Ministry of Defence

Defence Fire and Rescue
Tactics Techniques & Procedures

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	DFRS LEC	✓	Other FRS Providers[1]	✓
	DFRS (Retained Officers)		DFRS (USVF)	
Technical Approved	Defence Fire and Rescue (CFR HQ) Operations Committee			
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Conditions of Release

[1] Other FRS Providers include Babcock Fire Services, Mitie Fire Service, QinetiQ Fire Service.

Document Control

Version	Date	Author	Role/Name	Status	Changes
V 1.0	31/01/2022	D Slesser CU FTM	WM	Initial	
V1.0	17/03/2022	Lt Cdr Stevenson	SO2 Assurance	Approved	
V1.0	24/03/2022	A Jones	CPO	For Review	
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Defence Fire and Recue

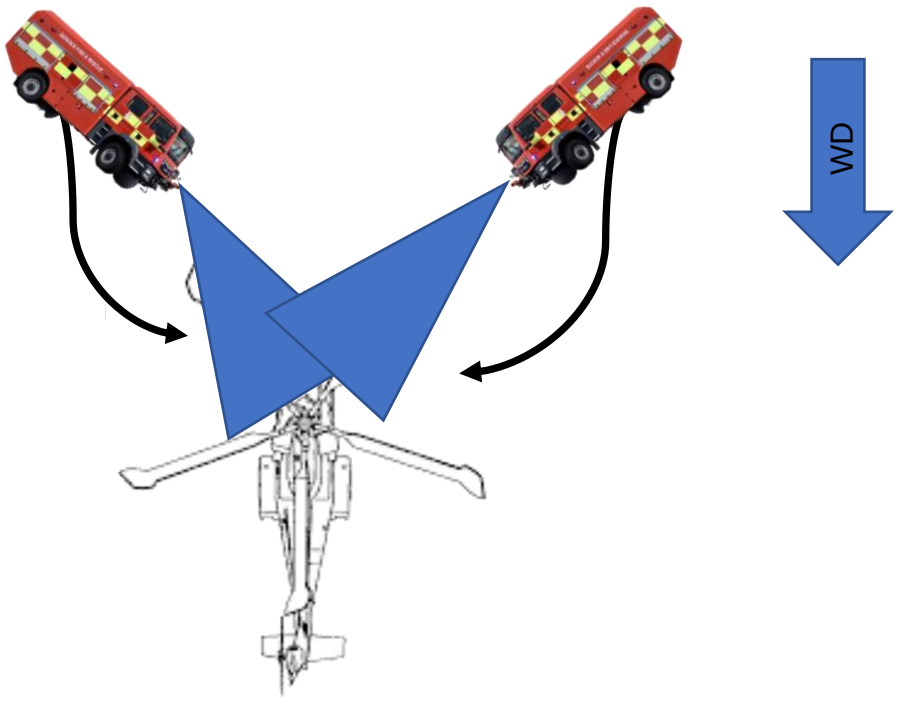
AIRCRAFT TACTICS TECHNIQUES PROCEDURES (ATTP/A42)

This TTP refers to the operation of the Merlin Mk2 utilising 2 MPRV vehicles at H3/5

MPRV (Crash1) 1X CM 1X DVR 2X BA	MPRV (Crash 2) 1X WM (IC) 1X DVR

TTP 1 - External Fire

Event Plan - Initial Deployment



Crash 2 - Incident Commander Considerations:

- Confirm whether armaments and countermeasures are present
- Conduct and complete DRA
- Order BA Team to don BA using Rapid Deployment
- Declare Tactical Mode
- Consider required agencies and resources
- Consider implementing Major Incident Plan
- Direct firefighting actions to create survivable conditions
- Consider contacting aircraft commander via ATC or 121.6 if available
- Be aware of PAX exiting aircraft
- Direct BA rescue crew
- Direct Medical Teams
- Direct all operational control and implement ICS
- Provide M/ETHANE report
- Maintain safe operations and ensure scene safety
- Direct other agencies using JESIP
- Consider water replenishment
- Consider media run-off and water courses on scene.
- Consider preservation of evidence

Crash 2 - MPRV Actions:

- Deploy vehicle at 45 degrees to the aircraft
- Be aware of PAX exiting the aircraft
- Operate monitor and extinguish fire utilising mass discharge
- Deploy sufficient lengths of 45mm hose and extinguish any remaining fire
- Cool airframe if required
- Assist rescue BA team.
- Consider use of TIC

Crash 1 - MPRV Actions:

- Deploy vehicle to 45 degrees to aircraft depending on wind direction
- Operate monitor and extinguish fire utilising mass discharge if required
- Be aware of PAX exiting the aircraft
- Consider method of entry if PAX remain on board
- Don BA and utilise Rapid Deployment Procedures
- Deploy 45mm hose and prepare to make entry into aircraft
- Create survivable conditions by extinguishing fire & ventilating.
- Utilise Medics to triage casualties on board if survivable conditions are present
- Aid Medics in extricating casualties
- Cool airframe if required.

Specific Aircraft Hazards/Procedures:

- Rotors
- Crowsnest Inflation
- Flammable liquids and flammable pressurised gases
- Composite aircraft materials.

Further Considerations:

- Aircraft position and wreckage
- Leaking fuel
- Aircrew
- Other agencies.

Supporting Information:

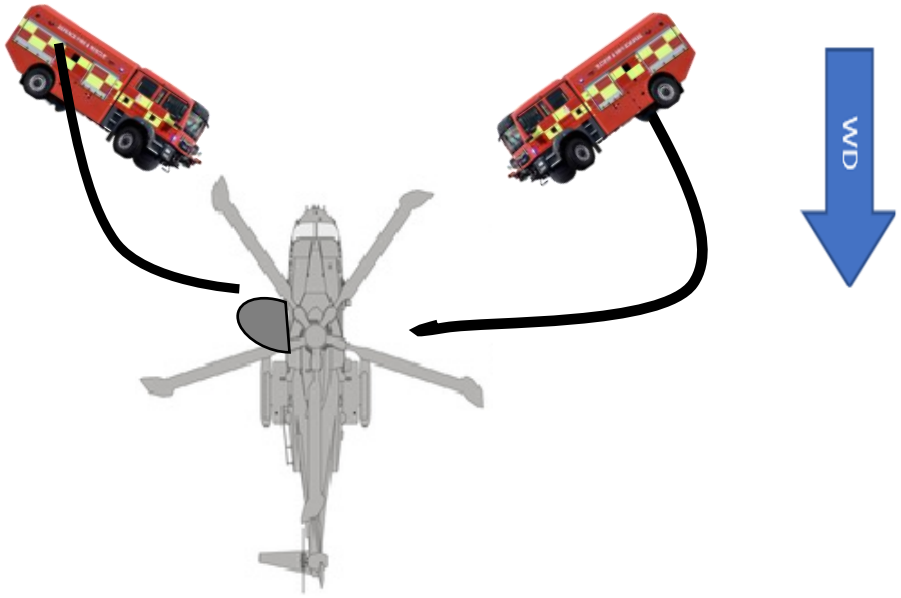
- NOG
- DFR BA Operations
- CFR Ops Instruction 001 – Aircraft Incidents
- CFR Ops Instruction 002 – CFR HSE Policy
- CFR Ops Instruction 005 – Low Speed Manoeuvring
- CFR Ops Instruction 006 – MPRV ARFF Positioning Deployment & Task
- CFR Ops Instruction 007 – MPRV Vehicle Operations
- CFR Ops Instruction 033 – BA Operations
- CFR Op Guidance 002 – Incidents Involving Rotary Wing Aircraft
- CFR Op Guidance 003 – Aircraft Fuel Fires
- CFR Op Guidance 007 – Aircraft Engine Fires
- MOD Aircraft Crash Hazards Document Set

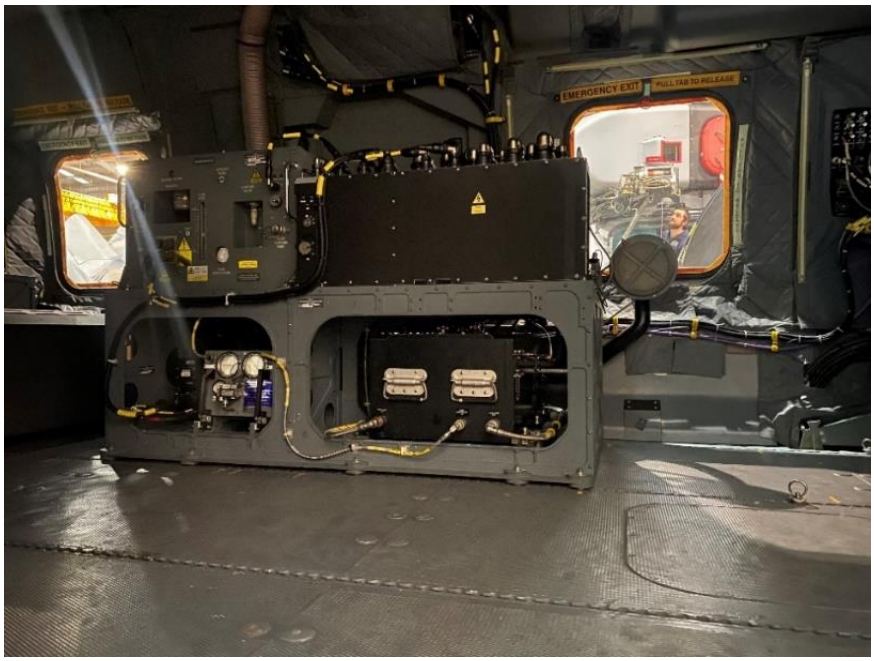
Training:

- Aircraft familiarisation
- Deployment exercise(s)
- Redkite CMS
- Aircraft lecture – 6 monthly lesson / familiarisation presentation

TTP 2 – Internal Fire

Event Plan - Initial Deployment





The Aircraft main internal fuselage will house the power supply unit for the Crowsnest, there will be nothing else stored in the rear main cargo area other that the unit pictured. Crowsnest Power Supply operates at 150v and within the unit there is a small 200psi Nitrogen Cylinder (pressure gauges on the left). The unit is Liquid Cooled with Tetrafluoroethane, a Non-Flammable liquid, however; rapid evaporation of the liquid may cause frostbite. The Gaseous vapour is heavier than air and can cause suffocation.

Crash 2 - Incident Commander Considerations:

- Confirm whether armaments and countermeasures are present
- Conduct and complete DRA
- Order BA Team to don BA using Rapid Deployment
- Declare Tactical Mode
- Consider required agencies and resources
- Consider implementing Major Incident Plan
- Direct firefighting actions to create survivable conditions
- Consider contacting aircraft commander via ATC or 121.6 if available
- Be aware of PAX exiting aircraft from rear ramp
- Direct BA rescue crew
- Direct Medical Teams
- Direct all operational control and implement ICS
- Provide M/ETHANE report
- Maintain safe operations and ensure scene safety
- Direct other agencies using JESIP
- Consider water replenishment
- Consider media run-off and water courses on scene.
- Consider preservation of evidence

Crash 1 - MPRV Actions:

- Deploy vehicle at 45 degrees to the aircraft
- Operate monitor and extinguish fire utilising mass discharge if required
- Consider secondary agents
- Deploy 45mm hose and prepare for entry into aircraft
- Don BA and utilise Rapid Deployment Procedures and gain access
- Create survivable conditions
- Confirm/make safe aircraft systems
- Utilise Medics to triage casualties on board if survivable conditions are present
- Aid Medics in extricating casualties
- Consider further media application

Crash 2 - MPRV Actions:

- Deploy vehicle at 45 degrees to the aircraft
- Be aware of PAX exiting the aircraft
- Operate monitor and extinguish Fire if required
- Deploy sufficient lengths of 45mm hose and extinguish any remaining fire
- Cool Engines and prevent internal fire spread
- Assist BA team.
- Consider use of TIC

Specific Aircraft Hazards:

- Rotors
- Flammable liquids
- Flammable/pressurised gases
- Composite aircraft materials.
- Electrical Radar Components
- Sonobuoys

Further Considerations:

- Aircraft position and wreckage
- Leaking fuel
- Aircrew
- Other agencies.

Supporting Information:

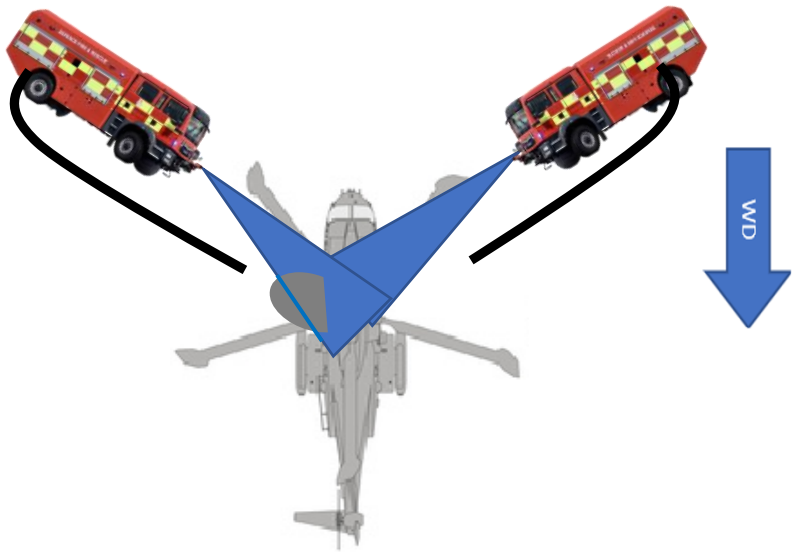
- NOG
- DFR BA Operations
- CFR Ops Instruction 001 – Aircraft Incidents
- CFR Ops Instruction 002 – CFR HSE Policy
- CFR Ops Instruction 005 – Low Speed Manoeuvring
- CFR Ops Instruction 006 – MPRV ARFF Positioning Deployment & Task
- CFR Ops Instruction 007 – MPRV Vehicle Operations
- CFR Ops Instruction 033 – BA Operations
- CFR Op Guidance 002 – Incidents Involving Rotary Wing Aircraft
- CFR Op Guidance 003 – Aircraft Fuel Fires
- CFR Op Guidance 007 – Aircraft Engine Fires
- MOD Aircraft Crash Hazards Document Set

Training:

- Aircraft familiarisation
- Deployment exercise(s)
- Redkite CMS
- Aircraft lecture – 6 monthly lesson / familiarisation presentation

TTP 3 - Engine Compartment Fire

Event Plan - Initial Deployment



Incident Commander Considerations:

- Confirm whether armaments and countermeasures are present
- Conduct and complete DRA
- Order BA Team to don BA using Rapid Deployment
- Declare Tactical Mode
- Consider required agencies and resources
- Consider implementing Major Incident Plan
- Direct firefighting actions to create survivable conditions
- Consider contacting aircraft commander via ATC or 121.6 if available
- Be aware of PAX exiting aircraft
- Direct BA rescue crew
- Direct Medical Teams
- Direct all operational control and implement ICS
- Provide M/ETHANE report
- Maintain safe operations and ensure scene safety
- Direct other agencies using JESIP
- Consider water replenishment
- Consider media run-off and water courses on scene.
- Consider preservation of evidence

Crash 1 - MPRV Actions:

- Deploy vehicle at 45 degrees to the aircraft
- Operate monitor and extinguish fire utilising mass discharge if required
- Consider secondary agents
- Deploy 45mm hose and prepare for entry into aircraft
- Don BA and utilise Rapid Deployment Procedures and gain access
- Create survivable conditions
- Confirm/make safe aircraft systems
- Utilise Medics to triage casualties on board if survivable conditions are present
- Aid Medics in extricating casualties
- Consider further media application

Crash 2 - MPRV Actions

- Deploy vehicle at 45 degrees to the aircraft
- Be aware of PAX exiting the aircraft
- Operate monitor and extinguish Fire if required
- Deploy sufficient lengths of 45mm hose and extinguish any remaining fire
- Cool Engines and prevent internal fire spread
- Assist BA team.
- Consider use of TIC

Specific Aircraft Hazards:

- Rotors
- Flammable liquids
- Flammable/pressurised gases
- Composite aircraft materials.
- Sonobuoys

Further Considerations:

- Aircraft position and wreckage
- Leaking fuel
- Safe Approach Angle
- Aircrew
- Other agencies.

Supporting Information:

- NOG
- DFR BA Operations
- CFR Ops Instruction 001 – Aircraft Incidents
- CFR Ops Instruction 002 – CFR HSE Policy
- CFR Ops Instruction 005 – Low Speed Manoeuvring
- CFR Ops Instruction 006 – MPRV ARFF Positioning Deployment & Task
- CFR Ops Instruction 007 – MPRV Vehicle Operations
- CFR Ops Instruction 033 – BA Operations
- CFR Op Guidance 002 – Incidents Involving Rotary Wing Aircraft
- CFR Op Guidance 003 – Aircraft Fuel Fires
- CFR Op Guidance 007 – Aircraft Engine Fires
- MOD Aircraft Crash Hazards Document Set

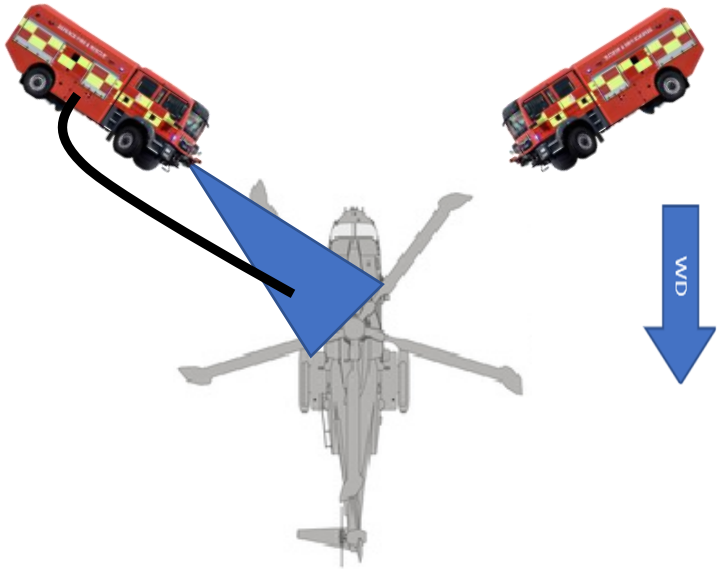
Training:

- Aircraft familiarisation
- Deployment exercise(s)
- Redkite CMS
- Aircraft lecture – 6 monthly lesson / familiarisation presentation

TTP 4 - Wheel Fire / Wheels Up and Undercarriage Failure

When the Crowsnest is deployed and in its operational position the bag will sit lower than the undercarriage when deployed. Currently for RNAS Culdrose, the wheels up landing platform (G-Site) any electronic issues to re-house the bag, the bag will foul itself on the ground. The bag is inflated with Oxygen and Nitrogen when in use, but the internal Radar can be operated independently of the bags positioning. The Nitrogen and Radar will be isolated just leaving approximately 80% Oxygen in the bag to protect the Radar when landing and the current protocol for the Bag being unable to be re-housed is to land on soft terrain area.

Event Plan - Initial Deployment



Incident Commander Considerations:

- Confirm whether armaments and countermeasures are present
- Consider Vehicle Positioning if Bag is Down
- Conduct and complete DRA
- Order BA Team to don BA using Rapid Deployment
- Declare Tactical Mode
- Consider Secondary Agents
- Consider required agencies and resources
- Consider implementing Major Incident Plan
- Direct firefighting actions to create survivable conditions
- Consider contacting aircraft commander via ATC or 121.6 if available
- Be aware of PAX exiting aircraft
- Direct BA crew
- Direct Medical Teams
- Direct all operational control and implement ICS
- Provide M/ETHANE report
- Maintain safe operations and ensure scene safety
- Direct other agencies using JESIP
- Consider water replenishment
- Consider media run-off and water courses on scene.
- Consider preservation of evidence
- Consider use of TIC

Crash 1 - MPRV Actions:

- Deploy vehicle and Firefighters at 45 degrees to the aircraft
- Operate monitor and extinguish fire utilising mass discharge if required to prevent spread to fuselage
- Don BA Rapid Deployment
- Deploy 45mm hose to fight fire from 45-degree angle
- Consider dual application of water and dry powder
- Create survivable conditions and be aware of PAX exiting airframe
- Confirm/make safe aircraft systems.
- Utilise Medics to triage casualties if required
- Consider further media application to prevent Fire Spread.

Crash 2 - MPRV Actions

- Deploy vehicle at 45 degrees to the aircraft
- Be aware of PAX exiting the aircraft
- Deploy sufficient lengths of 45mm hose if required
- Supply extra Dry Powder as required
- Assist BA team.
- Consider use of TIC

Specific Aircraft Hazards:

- Rotors
- Flammable liquids
- Flammable/pressurised gases
- Composite aircraft materials.
- Wheel Plugs
- Crowsnest

Further Considerations:

- Aircraft position and wreckage
- Leaking fuel
- Safe Approach Angle
- Aircrew
- Other agencies.

Supporting Information:

- NOG
- DFR BA Operations
- CFR Ops Instruction 001 – Aircraft Incidents
- CFR Ops Instruction 002 – CFR HSE Policy
- CFR Ops Instruction 005 – Low Speed Manoeuvring
- CFR Ops Instruction 006 – MPRV ARFF Positioning Deployment & Task
- CFR Ops Instruction 007 – MPRV Vehicle Operations
- CFR Ops Instruction 033 – BA Operations
- CFR Op Guidance 002 – Incidents Involving Rotary Wing Aircraft
- CFR Op Guidance 003 – Aircraft Fuel Fires
- CFR Op Guidance 007 – Aircraft Engine Fires
- MOD Aircraft Crash Hazards Document Set

Training:

- Aircraft familiarisation
- Deployment exercise(s)
- Redkite CMS
- Aircraft lecture – 6 monthly lesson / familiarisation presentation