



Ministry
of Defence



Defence Fire and Rescue

Aviation Tactics Techniques & Procedures

Document No: ATTP-A28
Title: Typhoon Mk4 - HRET, MPRV and SUV **V1.3**
Date Issued: 08 03 2024
Supersedes: 27 06 2023
Review Date: 01 03 2029
Stakeholders:
DFR HQ ✓ Capita Fire and ✓
RN Aircraft Handler ✓ RAF Fire and Rescue ✓
DFRS LEC ✓ Other FRS Providers ✓
DFRS (Retained) DFRS (USVF) ✓

Technical Author(s): DFR HQ & CFR
Approved Authority: Operations Committee

Sponsor Details: **Strategic Lead Operational Capability & Development**
Defence Fire & Rescue (DFR) Headquarters
Sedgemoor Building, Marlborough Lines,
Monxton Road,
Andover,
Hampshire,
SP11 8HT

Contact: DFR-HQOCD@mod.gov.uk

Conditions of Release

1. This information is Crown Copyright and the intellectual property rights for this publication belong exclusively to the Ministry of Defence (MOD). No material or information contained in this publication should be reproduced, stored in a retrieval system, or transmitted in any form outside MOD establishments except as authorised by both the sponsor and the MOD where appropriate.
2. This information is released by the United Kingdom Government to a recipient Government for defence purposes only. It may be disclosed only within the Defence Department of a recipient Government, except as otherwise authorised by the MOD.
3. This information may be subject to privately owned rights.

VERSION CONTROL HISTORY

Version	Amendment	Brief Details	Amended By	Date
V0.1	Draft	Draft	WM M Fleming	07 June 2021
V1.1	Final Draft	Final Draft	G Mc Lelland	25 June 2021
V1.2	Issued in new format	Issued in new format	Phil McGuinness	02 Nov 2023
V1.3	For re-issue	References added: Ops Instruction 066 Ops Instruction 069	Phil McGuinness	06 Mar 2024
V1.3	Doc Review	RAF Akrotiri response review	D Cain	07 Mar 2024

Defence Fire & Rescue



AIRCRAFT TACTICS TECHNIQUES PROCEDURES

This ATTP applies to the operation of the Typhoon aircraft at stations utilising:

SUV¹

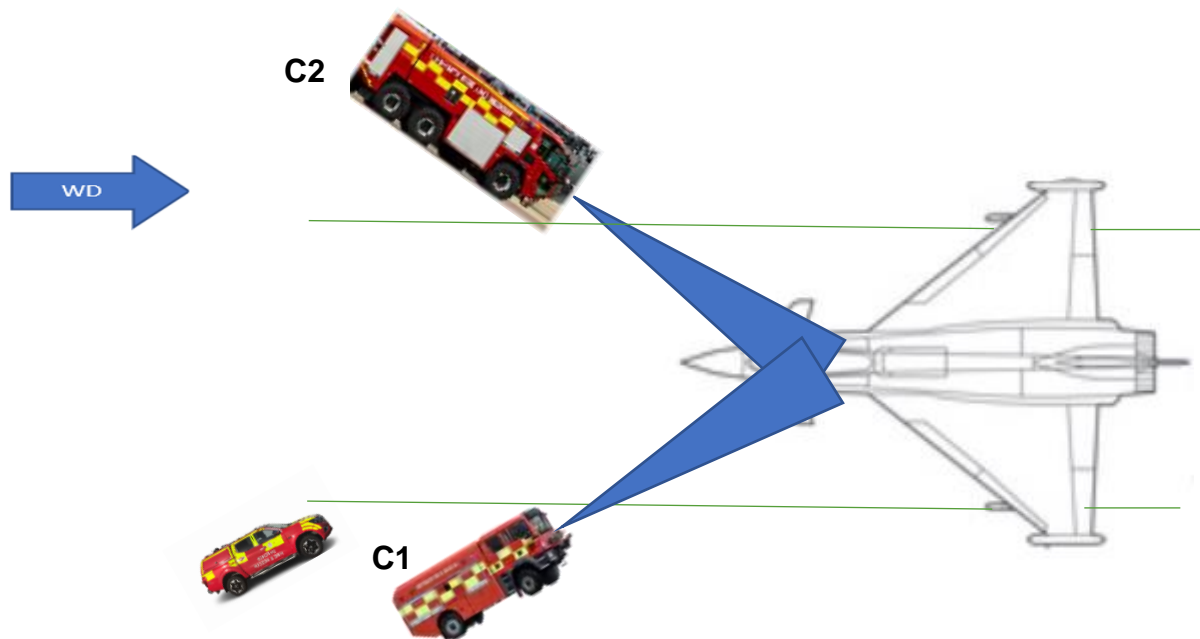
MPRV (Crash 1)

HRET Striker (Crash2)

TTP 1 - Engine Fire	Page 3
TTP 2 - Wheel Assembly Incidents / Fire	Page 8
TTP 3 - APU Fire	Page 13
TTP 4 - External Fire	Page 17

TTP 1 – Engine Fire (ARMED)

Event Plan - Initial Deployment:



If the aircraft is armed:

Do Not deploy in front of armaments, and ensure all personnel are made aware.

¹ In the absence of a SUV the IC will ride the HRET in-line with Ops-Ins-039-Loss-of-the-SUV

TTP 1 - Engine Fire Unarmed

Event Plan - Initial Deployment:



Incident Commander Considerations:

- Emergency declared
- Location of A/C
- Wind Direction
- Number of POB (aircraft variant)
- Is aircraft armed or unarmed (**ASRAM or AMRAM deployment consideration**)
- Liaise with pilot (through ATC if necessary) at earliest opportunity to confirm immediate shut down of engines and fuel cocks to reduce escalation of incident (IAW BTY 103 Crash Rescue Procedures & BTY 400 CES Safety for Emergency Crews)
- On arrival conduct DRA followed by M/ETHANE
- Direct all operational control and implement ICS
- Select Safe a System of Work
- Is flame visible?
- Is fire spreading (is mass discharge applicable?)
- Create survivable conditions
- Consider use of secondary media (if applicable)
- Inform ATC of Tactical Mode & request external resources
- Safety distances to be adhered to if pilot/crew intend to use canopy jettison.
- Extinguish fire, gain entry, evacuate aircrew
- Direct Medics to location
- Repeat DRA as appropriate to the incident
- Prepare for ARA (where time and resources permit)
- Evacuated flight crew to safe holding area prior to designated casualty clearance set up by Medics
- SENG/Sqn Support
- Liaise with LAFRS (where applicable)
- Declare state of airfield and ICAO category
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.

Priorities may vary on complexity, size, and nature of the incident.

Crash 1 - MPRV Actions:

- Crash 1 to deploy according to event plan for ARMED or UNARMED a/c. This will permit support of Crash 2 and additionally support redeployment as required during incident phases
- Deploy Portside (rescue side of a/c), safely and appropriately so not to hinder HRET Ops
- Designated BA wearers will don BA sets but remain off air until instructed by the IC
- Initially, crew will respond and assist crew if evacuating (who will be directed towards the medics and away from danger area)
- Vehicle commander will monitor operations of Crash 2 and assist with extinguishment of the fire and protection of the cockpit as required
- Prepare ladder for rescue requirements as appropriate
- Prepare for use of 9kg dry powder extinguisher and appropriate hose line in preparation of engine fire access following mass discharge knockdown if required
- If engine fire access is required, instruction will be given by IC. BA Team will enter the area using suitable control measure with appropriate media and hose line
- IC should consider the use of thermal image camera to identify hot spots, monitoring the temperature of armaments and the airframe which is to be under 150 degrees due to Polymer Composites before the use of dust masks is permitted
- BA team aim will brief IC when extinguishment of fire has been achieved
- BA team should chock and pin airframe
- BA team should gain access and make safe the airframe IAW:
 - Engineering Authority BTY 103 Crash Rescue Procedures
 - Engineering Authority BTY 400 CES Safety for Emergency crew
- **AAES** - Request specialist advice for AAES. Establish cordon of 30m for ejected AAES.
- Make external systems safe (weapons, defensive suites, canopy)
- Gain access into cockpit (Refer AQRC) make safe AAES/special risks, shut down a/c (if required) and initiate the rescue of aircrew (trapped/or otherwise).
- Working from ladders or other suitable platforms may have to be considered.
- Remove any casualties as appropriate and according to local SOP / IAW training

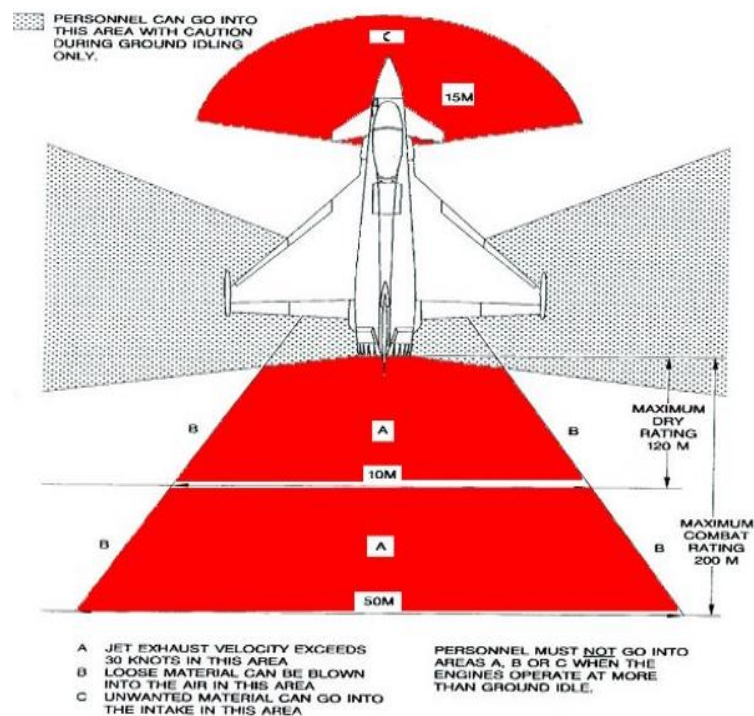
No direct access to airframe should take place until mass discharge has extinguished external engine fire.

CRASH 2 – Striker HRET Actions

- Crash 2 to deploy according to event plan for ARMED or UNARMED 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.
- Bumper turret may be used to cool fuselage if required following mass discharge to engine fire. Consider conservation of media used.
- Bumper turret may be required to ensure any fuel spillage has foam blanket applied. Aviation fuel/hydraulic oils and composite fibers may be released. An aspirated foam blanket should be maintained over any such releases for the duration of the incident
- IC will provide supporting resources if incident requires BA intervention, Emergency covering line in support of BA Team, from MPRV and/or ladder access requirements
- If a rescue task is required Crash 1 driver and passenger will enter Risk Area utilizing dust masks (when temperature is under 150 degrees) to assist the BA team in gaining entry and shutting down the airframe and carryout rescue.
- If rescue task is required Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in event of reignition.

- If BA teams are utilised the IC 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?
- Once fire is extinguished and the aircraft has been made safe, casualties have been extracted and are in medical care, the IC can look to close the incident and hand the aircraft over to the relevant agencies.

Specific Aircraft Hazards - (Make use of AQRC):



For armed a/c:

- Fire vehicles must not be parked directly in front or behind the jet. Deployment should be just past each wing tip to ensure the safety of crew (not in-line of sight of weapons).
- Request specialist advice for Weapon/Explosive stores.
- Establish complete evacuation cordon of 400m.
- Manage or restrict the use of electronic communication devices until isolated.

All a/c incidents:

- All hazards/potential hazards are diminished or fully extinguished before making entry into the cockpit.
- Moving aircraft surfaces; Flaps etc.
- Crash crew are to ensure correct level of PPE is worn, breathing apparatus is required for the rescue team.
- Personnel not required on scene are escorted to a safe area up wind from any smoke issuing from the aircraft.

- A/C to be shut down IAW DAP 101B-5400-1A

Further Considerations:

- ICP set up
- Consider any environmental implications
- Use of TIC
- Use of secondary media.
- LAFRS response times.
- Preserve the scene and any evidence

Supporting Information:

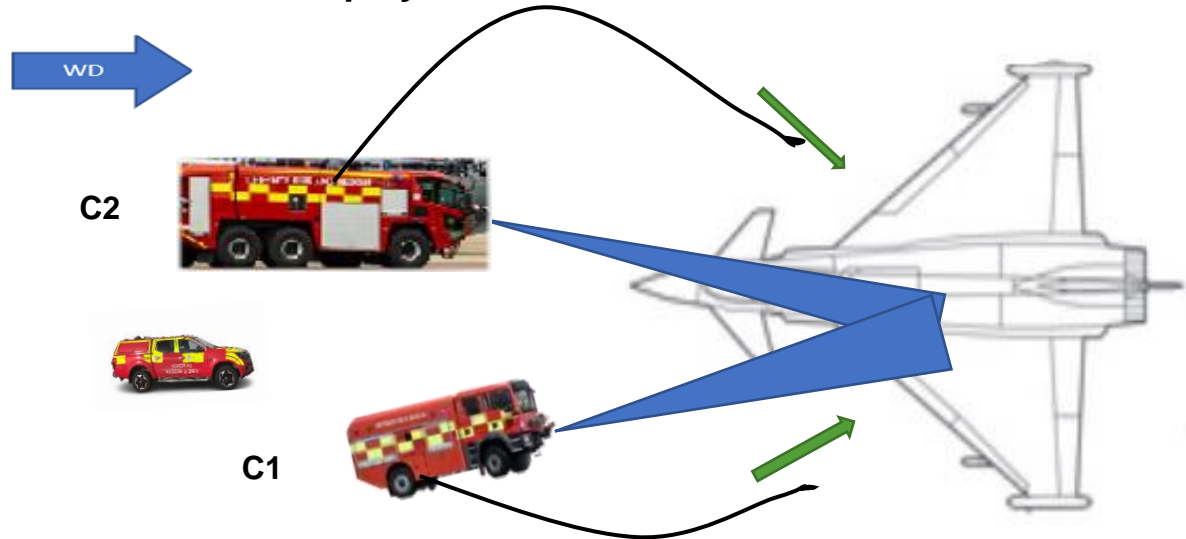
- DFR-OG 009 - Aircraft Fires
- Ops Instruction 001 - Aircraft Incidents
- Ops Instruction 002 - CFR HSE Policy
- Ops Instruction 005 - Low Speed Manoeuvring
- Ops Instruction 006 - MPRV ARFF Positioning Deployment & Task
- Ops Instruction 007 - MPRV Vehicle Operations
- Ops Instruction 009 - Oshkosh Striker HRET Positioning Deployment & Task
- Ops Instruction 010 - Oshkosh Striker HRET Incident Commander Considerations
- Ops Instruction 012 - Oshkosh Striker HRET Controls
- Ops Instruction 013 - Oshkosh Striker HRET Manual Recovery
- Ops Instruction 014 - Oshkosh Striker HRET Safety Considerations
- Ops Instruction 016 - Oshkosh Striker HRET Operator Considerations
- Ops Instruction 018 - SUV positioning Deployment & Task
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Ops Instruction 069 - Polymer-Composites-and-MMMF
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 004 - Military Fast Jets
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fires.
- Op Guidance 008 - Aircraft Undercarriage Incidents
- MOD Aircraft Crash Hazards Document Set
- NATO STANAG/TO 00-105E-9-Chapter 13 (revision 16)
- AQRC-A28-Typhoon

Training:

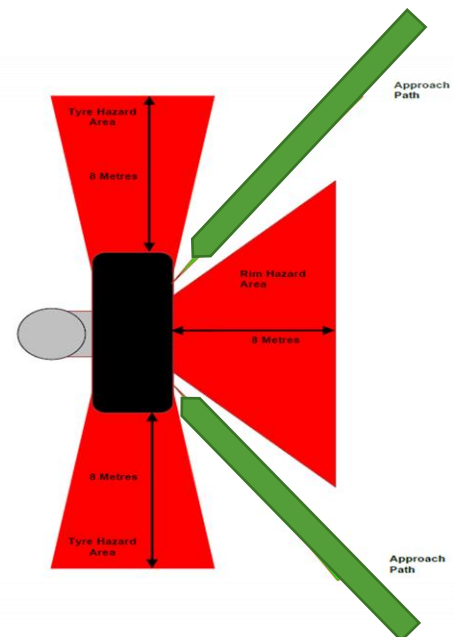
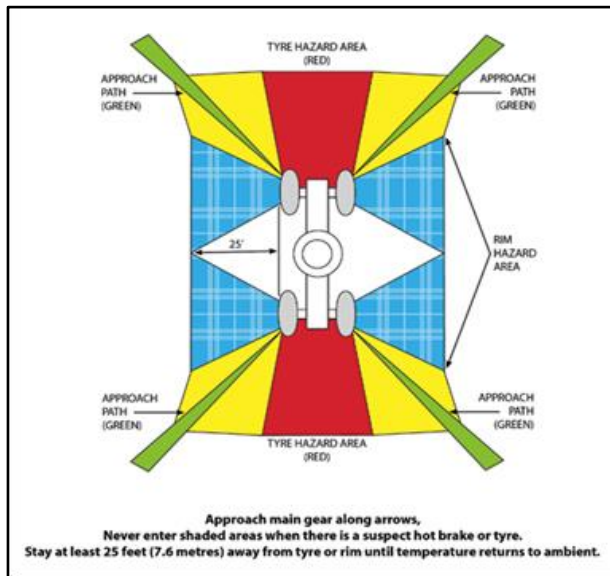
- Aircraft familiarization
- Theoretical lesson Typhoon A/C
- Engineering Authority BTY 103 Crash Rescue Procedures
- Engineering Authority BTY 400 CES Safety for Emergency crew

TTP 2 – Wheel Assembly Incidents (Un-Armed)

Event Plan - Initial Deployment:



Rim Disintegration area:



Incident Commander Considerations:

- Emergency declared
- Location of A/C
- Wind Direction
- Number of POB (aircraft variant)
- Is aircraft armed or unarmed (**ASRAM or AMRAM deployment consideration**)
- Liaise with pilot (through ATC if necessary) at earliest opportunity to confirm immediate shut down of engines and fuel cocks to reduce escalation of incident (IAW BTY 103 Crash Rescue Procedures & BTY 400 CES Safety for Emergency Crews)
- On arrival conduct DRA followed by M/ETHANE
- Direct all operational control and implement ICS
- Select Safe a System of Work
- Is flame visible?
- Is fire spreading (is mass discharge applicable?)
- Create survivable conditions
- Consider use of secondary media (if applicable)
- Inform ATC of Tactical Mode & request external resources
- Safety distances to be adhered to if pilot/crew intend to use canopy jettison.
- Extinguish fire, gain entry, evacuate aircrew
- Direct Medics to location
- Repeat DRA as appropriate to the incident
- Prepare for ARA (where time and resources permit)
- Evacuate flight crew to a safe holding area, prior to designated casualty clearance set up by Medics
- SENG/Sqn Support
- Liaise with LAFRS (where applicable)
- Declare state of airfield and ICAO category
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required

Priorities will vary on complexity, size, and nature of the incident.

Crash 1 - MPRV Actions:

- Crash 1 to deploy according to event plan for ARMED or UNARMED aircraft
- Initial use of bumper turret will/may be required for fire knock down using foam discharge and consideration should be given to the use of the vehicles secondary media (DP) if appropriate as dual media application.

Where no fire is evident media should not be applied but crews should standby

- Designated BA wearers will don BA sets but remain off air until instructed by the IC
- 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 cockpit if required
- Prepare for use of 9kg dry powder extinguisher and appropriate hose line in preparation for access to undercarriage void following mass discharge knockdown (if required)
- If undercarriage void fire access is required, instruction will be given by IC, the BA Team will enter the area using suitable control measure with hose line and 9kg dry powder extinguisher
- The IC should consider use of thermal image camera to identify hot spots, monitoring the temperature of armaments and the airframe which is to be under 150 degrees due to Polymer Composites before the use of dust masks is permitted

- BA team will brief IC when extinguishment of fire has been achieved
- BA team should chock and pin airframe
- BA team should gain access and make safe the airframe IAW:

Engineering Authority BTY 103 Crash Rescue Procedures

Engineering Authority BTY 400 CES Safety for Emergency crew

- **AAES** - Request specialist advice for AAES. Establish cordon of 30m for ejected AAES.
- Make external systems safe (weapons, defensive suites, canopy)
- Gain access into cockpit (Normal/Emergency/Forcible) make safe AAES/special risks, shut down A/c (if required) and initiate the rescue of trapped aircrew.
- Working from ladders or other suitable platforms may have to be considered.
- Foam and water sprays should be used externally to keep adjacent structures/explosive stores cool.
- Remove any casualties as appropriate and according to local SOP / IAW TRA

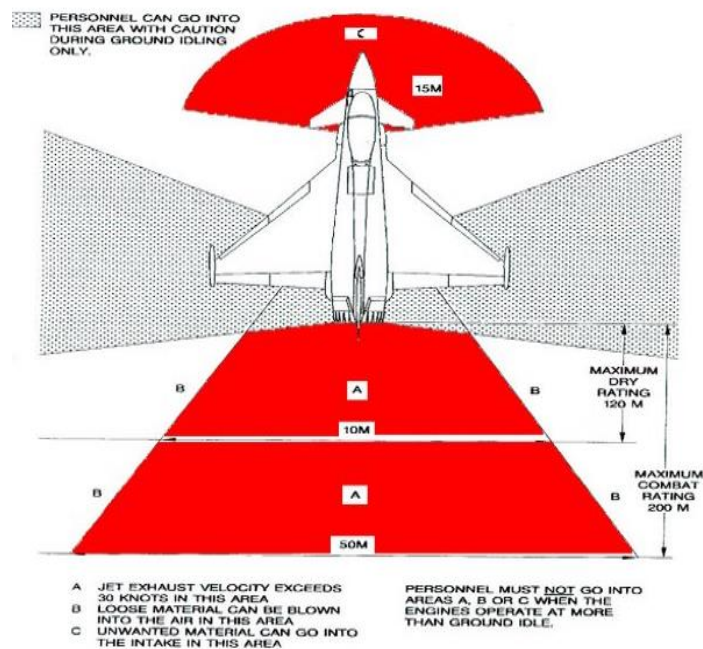
CRASH 2 – Striker HRET Actions

- Crash 2 to deploy according to event plan for ARMED or UNARMED 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.

Where no fire is evident media should not be applied but crews should standby in case of fire initiation.

- Bumper turret will/may be used to cool fuselage if required following mass discharge to engine fire. Consider conservation of media used.
- Bumper turret will/may be required to ensure any fuel spillage has foam blanket applied. Aviation fuel/hydraulic oils and composite fibers may be released. An aspirated foam blanket should be maintained over any such releases for the duration of the incident
- The IC will provide supporting resources if incident requires BA intervention. (Emergency covering line in support of BA Team, from MPRV, ladder access requirements)
- If a rescue task is required Crash 1 driver and passenger will enter Risk Area utilizing dust masks (when temperature under 150 degrees) to assist the BA team in gaining entry and shutting down the airframe and carryout rescue
- If rescue task is required Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in event of reignition
- If BA teams are utilised the IC is to ensure that the following information is passed to ATC
 - The number of BA in use
 - The purpose, e.g., firefighting/rescue
 - What Stage of control is in operation
 - If additional BA resources are needed
- 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):



For armed a/c:

- Fire vehicles must not be parked directly in front or behind the jet. Deployment should be just past each wing tip to ensure the safety of crew (not in-line of sight of weapons).
- Request specialist advice for Weapon/Explosive stores.
- Establish complete evacuation cordon of 400m.
- Manage or restrict the use of electronic communication devices until isolated.

All a/c incidents:

- All hazards/potential hazards are diminished or fully extinguished before making entry into the cockpit.
- Moving aircraft surfaces; Flaps etc.
- Crash crew are to ensure correct level of PPE is worn, breathing apparatus is required for the rescue team.
- Personnel not required on scene are escorted to a safe area up wind from any smoke issuing from the aircraft.
- A/C to be shut down IAW DAP 101B-5400-1A

Further Considerations:

- ICP set up
- Use of TIC
- Consider use of secondary media
- Fuel/Hydraulic spill
- Unstable aircraft fuselage
- Live ejection seats (AAES).
- Intakes, running engines to allow A/C's wheel fans to operate.
- LAFRS response times.
- Consider any environmental implications
- Preserve the scene and any evidence

Supporting Information:

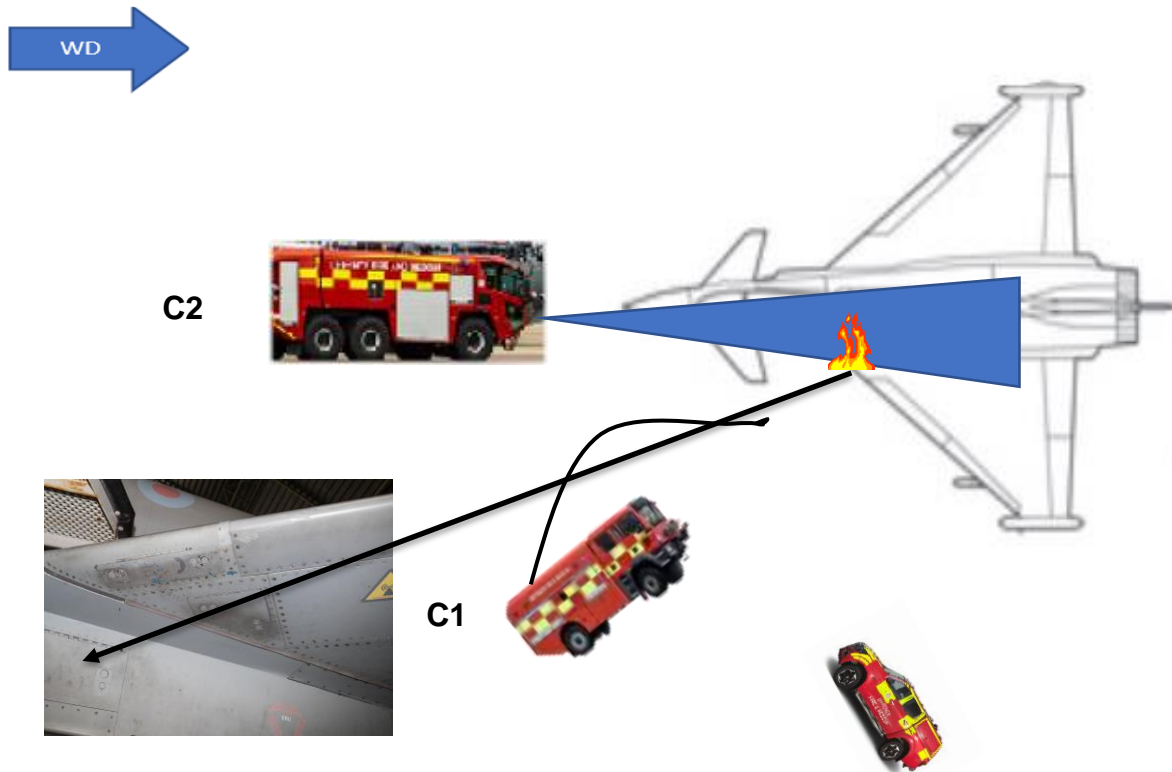
- DFR-OG 009 - Aircraft Fires
- Ops Instruction 001 - Aircraft Incidents
- Ops Instruction 002 - CFR HSE Policy
- Ops Instruction 005 - Low Speed Manoeuvring
- Ops Instruction 006 - MPRV ARFF Positioning Deployment & Task
- Ops Instruction 007 - MPRV Vehicle Operations
- Ops Instruction 009 - Oshkosh Striker HRET Positioning Deployment & Task
- Ops Instruction 010 - Oshkosh Striker HRET Incident Commander Considerations
- Ops Instruction 012 - Oshkosh Striker HRET Controls
- Ops Instruction 013 - Oshkosh Striker HRET Manual Recovery
- Ops Instruction 014 - Oshkosh Striker HRET Safety Considerations
- Ops Instruction 016 - Oshkosh Striker HRET Operator Considerations
- Ops Instruction 018 - SUV positioning Deployment & Task
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Ops Instruction 069 - Polymer-Composites-and-MMMF
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 004 - Military Fast Jets
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fires.
- Op Guidance 008 - Aircraft Undercarriage Incidents
- MOD Aircraft Crash Hazards Document Set
- NATO STANAG/TO 00-105E-9-Chapter 13 (revision 16)
- AQRC-A28-Typhoon

Training:

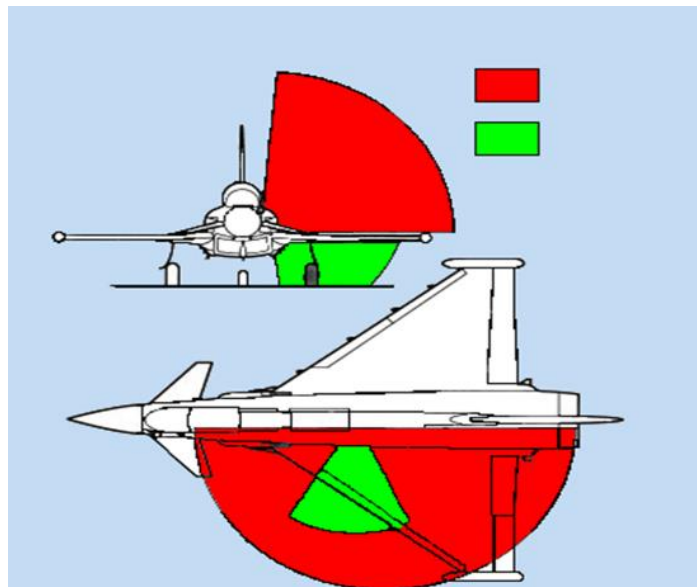
- Aircraft familiarization
- Theoretical lesson Typhoon
- Engineering Authority BTY 103 Crash Rescue Procedures
- Engineering Authority BTY 400 CES Safety for Emergency crew

TTP 3 - APU Fire (Unarmed)

Event Plan - Initial Deployment:



For unarmed AC - HRET is to deploy nose on with MPRV rescue side. APU is located under port side leading edge of the wing. IC (dark icon) will have overall visibility and direct personnel. Danger areas shown below. Fire fighters will utilise where possible the 10kg CO2 trolley to access fire panels and APU switch located under access panel to shut APU down (as shown)



APU Hazard areas.

Incident Commander Considerations:

- Emergency declared
- Location of A/C
- Wind Direction
- Number of POB (aircraft variant)
- Is aircraft armed or unarmed (**ASRAM or AMRAM deployment consideration**)
- Liaise with pilot (through ATC if necessary) at earliest opportunity to confirm immediate shut down of engines and fuel cocks to reduce escalation of incident (IAW BTY 103 Crash Rescue Procedures & BTY 400 CES Safety for Emergency Crews)
- Is safe evacuation for the crew possibly
- Conduct DRA followed by M/ETHANE
- Direct all operational control and implement ICS
- Select Safe a System of Work
- Declare tactical mode with ATC
- Is flame visible?
- Is fire spreading (is mass discharge applicable?)
- Consider use of secondary media (if applicable)
- Inform ATC of Tactical Mode & request external resources
- Safety distances to be adhered to if pilot/crew intend to use canopy jettison.
- Extinguish fire, gain entry, evacuate aircrew
- Direct Medics to location
- Repeat DRA as appropriate to the incident
- Prepare for ARA (where time and resources permit)
- Evacuate flight crew to a safe holding area, prior to designated casualty clearance set up by Medics
- SENG/Sqn Support/Armourers
- Liaise with LAFRS (where applicable)
- Declare state of airfield and ICAO category
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.

Priorities may vary on complexity, size, and nature of the incident.

Typhoon APU fires can vary from cause and potential outcome, so the IC is to continually assess and implement safe systems of work to deal with incident. This involves using and heat imagine equipment to check heat transfers and temperature on typhoon.

Crash 1 - MPRV Actions:

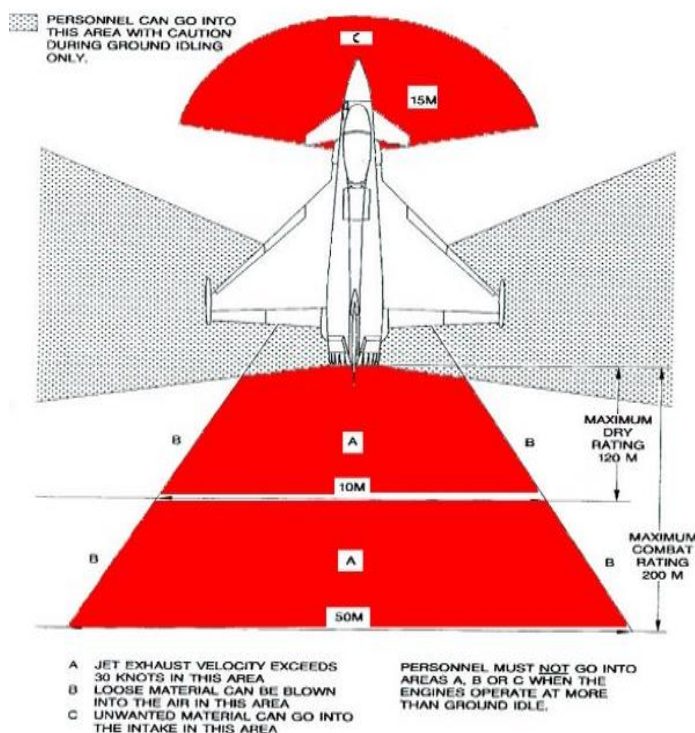
- MPRV to take up rescue side/port side deployment due to accessibility to canopy access panel and EPU switch
- Crash 1 I/C deploy in BA and utilise 10 kg CO2 from the line, if unavailable 5Kg CO2 will be utilized from the vehicle
- Passenger of the MPRV will exit vehicle in BA and deploy side line from crash one, this to enable 360 coverage of the aircraft if the APU fire escalates. They will join the other BA wearer in extinguishing APU fire
- BA Team will enter under Rapid deployment procedures to prevent the incident escalating
- The IC can consider instructing firefighters to use clean extinguishing agents first through 'Fire Access' panels for unconfined fires within the engine. Dry powder may be used but may cause further damage to the A/C.

If rescue task required, then slow or quick extraction procedures to be adopted. Ladder may be required from Crash 1.

CRASH 2 - Striker HRET Actions

- Crash 2 deploy nose on aircraft (to take-up the dominant position), to have overall view.
- Crash 2 monitor ops to deploy extended line off C2 if monitor is not required
- If Crash 2 Monitor ops is deployed in BA, then Stage 1 BA Control will be needed
- Crash 2 driver to be utilised as BAECO if required.
- Provide scene safety
- Maintain contact with IC

Specific Aircraft Hazards - (Make use of AQRC):



For armed a/c:

- Fire vehicles must not be parked directly in front or behind the jet. Deployment should be just past each wing tip to ensure the safety of crew (not in-line of sight of weapons).
- Request specialist advice for Weapon/Explosive stores.
- Establish complete evacuation cordon of 400m.
- Manage or restrict the use of electronic communication devices until isolated.

All a/c incidents:

- All hazards/potential hazards are diminished or fully extinguished before making entry into the cockpit.
- Moving aircraft surfaces; Flaps etc.
- Crash crew are to ensure correct level of PPE is worn, breathing apparatus is required for the rescue team.
- Personnel not required on scene are escorted to a safe area up wind from any smoke issuing from the aircraft.
- A/C to be shut down IAW DAP 101B-5400-1A

Further Considerations:

- ICP set up
- Use of TIC
- Consider use of secondary media
- Fuel/Hydraulic spill
- Unstable aircraft fuselage
- Live ejection seats (AAES).
- Intakes, running engines to allow A/C's wheel fans to operate.
- LAFRS response times.
- Consider any environmental implications
- Preserve the scene and any evidence

Supporting Information:

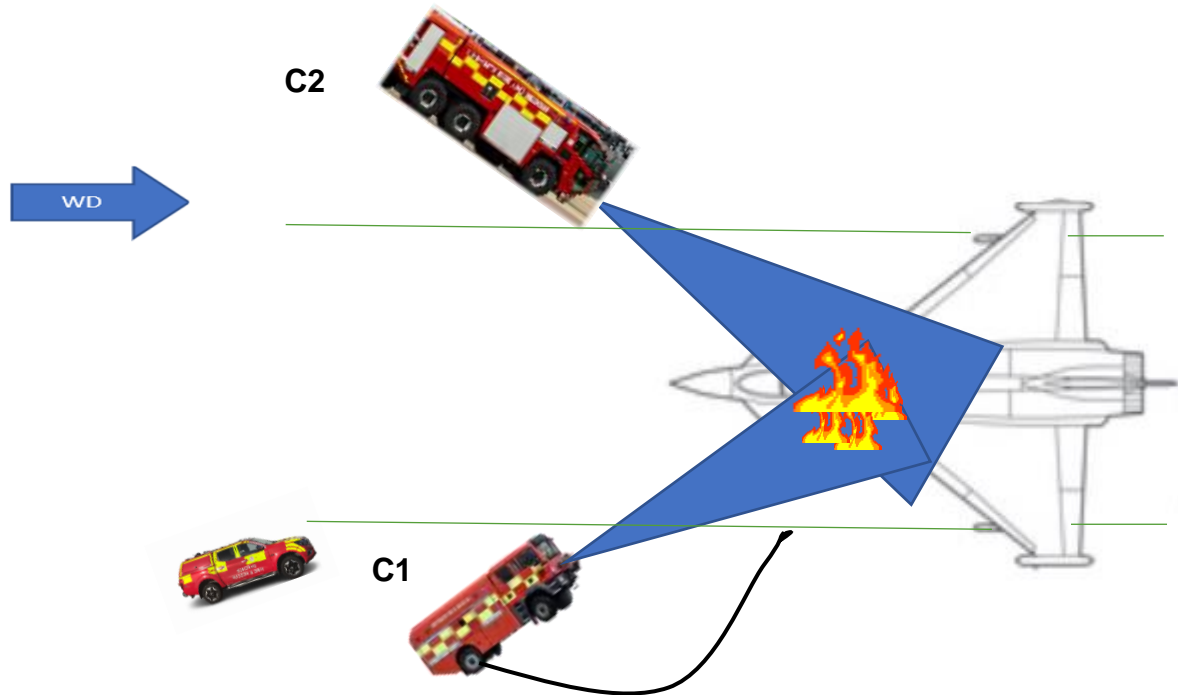
- DFR-OG 009 - Aircraft Fires
- Ops Instruction 001 - Aircraft Incidents
- Ops Instruction 002 - CFR HSE Policy
- Ops Instruction 005 - Low Speed Manoeuvring
- Ops Instruction 006 - MPRV ARFF Positioning Deployment & Task
- Ops Instruction 007 - MPRV Vehicle Operations
- Ops Instruction 009 - Oshkosh Striker HRET Positioning Deployment & Task
- Ops Instruction 010 - Oshkosh Striker HRET Incident Commander Considerations
- Ops Instruction 012 - Oshkosh Striker HRET Controls
- Ops Instruction 013 - Oshkosh Striker HRET Manual Recovery
- Ops Instruction 014 - Oshkosh Striker HRET Safety Considerations
- Ops Instruction 016 - Oshkosh Striker HRET Operator Considerations
- Ops Instruction 018 - SUV positioning Deployment & Task
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Ops Instruction 069 - Polymer-Composites-and-MMMF
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 004 - Military Fast Jets
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fires.
- Op Guidance 008 - Aircraft Undercarriage Incidents
- MOD Aircraft Crash Hazards Document Set
- NATO STANAG/TO 00-105E-9-Chapter 13 (revision 16)
- AQRC-A28-Typhoon

Training:

- Aircraft familiarization
- Theoretical lesson Typhoon
- Engineering Authority BTY 103 Crash Rescue Procedures
- Engineering Authority BTY 400 CES Safety for Emergency crew

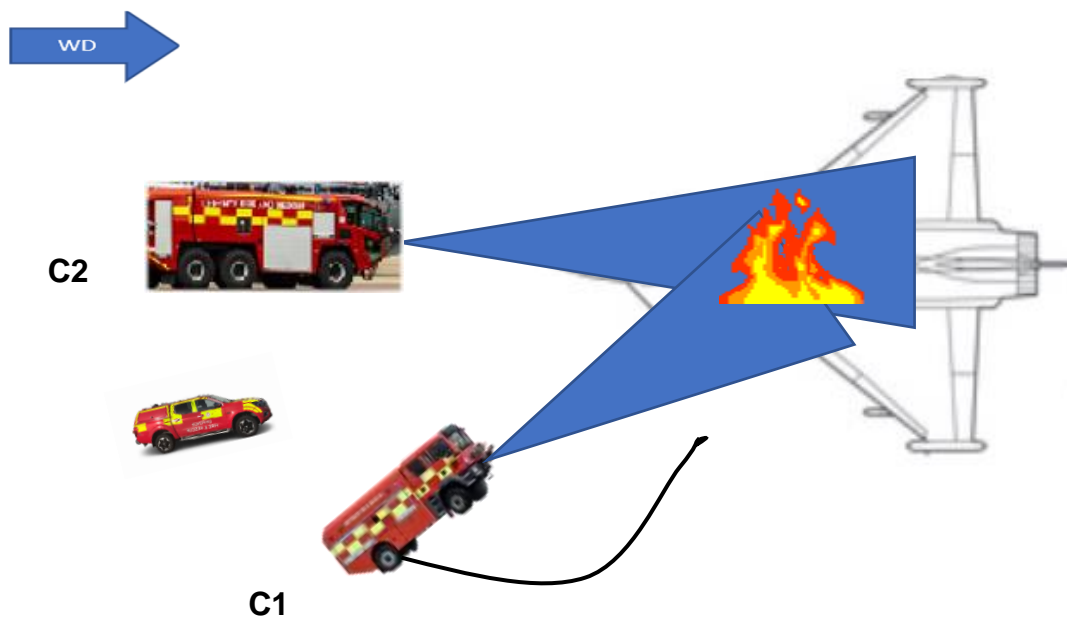
TTP 4 - External Fire (ARMED)

Event Plan - Initial Deployment:



TTP 4 - External Fire (UN-ARMED)

Event Plan - Initial Deployment:



Incident Commander (IC) Considerations:

- Emergency declared
- Location of A/C
- Wind Direction
- Number of POB (aircraft variant)
- Is aircraft armed or unarmed (**ASRAM or AMRAM deployment consideration**)
- Liaise with pilot (through ATC if necessary), at earliest opportunity confirm immediate shut down of engines and fuel cocks to reduce escalation of incident: IAW BTY 103 Crash Rescue Procedures & BTY 400 CES Safety for Emergency Crews
- On arrival conduct DRA followed by M/ETHANE
- Direct all operational control and implement ICS
- Select Safe a System of Work
- Are flames visible?
- Is fire spreading (is mass discharge required?)
- Create survivable conditions
- Consider use of secondary media (where applicable)
- Inform ATC of Tactical Mode & request external resources
- Safety distances to be adhered to if pilot/crew intend to use canopy jettison.
- Extinguish fire, gain entry, evacuate aircrew
- Direct Medics to location
- Repeat DRA as appropriate to the incident
- Prepare for ARA (where time and resources permit)
- Evacuated flight crew to a safe holding area prior to designated casualty clearance set up by Medics
- SENG/Sqn Support
- Liaise with LAFRS (where applicable/on arrival)
- Ensure safe handover of incident when declared safe to relevant authority
- Debrief all crew's post-incident and identify any further support required.
- Declare state of airfield and ICAO category

Priorities may vary on complexity, size, and nature of the incident.

Crash 1 - MPRV Actions:

- Crash 1 to deploy according to event plan for ARMED or UNARMED aircraft or to the side the fire is located. This will permit support of Crash 2 and additionally support redeployment as required during incident phases
- Designated BA wearers will don BA sets but remain off air until instruction from IC
- 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 extinguishment of the fire and protection of the cockpit as required
- Prepare ladder for rescue requirements as appropriate
- Prepare for use of 9kg dry powder extinguisher and appropriate hose line in preparation of engine fire access following mass discharge knockdown if required
- If engine fire access is required, instruction will be given by IC. BA Team will enter the area using suitable control measure with appropriate media and hose line
- IC should consider. use of thermal image camera to identify hot spots, monitoring the temperature of armaments and the airframe which is to be under 150 degrees due to Polymer Composites before the use of dust masks is permitted
- BA team aim will brief IC when extinguishment of fire has been achieved
- BA team should chock and pin airframe
- BA team should gain access and make safe the airframe IAW:

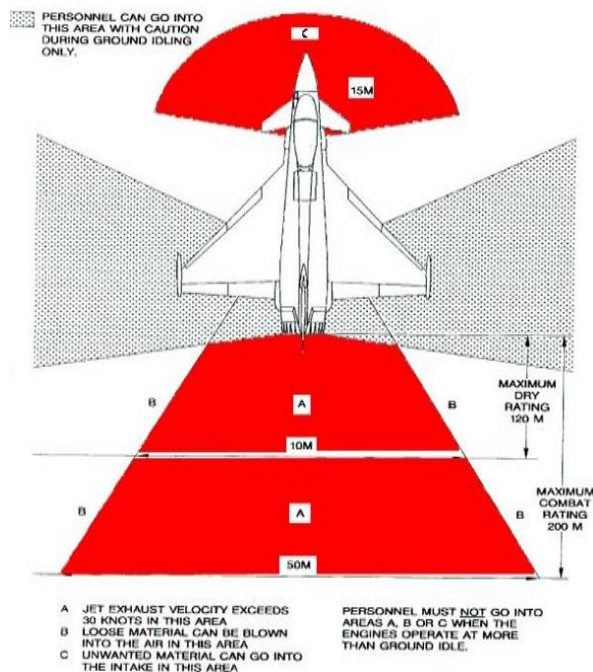
- Engineering Authority BTY 103 Crash Rescue Procedures
- Engineering Authority BTY 400 CES Safety for Emergency crew
- AAES - Request specialist advice for AAES. Establish cordon of 30m for ejected AAES.
- Make external systems safe (weapons, defensive suites, canopy)
- Gain access into cockpit (Normal/Emergency/Forcible) make safe AAES/special risks, shut down A/c (if required) and initiate the rescue of trapped aircrew.
- Working from ladders or other suitable platforms may have to be considered.
- Foam and water sprays should be used externally to keep adjacent structures/explosive stores cool.
- Remove any casualties as appropriate and according to local SOP / IAW TRA

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

CRASH 2 - Striker HRET Actions

- Crash 2 to deploy according to event plan for ARMED or UNARMED 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.
- Bumper turret may be used to cool fuselage if required following mass discharge. Consider conservation of media used.
- Bumper turret may be required to ensure any fuel spillage has foam blanket applied. Aviation fuel/hydraulic oils and composite fibers may be released. An aspirated foam blanket should be maintained over any such releases for the duration of the incident
- 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 a rescue task is required Crash 1 driver and passenger will enter Risk Area utilizing dust masks (when temp under 150 degrees) to assist the BA team in gaining entry and shutting down the airframe and carryout rescue.
- If Rescue Task is required Crash 2 driver will remain with the vehicle to provide scene safety from the monitor in event of reignition.
- If BA teams are utilised the IC 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?
- 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):



Further Considerations:

- All Personnel to don BA and make ready for use with the exception of drivers and Incident Commander
- Will additional BA Team be required?
- Use of TIC
- Deployment of vehicle and portable secondary media.
- ICP set up point
- Due to potential for fibres created in fire situations consideration should be given to the need to clean non-disposable personal protective equipment at the earliest opportunity.
- Casualties contaminated with fire residues from composites should have outer clothing removed where possible, to prevent fibres being transported away from the crash site and ambulance/medical teams advised as to the irritant nature of these products.
- The treatment of casualties with serious/life threatening injuries should not be delayed. Medical teams must be advised of the hazards posed by contaminated clothing.
- It is generally considered that normal washing protocols for personal protective equipment will suffice following normal Fire and Rescue Service (F&RS) operations at aircraft fire/crash scenarios. Incident commanders may wish to liaise with AAIB or Joint Aircraft Recovery & Transportation Squadron (JARTS) on the scene advisers with regards to cleaning protocols.
- LAFRS response times.

Training:

- Aircraft familiarization
- Theoretical lesson Typhoon A/C
- Engineering Authority BTY 103 Crash Rescue Procedures
- Engineering Authority BTY 400 CES Safety for Emergency crew

Supporting Information:

- DFR-OG 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 009 - Oshkosh Striker HRET Positioning Deployment & Task
- Ops Instruction 010 - Oshkosh Striker HRET Incident Commander Considerations
- Ops Instruction 012 - Oshkosh Striker HRET Controls
- Ops Instruction 013 - Oshkosh Striker HRET Manual Recovery
- Ops Instruction 014 - Oshkosh Striker HRET Safety Considerations
- Ops Instruction 016 - Oshkosh Striker HRET Operator Considerations
- Ops Instruction 018 - SUV positioning Deployment & Task
- Ops Instruction 033 - BA Operations
- Ops Instruction 066 - Fire Contaminants
- Ops Instruction 069 - Polymer-Composites-and-MMMF
- Op Guidance 001 - Aircraft Incidents
- Op Guidance 003 - Aircraft Fuel Fires
- Op Guidance 004 - Military Fast Jets
- Op Guidance 006 - Aircraft Internal Fires
- Op Guidance 007 - Aircraft Engine Fires.
- Op Guidance 008 - Aircraft Undercarriage Incidents
- MOD Aircraft Crash Hazards Document Set
- NATO STANAG/TO 00-105E-9-Chapter 13 (revision 16)
- AQRC-A28-Typhoon