

White Desert

WFR A340 Apron Plan

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Responsibilities

White Desert

Responsible for:

- Control of apron movements, which will be facilitated by an 'Apron Boss' who will also communicate with the crew.
- Supply and maintenance of all cargo, passenger and fuel handling GSE.
- Provision of guides to marshal and control passenger movements.
- Provision of cargo and fuel handling teams
- Staff will bring equipment to and from the aircraft. They will not touch the aircraft unless directed to do so and supervised by a member of the aircrew.
- Maintaining SPECI watch while aircraft is on ground.

Aircrew

Responsible for:

- Oversight of loading and unloading operations.
- All connections / disconnections to aircraft and the operation of aircraft systems.
- Determination of fuel movement quantities and the monitoring for fuel volumes moved.

Aircraft Considerations

Air sources

The aircraft must maintain two air sources. The APU will be running and also **engine #1 will be left running** while on the ground. Estimated fuel flow of APU and #1 engine is 600 L/hr.

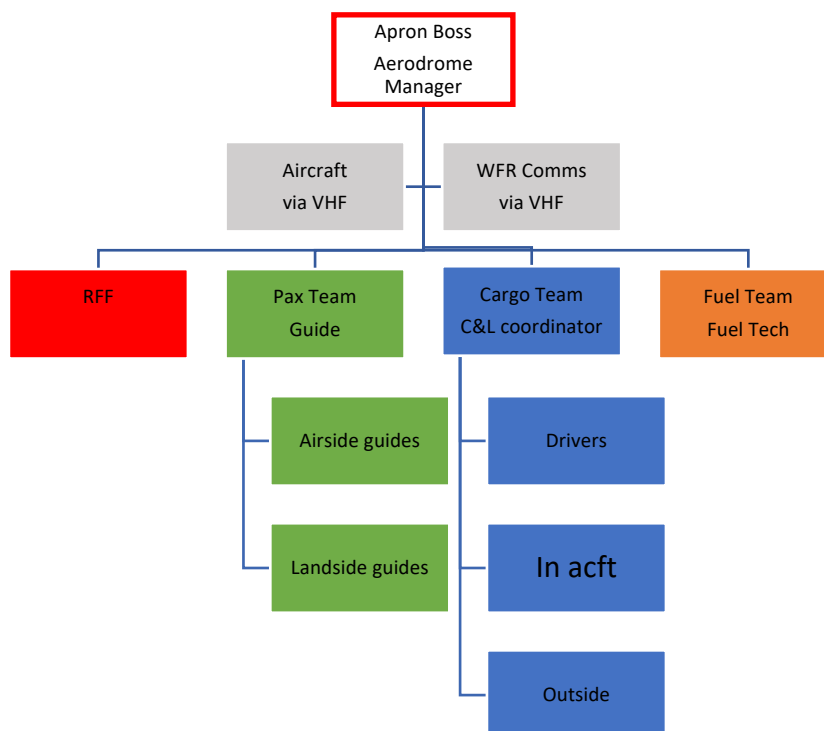
Cabin Water

If ground temperatures are expected to be below M15 there is a risk of the cabin water reservoir freezing. The crew must be notified at TOD if temperatures are expected to be below M15 so they can dump the water.

Control Arrangements

- All activities on the Apron will be controlled by the Apron Boss. They will maintain communications to:
 - Aircrew, RFF team and WFR comms via VHF (airband, 123.45)
 - All team leaders on the apron via VHF (Marine Ch 10).
- All access to the apron is prohibited unless approved by the apron boss.
- All access to the apron is to be restricted to a single gate on the southern side of the apron.
- The teams working on the apron will be identifiable by a colored vest.

Apron Structure



RFF Team

Leader- TBC

Assets- AT4x4, Fire Trailer once on site.

Team size - 4

Comms- On airband and ground

Tasks:

- Remain at full readiness for fire response while aircraft are operating or on the apron.
- Conduct runway inspection immediately after the aircraft lands and before it backtracks. Report anomalies to the Aerodrome Manager immediately.
- Be prepared to offer guidance to the crew during their turn on the runway turning bay. Watch for engine clearance to markers and wheels staying on the groomed surface.
- Monitor No Go areas on apron for duration of turnaround and stop anyone from entering.
- Provide fire cover to fuel handling team when on the apron.
- Inspect the runway before the aircraft departs.

Critical hazards:

- runway thermal cracks after landing and taxi
- engine start
- anyone entering no-go zone due to #1 engine running.

Passenger Team

Leader- TBC

Assets- nil
Team size - 8
Comms- On ground

Tasks:

- Provide welcome and brief for incoming passengers on aircraft.
- Escort and control passengers as they cross the apron and on/off the aircraft.
- Manage passenger waiting area off apron.
- control passenger movements to and from camps.

Critical hazards

- clients movement down and up stairs.
- first steps of passengers on the ice.
- passengers lacking situational awareness and/or wandering.
- FOD and passengers loosing clothing etc, especially while upwind of the aircraft.

Cargo Team

Leader- TBC
Assets- PB, lehman, skidoos and qamatiks
Team size - 16
Comms- On ground

Tasks:

- chock wheels. Push up stairs.
- unload client bags from bulk hold. Load client bags into bulk hold.
- unload rear hold. Check against manifest.
- unload forward hold. Check against manifest.
- be prepared to support fuel team with sledge movements (pushing) if necessary.
- on departure, pull back stairs and unchock wheels as directed by Apron Boss.

Critical hazards:

- Vehicle contact with aircraft. Never reverse up to the aircraft. Always use guides near aircraft.
- Always work under supervision of aircraft crew.
- Manual handling injuries and falling from height risks.
- Excessive speed in vehicles. Conflict with pedestrians.
- Do not rush, be methodical.
- FOD from cargo.

Fuel Team

Leader- TBC

Assets- PB and sledge

Team size - 6

Comms- On ground

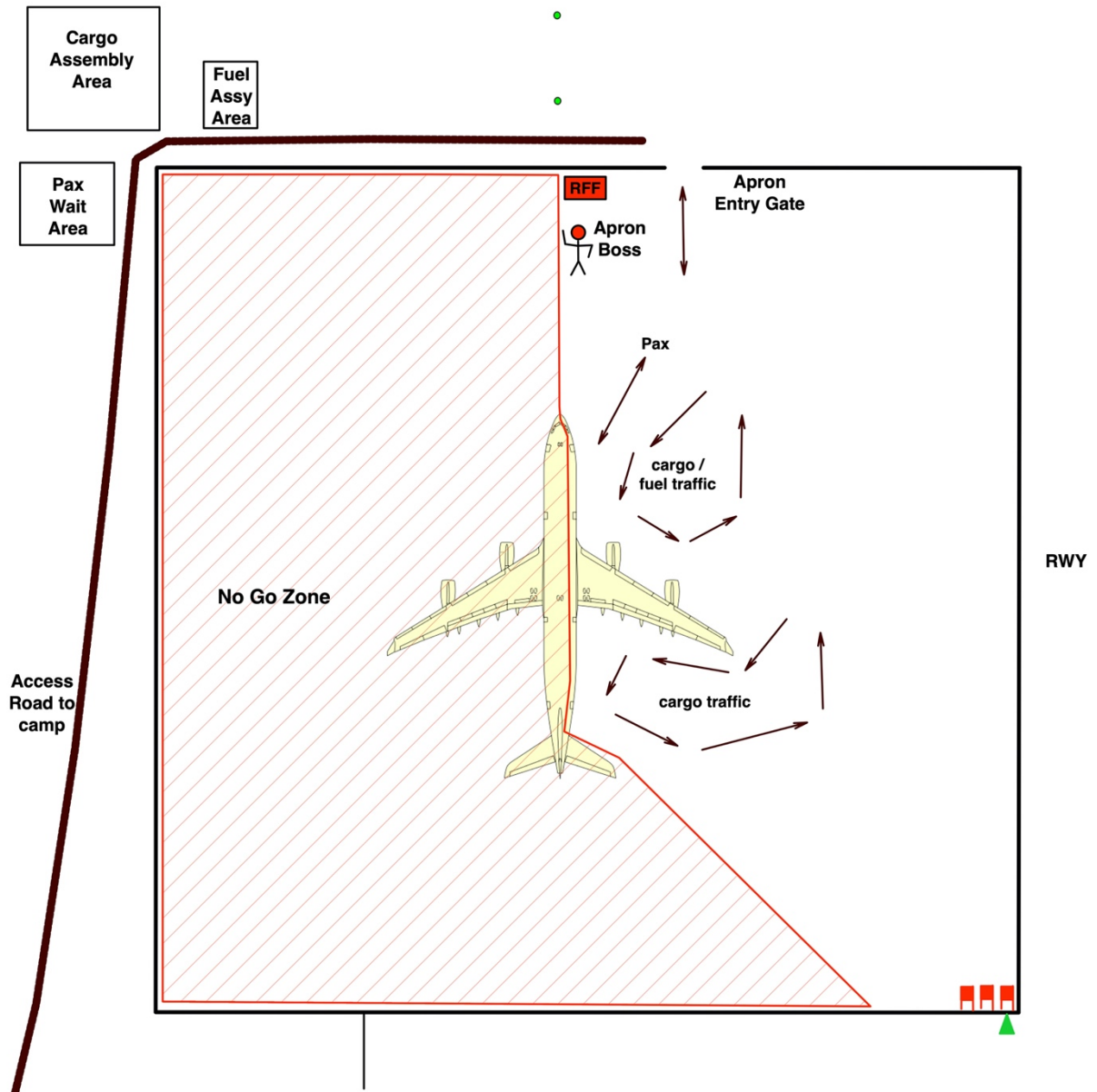
Tasks:

- Maintain fueling equipment
- Undertake defueling
- provide two man check of defuel quantity and report to aircrew in writing.
- collect and label fuel sample from defuel batch.
- undertake refueling operations if required.
- manage spill kits and spill response.

Critical hazards:

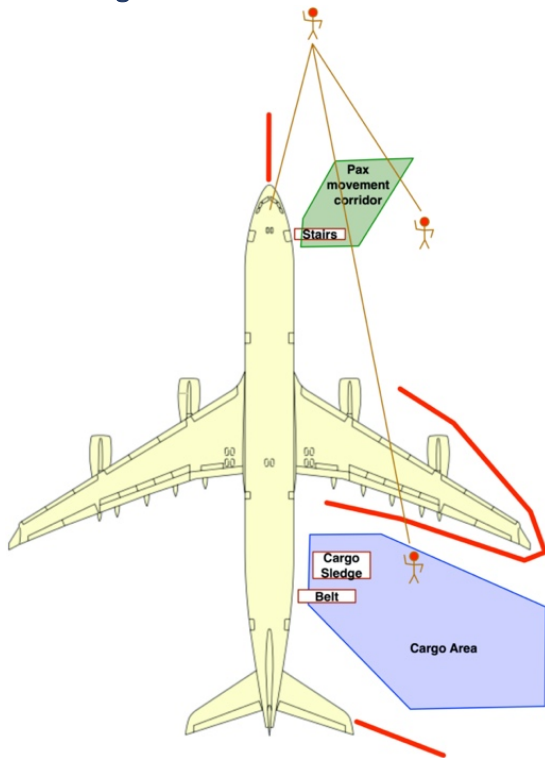
- Ignition sources such as static hazards from clothing, high flow rates, not adequately bonded.
- Errors in fuel loading and unloading quantities. Much dip tanks and check with meters. Two people to undertake the check independently of one another.
- falling from heights.
- fluid hammer (close valves very slowly)
- spills, small from poor seals, large from overfilling.

Apron Layouts

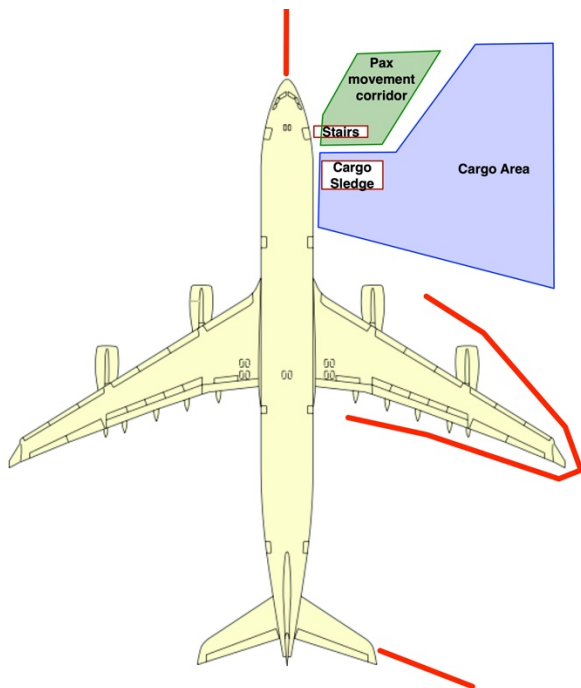


Team Areas

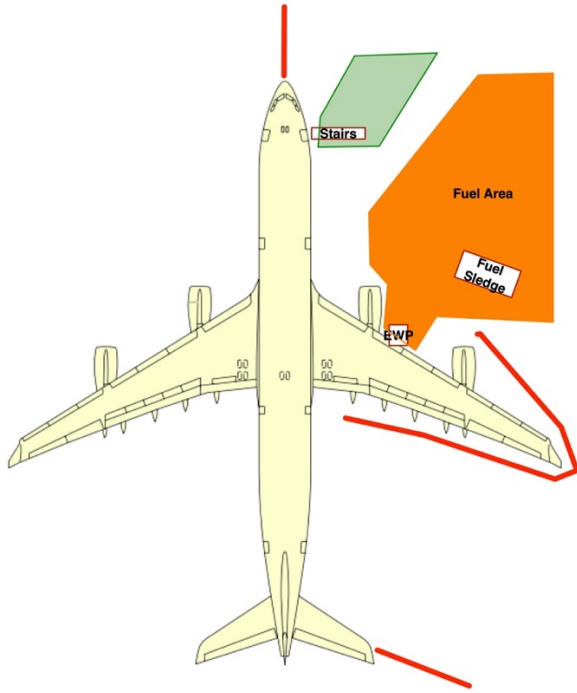
Rear cargo



Fwd cargo area



Defuel area



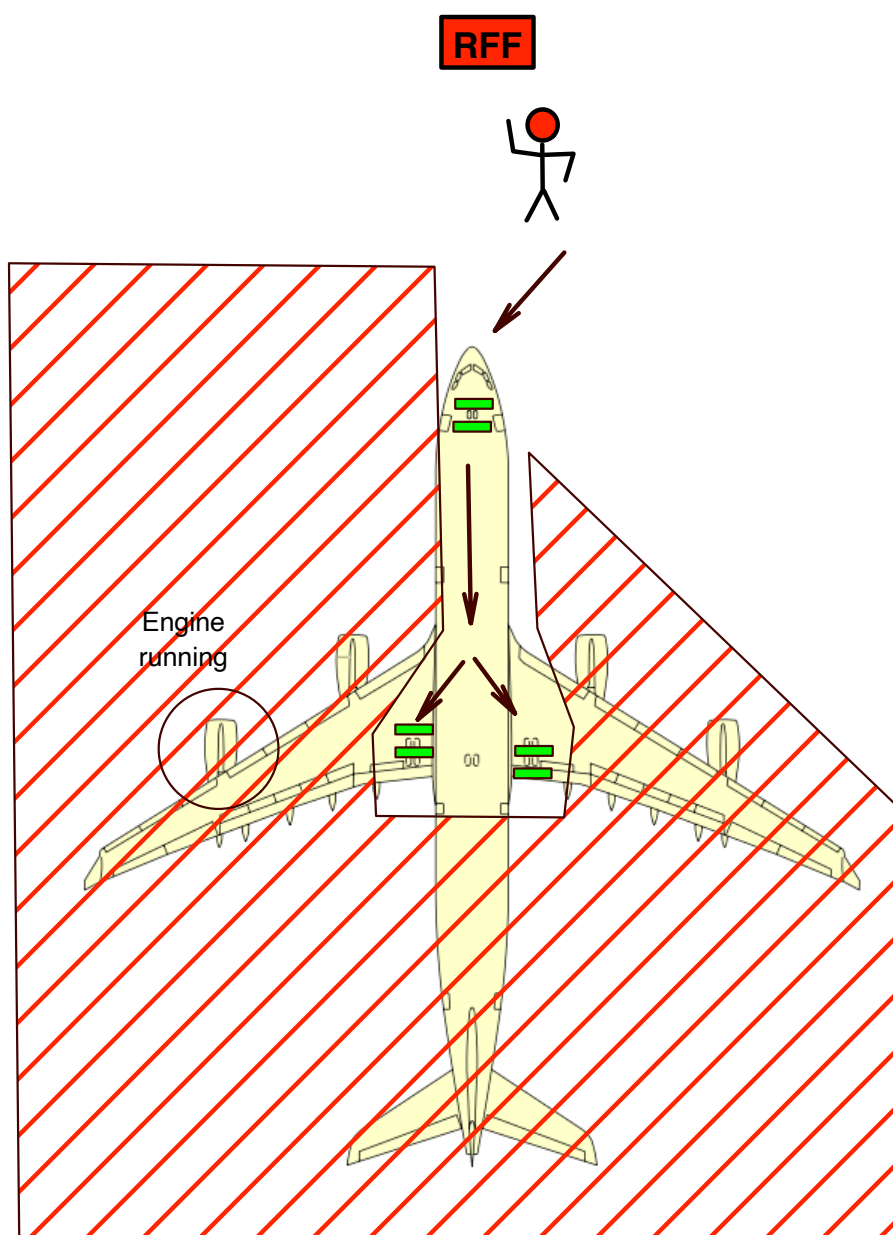
Sequencing

T+	Aircraft	RFF / Rwy	Pax	Cargo	Fuel
0	Landing and backtrack	runway inspection			
10	On apron, brake set engine 2,3,4 shutdown		Stairs set	Wheels chock Posn sledges	
	Door 1R opens		Pax offload		
20	Door bulk hold open Door rear hold opens			unload bulk hold	
30	Cabin clean Close bulk hold door		Pax clear apron	unload rear hold	
40				load bulk hold	
50	Defuel start				
01:00					
01:10					
	Door fwd hold open				
01:20	Door rear hold close			Posn sledges unload fwd hold	
01:30					
01:40	Defuel stop		Marshall pax check manifest		
01:50					Posn sledges
02:00					Set-up equipment
02:10					
				clear apron	Defuel start
02:20	Door fwd hold close				
02:30		Rwy inspection			
02:40					Defuel stop clear apron
			Load pax		
02:50		RCR			
			last pax Clear stairs		
03:00	Door 1R close Engine start			Clear chocks	
03:10	Taxi and depart				

Wheel Chock Procedure

- Engine 2, 3, 4 will be shut down. Engine 1, will remain running.
 - Pilot will request Apron Boss to set chocks via radio
 - Chock team is to chock L & R main wheels and nose wheel.
 - Access is via right side of aircraft. Left wheels to be approached from under the aircraft fuselage.
-
- Reverse procedure for clearing chocks. A sledge hammer is to be on hand, incase chocks are stuck.
 - Chocks are to be laid on the ground at edge of apron so pilots can see them.

Access for chocking



Ground Handling Evaluation and Flight Objectives

Specific objectives for each flight is TBC.

WFR A340 Defueling Operation

Responsibilities

White Desert

Responsible for:

- Supply and maintenance of all equipment for refueling and defueling.
- Management of fuel reserves and ullage space at WFR. A minimum of 6000 L will be maintained and available for the A340 to uplift at WFR if required.
- Maintenance of a sterile apron and control of movements on the apron. This will be facilitated by an 'Apron Boss' who will also communicate with the crew. Provision of guides to marshall and control passenger movements.
- Staff will bring equipment to and from the aircraft. They will not touch the aircraft unless directed to do so and are supervised by a member of the aircrew.
- Staff will control the filling of IBCs or Isotank including the continual monitoring of the fill levels and the rotation of IBCs when required.

Aircrew

Responsible for:

- Oversight of defuel / refuel operation
- All connections / disconnections to aircraft and the operation of aircraft systems.
- Determination of fuel movement quantities and the monitoring for fuel volumes moved.

Equipment

Refuel Equipment

160 lpm pump set.

- centrifugal pump with 1.5" BSP camlock inlet and outlet.
- diesel engine with grid heater
- twin coalescer filter units (Ed5)
- compound gauge
- flow meter
- 30m bonding lead
- 2kg fire extinguisher
- 950mm x 750 mm x 750mm. 180 kg



Suction hose- 38mm x 6m. Camlock fittings. (Elaflex TW-E)

Delivery hose- 38mm x 15m. Camlock fittings. (Elaflex HD-C)

Open port Nozzle- Jet A1 spout. ZVF40

Closed Port Nozzle- Iso 45. Cla-Val.

IBC Storage units. 36 x 1500 L units. Stainless Steel with pressure relief valve and 38mm camlock filling port. Discharge is via 1500mm spear with 38mm camlock fitting.



Defueling Equipment

Delivery hoses- 2x 50mm x 10m. Drybreak Kamvalok fittings. (Elaflex HD-C)

Closed Port Nozzles- 2x ISO 45. Cla-Val.

Bonding leads- 3x 10m.

Access ladder

- To be mounted on runners or base plate.
- Will have fixing points for ice screws to secure to ice.
- Strain relief mechanism for fuel lines to be provided.



Layout on Apron

A apron layout is provide at Annex A.

Quality Assurance

Jet A1 stock

Jet A1 stock is held as both bulk and drum fuel. Drums are sealed and dated from the supplier. White Desert also apply a color band to the drums to make the age of drums easier to identify. Aircrew are to make their own determination as to the suitability of drum fuel.

Jet A1 drum age by colour band	
2018 (black with green band)	2021 (yellow with black band or black of SAF)
2019 (white with red band)	2022 (Yellow band)
2020 (no fuel)	2023 (Purple band)

Bulk fuel is managed by batch with each storage container identifying the batch lot. Unless we have more than one resupply voyage per season delivering fuel, the batch lot will be the year of delivery.

Every 12 months, each batch lot of fuel is to be recertified by returning fuel samples to Cape Town for a laboratory analysis. Any batch lot which fails certification is to be marked as ground fuel only.

Defueling stock

Fuel downloaded from the wing of an aircraft is no longer certified as Jet A1. It cannot be used in aircraft and must be labeled as ground fuel only and separated from Jet A1 fuel stores.

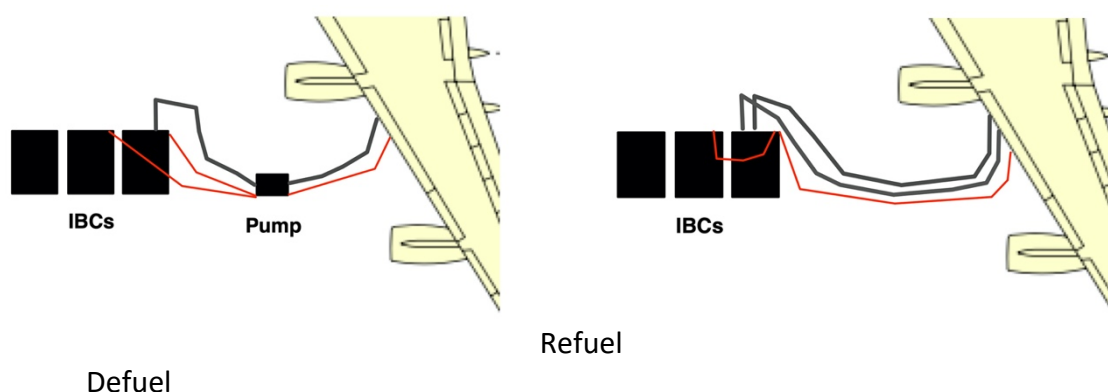
Recertification of fuel as Jet A1 can occur after laboratory analysis but only in batch lots. All fuel down loaded from an aircraft on the same rotation to WFR is considered to be of the same batch lot. Fuel from a subsequent rotation is to be considered a new and discrete batch lot. Defuel stock is to be clearly labelled with its batch lot, which will be the date it was taken from the wing.

Safety Requirements

Bonding

- Bonding leads are to be connected before any IBCs are opened or hoses connected.
- Bonding leads are to run parallel to all hoses and terminate wherever hoses terminate, including any pump or inline separator units if used.
- Two or more bonding leads are required if multiple IBCs are being filled to ensure continuous bonding while IBCs are open and hoses are transferred between IBCs.

Standard Configurations are shown below (bonding leads in red)



Fuel velocity.

- Fuel velocity must not exceed 3 m/s. With a 50mm hose a flow rate of 350 L/min equates to a fuel velocity of 3 m/s. Higher velocities increase the risk of static electricity accumulation.
- Flow rates are to be monitored by measuring the time it takes to fill an IBC. Fill rates must not exceed the times in the following table.

IBC Type	Single 50mm Hose Minimum Fill Time (min:sec)	Two 50mm Hoses Minimum Fill Time (min:sec)
1560 L	4:30	2:15
2000 L	5:45	2:55

- If flow rates are too high the flow must be reduced. Flow may be reduced by:
 - reducing the manifold pressure in the aircraft fuel tank (turn off boost pumps).
 - elevating the IBC to reduce the static head pressure.
 - 'gate' the flow by partially closing the ball valve at the end of the discharge line.
- Fuel must never be allowed to 'free fall' into a container. Spears or bottom tubes must be used to deliver fuel to the bottom of IBCs.
- Ball valves must never be 'slammed' shut as the resulting hammer can damage equipment. Ball valves should be close over a period of not less than five (5) seconds.

Spill Risk

- Fuel spill kit (240l bin) is to be position at the site of refuel / defuel operations before any fuel transfer occurs.
- See **White Desert Spill Response Plan V4** for additional requirements.

Fire Response

- Whenever aircraft fueling operations are taking place on the apron, the aerodrome fire vehicle and crew must be in attendance and ready for immediate deployment. They are not to engage in other tasks.
- Fuel handling staff are not to wear synthetic outwear due to the risk of static discharges.

Layout

- Stairs on Door 1R. No Pax loading or unloading concurrent to fuel operations.
- Rear cargo unloading completed before defuel operations commence.

