QC³ Consulting Report

Customer: **Flinders Council**

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1 Executive Summary

QC³Consulting has been engaged to undertake a 'high level' review of the fuel facility at the Flinders Island airport and provide improvement options and recommendations for the consideration of Flinders Council.

This high level review has encompassed interviews with commercial and private operators, discussions with Flinders Island Airport Operations and other Airport Operators.

This investigative report has identified that there is a risk to Flinders Council which can be mitigated by upgrading the existing fuel facility to ensure compliance with the appropriate Australian Standards and compliance with Tasmanian Health and Safety legislation. Risk exposure can further be decreased by establishing a new operations and maintenance regime either through developing a new agreement with the key commercial operator or taking the works 'in house' and managing internally.

Investigating opportunities to reduce the retail fuel costs for the smaller commercial operators and all private operators and introducing automated fuel dispensing to facilitate and enhance the experience of visitors using the facilities at the Flinders Island Airport would benefit Flinders Island. by being actively in compliance with the applicable precepts detailed in the Flinders Island Airport Master plan 2012 and specifically the Flinders Island Airport vision and key objectives.

It is recommended, subject to general approval with the information contained within this report, that further works be undertaken specifically in review of risk management and the costs associated with the identified improvements to develop a business case to assist with appropriate decision making.

2 Background

The aviation fuel storage facility is operated by Sharp Airlines and is located adjacent to the west side of the main apron. The fuel is stored in a secure, bunded enclosure. The facility is a twin chambered tank storing Avgas and Jet A1 fuel. The total storage capacity is circa 55,000 litres.

The fuel tank is filled by Sharp Airlines using a fuel tanker based on the Tasmanian mainland utilising the Furneaux Freight shipping service on an 'as needs' basis.

Aircraft refuelling is undertaken as required and this service is provided by an employee of Sharp Airlines based at the Flinders Island Airport.

The fuel storage facility is considered suitable for current aircraft operations.

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3 Project Objectives

The primary project objectives of this report are to:

- Review the current fuel facility for compliance with the appropriate Australian Code of Practice (*AS-1940-2004-The-storage-and-handling-of-flammable-and-combustible-liquids*).
- Review the current fueling/refueling operation.
- Identify and engage with key stakeholders in seeking information regarding the current operation and identify opportunities for improvement.
- Engage with appropriate Flinders Council stakeholders.
- Review and comment on possible improvements to operations.
- Table findings and present recommendations including likely costs where applicable.
- Complete the review efficiently, professionally and cost effectively.

4 Flinders Island Airport Vision and Objectives

In developing this report with respect to the management and maintenance of the fuel facility, the Flinders Island Airport Vision and Key objectives were referenced to ensure compliance.

Vision

Flinders Island Airport is a critical transport hub servicing Flinders Island which will continue to be maintained, enhanced and protected to support the sustainable growth and development of the community and economy of the island.

Key Objectives

- Protect the airport's primary function for aviation.
- Recognise the airport as a valuable community and economic asset.
- Create positive gains for the community and economy.
- Support the growth of RPT and charter activities.
- Support aviation-related development on the site.
- Support the growth of tourist passenger traffic.
- Support the ongoing use by emergency services.
- Ensure that appropriate infrastructure is provided.
- Allow appropriate development of surplus land.
- Ensure compliance with CASA standards and requirements.
- Ensure that future development occurs in a planned and orderly manner in accordance with the long term vision for the airport.

5 Status of current facility

In review of the existing infrastructure it is generally in compliance with AS-1940-2004-The-storage-and-handling-of-flammable-and-combustible-liquids.

Recommended key improvements are:

- Undertake a tank inspection using an appropriate, accredited inspection agency. It is likely that this inspection can be undertaken using external ultrasonic testing to verify wall thickness and specifically in areas where metal corrosion is evident. (See section 6, Tank Inspection Scope and Cost Estimate)
- Address any findings and recommendations identified by this inspection.
- Develop and implement a regular inspection and maintenance regime.
- Provide an appropriate spill kit.
- Replace/upgrade safety signage.
- Replace the existing 20m Jet fuel hose with a 30m hose to facilitate refueling of the Sharp Airlines Metroliners. (Recommendation from Flinders Airport Operations Manager).

Figure 1 Flinders Island Airport Fuel Facility

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6 Tank Inspection Scope and Cost estimate

Laboratories for Materials Advanced Testing Services (LMATS) based in Melbourne were approached to provide a scope of works and cost estimate to undertake an inspection of the Flinders Island Airport fuel tank.

Typical Scope will include:

- Visual inspection on all external areas of the tank including:
  - critical areas of the piping,
  - tank paint condition, and
  - tank wall thickness.
- Visual inspection of the support structure.
- Condition appraisal of the bund, plinth and concrete.
- Ultrasonic thickness survey at 12°Clock , 3°Clock, 6°Clock and 9°Clock at 1 metre intervals across the entire length of the tank. This will indicate issues associated with corrosion.

The cost estimate to complete this work is:

- For the external inspection 1 x Qualified Pressure Vessel Inspector for 8 hours who can also perform thickness assessment ($1,280)
- Mobilisation, Site Induction, Travel and Overnight stay approximately $1,200 to $1,500
- Reporting – 4 Hours – Approximately - $640
- Total Fees - $3500 to $4100 indicative price

The primary contact for this work is:

Mandar Phadke
Inspection Services Manager
6 Techno Park Drive, Williamstown, VIC 3016
PH: +61 3 9399 9199
MOB: +61 437 709190

7 Status of Current Operation

Flinders Council executed a contract with Airlines of Tasmania in 2008 which expired in 2010. The contract provided for Airlines of Tasmania to lease the block of land containing the fuel facility at the Flinders Island Airport and to manage and operate the fuel facility.

Key clauses within the contract included the provisions to:

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5.1	The Tenant must, at all times pursuant to this lease, keep the premises in good condition and repair and in particular ensure that the structural improvements erected on the premises comprising the aviation fuel storage and dispensing facilities, are at all times maintained in accordance with relevant statutory requirements and are upgraded and improved from time to time, which may require replacement by the Tenant, so that such facilities are always fit for the purpose of storing and dispensing aviation fuel in a safe manner.

18.1	At all times pursuant to this lease the Tenant must ensure that there is stored on the premises;
	(a) sufficient aviation fuel to cater for emergency use; and
	(b) sufficient aviation fuel to supply users of the Whitemark Airport.

The above clauses ensured that maintenance activities were undertaken and that there was always sufficient fuel available.

The contract also ensured that the Flinders Council was appropriately indemnified and that the insurance risk was covered by the lessee.

Airlines of Tasmania no longer operates as the primary commercial operator at Flinders Island airport with that mantle now resting with Sharp Airlines. Sharp Airlines currently refuel the tank at the fuel facility under a verbal agreement (not confirmed) however it is apparent that there is no obligation to maintain the facility and it is apparent that no maintenance of the facility is currently undertaken.

With contract expiration (2010) the management of the fuel facility including maintenance and compliance with the Australian Standards and the Tasmanian Health and Safety Act and Regulations now rests with Flinders Council.

It is recommended that as a minimum Flinders Council inspect and upgrade the facility as per recommendations listed in section 5 of this report and further, implement a management/maintenance/fuel supply regime to ensure compliance with legislative obligations.

Options available to Flinders Council include:

- Negotiate and execute a suitable contract with Sharp Airlines for the ongoing management and maintenance of the fuel facility, or
- Provide 'in house' maintenance (local contractor and Airport Operations) and engage an alternate fuel supplier.

Flinders Council risk will be best managed by abrogating accountability through an appropriate engagement with Sharp Airlines ensuring, from a cost perspective, that the outcome is of mutual benefit to Sharp Airlines, Flinders Council and other stakeholders (commercial and private operators utilising the fuel facility).

8 Fuel

8.1 Fuel Costs.

A review of the cost of fuel on Flinders Island was undertaken by Resonance Consulting in July, 2014 *(Flinders Island Fuel Supply Study July 2014).* This report concentrated primarily on the supply of Diesel and unleaded fuels. This report noted that TasPorts ceased supplying aviation fuels (Avgas and JetA1 fuels) in June 2007. It is assumed that from that date the AV Gas and JetA1 Fuel requirements have been supplied by the primary commercial operator at Flinders Island Airport.

At the time of writing this report the fuel requirements are delivered by Sharp Airlines. The fuel is transported from Hobart (Bulk fuel supplies) to the Flinders Island Airport via Furneaux Freight.

The current costs per litre (retail) for customers utilising the Flinders Island Airport fuel facility are as follows:

JetA1 Fuel - $2.63
AVGas - $3.08

The current costs per litre (retail) for customers utilising facilities at Launceston Airport are as follows:

JetA1 Fuel - $1.58
AVGas - $1.90

The current costs per litre (retail) for customers utilising facilities at Wynyard Airport are as follows:

JetA1 Fuel - $1.74
AVGas - $2.06

Generally the cost per litre of fuel on Flinders Island is an additional $1.00/litre above the Tasmanian prices.

The Flinders Island Airport costs per litre are set by Sharp Airlines.

In discussions with two commercial operators on Flinders Island; Flinders Island Aviation and Flinders Island Air Charters, these costs are deemed prohibitive and therefore not sustainable for their operations with both operators managing their own fuel requirements without recourse to the Flinders Island fuel facility.

The key users of the fuel facility are the SES and Emergency Services from mainland Australia, visiting helicopters (requirement to refuel between the Australian mainland and Tasmania), some private

operators and Sharp Airlines. Airport operations have confirmed that circa 100,000 litres of fuel was dispensed from the fuel facility across the 2015/2016 12 month period.

It is recommended that:

- A review of the price offering for fuels as provided by Sharp Airlines be reviewed.
- This review could form the basis of any new agreement to manage the fuel facility.

- Review the possibility of an alternate fuel supplier with the goal to reduce costs and increase the uptake of fuel. The availability of cheaper fuels at the Flinders Island Airport would be attractive for the commercial and private operators expressing interest in developing hangars at the airport and also attractive for visiting private operators (tourists).

8.2 Fuel Dispensing

When fuel is required (AVGas/JetA1 Fuels) the aircraft operator makes contact with the Sharp Airlines representative who manually dispenses fuel as required. The quantity is recorded using the insitu analogue meter. Payment is made either on account or by credit card or cash using the Sharp Airlines office facilities to complete the transaction. The Sharp Airlines operator is on call and available 24/7, 365 days a year. The operator is recompensed to ensure availability.

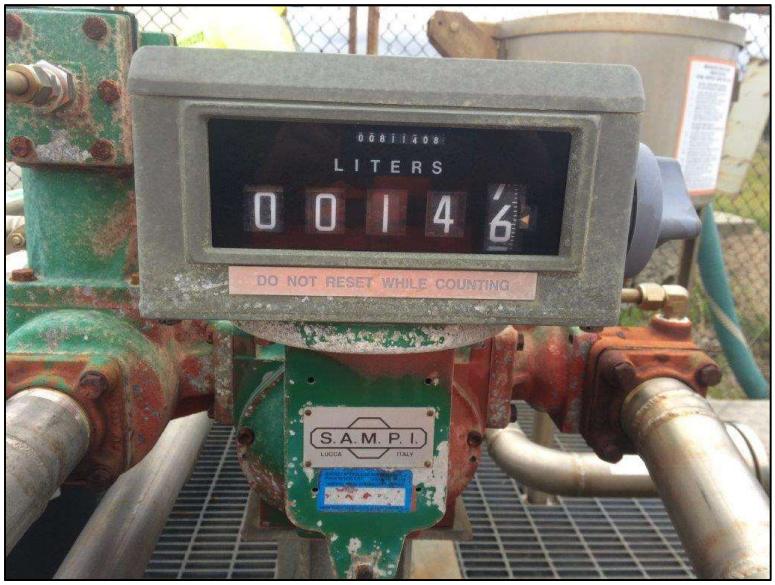

Figure 2 Analogue fuel meter

Information was not available as to whether the fuel dispensing system and meter are recalibrated or tested on a frequency basis.

8.3 Automated Fuel Dispensing

Flinders Council are reviewing the opportunity to introduce an automated fuel dispensing system to remove the onerous demands placed on the 'on call' operator and to achieve potential cost savings.

An automated fuel dispensing system would be similar to the 'after hours' service stations where a customer can self-refuel using a swipe card system (credit card) either requesting a fixed amount of fuel or fill 'as required' once the system is in receipt of credit card details.

In discussions with an airport operator in Port Pirie, as recommended by CASA, it is apparent that these systems are a good option providing flexibility for visiting aircraft to plan trips knowing that the refuelling exercise is a managed risk.

Modern systems allow for accuracy in volumetric measurement ensuring value for all parties, however there is still a requirement for annual recalibration.

Notes of concern that need to be taken into account when planning an investment for this type of system include:

- Ensuring an ability to override (bypass) the system in the event of system failure e.g. a power failure.
- Ensuring good 'after sales' service response from the equipment supplier including reactive time to address issues, maintenance requirements and the availability of spare parts.
- Going to market to achieve the best value with the provision of this equipment.

For the purposes of this report Gilbarco - Veeder Root were approached to provide information on a suitable system and the likely costs. Gilbarco were selected on the basis that they have representation in Tasmania, have a positive track record for providing fuel dispensing systems and the existing fuel dispensing system was installed by Gilbarco.

The request for information was as follows:

1. Review compliance with Tasmanian regulations (AS1940-2004).

2. Review integrity of existing infrastructure.

3. Provide method and costs for the installation of equipment to allow fuel dispensing via swipe card (to specified account or no set amount).

4. Any other cost effective opportunities for improvement.

6. The swipe card will require debit/credit card capability and will probably link to the 'Airport Operations PC'.

7. Confirmation that there is Wi-Fi at the airport terminal which is circa 100m metres from the fuel installation.

8. Review adequacy of insitu Signage.

9. Review adequacy of existing bunding.

10. Should we have a spill kit available? Type?

11. A 30m hose to replace the existing JetA1 fuel 20m hose.

The Gilbarco Response received was supply of:

- B2b OPT system
- Electronic Registers to replace existing mechanical units
- Remote Display
- UPS and suitable stand
- Postec unit and software
- Foresite Software
- Wireless communication
- Weather Proof Box
- Prepare new, replacement signage as required
- Order suitable spill kit for site
- Order replacement hose for site
- Assemble system, ensure functionality
- Disassemble system, pack and freight to Flinders Island Aerodrome
- Mobilise to site, barricade work area
- Assemble system on site
- Electrical and Communication work to be provided by licenced hazardous area electrician
- Test and commission payment system
- Demobilise

Figure 3 Automated (Swipe Card) Fuel Dispenser

The Cost proposed for this supply and install is $136,437 ex GST. The 'pre-set amount' fuel dispensing option would be an additional $23,500 ex GST. Other costs to consider would be connection to power (est $2.5k) and any civil works (est $1k).

9 Funding

Flinders Council proposed that there may be funding available through the National Disaster Resilience Grants Program (NDRGP).

http://www.ses.tas.gov.au/h/em/funding/ndrgp/ndrp-eligible

In review of the eligibility requirements it was initially determined that an application to upgrade the existing fuel facility and install an automated dispensing system may not meet the eligibility criteria. However with Emergency Services being one of the primary organisations utilising the fuel facility there may be recourse to some financial assistance from the Grants Scheme. With the next round of funding grants due to commence in October, 2016 it is recommended that further investigation be undertaken into the possibility of funding assistance.

10 Local SES Funding opportunity

While not formally a part of the Flinders Island fuel facility report, in review of the National Disaster Resilience Grants Program (NDRGP) there exists an opportunity for the Flinders Island SES to review the opportunity to invest in a compliant mobile fuel dispensing tank to assist with refuelling operations in remote areas of Flinders Island e.g. NE River during emergencies, including the refuelling of helicopters for search and rescue and firefighting operations.

Suitable, compliant, cost effective, mobile units are available and it is recommended that further investigation be undertaken to explore the viability of this type of equipment.

Figure 4 Typical 1200L mobile fuel dispensing unit

Specification for mobile fuel dispensing unit:

- Fully self bunded mobile fuel tank constructed to Australian Standards
- Safe fill level – 1,200lt
- Electric start diesel engine and pump
- Road registered with all required signage and reflective tape, all lighting is LED
- Dual axle design for extra strength, stability and excellent ground clearance but still with a low centre of gravity
- Heavy duty radial tubeless tyres on standard 17 inch rims with spare tyre supplied
- Marked dipstick with safe fill level
- Clearly visible automated amber flashing light whilst refuelling
- Emergency stop button with battery isolation switch
- Bunded front containment area under the pump housing further reduces any risk of accidental spillage going to ground
- Graco 10 metre x 25mm diameter retractable hose reel with auto shut off nozzle
- 1 x 4 digit mechanical reset fuel meter
- Disc brakes with manual handbrake
- Heavy duty jockey wheel with swivel retraction for optimum ground clearance
- Heavy duty 50mm tow hitch
- 2 x safety chains with load rated shackles
- 50 mm (2") Dip point with camloc
- 75mm (3") Fill point with camloc
- 75mm (3") Vent point with camloc
- 1 x standard seven pin trailer plug
- 1 x 9kg fire extinguisher
- Trailer dimensions in mm: 1,800W x 4,250L x 2,000H
    - (trailer height is measured to top of flashing light pole)
- 1200lt trailer approximate tare weight is 1,000kg
    - (this is unloaded trailer weight)
- 1200lt fuel trailer loaded weight is approximately 2,000kg

11 Appendices

11.1 Appendix 1 Gilbarco Veeder Root Proposal

11.2 Appendix 2 Flex Pay Terminal Brochure