



Ministry  
of Defence



## Defence Fire and Rescue Tactics, Techniques & Procedures

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<b>Stakeholders:</b>	DFR HQ	✓	Capita Fire and Rescue	✓
	RN Aircraft Handler	✓	RAF Fire and Rescue	✓
	DFRS LEC	✓	Other FRS Providers <sup>1</sup>	✓
	DFRS (Retained Officers)		DFRS (USVF)	

**Technical Approved** DFR HQ & CFR  
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<sup>1</sup> Other FRS Providers include Babcock, Mitie, QinetiQ Fire Services

# Defence Fire & Rescue



## AIRCRAFT TACTICS TECHNIQUES PROCEDURES

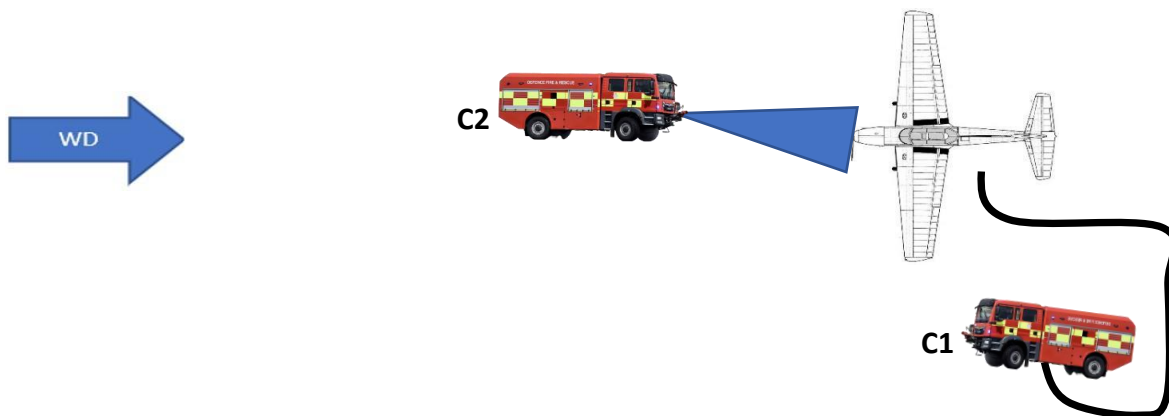
### Chipmunk.

**Note: This TTP refers to the operation of the Chipmunk aircraft**

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## TTP 1 – Engine/External Fire

### Event Plan - Initial Deployment



### Incident Commander Considerations:

- Location of A/C
- Emergency declared
- POB
- Wind Direction
- Transit to incident
- Confirm with all crews the nature of incident and location
- Evacuating PAX
- DRA followed by M/ETHANE
- Inform ATC of Tactical Mode & request external resources
- Contact aircraft commander via ATC, or direct visually
- Direct all operational control and implement ICS
- Contacting aircraft commander via ATC or direct visually, to ensure shutdown of engine and fuel cocks (IAW B169 CGY BBMF Chipmunk Crash/Rescue)
- Repeat DRA as appropriate to the incident
- Prepare for ARA
- Declare state of airfield and ICAO category
- Consider use of secondary media initially as mass discharge dual application.
- Direct evacuated flight crew to safe holding area prior to designated casualty clearance set up by Medics

- Direct Medics to location
- SENGO/Sqn Support
- LAFRS
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.

### **Crash 1 - MPRV Actions:**

- Crash 1 Deploys to the port of the aircraft covering the access to canopy
- Be aware of PAX exiting the aircraft requiring assistance
- Designated BA wearers (Led by JNCO<sup>2</sup>) will don BA sets but remain off air until instruction from Incident Commander
- Initially crew will respond and assist evacuating crew, who will be directed towards the medics and away from danger area
- Vehicle commander will monitor operations of Crash 2 and assist with protection of the fuselage as required
- Chock aircraft when safe and ensure engines are shut down
- Incident commander should consider use of thermal image camera to identify hot spots, monitoring the fuselage for heat transfer
- Short extension ladder may be required for cockpit access
- BA team will need to ensure canopy is opened following fire extinguishment if required on direction from IC
- BA team should gain access and make safe the airframe IAW:

☐ Engineering Authority B169 CGY BBMF Chipmunk Crash/Rescue

- Assist in extrication of any casualties as appropriate and according to local SOP. N.B. No direct access to airframe should take place until mass discharge has extinguished external engine fire.

**No direct access to airframe should take place until mass discharge has extinguished external engine fire.**

### **Crash 2 - MPRV Actions:**

- Crash 2 to deploy according to wind direction for immediate access to nose of airframe protecting critical part (canopy cockpit). Initial use of bumper turret will be required for primary knock down using foam discharge
- Be aware of PAX exiting the aircraft
- Bumper turret may be used to cool fuselage and maintain foam blanket if required following mass discharge to engine fire. Consider conservation of media used
- Incident Commander will provide supporting resources if incident requires BA intervention. (emergency covering line in support of BA Team, from MPRV, ladder access requirements)
- If BA teams are utilised the Incident Commander is to ensure that the following information is passed to ATC.

- ☐ The number of BA in use
- ☐ The purpose, e.g. ventilation
- ☐ What Stage of control is in operation?
- ☐ What additional BA resources are required?

<sup>2</sup> RAF Coningsby's operating model.

- If Rescue Task is required Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in event of reignition.
- Once fire is extinguished and the aircraft has been made safe, casualties have been extracted and are in medical care, crew commander can look to close down the incident and hand aircraft over to relevant agencies

### **Specific Aircraft Hazards - (Make use of AQRC):**

- All crew to be aware of propellers when approaching aircraft, taking into consideration rotor danger zones
- Engine fire to be extinguished by spraying water / foam into the intake
- Aviation Fuel and pressurized systems again if fire spreads from engine fire. Aspirated foam blanket should be maintained
- Ensure engine is shut down and fuel cocks closed. Use magneto switch inside the cockpit as shown below



- Gain access to the canopy by sliding it backwards using the handles as show below



- If canopy fails, then emergency entry is gained by using window release handles that allow the windows to be removed. Handles operate by lift, turn, and pull action as seen in figure below



### Further Considerations:

- Propeller danger zones
- Will additional BA Team be required?
- Use of TIC
- Will engine covers need to be opened?
- ICP set up point
- LAFRS response times.

### Training:

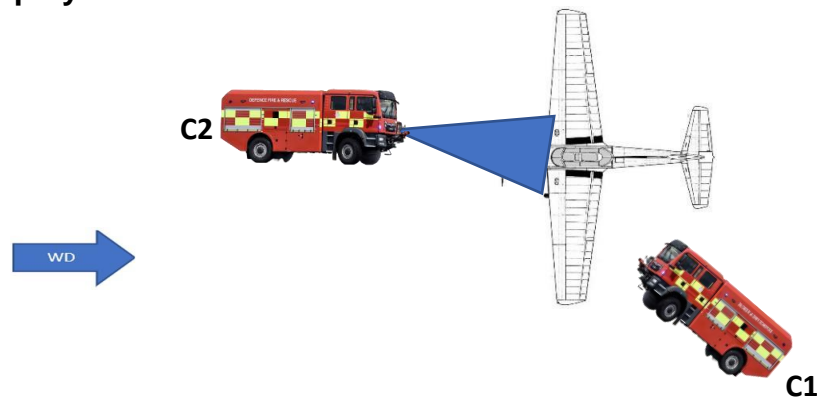
- Aircraft familiarization
- B169 CGY BBMF Chipmunk Crash/Rescue
- Deployment exercise(s)
- Redkite CMS

### Supporting Information:

- DFR-Ops Guidance 009 - Aircraft Fires
- Ops Instruction 001 - Aircraft Incidents
- Ops Instruction 002 - CFR HSE Policy
- Ops Instruction 005 - Low Speed Manoeuvring
- Ops Instruction 006 - MPRV ARFF Positioning Deployment & Task
- Ops Instruction 007 - MPRV Vehicle Operations
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fire
- Op Guidance 008 - Aircraft Undercarriage Incidents
- ATTP A07 Chipmunk.
- MOD Aircraft Crash Hazards Document Set

## TTP 2 - Wheel Assembly Incidents

### Event Plan - Initial Deployment



### Incident Commander Considerations:

- Location of A/C
- Emergency declared
- POB
- Wind Direction
- Transit to incident
- Confirm with all crews the nature of incident and location
- Evacuating PAX
- DRA followed by M/ETHANE
- Inform ATC of Tactical Mode & request external resources
- Contact aircraft commander via ATC, or direct visually
- Direct all operational control and implement ICS
- Contacting aircraft commander via ATC or direct visually, to ensure shutdown of engine and fuel cocks (IAW B169 CGY BBMF Chipmunk Crash/Rescue)
- Repeat DRA as appropriate to the incident
- Prepare for ARA
- Declare state of airfield and ICAO category
- Consider use of secondary media
- Direct evacuated flight crew to safe holding area prior to designated casualty clearance set up by Medics
- Direct Medics to location
- SENG/Sqn Support
- LAFRS
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.

### Crash 1 - MPRV Actions:

- Crash 1 Deploys to the port of the aircraft covering the access to canopy
- Be aware of PAX exiting the aircraft requiring assistance
- Designated BA wearers (Led by JNCO<sup>3</sup>) will don BA sets but remain off air until instruction from Incident Commander
- Initially crew will respond and assist evacuating crew, who will be directed towards the medics and away from danger area
- Vehicle commander will monitor operations of Crash 2 and assist with protection of the fuselage as required

<sup>3</sup> RAF Coningsby's operating model.



- Prepare for use of 9kg dry powder extinguisher and appropriate hose lines in preparation for access to undercarriage following mass discharge knockdown if required.
- Chock aircraft to when safe to do so.
- If further undercarriage action is required, instruction will be given by Incident Commander. BA Team will enter the area using suitable control measure with an appropriate hose line and 9kg dry powder extinguisher.
- Incident commander should consider use of thermal image camera to identify hot spots, monitoring the fuselage for heat transfer
- Short extension ladder will be required for cockpit access
- BA team will need to ensure canopy is opened following fire extinguishment if required on direction from IC
- BA team should gain access and make safe the airframe IAW:
  
- Engineering Authority B169 CGY BBMF Chipmunk Crash/Rescue
- Assist in extrication of any casualties as appropriate and according to local SOP.

**N.B. Where no fire is evident media should not be applied but crews should standby**

## **CRASH 2 - MPRV Actions**

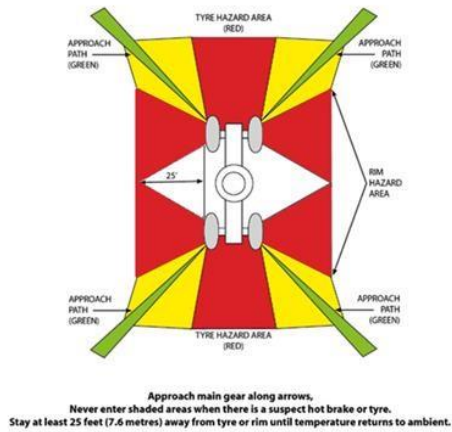
- Crash 2 to deploy according to wind direction to nose of aircraft. Initial use of bumper turret will be required for primary knock down using foam discharge. Consideration should be given to the use of vehicle secondary media (DP) if appropriate as dual media application

**N.B. Where no fire is evident media should not be applied but crews should standby**

- Be aware of PAX exiting the aircraft.
- Consideration should be given to the use of vehicle secondary media (DP) if appropriate as dual media application.
- Bumper turret may be used to cool fuselage if required following mass discharge to engine fire. Consider conservation of media used.
- Incident Commander will provide supporting resources if incident requires BA intervention. (emergency covering line in support of BA Team, from MPRV, ladder access requirements)
- If BA teams are utilised the Incident Commander is to ensure that the following information is passed to ATC.
  
- The number of BA in use
- The purpose, e.g. ventilation
- What Stage of control is in operation?
- What additional BA resources are required?
  
- If Rescue Task is required Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in event of reignition.
- Once fire is extinguished and the aircraft has been made safe, casualties have been extracted and are in medical care, crew commander can look to close down the incident and hand aircraft over to relevant agencies.

## Specific Aircraft Hazards - (Make use of AQRC):

- Generic wheel assembly danger areas



- Structural Collapse due to weakened undercarriage
- All crew to be aware of propellers when approaching aircraft, taking into consideration propeller danger zone
- Ensure engine is shut down and fuel cocks closed. Use magneto switch inside the cockpit as shown below



- Gain access to the canopy by sliding it backwards using the handles as show below





- If canopy fails, then emergency entry is gained by using window release handles that allow the windows to be removed. Handles operate by lift, turn, and pull action as seen in figure below



### Further Considerations:

- Propeller danger zones
- Will additional BA Team be required?
- Use of TIC
- Will engine covers need to be opened?
- ICP set up point
- LAFRS response times.

### Training:

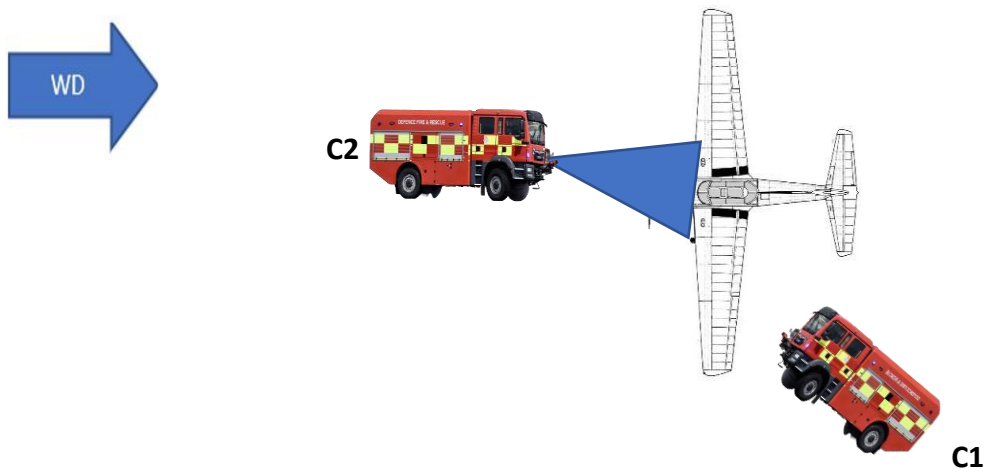
- Aircraft familiarization
- B169 CGY BBMF Chipmunk Crash/Rescue
- Deployment exercise(s)
- Redkite CMS

### Supporting Information:

- DFR-Ops Guidance 009 - Aircraft Fires
- Ops Instruction 001 - Aircraft Incidents
- Ops Instruction 002 - CFR HSE Policy
- Ops Instruction 005 - Low Speed Manoeuvring
- Ops Instruction 006 - MPRV ARFF Positioning Deployment & Task
- Ops Instruction 007 - MPRV Vehicle Operations
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fire
- Op Guidance 008 - Aircraft Undercarriage Incidents
- ATTP A07 Chipmunk.
- MOD Aircraft Crash Hazards Document Set

## TTP 3 – External Fire

### Event Plan – Initial Deployment



#### Incident Commander Considerations:

- Location of A/C
- Emergency declared
- POB
- Wind Direction
- Transit to incident
- Confirm with all crews the nature of incident and location
- Evacuating PAX
- DRA followed by M/ETHANE
- Inform ATC of Tactical Mode & request external resources
- Contact aircraft commander via ATC, or direct visually
- Direct all operational control and implement ICS
- Contacting aircraft commander via ATC or direct visually, to ensure shutdown of engine and fuel cocks (IAW B169 CGY BBMF Chipmunk Crash/Rescue)
- Repeat DRA as appropriate to the incident
- Prepare for ARA
- Declare state of airfield and ICAO category
- Consider use of secondary media initially as mass discharge dual application.
- Direct evacuated flight crew to safe holding area prior to designated casualty clearance set up by Medics
- Direct Medics to location
- SENG/Sqn Support
- LAFRS
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.

## Crash 1 - MPRV Actions:

- Crash 1 Deploys to the port of the aircraft covering the access to canopy
- Be aware of PAX exiting the aircraft requiring assistance
- Designated BA wearers (Led by JNCO<sup>4</sup>) will don BA sets but remain off air until instruction from Incident Commander
- Initially crew will respond and assist evacuating crew, who will be directed towards the medics and away from danger area
- Vehicle commander will monitor operations of Crash 2 and assist with protection of the fuselage as required
- Chock aircraft when safe and ensure engines are shut down
- Incident commander should consider use of thermal image camera to identify hot spots, monitoring the fuselage for heat transfer
- Short extension ladder may be required for cockpit access
- BA team will need to ensure canopy is opened following fire extinguishment if required on direction from IC
- BA team should gain access and make safe the airframe IAW:
- Engineering Authority B169 CGY BBMF Chipmunk Crash/Rescue
- Assist in extrication of any casualties as appropriate and according to local SOP.

**No direct access to airframe should take place until mass discharge has extinguished external engine fire.**

## CRASH 2 - MPRV Actions

- Crash 2 to deploy according to wind direction for immediate access to nose of airframe protecting critical part (canopy cockpit). Initial use of bumper turret will be required for primary knock down using foam discharge
- Be aware of PAX exiting the aircraft
- Bumper turret may be used to cool fuselage and maintain foam blanket if required following mass discharge to engine fire. Consider conservation of media used
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- The number of BA in use
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- If a rescue task is required, Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in the event of reignition.
- Once fire is extinguished and the aircraft has been made safe, casualties have been extracted and are in medical care, crew commander can look to close down the incident and hand aircraft over to relevant agencies.

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<sup>4</sup> RAF Coningsby's operating model.

## Specific Aircraft Hazards – (Make use of AQRC):

- All crew to be aware of propellers when approaching aircraft, taking into consideration rotor danger zones
- Engine fire to be extinguished by spraying water / foam into the intake
- Aviation Fuel and pressurized systems again if fire spreads from engine fire. Aspirated foam blanket should be maintained
- Ensure engine is shut down and fuel cocks closed. Use magneto switch inside the cockpit as shown below



- Gain access to canopy by using the handles to slide back as shown below



- If canopy fails, then emergency entry is gained by using window release handles that allow the windows to be removed. Handles operate by lift, turn, and pull action as seen in figure below.



### Further Considerations:

- Propeller danger zones
- Will additional BA Team be required?
- Use of TIC
- Will engine covers need to be opened?
- ICP set up point
- LAFRS response times.

### Training:

- Aircraft familiarization
- B169 CGY BBMF Chipmunk Crash/Rescue
- Deployment exercise(s)
- Redkite CMS

### Supporting Information:

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Version	Date	Author	Role/Name	Status	Changes
V1.0	25 06 2021	A. Carr	F.S. Training Manager	Current	Drafted
V1.0	15 10 2021	P McGuinness	CFR Hd of Response	Review	Published
V1.1	19 06 2024	P McGuinness	CFR Hd of Response	Doc Update	New Cover New Sponsor
V1.1	20 06 2024	S Dalgliesh	FSM / FS RAF Coningsby	Endorsed	
V1.1	21 06 2024	S Cook	AM DFR HQ	Stakeholder review	Footnotes requested
V1.1	24 06 2024	P McGuinness	CFR Hd of Response	Issued	Footnotes added