

# **SYDNEY HELICOPTERS GRANVILLE**

# **PROCEDURES MANUAL**

# **AVIATION FUEL STORAGE**



## **CONTENTS**

|            |   |                                  |
|------------|---|----------------------------------|
| <b>1.1</b> | <b>GENERAL SITE LAYOUT</b>  | <b>Page 3</b>                    |
|            |   | <b>Page 4</b>                    |
| <b>1.2</b> | <b>EMERGENCY STOP – HANGER</b>  | <b>Page 5</b>                    |
| <b>1.3</b> | <b>EMERGENCY STOP – BOWSER SKID</b>                                       | <b>Page 5</b>                    |
| <b>1.4</b> | <b>EMERGENCY STOP – HOSE REWIND</b>                                       | <b>Page 5</b>                    |
| <b>2.1</b> | <b>FIRST AID/FIRE EXTINGUISHERS</b>                                       | <b>Page 6</b>                    |
| <b>2.2</b> | <b>EMERGENCY SPILL KIT</b>  | <b>Page 6</b>                    |
| <b>3.1</b> | <b>BOWSER HOSE NOZZLE</b>   | <b>Page 7</b>                    |
| <b>3.2</b> | <b>ELECTRIC HOSE REEL – POWER</b>   | <b>Page 7</b>                    |
| <b>3.3</b> | <b>ELECTRIC HOSE REEL OPERATION</b>                                       | <b>Page 7</b>                    |
| <b>4.1</b> | <b>MAIN TANK SHUT OFF VALVE</b>   | <b>Page 8</b>                    |
| <b>4.2</b> | <b>PIPEWORK AND VALVES</b>  | <b>Page 8</b>                    |
| <b>5.1</b> | <b>LOW POINT SAMPLE DRAIN</b>   | <b>Page 9</b>                    |
| <b>5.2</b> | <b>BUNDED AREA AND DRAINAGE</b>   | <b>Page 10</b>                   |
| <b>6.1</b> | <b>Daily Sampling Procedure.</b>  | <b>Page 11</b>                   |
| <b>7.1</b> | <b>Fuel Bowser and Hose Reel Operation /<br/>SOP – Refuel an Aircraft</b> | <b>Page 12</b><br><b>Page 13</b> |
| <b>8.1</b> | <b>Bridger Receipt Procedure.</b>   | <b>Page 14</b>                   |
| <b>9.1</b> | <b>SPILL RESPONSE PROCEDURE / FILLING POINT</b>                           | <b>Page 15</b>                   |
| <b>9.2</b> | <b>SPILL RESPONSE PROCEDURE / AT BOWSER</b>                               | <b>Page 16</b>                   |
| <b>9.3</b> | <b>RESPONSE PROCEDURE – FIRE AT FILLING POINT</b>                         | <b>Page 17</b>                   |
| <b>9.4</b> | <b>RESPONSE PROCEDURE – FIRE AT BOWSER</b>                                | <b>Page 18</b>                   |

# AERO REFUELLERS

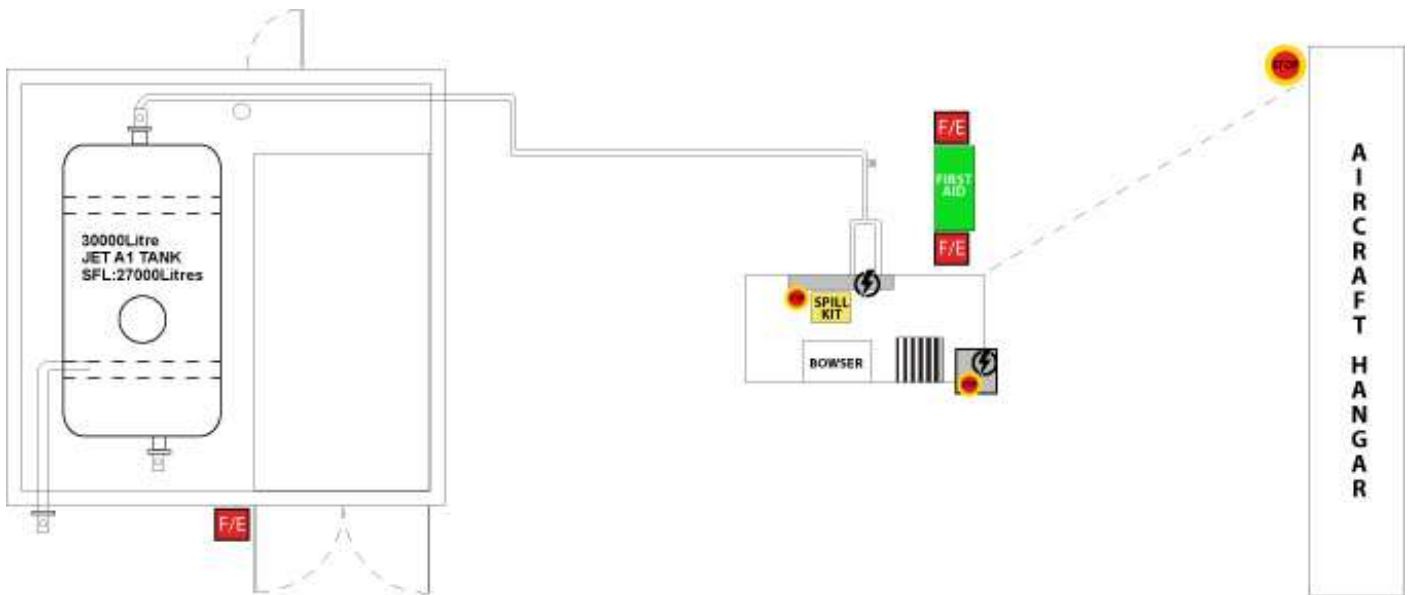
Fuel Storage Procedures Manual

Sydney NSW

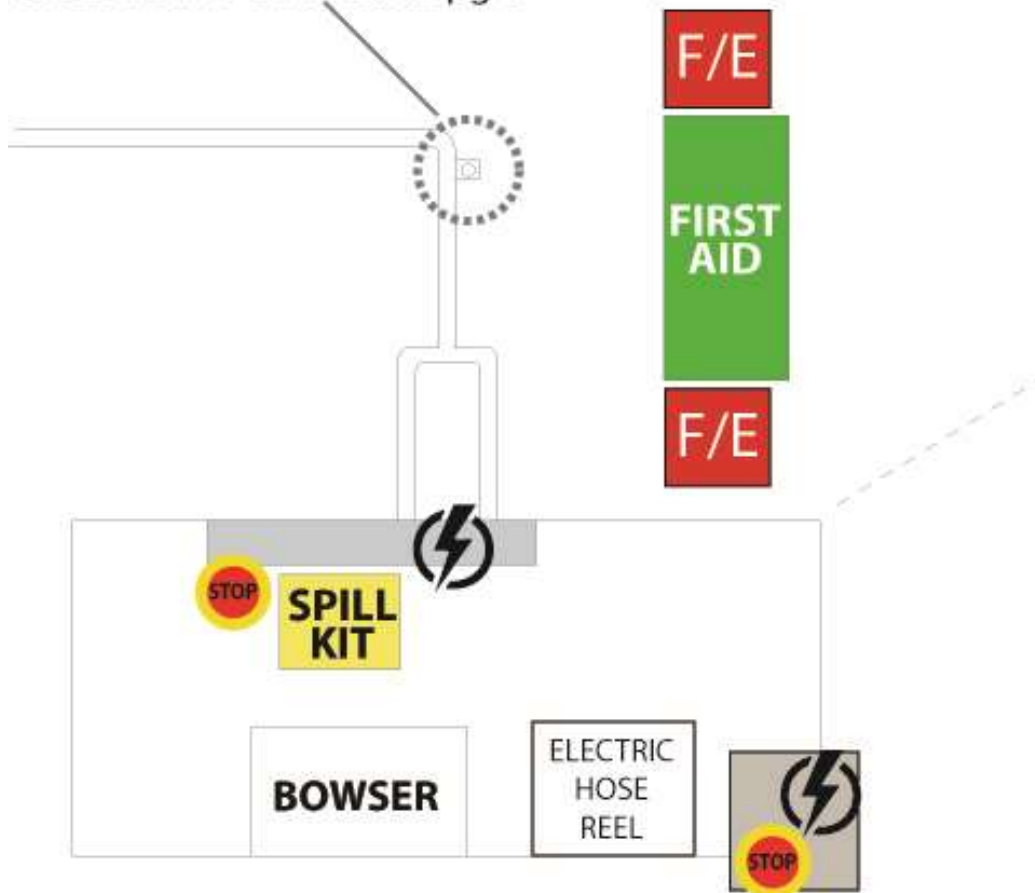
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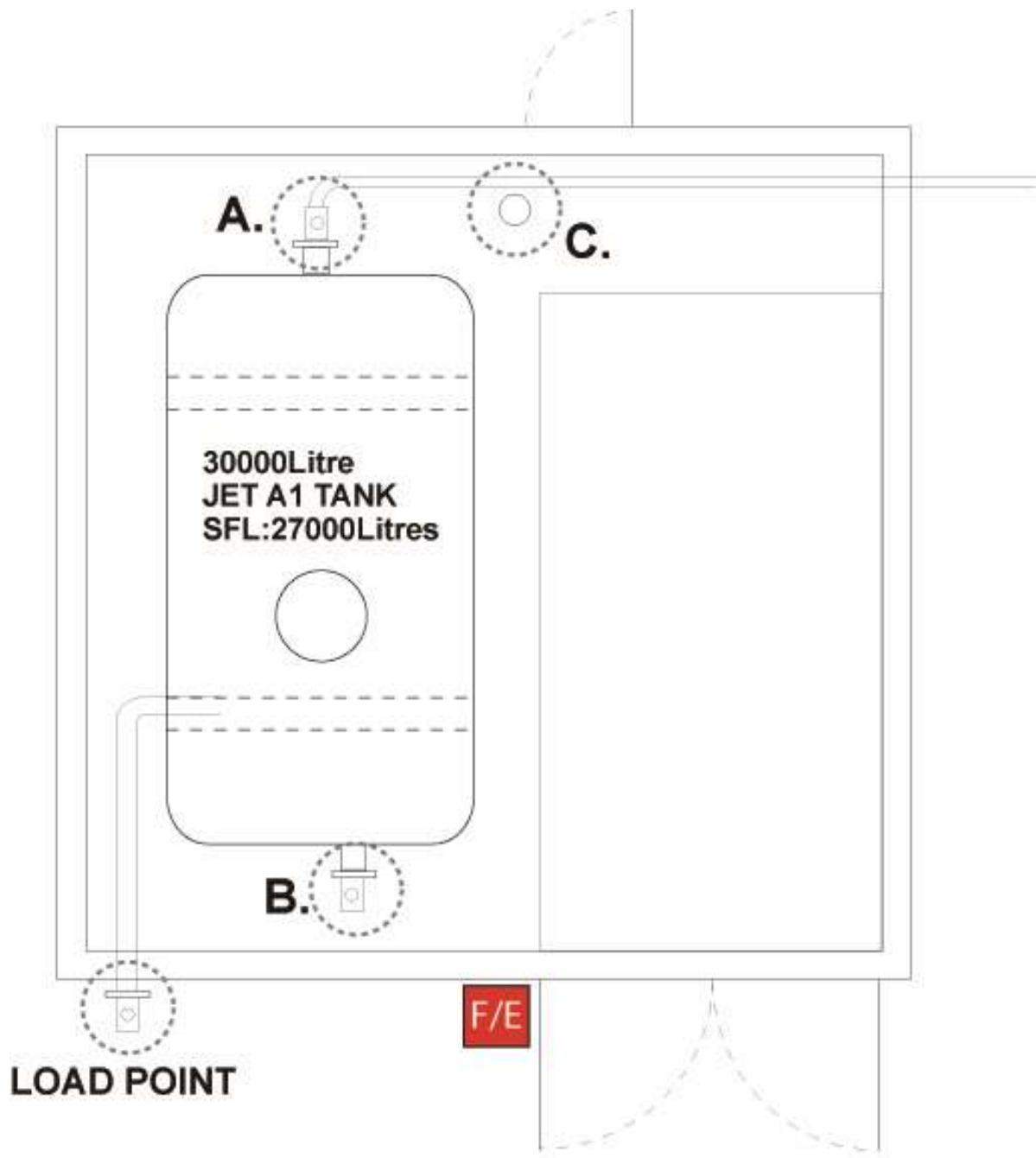
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## 1.1 GENERAL SITE LAYOUT



FUEL BOWSER  
ISOLATER T PORT ref.4.2 pg 8





- A. MAIN FUEL SHUT OFF VALVE ref. 4.1 pg 9**
- B. LOW POINT SAMPLE DRAIN ref. 5.1 pg 9**
- C. BUNDED AREA SUMP PUMP ref. 5.2 pg10**

## 1.2 Emergency Stop – Aircraft Hanger



EMERGENCY STOP BUTTON – LOCATED ON WALL OF HANGAR



## 1.3 Emergency Stop – Bowser skid



EMERGENCY STOP BUTTON LOCATED UNDER BOWSER SKID CABINET



## 1.4 Emergency Stop – Powered Hose Rewind Controls / Aircraft Bonding Lead



EMERGENCY HOSE REEL STOP BUTTON



AIRCRAFT BONDING REEL / LEAD

## 2.1 First Aid Kit / FIRE EXTINGUISHER CABINETS

EMERGENCY RESPONSE UTILITY BOX CONTAINING –

- SPILL KIT
- EYE WASH
- FIRST AID KIT

2 X FIRE EXTINGUISHER CABINETS LOCATED EITHER SIDE TO THE REAR OF BOWSER SKID INSTALLATION.



1 X FIRE EXTINGUISHER LOCATED IN BETWEEN TRUCK LOADING POINT AND ACCESS GATES.



## 2.2 EMERGENCY SPILL KIT

1 X 120LT EMERGENCY RESPONSE SPILL KIT LOCATED TO THE REAR OF BOWSER SKID.



## 3.1 FUEL BOWSER NOZZLE



FUEL BOWSER NOZZLE AND CAPTIVE LOCK SYSTEM

## 3.2 ELECTRIC HOSE REEL OPERATION – POWER SWITCH



HOSE REEL POWER SWITCH  
**MUST BE TURNED OFF WHEN NOT  
IN USE**

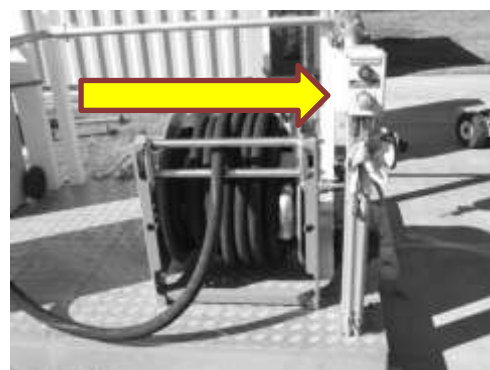


## 3.3 ELECTRIC HOSE REEL OPERATION

ELECTRIC HOSE REEL CONTROLS  
GREEN BUTTON IS FOR REWIND



**EMERGENCY STOP BUTTON IS  
LOCATED UNDER REWIND BUTTON**



## 4.1 MAIN SHUT OFF VALVE



MAIN FUEL SUPPLY SHUT OFF VALVE

## 4.2 PIPEWORK AND VALVES



"GAS BOY"  
FUEL PRESSURE REGULATOR  
VALVES AND THERMAL RELIEF  
CIRCUIT



"T" PORT FUEL SHUT OFF/DIVERSION VALVE  
AND ALTERNATE FUEL PICKUP FROM TANK VALVE





## 5.1 LOW POINT SAMPLE DRAIN



LOW POINT SAMPLE DRAIN ASSEMBLY

DEAD MAN SAMPLE DRAIN VALVE HANDLE

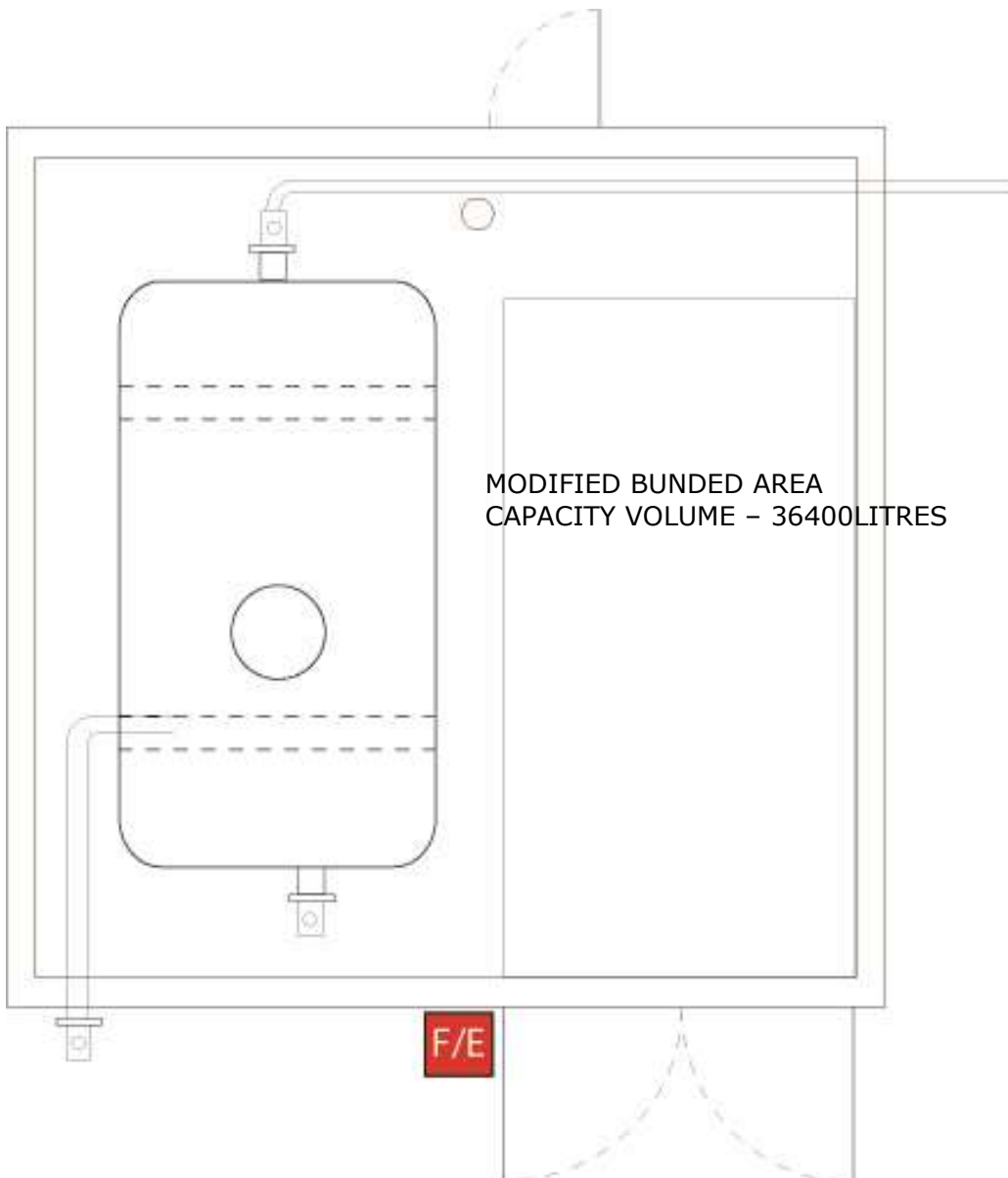


LOWER SHUT OFF VALVE

## 5.2 BUNDING AND DRAINAGE



BUNDED AREA SUMP PUMP FOR WATER MANAGEMENT – DISCHARGED TO LAWN AREA



## **6.1 Daily Sampling Procedure.**

Daily fuel drains need to be taken daily and samples tested with the results recorded in the facility Quality Control diary.

The following procedure is to be adopted.

### **Tank low point sample.**

Identify the tank low point drain assembly located on the main bulk fuel tank (Fig 9)

Open the tank low point drain shut off valve

Attach the bonding lead of a 15-litre stainless steel bucket to the low point drain assembly.

Remove the camlock cap from the gooseneck outlet and operate the dead-man handle to obtain a 5 > 10 litre sample into the bucket.

Replace the camlock cap and then return the low point shut off valve to the closed position. Retain the sample for testing

### **Filter Drain and sample. (under pressure)**

Identify the filter housing assembly located on the fuel bowser skid unit (Fig 3.2)

Identify the fuel nozzle assembly on the fuel bowser module. (Fig 3.1) Operate the captive lock lever to remove the fuel nozzle from the bowser unit. This will cause the fuel bowser system to operate. (Rest the nozzle on top of the hose reel unit during sampling)

Remove the camlock cap from the filter drain outlet and operate the dead-man handle to obtain a 1 > 1.5 litre sample into a clean 2 litre sample jar.

Replace the camlock cap to the filter drain outlet.

Retain the sample for testing

### **Nozzle Drain and sample.**

Place a clean 2 litre sample jar on the ground at least 1.5 metres from the fuel bowser. Take the fuel nozzle to the sample jar and gently manipulate the nozzle trigger to obtain a 1 > 1.5 litre sample. Return the fuel nozzle to the captive lock location on the fuel bowser module.

### **Carry out Fuel Quality Sampling (QC Checks)**

QC checks on the fuel should then be carried out in accordance within the guidelines of Aero Refuellers training and procedures module 3.07 – Clear and Bright test (Appendix “A”)

## 7.1 Fuel Bowser and Hose Reel Operation

### Refuelling of Aircraft Procedure.

The Sydney Helicopters JET A1 aviation refuelling facility is fitted with a high flow (160 litre per minute) fuel bowser and electric rewind hose reel fitted with 30 metres of 32mm hose.

The system is simplistic in its operation and is designed to be easily operated by a single person.

### Standard Operating Procedure –Refuelling an aircraft

#### STEP 1 – CONFIRM THE GRADE – JET A1



Confirm that the grade of fuel for the Aircraft is Jet A1 (aviation Turbine Fuel)

#### STEP 2 – Identify the EMERGENCY Stop Button Locations



#### DO NOT USE “E” STOPS UNLESS ITS AN EMERGENCY

There are 3 “E” stop buttons for the facility.

The facility stop button is located on the wall of the main hanger (Fig 1.2)

The fuel bowser stop button is located under the switch board at the rear of the fuel bowser (Fig 1.3)

The hose reel stop button is located at the front of the hose reel, under the rewind button. (Fig 1.4)

#### STEP 3 – Electrically Bond the Aircraft



Identify the bonding reel located at the front of the hose reel (fig1.4) . Inspect the bonding reel clip for integrity and if fit for use run the bonding lead out to the aircraft and attach to an approved bonding point.

#### STEP 4 – Activate the Hose Reel Power

The electric rewind hose reel requires power to allow the hose reel to freely unwind.

The power switch for the hose reel is located on the hangar side of the hose reel.

Turn the switch to the on position (Fig 3.2)

Due to the size of the hose reel and the resultant weight, the hose can feel “heavy” to unwind.

#### STEP 5 – Remove the Nozzle from the Fuel Bowser

Operate the captive lock lever to remove the fuel nozzle from the bowser unit.

This will cause the fuel bowser system to operate.(Fig 3.1)

The meter readout on the front of the fuel bowser should read zero.

## STEP 6 – Refuel the Aircraft

Take the hose to the aircraft and attach the nozzle bond lead to the aircraft BEFORE removing the aircraft fuel cap.

Remove the aircraft fuel cap, place the nozzle into the aircraft fuel filler and operate the fuel nozzle trigger



### **“CAUTION”**

**Fuel is delivered at a high flow rate. Use the nozzle trigger to control the flow rate.**

When the required amount of fuel has been delivered into the aircraft, remove the nozzle, allowing any residual to drain into the aircraft. Replace the aircraft fuel cap and then remove the nozzle bond.

## STEP 7 – Remove the Bonding Lead

Once the fuel cap has been replaced, remove the main bonding cable from the aircraft, leaving it on the ground clear of both the hose and the aircraft

## STEP 8 – Restow the FUEL NOZZLE and rewind the Hose

Return the fuel nozzle to the captive lock on the fuel bowser unit. (Fig 3.1) This will stop the pump from operating.

To rewind the hose, press the GREEN button marked “push to rewind” located on the hose reel control unit (Fig 3.3) Control the hose rewind operation by stop / starting using the push button.



### **IMPORTANT**

**At the completion of rewinding the hose, turn the hose reel power switch to the OFF position**

## STEP 9 – Rewind and secure the Bonding Lead

Rewind the bonding lead to its stowed position.

## STEP 10 – Record the Fuel Transaction

Record the amount of fuel in the record of fuel sales diary and record any other information as required in the Sydney Helicopter SOP.

## **8.1 Bridger Receipt Procedure.**

The Sydney Helicopters JET A1 aviation refuelling facility has a single skin above ground tank located within a fenced, roofed and bunded compound. The tank is fitted with automatic tank level gauging. The **Capacity** of the tank is 30,200 litres, **Safe fill level of 29,600 litres.** The bund capacity is 36,000 litres. A sump pump is located in the bund to remove excess storm water build up.

### **Standard Operating Procedure –Replenishment of Bulk Tank**

#### **CONFIRM THE GRADE –JET A1**

Confirm that the grade of fuel being delivered is Jet A1 (aviation Turbine Fuel)

#### **Confirm the Tank Ullage**

The level of fuel in the tank can be checked at either the tank Gauging panel located at the fuel bowser skid (Fig ) or via the tank Gauging portal. A manual dip can be carried out at the top of the tank. Calculate the amount of fuel required to replenish the level in the tank to the **SAFE FILL LEVEL (29600 litres)**

#### **Position the Bridging Tanker**

The facility location allows the bridging tanker to locate at the North Eastern corner of the refuelling compound. There is a single dry- break loading point allowing for high flow bottom loading of the tank.

#### **Electrically bond the Tank**

Attach the bonding reel from the bridging tanker to the tank bond point located adjacent to the fill point.

#### **Carry out pre delivery QC Checks.**

Pre delivery QC checks must be carried out to both the receiving tank and the bridging vehicle. These results need to be recorded on the Bridgers run sheet.

#### **Attach the Refuelling Hose**

Attach the underwing fuel transfer hose from the bridging tanker to the dry – break tank filling point. Turn the ball valve located at the filling point to the “ON” position.

#### **Transfer Fuel to Tank.**

Carry out the fuel transfer from the bridger to the tank in accordance with Aero Refuellers training and procedures module 4.02 Bridger Receipt (Annexure “B”)

#### **Completion of Transfer**

On completion of the transfer:

Turn off the tank fill point ball valve

Disconnect the Bridger transfer hose.

Restow the fuel hose.

Disconnect the bonding lead and restow.

Check the level on the Automatic tank-gauging panel. Ensure the level is correct in relation to the amount of fuel delivered. (A manual dip can also be taken)

#### **Record the fuel transaction.**

Record the amount of fuel in the record of fuel sales diary and including any other information as required in the Sydney Helicopter SOP. Ensure a copy of the fuel release note is left in the facility diary.

## 9.1 SPILL RESPONSE PROCEDURE – SPILL AT FILLING POINT

### Response Procedure.

#### Spill at the filling point

##### Initial Response

**The site has a YELLOW 120 litre spill kit located at the rear of the fuel bowser**

**Spills occurring at the Filling point need to be dealt with as a matter of priority**

##### **Stop the flow of Fuel.**

Operating the “E” stop at the rear of the fuel bowser or on the hanger wall will isolate power to the fuel bowser causing the pump to shut down.

##### **Contain The Spill**

Assess the origin of the spill and if safe to do so, utilize the contents of the spill kit located at the rear of the fuel bowser to contain the spill. If the volume of fuel is too great or it is not safe to attempt a cleanup, call for assistance immediately.

##### **Clean up the Spill**

The Spill kit contains absorbent mats, booms and litter to absorb hydrocarbon based spills. Use the contents of the kit to absorb all spills. There are disposal bags in the kit allowing the contaminated absorbent materials to be collected and disposed of in normal land fill.

## 9.2 SPILL RESPONSE PROCEDURE – SPILL AT THE BOWSER

### Response Procedure.

#### Spill at the Bowser

##### Initial Response

**The site has a YELLOW 120 litre spill kit located at the rear of the fuel bowser**

**Spills occurring at the site of the Fuel bowser skid need to be dealt with as a matter of priority**

##### **Stop the flow of Fuel.**

Operating the “E” stop at the rear of the fuel bowser or on the hanger wall will isolate power to the fuel bowser causing the pump to shut down.

##### **Contain The Spill**

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## 9.3 RESPONSE PROCEDURE – FIRE AT FILLING POINT

### Response Procedure.

#### Fire at the Fuel Bowser

##### Initial Response

The site has 2 Dry Powder BE Fire extinguishers mounted on the QC testing cabinet module

Fires occurring at the Fuel Bowser need to be dealt with as a matter of priority

1. CALL FOR ASSISTANCE IMMEDIATELY

**As soon as fire starts call out “FIRE,FIRE,FIRE.”**

2. Stop the flow of Fuel.

Operating the “E” stop at the rear of the fuel bowser or on the hanger wall will isolate power to the fuel bowser causing the pump to shut down.

3. FIRE EXTINGUISHER

Assess the size of the fire and if safe to do so, use the facility fire extinguishers. Do not put yourself in harm’s way. If the fire is too large to deal with, move to a safe place and wait for help. Warn others. Call for further assistance. Do not assume that someone else has called the fire brigade.

## 9.4 RESPONSE PROCEDURE – FIRE AT THE BOWSER

### Response Procedure.

#### Fire at the Fuel Bowser

##### Initial Response

The site has 2 Dry Powder BE Fire extinguishers mounted on the QC testing cabinet module

Fires occurring at the Fuel Bowser need to be dealt with as a matter of priority

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