeds inappropriate for the conditions

For example, unintentional slow flight, unusual attitudes, approach to stalls, stalls, spins and overspeed conditions are all airplane upsets.



## THWARTING THE HAZARDS OF LOSS OF CONTROL INFLIGHT (LOC-I)



### The Good News – Industry Embraces a Multi-Faceted Approach

To thwart the hazards associated with the risks of LOC-I, a multi-faceted approach is needed:

- Awareness – knowing the hazards associated with airplane upsets and LOC-I
- Prevention – implementing the barriers to mitigate or minimize the hazards
- Recovery – knowing how to recover from an airplane upset

### Knowledge, Recognition, Skill and Discipline



ICAO Doc 10011 - Manual on Aeroplane Upset Prevention and Recovery Training describes training needed by all pilots. Topics include aerodynamics, causes of airplane upsets, accident analysis, energy awareness, flight path management, UPRT techniques, automation mismanagement and a diversity of human factors to include pilot monitoring, distraction, startle, surprise and stress.

### The Bad News – Human Factors Failures

Many of the precursors leading to airplane upsets are human factors and human performance failures in these areas:

- Responses to aerodynamics – how pilots perceive and control the airplane
- Energy management – maintaining awareness of the airplane's energy state
- Flight path management – maintaining awareness of position in space
- Automation management – understanding and application of automation and technology
- Pilot monitoring – monitoring the other crewmembers' performances and the state of the airplane and automation
- Distraction – minimizing and managing distractions and interruptions
- Startle – a physiological response such as to a loud noise
- Surprise – the response to an unexpected event
- Stress – managing and mitigating acute and chronic stress

## RESOURCES FOR DEALING WITH LOSS OF CONTROL INFLIGHT (LOC-I)



### The Good News – Here is a Place to Start

The NBAA Safety Committee's LOC-I Working Group has developed an online portal of vetted training tools and resources to help you and/or your pilot team take steps right now to mitigate LOC-I. The portal is a live work in progress and will be updated when new resources are identified. The listings include contact information and a short description of the resource.

- [nbaa.org/safety/loci-resources](http://nbaa.org/safety/loci-resources)

### More Good News – You Can Contribute

Do you have a good resource or training provider addressing LOC-I that you would like to share? Your contribution to the resource list is welcome. [Click here to participate.](#)