



Ministry
of Defence



Defence Fire and Rescue

Tactics, Techniques & Procedures

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TACTICS TECHNIQUES PROCEDURES



Boeing C17 Globemaster (Category 8) RAF Odiham - 8 FFTRs

MPRV (Crash 1)	Striker HRET (Crash 2) (IC)	Striker HRET (Crash 3)
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Crewing for TRA ICAO8 RAF Odiham

APPLIANCE A - MPRV (Crash 1)

IC (A1)	Cpl
DRIVER (A2)	SA
BA (A3)	SA

APPLIANCE B - Striker HRET (Crash 2)

OIC (B1)	Sgt
DVR (B2)	SA
Vehicle I/C (B3)	SA

APPLIANCE C - Striker HRET (Crash3)

IC (C1)	Cpl
DVR (C2)	SA

Vehicle Media Quantities

MPRV Firefighting Media Quantities

10. Table 2 below provides the firefighting media quantities and specifications.

Table 2

Water Capacity	4600 Ltrs	Firefighting foam availability	650 Ltrs
Monitor Discharge Rate	3000 Ltrs per Min 1500 (half flow setting)	Ladder	10.5M and 5.5M
Monitor Throw	55 Metres	FAFA (in Cab) CO ₂ Dry Powder	2 kg 6 kg
Type and Quantity of Dry Powder	Monnex 250 kg Discharge Rate 7 kg/s	Vehicle Rider Strength	4/5

Striker HRET Firefighting Media Quantities

Table 2:

Water Capacity (Litres)	9500
Bumper Turret Discharge Rate (Litres per min)	6000 – (3000 at half flow rate)
Piercing Spike (Litres per Min)	946
Hydro Chem Roof Turret	3745/1892
Firefighting Foam Availability	1140
Ladder	10.5m or 5.5m
CO ₂ Carried (Cab)	2kg
Dry Powder Carried (Cab)	6kg
Thermal Imaging Camera - FLIR	Yes
Type & Quantity of Dry Powder	Monnex 175 kg Discharge Rate (7.8 /10 kgs per sec)
Vehicle Ride Strength	2/4

DFSA 02 ARFF Regs: Table 1

Table 1 below shows - Minimum useable amounts of extinguishing agents

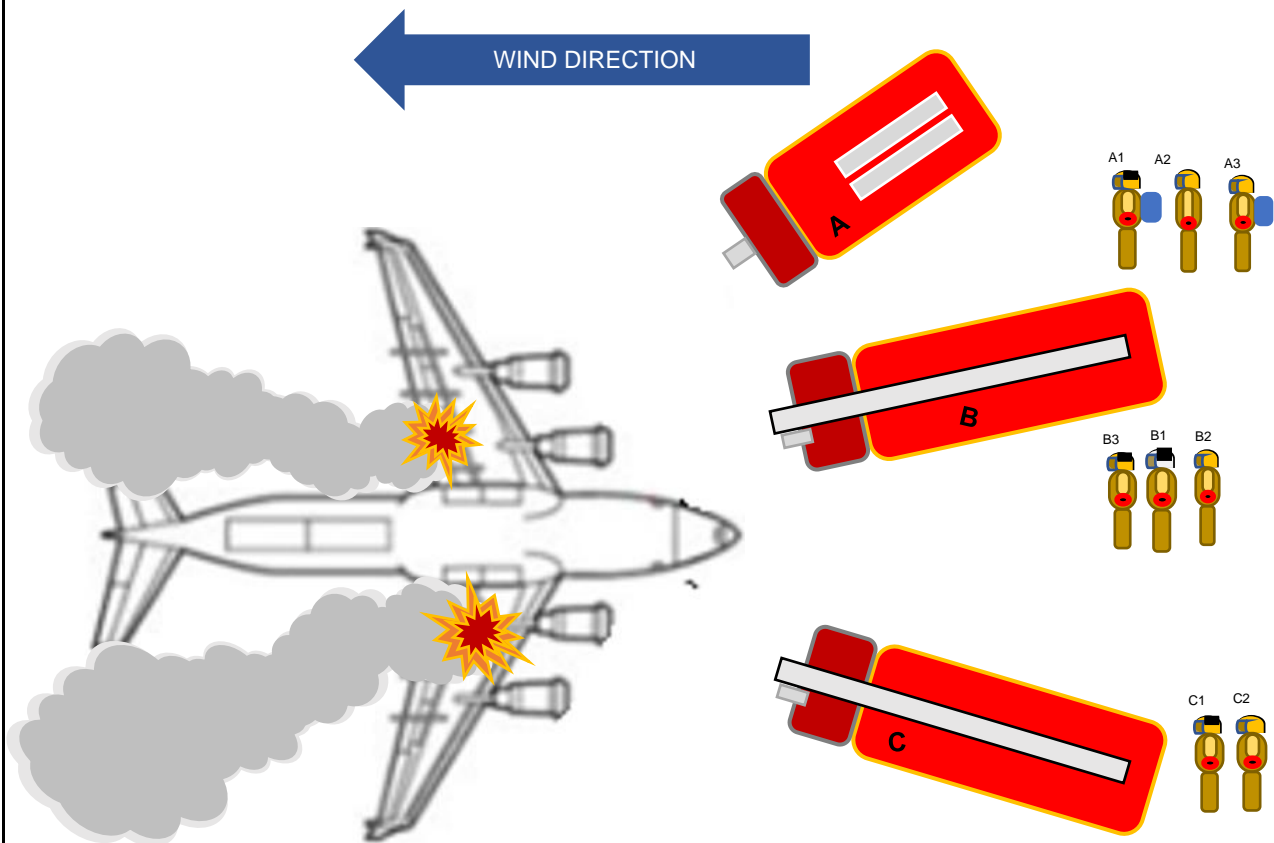
ARFF Category	Foam meeting performance level B		Foam meeting performance level C		Complementary agents (Kg)	
	Water (Ltrs)	Discharge Rate Foam Solution (Lpm)	Water (Ltrs)	Discharge Rate Foam Solution (Lpm)	Minimum Dry Powder (Kg)	Discharge Rate (Kg/Sec)
Special	90	60	60	40	18	1.25
1	230	230	160	160	45	2.25
2	670	550	460	360	90	2.25
3	1200	900	820	630	135	2.25
4	2400	1800	1700	1100	135	2.25
5	5400	3000	3900	2200	180	2.25
6	7900	4000	5800	2900	225	2.25
7	12100	5300	8800	3800	225	2.25
8	18200	7200	12800	5100	450	4.5
9	24300	9000	17100	6300	450	4.5
10	32300	11200	22800	7900	450	4.5
H1	500	250	350	175	23	2.25
H2	1000	500	700	350	45	2.25
H3	1600	800	1070	535	90	2.25

Table 3 below shows – Individual Aircraft Fire-fighting Media Requirements

Aircraft Type	Water Calculation (Ltrs)	Aircraft Category	Min Water Required ³ (Ltrs)	Discharge Rate ⁴ (if different) to that provided in Table 1 (Lpm)
Atlas (A400M)	12920	8	18200	
Avenger	1048	3	1200	
BAE 146 CC Mk2 (RJ 70)	5637	5	5637	3221
BAE 146 C Mk 3 (RJ 100)	7631	6	7900	
C130	8647	6	8647	4324
C17	18060	8	18200	

Worst-case Credible Scenario		
1	ICAO Category	ICAO-8
Event - what has occurred		
2	Time of Day (Daylight or Darkness)	1300 hrs (daytime)
3	Weather conditions, wind direction and strength	Weather dry, calm wind
4	Event (What has happened)	<p>C17A Globemaster enroute to RAF Odiham from Mali with PAX and Chinook Cargo. 10 PAX / 5 Crew.</p> <p>A heavyweight high-speed landing causes the undercarriage to fail. Tyres burst and brake fires initiate due to brake temperatures more than 1000 degrees Celsius. The aircraft remains intact and comes to rest at CX Map location H9. Brake and landing gear is on fire. External fire breaches aircraft fuselage and emits fire gases into occupied aircraft. 4 x Crew and 6 x PAX self-rescue through cockpit emergency escape and available exits retrospectively. 1 x Crew in cockpit and 4 x PAX in fuselage require rescue due to injuries sustained during heavy landing.</p> <p>ES message from ATC, C17, undercarriage failure Rwy 09, Crash Map location K-7, 15 POB</p>
5	What are the contributing factors	
What are the consequences		
6	What is on Fire and Why	Tyres burst, and brake fires initiate due to brake temps more than 1000 degrees Celsius. The aircraft remains intact and comes to rest at Crash Map Location K-7
7	Extent fire spread	Fire has spread from the wheel brake assembly to fuselage.
8	Time taken to extinguish	Approximately 60 seconds
9	Number of Persons Evacuating, and from where and how	1 X Crew and 4 X PAX need rescue.
10	Trapped personnel requiring rescue	1 X Crew and 2 X PAX need rescue.
11	Incident Assumptions	
12	Additional Considerations	The aircraft is unarmed.

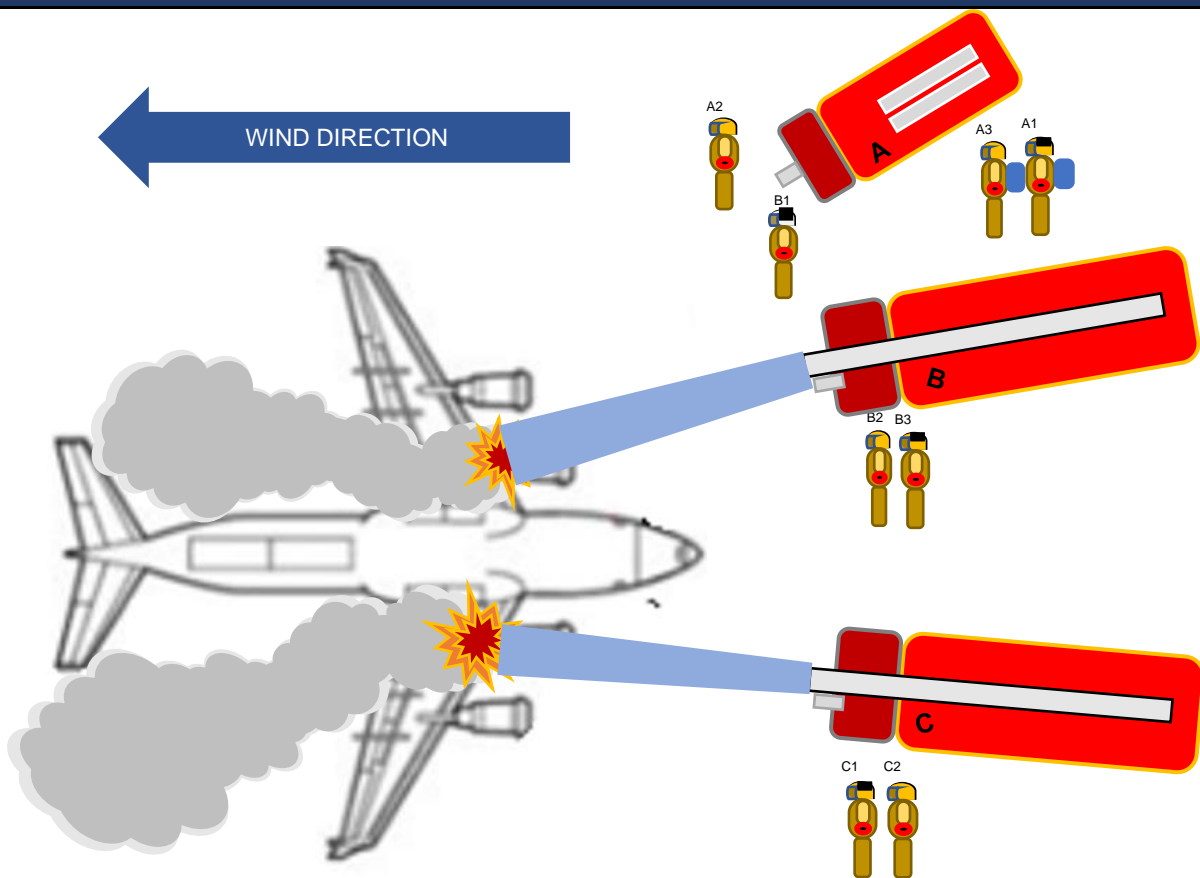
TIME IN ATTENDANCE 01:15 Minutes



Comments

- Combine Enter Runway 09 via Charlie and fast track
- Time in attendance 01:15 (As carried out in area response assessment)
- Incident Commander will: -
 - Carry out initial scene assessment and DRA of the incident enroute.
 - Initiate MIP enroute, (this will trigger a response from various station assets to assist when applicable and safe to do so.
 - A call to LAFRS will be made on activation of the MIP either by ATC or using airwaves radio).
- 1 x MPRV (A) 2x Strikers (B, C) in attendance.
- A2, B2 and C2 positions vehicles: MPRV A (Rescue) Striker B (Nose/Portside) & Striker C (Starboard).

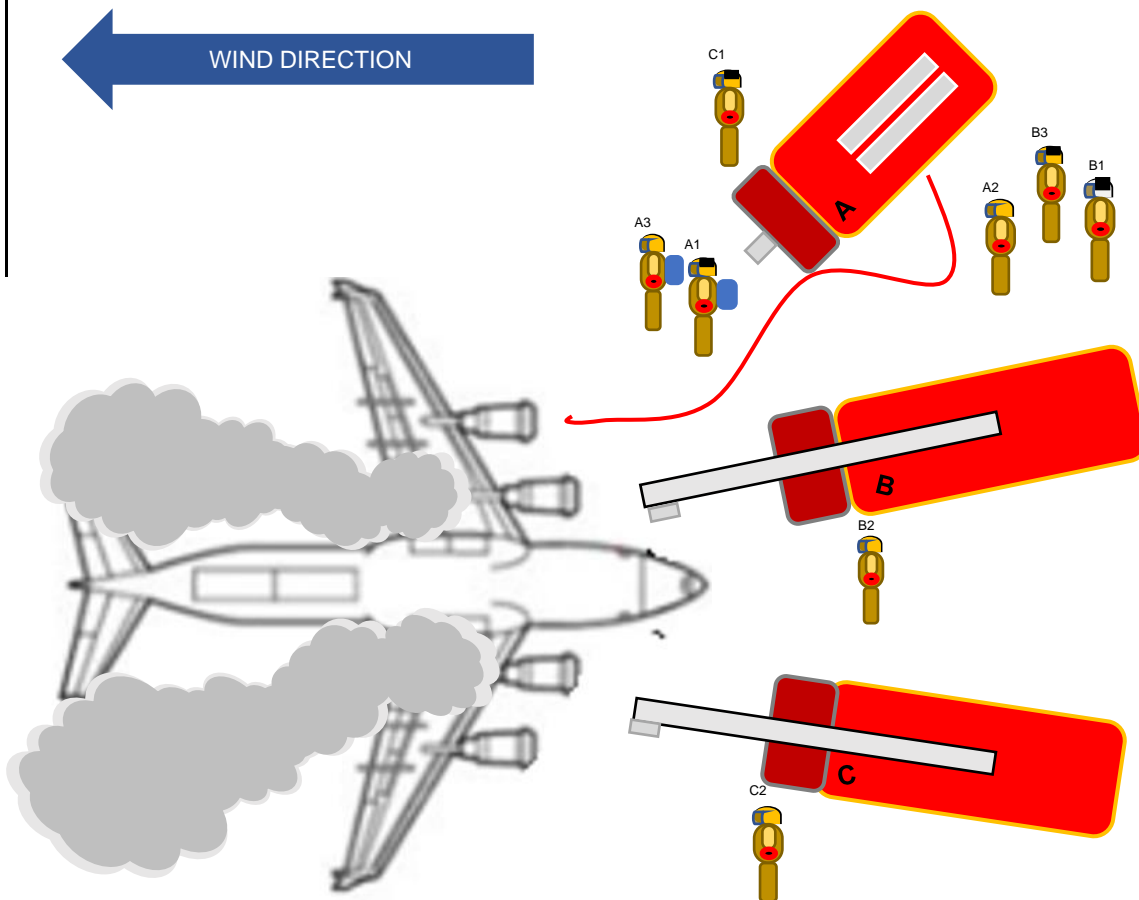
Fire Extinguished 01:15 - 02:15



Comments

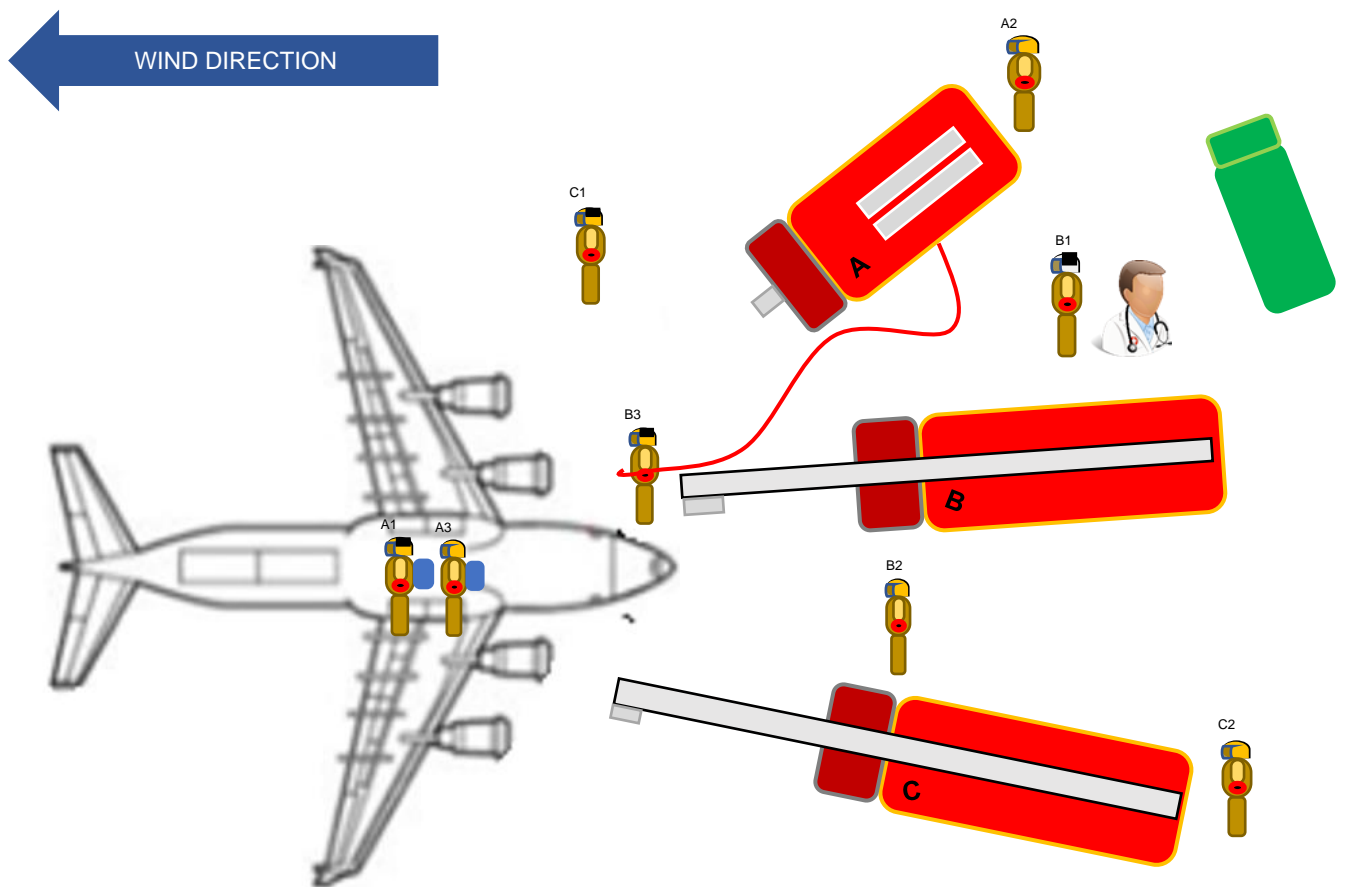
- B1 Incident Commander to carry out initial scene assessment and DRA of the incident.
- C1 and B3 to operate the bumper monitors (6000L/pm) for 60 seconds minimum and will continue until HRET is deployed for use of FLIR and safety covering lines. Striker B 50% and Striker C 100% discharge rates, (This exceeds 7200 discharge rate foam solution L/PM as stated in DSA 02 Table 1)
- I/C to consider use of dry chem.
- B2 & C2 To deploy HRET For use of FLIR and covering line.
- A2 To carryout initial PEMS and hand over to medics for triage once medics on scene

INITIATE RESCUE: TIME 02:15 – 04:30 Minutes



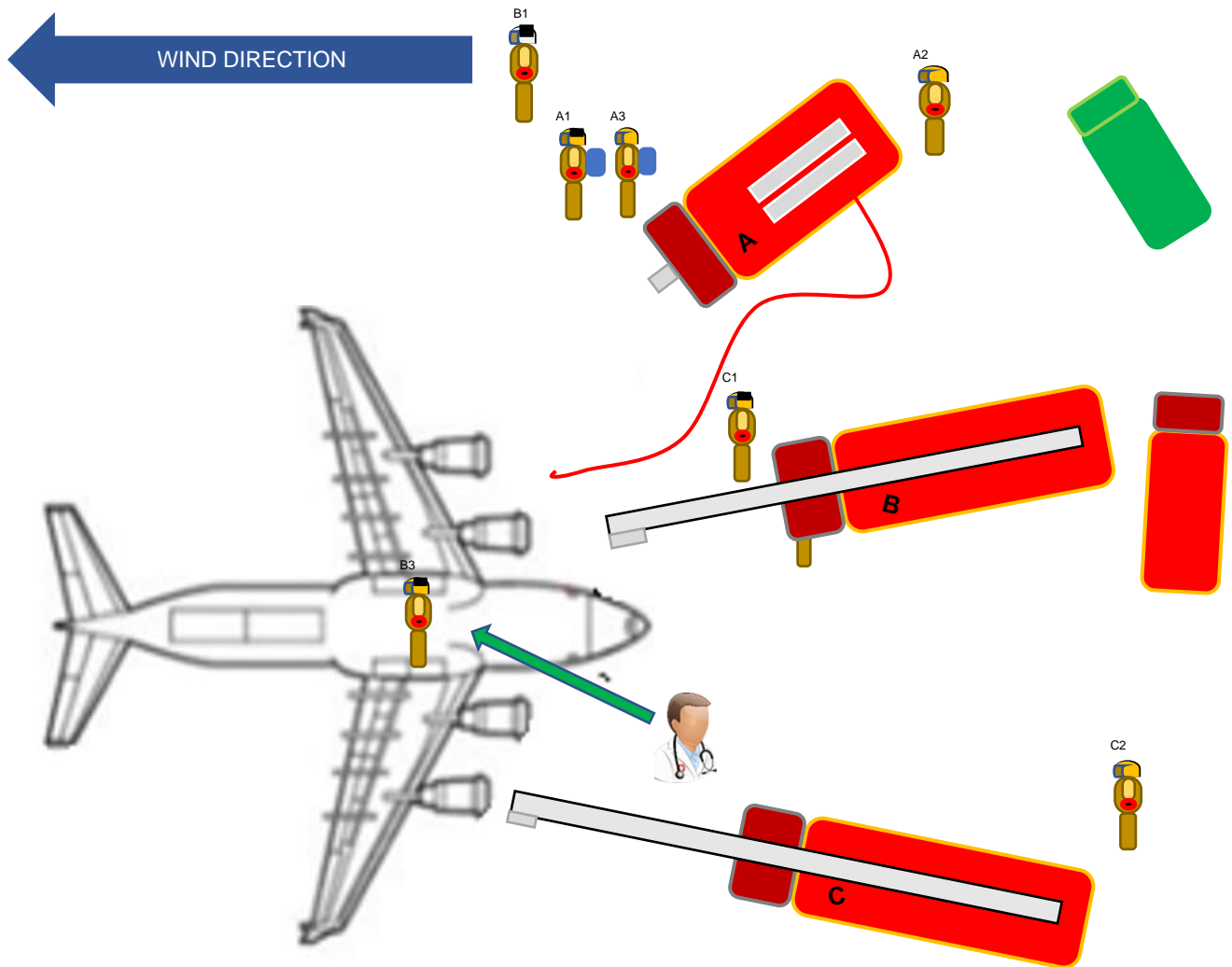
Comments

- B1 Incident Commander to carry out initial scene assessment and DRA of the incident.
- A2, B3 deploy 3 x lengths of 45mm lay flat hose.
- A1 & A3 Don BA for Rapid deployment
- C1 appointed as 2 IC (Rescue Sector Commander) to assist OIC With spans of control
- B2 & C2 to remain on vehicles as covering lines and utilising FLIR
- FFP3 Masks to be donned by all personnel not in BA within the risk area.



Comments

- B1 Incident Commander to carry out initial scene assessment and DRA of the incident.
- A1 and A3 deploy under rapid deployment procedures with TIC. Confirm with I/C Internal condition and commence ventilation to improve conditions, assess PAX and remain in position until Medics on A/C
- C1 Continues as 2 IC (Rescue Sector Commander)
- B3 conducts hose management
- A2 Pump Ops as MPRV isn't a standalone pump and has 4550L of water media for entry
- B2 and C2 Covering lines with HRET.
- I/C Brief B3 And Medics to don FFP3 Mask and enter fuselage to carryout triage of trapped casualties.
- A1 & A3 Exit aircraft and doff sets. BA discontinued



Comments

- LAFS Make staggered attendance, Consider STOP Message for further appliance attending if incident under control
- Appoint complete ICS, Safety officer.
- VAHS To assess Aircraft.
- Police to scene for evidence preservation.
- Environmental officer
- Media officer
- Ensure adequate resources for the safe resolution of the incident
- Engineers
- AAIB