



EASA

European Aviation Safety Agency

Airworthiness Risk Portfolio

Commercial Air Transportation - Fixed Wing

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CAT-FW Airworthiness SRP





- **Purpose** : identify the systemic Safety Issues affecting **Design**, **Production** and **Maintenance** of Commercial Air Transportation - Fixed Wing (**CAT-FW**) products

- Project divided into 4 Work Packages
 - **WP1**: Review of **Occurrences** (Accidents, Serious Incidents) in IORS workflow tool database + ECR analysis
 - **WP2**: EASA **Experts** (LA PCMs, Chief Experts, DOA TLs, POA/CAOA TLs) feedback
 - **WP3**: Review of **Safety Recommendations**
 - **WP4**: **Merge** of previous inputs, **scoring** and Safety Issues **shortlisting**



► Figures

► WP1:

- “manual” review of **334** Occurrence, **50** provided indications relevant for this AW Portfolio (Design, Production, Maintenance root cause)
- ECR analyses built on the data contained in **2634** Occurrences
- WP1 allowed to identify **17** Safety Issues, raised to WP4

► WP2, the Experts community submitted **105** Safety Issues proposals to the Team

- Post grouping, this lead to the identification of **16** Safety Issues, raised to WP4

► WP3, **327** Safety Recommendations were reviewed

- This allowed to identify **31** Safety Issues, raised to WP4

► **WP4**, the Team finally identified **38** Safety Issues, which were subsequently scored

Design related Safety Issue

Part 145 and CAMO related Safety Issue

Production related Safety Issue



WP4: Safety Issues scoring

Medium		High	
rank		rank	
1	17 - Inadequate Organisational application of human factors principles leading to system induced errors and/or fatigue in maintenance	1	1 - Cyber security and system integration vulnerability
2	2 - Intentional deviations from maintenance procedures or complacency in maintenance tasks performance		
2		1	
rank		rank	
1	45 - Contaminated Cabin Air	1	12 - Icing threats
2	6 - Inadequate design of landing gears, braking systems, hydraulic system and tyres	2	11 - Inadequate Man Machine Interface
3	48 - Inadequate design of access doors, hinges, latches and locking systems and cargo fixing points	3	9 - Complex systems inadequate design
4	58 - Inadequacy of emergency evacuation equipment and installation	3	14 - Inadequate maintenance on safety relevant systems
5	21 - Incorrect Monitoring of MEL Interval Expiration	5	10 - Inadequate Go-Around related training requirements, AFM procedures and involved components design (FCU/MCP)
6	M5 - Improper execution of simple/routine maintenance tasks	6	7 - Poor manufacturing of STD parts
7	26 - Inadequate identification and management of repetitive and/or hidden defects	7	13 - Incorrect Assessment of Defect or Fault
8	M6 - inadequate work card system and/or records system unable to ensure traceability to details of maintenance work carried out	8	11 - Lack of adequate maintenance personnel competencies and inadequate competencies assessment
9	13 - Parts missing/not installed on Original Manufacturing	9	18 - Inadequate robustness of organization procedures for critical maintenance tasks
10	63 - Inadequate design subcontractors/suppliers management and oversight	10	16 - Inadequate structures testing, qualification methods and ageing impact assessment
5		3	

Design related Safety Issue

Part 145 and CAMO related Safety Issue

Production related Safety Issue



➤ WP4: Safety Issues scoring

rank	Id - Safety Issue
1	61 - Cyber security and system integration vulnerability
1	M7 - Inadequate Organisational application of human factors principles leading to system induced errors and/or fatigue in maintenance
1	M2 - Icing threats
2	62 - Intentional deviations from maintenance procedures or complacency in maintenance tasks performance
2	M1 - Inadequate Man Machine Interface
3	69 - Complex systems inadequate design
3	M4 - Inadequate maintenance on safety relevant systems
5	40 - Inadequate Go-Around related training requirements, AFM procedures and involved components design (FCU/MCP)
6	67 - Poor manufacturing of STD parts
7	23 - Incorrect Assessment of Defect or Fault
8	71 - Lack of adequate maintenance personnel competencies and inadequate competencies assessment
9	28 - Inadequate robustness of organization procedures for critical maintenance tasks
10	66 - Inadequate structures testing, qualification methods and ageing impact assessment

Design related Safety Issue

Part 145 and CAMO related Safety Issue

Production related Safety Issue



➤ Discussion items

➤ **Methodology** adopted – level of confidence on results

- Merging in WP4 was challenging (different nature of WP1, 2, 3 inputs)
- Merging anyway done thanks to the experts advice (“subjectivity”)

➤ **Cyber Security** Safety Issue as top of the list:

- Limited number of events/occurrences associated to it
- A certain number of cross-domain “exploitable” vulnerabilities is known
- Acknowledgement that they have the potential to pose threat to aviation Safety



➤ Conclusion

- The Airworthiness SRP led to the identification of **13** TOP Safety Issues
 - Some Safety Issues are already known to the Agency
 - Other Safety Issues have been captured through the SRM process for the first time
- EASA will further consider which Safety Issues should be prioritised for supplementary assessment



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End

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