A

1. HIRM REFERENCE NUMBER:	GAM/SMS/H-127(21)				
2 AREA/ OPERATION/ EQUIPMENT:	Aircraft Maintenance Operation				
3. HAZARD / THREAT [H/T]:	ONE-OFF Annual Inspection at JBPM Bertam Base				
4. UNSAFE EVENT [UE]:	Difficulties while performing aircraft maintenance can cause damage to aircraft systems and injuries to maintenance personnel.				
5. ULTIMATE CONSEQUENCE [UC]:	Not comply to the Authority standard maintenance requirement will impact to the aircraft safety during operation.				
Date Conducted	7-Sep-21	Conducted by	Safety Department	Approved by	Mohammad Nizam Jaafar (Safety Manager)
Revision	0	Received by	Safety Department	Document No.	GAM/SMS/HRC-003-01/21

Galaxy Aerospace
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HAZARD IDENTIFICATION AND RISK MANAGEMENT (HIRM) FORM

B

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Unsafe Event Mitigation (as applicable) >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>																							>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Ultimate Consequence Mitigation (as applicable) >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>																						
Hazard / Threat	Existing Preventive Controls [E-PC]									RI & T		New Preventive Controls [N-PC]									RI & T		Unsafe Event	Existing Recovery Measures [E-RM]									RI & T		New Recovery Measures [N-RM]									RI & T		Ultimate Consequence
	1. Backup/ standby system	2. Regulation/ Requirement	3. Std Operating Procedure	4. Inspn/ Maint program	5. GM/ Advisory/ Notification	6. Training	7. Others	Escalation Factor [EF]	Escalation Control [EC]	Existing Risk Index	Tolerability	1. Backup/ standby system	2. Regulation/ Requirement	3. Std Operating Procedure	4. Inspn/ Maint program	5. GM/ Advisory/ Notification	6. Training	7. Others	Escalation Factor [EF]	Escalation Control [EC]	Resultant Risk Index	Tolerability		1. Backup/ standby system	2. Regulation/ Requirement	3. Std Operating Procedure	4. Inspn/ Maint program	5. GM/ Advisory/ Notification	6. Training	7. Others	Escalation Factor [EF]	Escalation Control [EC]	Existing Risk Index	Tolerability	1. Backup/ standby system	2. Regulation/ Requirement	3. Std Operating Procedure	4. Inspn/ Maint program	5. GM/ Advisory/ Notification	6. Training	7. Others	Escalation Factor [EF]	Escalation Control [EC]	Resultant Risk Index	Tolerability	
ONE-OFF Annual Inspection at JBPM Bertam Base					E-PC1					2C	Moderate Risk	N-PC1							EF>N-PC1	EC>EF>N-PC1	1C	Low Risk	Difficulties while performing aircraft maintenance can cause damage to aircraft systems and injuries to maintenance							E-RM1			2C	Moderate Risk							N-RM1			1C	Low Risk	Not comply to the Authority standard maintenance requirement will impact to the aircraft safety during operation.
		E-PC2						EF>E-PC2				N-PC2							EF>N-PC2	EC>EF>N-PC2							E-RM2																			
		E-PC3						EF>E-PC3	EC>EF>E-PC3																E-RM3																					
			E-PC4					EF>E-PC4																																						
						E-PC5		EF>E-PC5																																						

C

Description of Existing Preventive Controls [E-PC]

E-PC1: MOC raised as a notification and preparation.
Refer document as provided.

EF>E-PC1:

EC>EF>E-PC1:

E-PC2: Manpower required for the operation as manpower list.

EF>E-PC2: Insufficient Qualified personnel for aircraft type.

EC>EF>E-PC2:

E-PC3: Facilities ready at Bertam as line maintenance.

EF>E-PC3: To meet the standard of authority and safety requirement for base maintenance.

EC>EF>E-PC3: Facility audit / Desktop audit as per MOE 3.1

E-PC4: Adequate and appropriate standard tools, GSE and Maintenance platform as per MOE Part 2.4

EF>E-PC4: The equipment may not meet the standard of authority compliance which lead to be an unsafe working environment

EC>EF>E-PC4:

E-PC5: Mandatory training provided to all maintenance staff as per MOE Part 3.4.5

EF>E-PC5: Required specific training base on aircraft type.

EC>EF>E-PC5:

Description of New Preventive Controls [N-PC]

N-PC1: Hydraulic rig, aircraft jack and special tools will be supported from GAM base MIAT. Refer list as provided.

EF>N-PC1: Overlook the expiry date or calibration dates

EC>EF>N-PC1: To updated tools list between JBPM and GAM.

N-PC2: One PC and two laptop available for maintenance in JBPM Bertam hangar to suppoort maintenance data which affected.

EF>N-PC2:

EC>EF>N-PC2:

N-PC3:

EF>N-PC3:

EC>EF>N-PC3:

N-PC4:

EF>N-PC4:

EC>EF>N-PC4:

N-PC5:

EF>N-PC5:

EC>EF>N-PC5:

Description of Existing Recovery Measures [E-RM]

E-RM1: Monitor and follow up the forecast system as per maintenance schedule.

EF>E-RM1:

EC>EF>E-RM1:

E-RM2: Safety and Quality Physical Audit as per MOE Part 3.1.2

EF>E-RM2:

EC>EF>E-RM2:

E-RM3: Conduct Crisis Management meeting when any accident or incident occur at Bertam which related to aircraft and maintenance personnel.

EF>E-RM3:

EC>EF>E-RM3:

E-RM4:

EF>E-RM4:

EC>EF>E-RM4

E-RM5:

EF>E-RM5:

EC>EF>E-RM5:

Description of New Recovery Measures [N-RM]

N-RM1: Rectification or action taken as per discuss and agree in Crisis Management meeting.

EF>N-RM1:

EC>EF>N-RM1:

N-RM2:

EF>N-RM2:

EC>EF>N-RM2:

N-RM3:

EF>N-RM3:

EC>EF>N-RM3:

N-RM4:

EF>N-RM4:

EC>EF>N-RM4:

N-RM5:

EF>N-RM5:

EC>EF>N-RM5:

D

5-1. Existing Risk Index [Hazard > Unsafe-Event]

A Assessed Existing Severity level of the UE [Wsht 5]: C
B Therefore, UE's Optimum No of Barriers (ONB) [Wsht 4A, Table3]: 4
C Applicable CBSV-Likelihood Table for this severity level [Table 3]: 4 (iii)

D Assessed BSV of individual Existing PCs [Table 1]:

E-PC1	2
E-PC2	3
E-PC3	4
E-PC4	4
E-PC5	4
E-PC6	0
E-PC7	0
E-PC8	0

E Therefore, CBSV (SUM) of all E-PCs: 17

F Assess CBSV of ONB (Applicable if E-PCs are more than ONBs): 15
(Choose barriers with highest BSVs for this ONB-CBSV calculation)

G Existing CBSV of UE (item E or F, whichever is applicable): 15

H Existing Likelihood of the UE (CBSV-Likelihood Table of item 3): 2

I Existing Risk Index of the UE [Sht8, RI & Tolerability]: 2C
J Existing Tolerability of the UE: Moderate Risk

5-2. Resultant Risk Index [Hazard > Unsafe-Event]

A Assessed Existing Severity level of the UE [Wsht 5]: C
B Therefore, UE's Optimum No of Barriers (ONB) [Table3]: 4
C Applicable CBSV-Likelihood Table for this severity level [Table 3]: 4 (iii)

D Assessed BSV of individual Existing PCs & New PCs [Table 1]:

E-PC1	2	N-PC1	5
E-PC2	3	N-PC2	5
E-PC3	4	N-PC3	0
E-PC4	4	N-PC4	0
E-PC5	4	N-PC5	0
E-PC6	0	N-PC6	0
E-PC7	0	N-PC7	0
E-PC8	0	N-PC8	0

E Therefore total (SUM) BSV of all E-PCs plus N-PCs: 27

F Assess total BSV of ONB (Applicable if E-PCs + N-PCs is more than ONBs): 18
(Choose barriers with highest BSVs for this ONB-CBSV calculation)

G Resultant CBSV of UE (item E or F, whichever is applicable): 18

H Resultant Likelihood of UE (CBSV-Likelihood Table of item 3): 1

I Resultant Risk Index of the UE [Sht8, RI & Tolerability]: 1C
J Resultant Tolerability of the UE: Low Risk

5-3. Existing Risk Index [Unsafe-Event > Consequence]

A Assessed Existing Severity level of the UC [Wsht 5]: C
B Therefore, UC's Optimum No of Barriers (ONB) [Table3]: 4
C Applicable CBSV-Likelihood Table for this severity level [Table 3]: 4 (iii)

D Assessed BSV of individual Existing RMs [Table 1]:

E-RM1	4
E-RM2	4
E-RM3	4
E-RM4	0
E-RM5	0
E-RM6	0
E-RM7	0
E-RM8	0

E Therefore, CBSV (SUM) of all E-RMs: 12

F Assess CBSV of ONB (Applicable if E-RMs is more than ONBs): 12
(Choose barriers with highest BSVs for this ONB-CBSV calculation)

G Existing CBSV of UC (item E or F, whichever is applicable): 12

H Existing Likelihood of the UC (CBSV-Likelihood Table of item 3): 2

I Existing Risk Index of the UC [Sht8, RI & Tolerability]: 2C
J Existing Tolerability of the UC: Moderate Risk

5-4. Resultant Risk Index [Unsafe-Event > Consequence]

A Assessed Existing Severity level of the UC [Wsht 5]: C
B Therefore, UC's Optimum No of Barriers (ONB) [Table3]: 4
C Applicable CBSV-Likelihood Table for this severity level [Table 3]: 4 (iii)

D Assessed BSV of individual Existing RMs & New RMs [Table 1]:

E-RM1	4	N-RM1	4
E-RM2	4	N-RM2	0
E-RM3	4	N-RM3	0
E-RM4	0	N-RM4	0
E-RM5	0	N-RM5	0
E-RM6	0	N-RM6	0
E-RM7	0	N-RM7	0
E-RM8	0	N-RM8	0

E Therefore total (SUM) BSV of all E-RMs plus N-RMs: 16

F Assess total BSV of ONB (Applicable if E-RMs + N-RMs is more than ONBs): 16
(Choose barriers with highest BSVs for this ONB-CBSV calculation)

G Resultant CBSV of UC (item E or F, whichever is applicable): 16

H Resultant Likelihood of UC (CBSV-Likelihood Table of item 3): 1

I Resultant Risk Index of the UC [Sht8, RI & Tolerability]: 1C
J Resultant Tolerability of the UC: Low Risk