

2 REPAIR PROGRAM
The road to recovery

6 A SAFE RETURN
The first priority

10 THE TEAM
Bringing OQA home

techTALK

Special Edition: Return of VH-OQA

536 DAYS: THE RETURN OF VH-OQA



Qantas Engineering

OUR VISION QE will be the benchmark for safety, quality and efficiency in airline maintenance. Others look to us to define best practice.	SAFETY First, always, everywhere.	CUSTOMERS At the heart of everything we do.	PEOPLE The team everyone wants to be part of.	COMMERCIAL Smart choices increasing our value to Qantas.	SIMPLER, FASTER, BETTER We always look for ways to improve.
---	---	---	---	--	---

Message from Chris

When an uncontained failure of the Intermediate Pressure turbine disc in the number two engine forced A380 VH-OQA Nancy-Bird Walton, bound for Sydney, to return to Singapore in November 2010; our people were amongst the first to respond.

Our own team of Qantas Engineers worked along side Airbus and SIA Engineering Company (SIAEC) engineers from day one to undertake a program, unlike any previously performed on this fleet type. This included removal and replacement of all four engines and the repair of the damaged left hand wing. 536 days saw an astounding 87,000 labour hours, multiple audits, 500 individual tests on

repaired parts, and extensive flight and ground testing.

This repair has touched every part of QE. VH-OQA's return wouldn't have been possible without the support of Line Maintenance, local staff from Line Maintenance Singapore operations, Finance, Maintenance Operations Centre, Supply Chain, Safety and Quality, Heavy Maintenance, Aircraft Airworthiness and countless other teams offering their support.

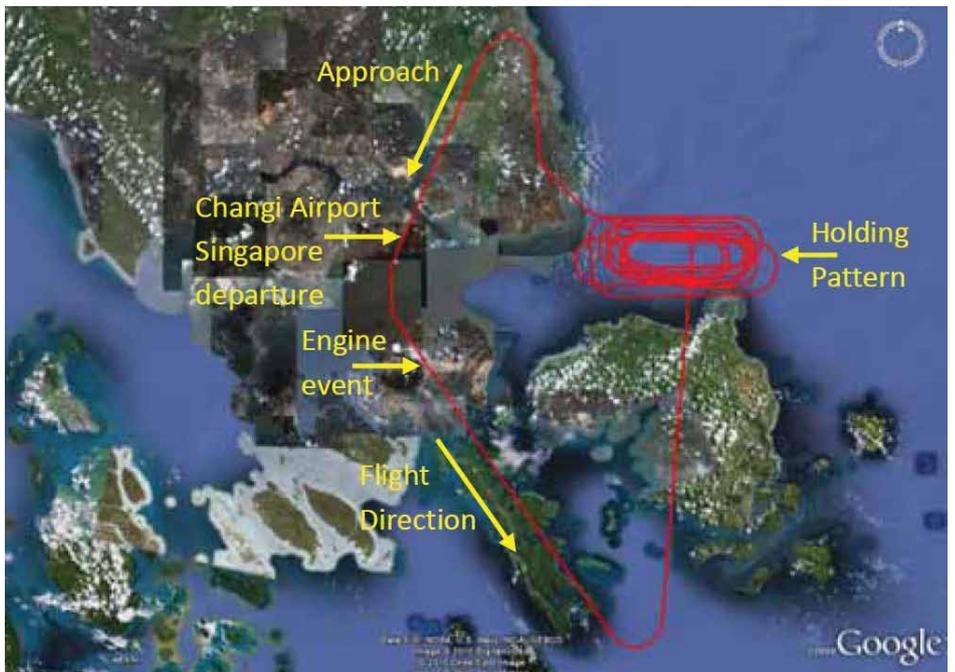
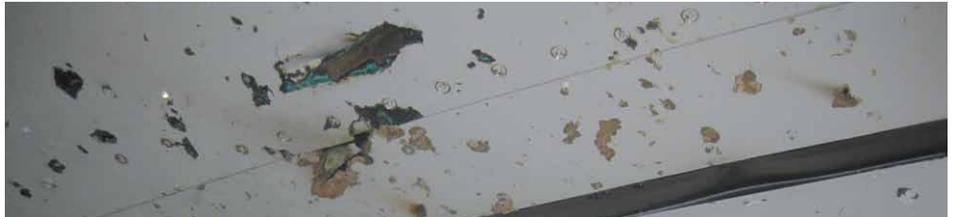
My sincere thanks to all involved, as well as their families, for making this possible.

While the return of VH-OQA to our skies is now a distant but proud memory, we thought we would look back at the biggest aircraft repair program in Airbus history and acknowledge the outstanding efforts of the team involved in bringing our



flagship aircraft home to Qantas where she belongs.

Chris



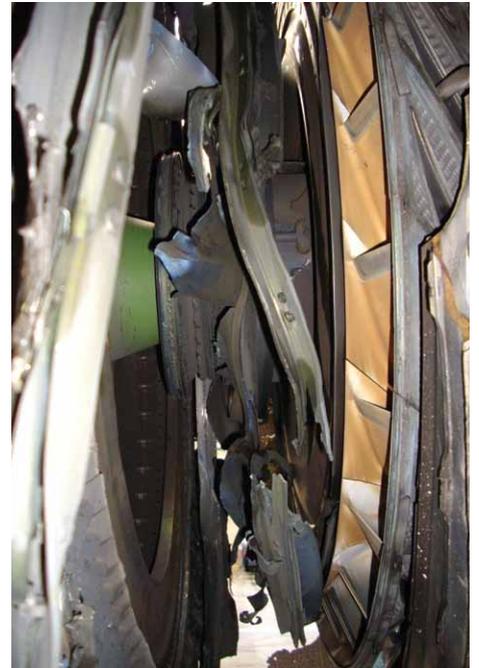
VH-OQA: the repair program

It was a long and winding road to recovery for VH-OQA. After the incident investigation process was completed, Airbus began the complex task of surveying the damage and designing the repairs and the specialised processes and tooling needed to perform these unique repairs. The actual repairs began in May 2011 and were completed nearly a year later in April 2012.

The recovery program was led by Airbus, with support from a Qantas

team and SIA Engineering Company (SIAEC). With Airbus carrying out structural wing repairs and replacing all systems affected, including pneumatic, electrical and hydraulic systems; all four original engines were removed and replaced with engines supplied by Rolls-Royce.

The repair was no small feat with a final estimated repair cost of \$A139 million, covered entirely by insurance. However, this is just one of the many mind boggling figures that allows for a glimpse into the extent of work that was required to have VH-OQA back in service.



SAFETY
First, always,
everywhere.

Anatomy of the biggest repair program in Airbus history

Design

- ▶ Around 50,000 man hours of design activity was completed with more than 100 drawings created.

Production

- ▶ Airbus staff performed approximately 76,000 production man hours;
- ▶ Over 170 Airbus staff have worked onsite (on rotation), with nationalities including French, German, Spanish, British, Dutch, Indian, Belgian and American;
- ▶ Qantas performed over 11,000 man hours of production work including modifications, preservation tasks and maintenance activity; and
- ▶ Airbus staff working on the repair in Singapore had an average of 25 years industry experience.

Systems

- ▶ About one-third of the wiring in the left wing was replaced. That's an approximate length of 6.1 kilometres of wiring compared with 37 kilometres of wiring throughout the aircraft.

Logistics

- ▶ Ten 40-tonne trucks carried 18 specifically manufactured jacks from a warehouse in Frankfurt to Hamburg harbour, with the equipment then transported to Singapore by sea (a journey of one month);
- ▶ 1,000 air freight shipments carried 1,500 boxes with a total weight of 150 tonnes of parts and tooling;
- ▶ Material was transported from 60 shippers and from 25 different airports to Singapore;
- ▶ 630 different part numbers were ordered; and
- ▶ 220 tools were ordered with a total weight of 110 tonnes.

Testing

- ▶ 250 individual tests were done by the embodiment team during repairs;
- ▶ 250 additional tests were done during the ground testing phase (similar to those carried out with a new aircraft off the production line);
- ▶ Flight testing comprised: a rejected take-off at 100 knots; a technical acceptance flight; and a flight to measure the performance of the airframe and engines; and
- ▶ Check sequences during the assessment flight included:
 - high 'G' manoeuvres to test the tolerance of the airframe;
 - individually shutting down each of the four engines and restarting it;
 - flying at slow speeds to test anti-stall systems;
 - turning off engine-powered hydraulic systems to ensure that the aircraft remained controllable;
 - testing emergency electrical systems; and
 - extending the landing gear via the alternate method.

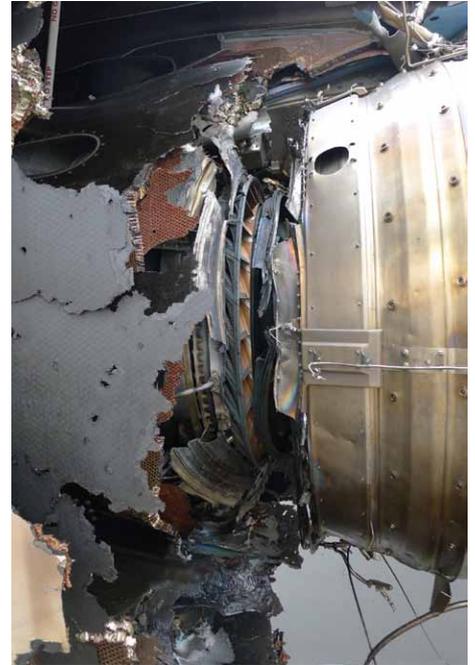
After Nancy-Bird flew home, many

Engineering staff were still required in Singapore to complete the job. This included the removal and destruction of three truck loads of unserviceable aircraft parts to prevent re-birthing, returning components to various locations and vendors around the globe, finalisation of contracts, returning the massive amount of legal documentation to Sydney and of course the cleanup and exit of the facility in Singapore.

- ▶ 110 tonnes of tools ordered
- ▶ 630 different part numbers required
- ▶ 150 tonnes of airfreight shipped
- ▶ 3.8 miles of wiring replaced
- ▶ 11,000 Qantas man hours performed
- ▶ 2000 chilli crab consumed



SAFETY
First, always,
everywhere.



• SPRAY LOOSE CF WITH LACQUER
 • MAKE ASSESSMENT OF 12 0'C & 60'C HOIST POINTS
 • REMOVE MAP BOTH SIDES AND ASSESS T/R MINNES FOR SECURITY.
 • ASSESS TR LATCHES.
 • REMOVE FAN COWLS BOTH SIDES
 ↳ TOOLING (SIAEC)
 ↳ MANPOWER (SIAEC)
 • LAY CANVAS MAT UNDER ENGINE
 • INSTALL T/R REMOVAL TOOL LHS FIRST
 • UNDO REMAINING LATCHES
 • SEPARATE REVERSER HALVES (FORCE WILL BE REQUIRED)
 • STRAP REVERSER - USING STRAP TO THE TR REMOVAL TOOL
 • PARTIALLY OPEN THE LHS REV HALF AND ASSESS FOR RIGIDITY/SECURITY
 • STRAP REVERSER HALF TO THE TR REMOVAL TOOL.
 • RAISE LHS TR HALF TO FULLY RAISED POSITION
 • CRANE AWAY.
 • REPEAT RHS.



SAFETY
First, always,
everywhere.

536 days in the making

2010

2011



- ▶ Aircraft recovery and position to hangar.
- ▶ Release of aircraft from investigators and regulatory authorities.
- ▶ Detailed inspections and damage assessment carried out by Airbus and Qantas Engineering in Singapore.

Incident
4 November

Damage Assessment
31 January



- ▶ Design construction of repairs, processes and tooling.
- ▶ Shipping preparation of major tooling.
- ▶ Preparation of Repair Agreement including performance calculations and commercial arrangements.

SIAEC Hangar 1 and outside

2011

2011

- ▶ Preparation of aircraft for “zero stress” jacking phase.
- ▶ Removal of structure and components for repair access.
- ▶ Construction of repair work packages and design drawings.



Phase 1: Access
30 May

Repair Preparation
7 July

- ▶ Aircraft “zero stress” jacked.
- ▶ Major structure repairs carried out including skins, forward spar and fuselage.
- ▶ Preparation for replacement of ancillary structures.



SIAEC Hangar 6

SAFETY
First, always,
everywhere.

2011



2012

2012

2012

- Commenced customised ground test programs.
- Engine ground run testing.
- Carry out flight test program in conjunction with Qantas and Airbus.



Phase 2:
Aircraft Repair
23 October

Phase 3: Additional Structural Repair
and A/C Systems Rebuild & Tests
9 April

Ground & Flight Tests
16 April



- Installation of replacement components and systems.
- Restoration and modification of cabin and associated systems.
- Installation of ancillary structure and flight controls.

21 April: Aircraft return to Sydney



SIAEC Hangar 1 and outside

SAFETY

First, always,
everywhere.

A safe return

On his arrival at SIAEC four days after the incident, John Ehret, Engineering's Manager of Ground Safety and Environment, observed that the amount of damage to the aircraft, at the detailed level, was significant. On close inspection of engine #2 it was noted that the thrust reverser halves were burnt and severely damaged, resulting from this damage was a potential for personnel to breathe airborne carbon fibre particles. Exposed edges were also razor sharp and there was an assessed Medium risk to the health and safety of all those within the vicinity. An area around the engine was declared hazardous and cordoned off. This containment would remain in place until the area was considered safe. Additional security was called upon to ensure there was no unauthorised access to this area.

After further assessment of the situation and the work likely to be required, a request was made through SIAEC to source a range of Personal Protective Equipment (PPE) including exposure suits, gloves and respirators to be provided for those working on the aircraft. For longer exposures in such a humid environment we also acquired some powered respirators to provide clean air to breathe with minimal effort and a cool stream of air to minimise fatigue due to heat. Training was also provided to our staff on the use of the PPE.

A major part of John's role was to balance risk with operational need in an atypical situation requiring the use of non-standard procedures to remove the damaged engine from a damaged frame, in a remote port using local SIAEC resources under the close scrutiny of the ATSB, Airbus, AAIB and Rolls Royce. This necessitated many planning sessions on how the work would be achieved and the completion of the various Risk Assessments that accompanied the task at hand. Most

notably these included separate assessments on Thrust Reverser removal, Leading Edge And Damaged Canoe removal, Engine Cowl removal, #2 Engine removal and Fuel Tank entry into damaged wing tanks.

After this planning and the completion of risk assessments, the left hand and right hand Fan Cowls were followed by the left and right hand Thrust Reversers. These were placed on trolleys, resprayed with a lacquer to help bind any loose carbon fibres and subsequently wrapped in plastic to mitigate the exposure of the sharp burnt fibrous material contacting personnel.

Post-work inspection of the work area showed that metal parts and other debris with significant carbon fibre content had fallen out from the engine onto the plastic ground sheet below. As the aircraft at this stage was still controlled by the ATSB, guidance was sought from them with respect to any of those parts being required for evidence. The ATSB recovered all of the loose material required and clearance was given to proceed and clear the area of debris. SIAEC staff, with full PPE, rolled up the sheeting and



disposed of it as hazardous waste.

Subsequently a request was made by Rolls Royce to perform engine boroscopy on the engine. As a Safety Controller on site at that time, Qantas Engineering Safety would not permit this to occur without suitable PPE to ensure adequate protection from residual fibre was provided.

PPE requirements would continue to remain in place at least until all residual debris and dust was HEPA vacuumed and the area immediately below the engine washed to the first flush drainage system. Larger pieces



of metal identified in this process and found sitting on top of the engine were bagged and given to the ATSB.

Preparations continued with respect to removal of the engine. An EA was generated to remove the engine in accordance with the relevant A380 AMM Task, where possible. The “where possible” reference was with respect to the damage sustained to the engine. Variations to this method were discussed and included the use of timber shoring and strapping in combination and in addition to the usual method of utilising the boot-strap. Engine removal was to be conducted during the evening and all associated staff were stood down for rest prior to this. The removal was to be supervised by Rolls Royce, who would determine any required variation to the method and ensure that safety considerations were continually monitored, assessed and changed if required during the process. Ultimately and importantly, removal of the engine was achieved without injury.

John Ehret acknowledges the proactive approach of both the local and contracted teams engaged on this job. Especially the support of Denis Panagiotopoulos and David Kelly for making sure Safety was the First Priority. Reviewing this case clearly demonstrates the importance and value of the Risk Assessment process to identify hazards and control risks arising. This is especially so where there are many unknowns and where following normal procedure is either not possible or where people would be exposed to conditions or practices that could have caused harm.



PEOPLE

The team everyone wants to be part of.

The team that brought VH-OQA home

It was the countless hours and tireless dedication of a team of QE staff that helped bring VH-OQA back from Singapore. *QtechTALK* caught up with each member of the team to find out how they helped get VH-OQA back in the sky.

GLENN BIDDLE
A380 LAME, SINGAPORE

The key tasks that I was involved in from the moment I saw VH-OQA on the runway were the:

- ▶ shutdown of the Number 1 engine using foam from the fire truck, following several other unsuccessful attempts using alternative methods
- ▶ replacement of blown tyres and removal of seized brakes before towing off the runway
- ▶ towing to a remote parking bay, while fuel was still leaking from the left hand wing
- ▶ removal of the Flight Recorders – under strict supervision by Transport Authorities – for dispatch to Sydney
- ▶ removal of all cargo using alternative methods, as the cargo doors could not be opened due to hydraulic failure caused by Number 2 engine damage, and;
- ▶ positioning to the SIAEC hangar so preliminary repairs and damage assessment could commence.

The next morning I sat down to write the most important Form 500 (Engineering Report) of my career.

KENT ASTON
A380 SENIOR LAME

I was the first engineer sent from Sydney to Singapore on 4 November. I was responsible for carrying out an initial damage assessment while liaising with the Australian Transport Safety Bureau (ATSB) regarding any technical enquires, before reporting back to the Qantas Business Resilience Centre.

Leading the initial recovery team I ensured the safety of the aircraft and systems, removal of the number two engine for ATSB and Rolls Royce Singapore Aero Engine Services Private Limited (SAESL) for investigation into the engine failure.

Soon after, I oversaw the preservation of the aircraft before my role transitioned to becoming the point of contact for technical certification and advice for Airbus and SIA Engineering Company (SIAEC) during the repair and return to service of VH-OQA. Along with a rotating team of engineers, I carried out all Qantas requests for maintenance and modifications of VH-OQA during its eighteen months in Singapore.

One of the final and most satisfying responsibilities I held was to conclude with the final return to service signature for the return QF32 flight from Singapore to Sydney.

JOHN CALPIS
SENIOR LAME, SYDNEY AIRCRAFT MAINTENANCE, A380

Based in Singapore on a posting at the time of Nancy-Bird Walton's air turn back, I was part of the initial response team to attend the aircraft at the end of the runway. My role included assisting with immediate hazard reductions and securing aircraft systems in preparation for towing the aircraft off the runway.

ALLAN KELLAM
LAME

I was sent to Singapore just after the incident occurred and I was involved in defueling the aircraft, the removal of the engines, damage assessments and preservation of the aircraft. My role also encompassed the important function of liaising with various departments. These other department included the Australian Transport Safety Bureau (ATSB), Qantas Technical Engineering in Sydney and Singapore, and SIA Engineering Company (SIAEC) which includes engineering, planning and stores. My involvement with VH-OQA ended when I returned to Sydney in late December 2010.

JOHN WALKER
MANAGER, CABIN SYSTEMS, MATERIALS AND PROCESSES

On the day of the event, I took the call from the Qantas Maintenance Operations Centre as part of the Aircraft Airworthiness Operational Support Team. Spending many hours on the phone with the MOC and with the people on the ground, I tried numerous technical tricks, proposed on my A380 knowledge, to shut down the number 1 engine.

The day after VH-OQA's grounding; I



PEOPLE
The team everyone wants to be part of.



flew to Singapore and was responsible for all of the engineering support to make the aircraft safe. Additionally, I liaised with Airbus and the ATSB investigation team before the removal of all of the failed components. It was also my role to define the storage procedures of the aircraft and the cabin to ensure that the aircraft was correctly preserved during the 13 month repair period.

RICHARD CHARLTON
MANAGEMENT ACCOUNTANT

My first task in the recovery of VH-OQA was to work with Project Manager, Tim Gent and A380 Fleet Manager, Michael Killeen to build the repair budget. Once the budget was approved, I controlled the project expenditure and liaised with Qantas Head of Insurance, Rob Collins to ensure all funds were reimbursed from our insurers.

DENIS PANAGIOTOPOULOS
LINE MAINTENANCE

I was there from day one and managed the entire process for the first 8-9 weeks, and then oversaw the repair process until its completion. That included managing all the stakeholders Airbus, ATSB, CASA, EASA, Rolls Royce, SIAEC and QE. It also included setting up all the facilities such as offices and hangar usage, storage facilities, negotiations regarding operational costs, negotiations on agreements with SIAEC and stakeholder management and relationships.

RICH CALLCUT
SENIOR A380 LAME

At the time of the VH-OQA incident, I was working on a posting from Sydney.

Part of my role as a Technical Representative in Singapore Line Maintenance was to perform the weekly checks and inspections on VH-OQA prior to its entry into the hangar for repair.

GAVIN NICOL
A380 FLEET TECHNICAL SPECIALIST

My role on this project involved coordinating the initial assessment of VH-OQA by Airbus and completing the aircraft preservation tasks for a period of six weeks. This included performing certification of the onsite third party labour and reviewing work performed by Airbus including liaison with Qantas Engineering Services. I then returned to Singapore on three other occasions to carry out numerous inspection and reassembly tasks including the final assessment flight.

MICHAEL STORY
SENIOR ENGINEER OPERATIONAL SUPPORT

I performed the initial assessment to identify all structural damage. My role also involved the engineering assessment of possible repair solutions and reviewing the Airbus structural repair proposals for acceptance. During repair embodiment it was my job to evaluate structural defects as well as view and accept structural repairs as per Qantas Engineering Authorities.

ZISI KOKOTATSIOS
NLCS AME

I was accountable for processing the unaffected engines on the wing and sending them to Singapore Aero Engine Services Private Limited (SAESL) for repair while working with representatives of the Singapore Airport Authority and Qantas LAMEs to

recover and ensure the preservation of the aircraft.

We spent nearly three and half weeks inspecting, dispatching and determining what materials were serviceable and what components would be returned to Sydney to be processed for repair.

Following the process of accounting for all the parts that were in storage or missing, we organised to have the relevant material ordered or retrieved. The material was forwarded to the hangar where four engines arrived from SAESL to be reassembled and fitted to the wing.

SIMON CHRISTIE
SENIOR A380 LAME

I assisted with the rectification and inhibiting of the aircraft while working with the Australian Transport Safety Bureau (ATSB) to further their investigation.

I was also accountable for ensuring the effective removal of the engine and airframe parts. Moving and positioning of the aircraft and assisting the ATSB and SIAEC to coordinate work on Nancy-Bird Walton.

WAYNE DUHIGG
LAME, SYDNEY

Primarily, I assisted the Australian Transport Safety Bureau (ATSB) in their investigation by assessing and identifying the damage to the electrical wiring.

DAVID KELLY
PROGRAM DIRECTOR FOR MARLIN

Coincidentally I was giving a talk at an MRO conference in the city when

PEOPLE

The team everyone wants to be part of.

the incident occurred. I was at the aircraft just after the passengers had disembarked, and with the assistance of the Singapore LMO Engineers, was able to get early images of the damage back to the Crisis Control Centre in Sydney to support the assessment of required fleet action. I remained in Singapore for a further three weeks to act as the QE ELT representative for the ensuing ATSB investigation.

NICOLAS ANDRONICK
COMMODITY MANAGER, AIRFRAME SERVICES, MRO

My responsibility on the VH-OQA project was supporting Denis Panagiotopoulos and Tim Gent to finalise the negotiation and formalise the agreement with SIA Engineering Company (SIAEC).

The agreement was essential in progressing and completing the repairs. It covers various items such as the hangar, all resources and the equipment to carry out the repair.

DAVID HYLAND
HEAD OF SUPPLY CHAIN

I provided procurement and logistics leadership and support for all contracts and materials required to repair VH-OQA, leading the negotiations and liaising with SIAEC, Singapore Airlines and Airbus to secure the A380 hangar for the extended period of time to carry out the critical wing repair.

BILL MORGAN
A380 B2 ENGINEER

During the repair process of VH-OQA, my role as a B2 Engineer was to carry out all Avionic related tasks before

expanding my role to carry out engine, airframe and cabin interior rework.

My daily work routine also involved liaising with the local engineers and their managerial staff at SIAEC and other support groups, as well as communicating different facets of the repair process to members of Qantas Technical Services, Stores and Maintenix coordinators.

MARK WATKISS
TECHNICAL OFFICER, RECEIPT COMPLIANCE

My role included the compliance review of the engines being repaired at Singapore Aero Engine Services Private Limited for the release of VH-OQA. This role also extended to the other aircraft that were grounded for inspections as a result of the engine failure.

LESTER PATTERSON
PLANNER/CONTROLLER, COMPONENT ASSET MANAGEMENT, SUPPLY CHAIN

My role was to ensure the smooth flow of work by providing the Aircelle working party with documents for tasks carried out on VH-OQA. Collaborating with the project team and working party, I placed numerous purchase orders for major components and material from Airbus and Aircelle to be replaced on the aircraft.

I was accountable for ensuring that all components were drop-shipped directly to VH-OQA at Singapore while coordinating some major units to be further reworked to Qantas specifications before delivery to VH-OQA.

MICHAEL KILLEEN
A380 FLEET MANAGER

In addition to negotiating the contract for the repair and return-to-service performance conditions, I worked with Tim Gent to compose and agree the work plan and project governance framework for managing the repair. I was also accountable for the management of maintenance issues including working with the broader A380 fleet team to get approval for the aircraft's return to service and maintenance system extensions from CASA. To foster a continuous flow of communication, I also conducted over 20 return to service briefings with A380 cabin crew in Melbourne and Sydney.

ANGELA BURBIDGE
PRINCIPAL ANALYST, INSURANCE AND WARRANTY

My work on VH-OQA was mainly to identify all QE repair costs of the damage so that we could submit them to Group Insurance for cost recoveries. This process also involved facilitating our insurer's assessor to view the damage on the aircraft and the removed parts as well as co-ordinating with QE Finance and suppliers to capture all costs associated with the repairs. For me, the most satisfying part of the project was to see the costs being recovered to our business from insurance.

NEIL ROBERTSON
SENIOR LAME A380

My role was to provide oversight of all aspects of VH-OQA's recovery including the coordination of work accomplished by Airbus, SIAEC and Qantas teams



PEOPLE
The team everyone wants to be part of.



managing the manpower supplied by SIA Engineering Company. Further still, I carried out all documentation updates within Maintenix, receipt drop shipment logistics and I was also involved in CASA and Qantas internal auditing.

MATTHEW BROWN
COMMERCIAL PLANNING MANAGER

My responsibility in Commercial Planning was to coordinate and manage the on site team. In addition, I oversaw the commercial governance and production reporting while managing the production milestones.



GRANT BARTLETT
OPERATIONS MANAGER, HEAVY MAINTENANCE COMMERCIAL PLANNING

My role included pre-planning activities for the recovery. Scope of work / detailed reporting requirements / Pre-input meetings with all QE stakeholders / clear and precise hand-over to (onsite) production team / owner of planning pipeline (process flow and protocols of information to production team).



while maintaining compliance and ensuring all work was completed to the Qantas Engineering standard.

I participated in several audits from Airbus, EASA, CASA and Qantas Quality & Safety during this time, representing Qantas Engineering, explaining and providing evidence of the processes used during the repair. I was also given the opportunity to facilitate the completion of this work with the engineering teams in Sydney.

DOMENIC BANICEVIC
SENIOR A380 LAME

My role in Singapore was to oversee the structural repair, the fitment of engines and cowling by Airbus. I also carried out preservation requirements whilst the aircraft was grounded and implemented modifications.

I was also accountable for performing all maintenance checks required for the return to service of the aircraft while

TIM GENT
MANAGER INTERNATIONAL OPERATIONS

The best way to describe my role was overall project governance and tracking.

The initial five months of activity included contract development and business case definitions. We had many variables to work with around how and where the aircraft would be repaired; this included the option of building a temporary hangar.

Working with the team all summer long, I compiled a repair contract that would take into account all aspects of the Airbus repair activity, including the performance once the aircraft returned to service. I am happy to say with certainty that the aircraft performance meets the guarantees of the fleet.

My role was also to ensure CASA and the associated regulatory bodies were supported in their needs for audit and

investigations. Our QE team built a joint quality plan in conjunction with Airbus to ensure compliance and reporting was carried out at the highest standard.

The project role ensured support of the onsite groups. This was primarily done by aligning the various stakeholders around the globe to handle escalations and keep all parties on track to deliver to the timelines necessary to support the Airbus and Qantas production groups.

LOU BERARDUCCI
AME MECHANICAL

My responsibilities were to remove all the QEC items—those parts attached to the engine that are not core Rolls Royce items and need to be removed for transport—off the remaining three engines and prepare the engines for dispatch to Singapore Aero Engine Services Private Limited (SAESL).

Once the engines were dispatched, all the removed items had to be inspected, made serviceable and the parts that were damaged needed to be sent back to Sydney. Although we had made many parts serviceable initially. I returned to Singapore seven to eight months later to reinspect the parts and account for any missing items, right down to the last bolt. This ensured that there were no surprises when it came to reassembly of the QEC.

BRENDEN DOONAN
AME

My responsibility for the repair of VH-OQA was in the Receipt and QEC build-up of all four Rolls Royce Trent 900 engines.

GEORGE JABLONSKI
MANAGER SUPPLY CHAIN COMPONENT AND AIRFRAME OPERATIONS

I was the Project Team focal for Supply Chain purchasing. My role oversaw the replenishment and timely delivery of all non-Airbus provided material to VH-OQA in Singapore. This involved considerable communication with the

PEOPLE

The team everyone wants to be part of.



project team, on-site engineering team and material suppliers to ensure that all delivery targets were achieved. It was a privilege to be a part of this historic project and work with such a professional and enthusiastic team.

PETER BAKER
SUPPLY CHAIN COMMODITY CONTROLLER,
AIRFRAME OPERATIONS

My role was to facilitate the placement of purchase orders for all material requirements that were not provided by Airbus. This entailed extensive communication with the project team, on-site engineering team and material suppliers to ensure that all delivery targets were achieved. I was also the Supply Chain representative at weekly VH-OQA project meetings and was responsible for maintaining a material purchasing status report.

MARK NARAYAN
MANAGER OF EXTERNAL MAINTENANCE
COMPLIANCE

My role was to construct a Repair Procedure Manual for the repair on VH-OQA, which would be used as an interface between Airbus and Qantas. The report contains procedures to achieve compliance and governance controls for the repair.

The report included processes for repair preparation, spares management, certification of the repair, risk management and project reporting. To compile the necessary information involved meetings with the Airbus repair team to discuss and develop processes to achieve compliance for Qantas, Airbus and the various regulators. The end result was a working document which was used as a governance framework to support the repair.



MATTHEW WRIGHT
LAME

I was principally sent to Singapore because of a B767 licence coverage shortfall and to assist with the extra B747 movements through Singapore due to the A380 fleet grounding. After the A380 returned to operation I signed for A380 transits as well.

CAMERON YOUNG
ONSITE PROJECT MANAGER

Managing the repair on behalf of Qantas, I worked with Airbus and SIA Engineering Company to progress repairs. Using their facilities, including the A380 hangar, GSE and labour; part of my role was managing the commercial side of the repair and managing a small Qantas team of LAMEs and logistics.

JONATHAN HARDS
SENIOR A380 LAME

At the stage I was involved in VH-OQA's recovery; we were reinstalling the cabin area that had been removed to allow the fuselage repairs. Amongst other duties, I conducted inspections that were required before the engine refit could begin. This also included supervising and assisting with building the engines to a stage where they could be installed.

A lot of time was also spent completing the long term storage/preservation checks that needed to be carried out at regular intervals due to the extended period the aircraft sat idle in the hangar while undergoing repairs.

FRED FERNANDEZ
LEVEL 5 RECEIPT INSPECTOR

My role was the Supply Chain Support for for locating and supporting



OQA Recovery part requirements in Singapore.

KEVIN LAU
ENGINEER A380 AVIONICS

My responsibility in the A380 Engineering Fleet Management – Avionics team, was primarily to provide engineering support to the VH-OQA Recovery Team in both Sydney and Singapore for the avionics systems.

Due to the nature of the A380 and its Integrated Modular Avionics (IMA) and NSS/OIS (Network Server System/Onboard Information System) architecture, many of these standards are driven by software changes. In total, just over 100 software part numbers required updating on over 30 distinct systems onboard VH-OQA. I spent several days providing technical assistance in Singapore to the VH-OQA Recovery Team while further assistance was provided by our team once VH-OQA returned to Sydney.

GEORGE MYLONAS
MANAGER AIRCRAFT DEVELOPMENT AND
WEIGHTS ENGINEERING

An aircraft weighing was required to determine the weight and balance, post repair of VH-OQA and it was my responsibility to coordinate the repair agreement to guarantee the weight impact of the repair was within the agreed tolerance. I also facilitated and conducted the aircraft performance test flight to a standard no less than Airbus' production test aircraft.

DAVID BELLAMY
SENIOR TECHNICAL OFFICER, RECEIPT
COMPLIANCE

My role included performing compliance checks of the engines

PEOPLE
The team
everyone wants
to be part of.

fitted to VH-OQA as well as the engines required for the aircraft that were initially grounded due to the incident.

DAVID BUDWAY
AIRCRAFT PRODUCTION PLANNER,
MAINTENANCE OPERATIONS CENTRE

My roles included the creation and management of the return to service work package while assisting on-site engineers in managing the work package and ensuring on time return to service of VH-OQA. I was also responsible for the on-time consolidation and wrap up of the return to service work package to enable Nancy-Bird Walton to have her first test flight on schedule.

FELICITY NORMAN
MANAGER BUSINESS IMPROVEMENT

My role during the recovery of VH-OQA was as Manager, Airframe Services within QE Supply Chain. Specifically, I worked with the Supply Chain team to provide Group Insurance with information regarding the incident and the repair. I also conducted commercial negotiations with Airbus regarding the damage assessment, design and repair phases as well as commercial negotiations with SIA Engineering Company regarding the hangar hire.

ROSS COATES
RECOVERY AGENT AND CUSTOMER
RELATIONS, SUPPLY CHAIN

My role was to coordinate the procurement and receipt of spare parts required by Qantas and Airbus Engineering during the preservation, repair and return to service.

My functions included moving parts into and out of Singapore as well as liaising with numerous groups including Qantas Supply Chain Commodities, Airbus, SIA Engineering Company, ISQ Fleet management Division, B&H Worldwide freight, SDV Warehousing and numerous vendors local and abroad to name a few.

DOBRE STEVANOVSKI
SENIOR A380 LAME, SYDNEY

With the A380 Maintenance Program managed through Maintenix, VH-OQA was transitioned to the newer version of the online maintenance system from 6.4.7 to the current version in July last year.

Throughout the recovery of VH-OQA, my role was to assist the team in Singapore during the transition to the new version of Maintenix.

BEN HOLLAND
TECHNICAL PILOT A380

Ben led the flight technical support project for return of VH-OQA to service. Ben was instrumental in working with the Airbus flight support team to develop return to service plans from early in the repair agreement project structure. Ben's previous experience in new aircraft deliveries and close relationship with Toulouse flight performance engineering set best practice protocols for developing procedures and bespoke testing designs. Ben spent a lot of time in Singapore assisting with ground tests and was the co-pilot with the Airbus test pilots in two return to service flight tests.

JAYA DE VALLE, GEMMA STONE AND JEFF RICHARDS
TECHNICAL RECORDS AND CONFIGURATION CONTROL

Gemma and Jaya maintained the aircraft inventory status, with Gemma in Singapore for 10 days. Jeff ran the 24/7 on call help desk to support the approval of non standard parts unique to the recovery repairs.

536 Days: The return of OQA

The date 4 November 2010 will forever be etched in the corporate memory of Qantas, of everyone involved in the QF32 uncontained engine failure event and its aftermath including those who helped return VH-OQA to the skies. From the grounding of Nancy-Bird in Singapore for eighteen months came a story of resilience, mateship, teamwork and unparalleled dedication.

It was towards the end of the repair program that we were fortunate enough to have a film crew record the story and on Tuesday 24 July 2012, 55 of our dedicated team members came together once more to relive the recovery. '536 days: the return of VH-OQA', tells the story of our QE colleagues and the significant contribution they and the other contributors made to bring VH-OQA back to our fleet.

Following the return of Nancy-Brid Walton to Sydney last April, a private screening of the documentary—featuring people from QE who helped rebuild VH-OQA to a state many have touted as, "better than new"—was a fitting reminder of the hard work and dedication the team put in.

The video screening was also a chance for the team to come together over a morning tea at the Centre of Service Excellence in Sydney to reflect and celebrate the commitment and sacrifices they made to see VH-OQA return to service.

"536 days: The return of VH-OQA" was shown at the Qantas Group Safety Conference earlier this month, to acclaim from the Board members, Executives and Safety Professionals in the audience. It is coming soon to a screen near you!

PEOPLE

The team everyone wants to be part of.

Any feedback or contributions?

Please contact
QE Communications on ext 21458
or email Shr QE Communications.



A special thanks

536 days and the sheer dedication of our people brought VH-OQA home... and back into our fleet where she belongs.

This is biggest repair program Airbus has ever undertaken.

137,000 design and repair man hours, 630 parts and 500 tests saw the spectacular and emotional return to service of our flagship aircraft.

You should all feel extremely proud of what you have achieved.

On behalf of Qantas Engineering, Qantas and all of our customers, past, present and future...

We thank you

Nicolas Andronick
Zisi Kokotatsios
Alex Arnautovic
Kevin Lau
Kent Aston
Nelson Lee
Domenic Banicevic
Michael Lovatt
Peter Baker
Alison McDougall
Lou Berarducci
William Morgan
David Bellamy
Tim Munro
Glenn Biddle
George Mylonas
Peter Brereton
Mark Narayan
Chris Browne
Domenic Navaro
Angela Burbidge
Gavin Nicol
John Calpis
Ben Nichols
Richard Callcut
Felicity Norman
Simon Christie
David Nye
Ross Coates

Michael O'Rance
Nicola Davidson
John Papadopoulos
Brendan Doonan
Denis Panagiotopoulos
Wayne Duhigg
Lester Patterson
John Ehret
Sidney Piggott
Fred Fernandez
Neil Robertson
Timothy Gent
Timothy Simmons
Tony Goncalves
Dobre Stevanovski
Silvia Greiss
Michael Story
Jonathan Hards
Robert Schwartz
Paul Hayler
Ka Yip Tam
Gavin Harris
Christopher Thompson
David Hyland
Adrian Verkerk
George Jablonski
John Walker
Nigel Jennings
Mark Watkiss

Allan Kellam
Alan Wray
David Kelly (Marlin project)
Matthew Wright
Michael Killeen
Cameron Young
David Budway
Alex Amatovic
Simon Nailer
Tim Chan
Richard Charlton
Mark Hammond
Ben Holland
Andrew Bartlett
David Wright
Matthew Brown
Maria Reitano
David Budway
David Mangan
Grant Bartlett
Tony Ruscigno
Derek Smith
Tim Garbey
Jaya De Valle
Gemma Stone
Jeff Richards

Thank you also to Cindy Geow, Cathy Vickery and all who worked tirelessly behind the scenes to support the team in making this happen.



Printed on Impact 100% recycled paper (100% post consumer waste).