



# LOSS OF CONTROL – IN FLIGHT

A REPORT ON THE DISCUSSIONS OF LOSS OF CONTROL – IN FLIGHT  
TEAM LED BY  
DEPARTMENT OF CIVIL AVIATION OF MALAYSIA

# ACTION REQUIRED

From 1 January 2005 Annex 6, Part 1 requires operators of aeroplanes of a maximum certificated take-off mass in excess of 27,000 kg. to establish and maintain a flight data analysis programme as part of its Safety Management System.

A flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

Operators **should ensure** their training and qualification processes utilize trend information from Safety Management Systems (SMS) **especially** Flight Data Analysis (FDA) to mitigate risk that could lead to a LOC incident.

## **OBJECTIVE**

To find out if the regulators have make it mandatory or optional that LOC events from data analysis is being utilised by operators in their pilot training program.



# REGULATOR SURVEY ANALYSIS

## MAIN CAUSES OF IN FLIGHT LOSS OF CONTROL

1. Loss of Situational Awareness
2. Wind shear
3. Structural or power plant damage
4. Mishandling of the aircraft
5. Flight with load distribution outside of safe limits
6. Mismanagement of Aircraft Pressurization Systems
7. Take off with critical parts of the airframe with ice deposits

# REGULATOR SURVEY ANALYSIS

## MAIN CAUSES OF IN FLIGHT LOSS OF CONTROL

8. Loss of power on all engines attributable to engine icing
9. Attempting to maneuver an aircraft outside its capabilities to resolve a prior problem
10. In-Flight Fire
11. Fuel exhaustion
12. False instrument readings
13. Wake turbulence
14. Malicious interference

## Survey analysis based on 38 APAC respondents

- 100% of the respondents have an established flight data monitoring and analysis program in the form of FOQA, Air Safety Reports (ASR), or less frequently collected data such as LOSA, and other internal or external audits.
- 64% of the respondents perform data analysis specific to LOC events.
- From the 64% of respondents, approximately 70% incorporated the outcome from their data analysis into their flight crew training programmes.

## Survey analysis based on 38 APAC respondents

- 79% have the training program documented in Part D of their Operations Manual (Training Manual).
- 77% of the respondents indicated that their respective regulators have not promulgated regulations requiring emphasis on LOC performance based training
- 85% noted that no guidance materials were issued by the state with regards to the same.

# Conclusion

- 36% of respondents do not perform data analysis specific to LOC events.
- 7 out of 38 air operators that were surveyed indicated that they do not have a performance based training program incorporated in Part D of their Operations Manual.
- Large proportions of respondents identified lack of participation from regulators in the promulgation of related regulations and in providing guidance material.
- This number estimated to rise with air traffic projected to double in 15 years.

## Action plan

- New approach needed to address the potential increase in non-conformity in flight crew operating procedures, and to achieve continuous improvement.
- Incorporation of performance based approach to LOC training with the use of flight data analysis, air safety reports, flight observation (LOSA), etc.

## Model regulations

- Operators should ensure that their training and qualification processes utilize trend information from Safety Management System (SMS), especially Flight Data Analysis (FDA) to mitigate the risk of a LOC-I incident.
- The operator should establish a program to identify and monitor events leading to LOC-I with the aim of developing specific Safety Performance Indicator (SPI) and its corresponding Safety Performance Target (SPT). These elements should be used in the development of a performance based training program to address LOC-I.

## Model Regulations (con't)

- The operator should establish a quality assurance program to provide an on-going monitoring and periodic review of the LOC-I Safety Performance Indicator (SPI) and Safety Performance Target (SPT).
- The selection and effectiveness of the Safety Performance Indicator (SPI) and its corresponding Safety Performance Target (SPT) remain the sole responsibility of the operator.
- The outcome of the performance based training should be provided to the regulators for their evaluation and endorsement.

# Guidance Material for Regulators

- Provide appropriate training to the inspectorate in relation to conducting oversight of performance based training in addressing LOC-I.
- Encourage consistent engagement and collaboration with operators to develop and enforce performance based oversight, taking into consideration the complexities of each operator's activities including the type of operation, output capacity, operating region, type of equipment used, etc, in relation to LOC-I.

## Guidance Material for Regulators (con't)

- Develop audit program to specifically monitor the implementation of performance based training in addressing LOC-I.
- Monitor and assess the effectiveness of the data gathering, analysis and overall safety performance achieved by the operator on a regular basis.
- Verification that operators deliver agreed safety performance in the areas of LOC-I and training activities.

## Guidance Material for Operators

- The operator shall establish and maintain a flight data analysis programme as part of its Safety Management System.
- Gather data from all safety programs and audits with regards to LOC.
- Analyse collected data to identify events leading to an LOC-I.
- Develop and design LOC enhancement training specifically in preventing LOC events, identification of impending LOC-I and recovery.

## Guidance Material for Operators (con't)

- Deliver the enhanced LOC training through both simulator training and appropriate literature.
- Monitor the effectiveness of the training program through quality assurance program.
- Review and modify the training program to meet overall safety performance.