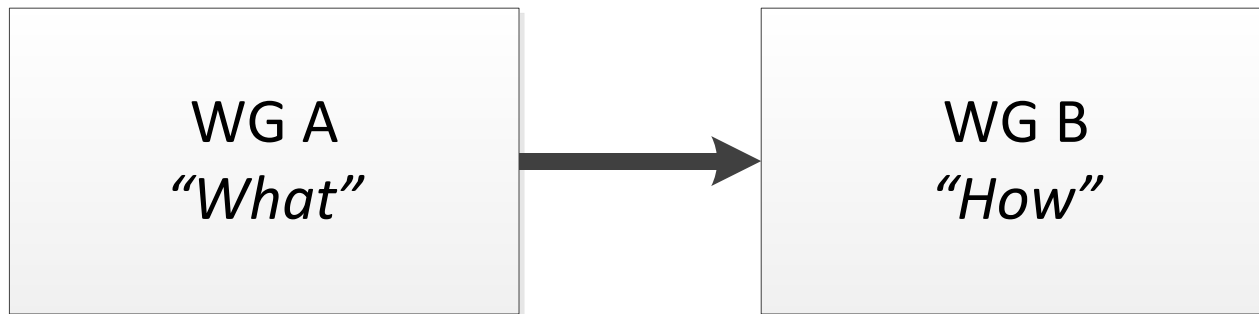


Working Group A update

Joao Brites – UK Civil Aviation Authority

WGA and WGB



LOC-I

- First draft handed over to WGB, not yet in public domain
- Same structure and format used for REX deliverable
- Foreseeable occurrences and precursors grouped in 5 generic scenarios:
 - Crew incapacitation
 - Flight Envelope Exceedance
 - Environmental factors
 - System failure
 - Inadequate Flight Management

LOC-I

- LOC-I document includes several recommendations to be addressed by WGB
- Two interesting outcomes:
 - Synergy with Aircraft Health Monitoring

LOC23 Engine failure: Develop means to identify situations of latent or active engine failure, including FOD and hardware degradation and failure.

Precursor	LOC categories					Recommendation
	1	2	3	4	5	
Fire, smoke and fumes	x			x		LOC01
Press. System Malfunction	X					LOC02
Press. System Misuse	X					LOC03
						Reserved
High Cabin altitude	X					LOC05
O2 masks not used by crew	X					LOC06
Supp. O2 system failure	X					LOC07
CG out of limits		X				LOC08
Special Operations		X				LOC09
Incorrect performance calculation		X				LOC10
Overweight takeoff		X				LOC11
Envelope protection systems		X		X		LOC12
Inadequate aircraft energy		X	X	X	X	LOC13
Inadequate aircraft attitude		X	X	X	X	LOC14
Loss of lift		X	X	X	X	LOC15
FOD			X			LOC16
Electromagnetic Interference			X			LOC17
Adverse Weather			X			LOC18
Windshear			X			LOC19
Severe turbulence			X			LOC20
Icing conditions			X			LOC21
De-icing system failure			X			LOC22
Engine failure			X	X		LOC23
Instrument Malfunction			X	X		LOC24
Structural Failure			X	X		LOC25
Loss of thrust			X	X	X	LOC26
Hardware failure				X		LOC27
Flight control failure or ineffective				X		LOC28
Mismanagement of automation					X	LOC29
Abnormal flight control inputs					X	LOC30
Fuel exhaustion					X	LOC31
Incorrect aircraft configuration					X	LOC32

LOC-I

- LOC-I document includes several recommendations to be addressed by WGB
- Two interesting outcomes:
 - Synergy with Aircraft Health Monitoring
 - Tougher challenges

LOC29 Mismanagement of automation:
Develop means to identify situations of inadequate or unexpected use of automation or unexpected disconnection of automation.

Precursor	LOC categories					Recommendation
	1	2	3	4	5	
Fire, smoke and fumes	x			x		LOC01
Press. System Malfunction	X					LOC02
Press. System Misuse	X					LOC03
						Reserved
High Cabin altitude	X					LOC05
O2 masks not used by crew	X					LOC06
Supp. O2 system failure	X					LOC07
CG out of limits		X				LOC08
Special Operations		X				LOC09
Incorrect performance calculation		X				LOC10
Overweight takeoff		X				LOC11
Envelope protection systems		X		X		LOC12
Inadequate aircraft energy		X	X	X	X	LOC13
Inadequate aircraft attitude		X	X	X	X	LOC14
Loss of lift		X	X	X	X	LOC15
FOD			X			LOC16
Electromagnetic Interference			X			LOC17
Adverse Weather			X			LOC18
Windshear			X			LOC19
Severe turbulence			X			LOC20
Icing conditions			X			LOC21
De-icing system failure			X			LOC22
Engine failure			X	X		LOC23
Instrument Malfunction			X	X		LOC24
Structural Failure			X	X		LOC25
Loss of thrust			X	X	X	LOC26
Hardware failure				X		LOC27
Flight control failure or ineffective				X		LOC28
Mismanagement of automation					X	LOC29
Abnormal flight control inputs					X	LOC30
Fuel exhaustion					X	LOC31
Incorrect aircraft configuration					X	LOC32

Ongoing Work

- Controlled Flight Into Terrain (2016)
- Next actions not yet decided