



Airbus A380
Qantas Implementation
Challenges

Overview

- Why the A380 aircraft?
- Magnitude of the A380 Program
- Key challenges

29 November 2000...

A Historic Day For Qantas



Challenges for The New Century

- Escalating costs
 - Fuel and distribution costs
 - Falling Australian Dollar
 - Efficiency pressures
- Declining yields
 - Increased competition
 - Liberalisation impact on market access

Challenges for The New Century

- Globalisation and alliances
 - Improved access to major hubs
- Qantas fleet renewal
 - Replacement of B747 Classics & B767-200s
 - Payload range on Pacific and to London
 - Preserve fleet flexibility

1960s

**Introduction
to the jet-age**



1970s

**The era of
the jumbo jet**



1980s

**Decade of the
widebody twin**



1990s

**Non-stop long-
haul operations**

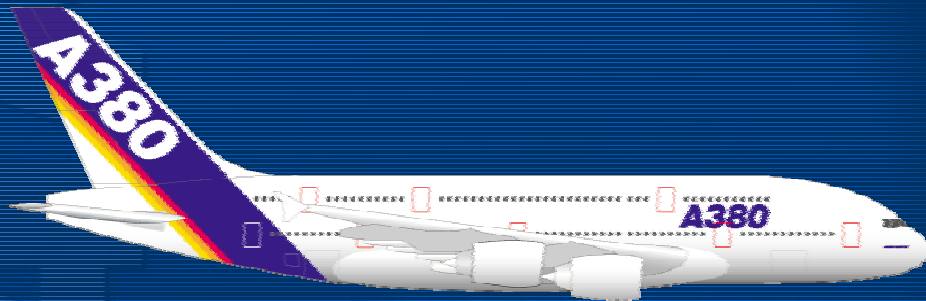


New Aircraft Commitments

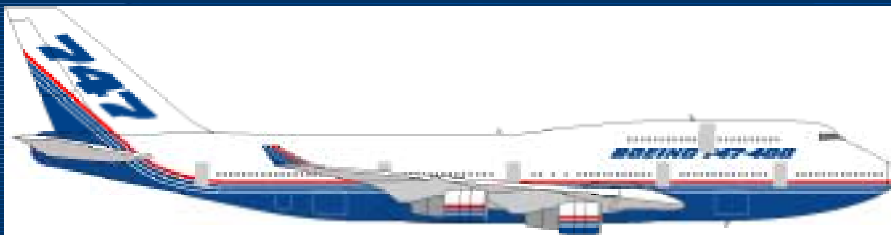


7 x A330-200
from 2002

6 x A330-300
from 2003



12 x A380-800
from 2006



6 x 747-400ER
from 2002



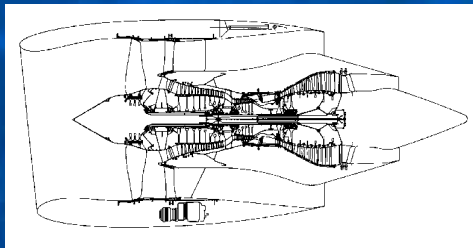
Program Benefits

Capacity

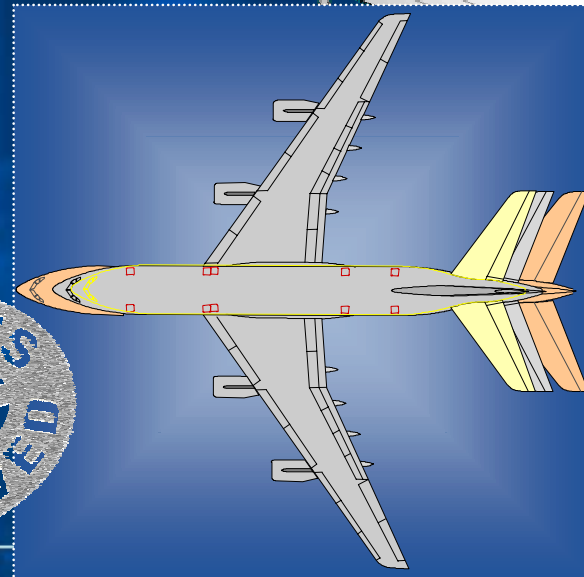
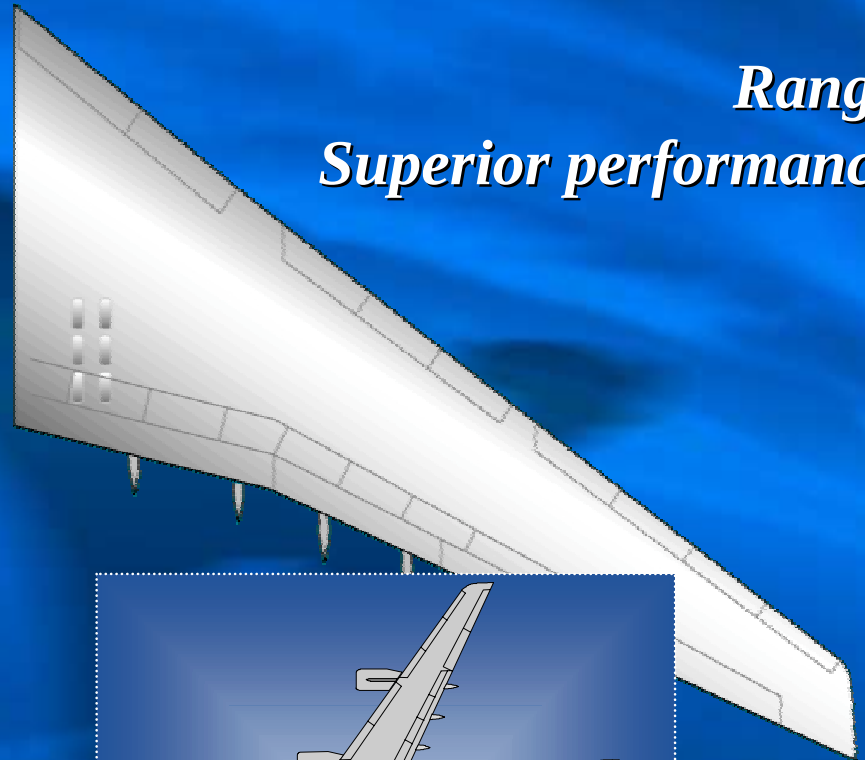
New technologies and design



*Fuel Efficient
Silence*



*Range
Superior performance*



*Airport
access*



The Key to Flexibility



Commonality with A380 and other Airbus types

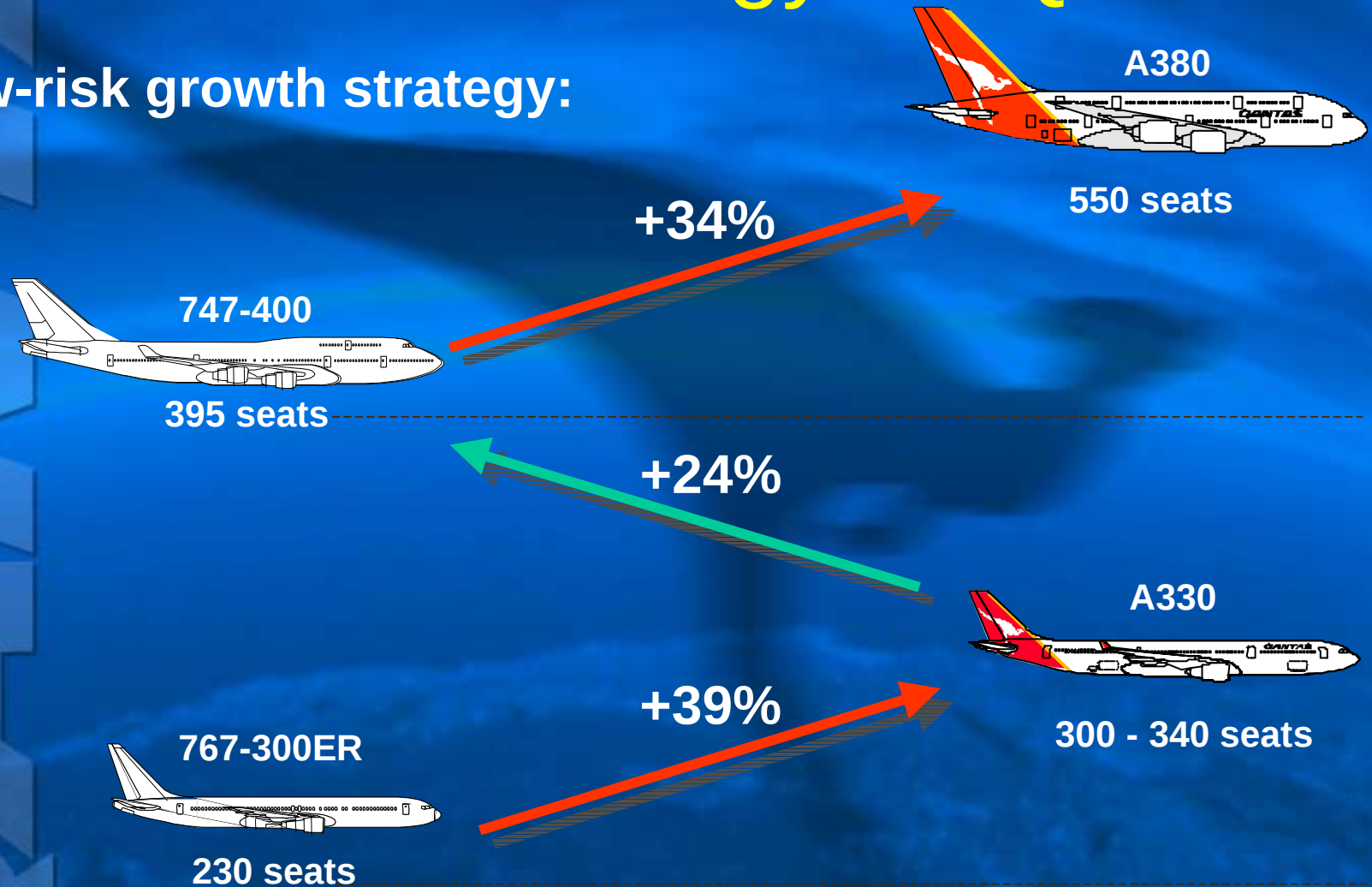
Overcoming Congestion at Sydney



Constraints also in London, Los Angeles and Tokyo

A330/A380 Strategy for Qantas

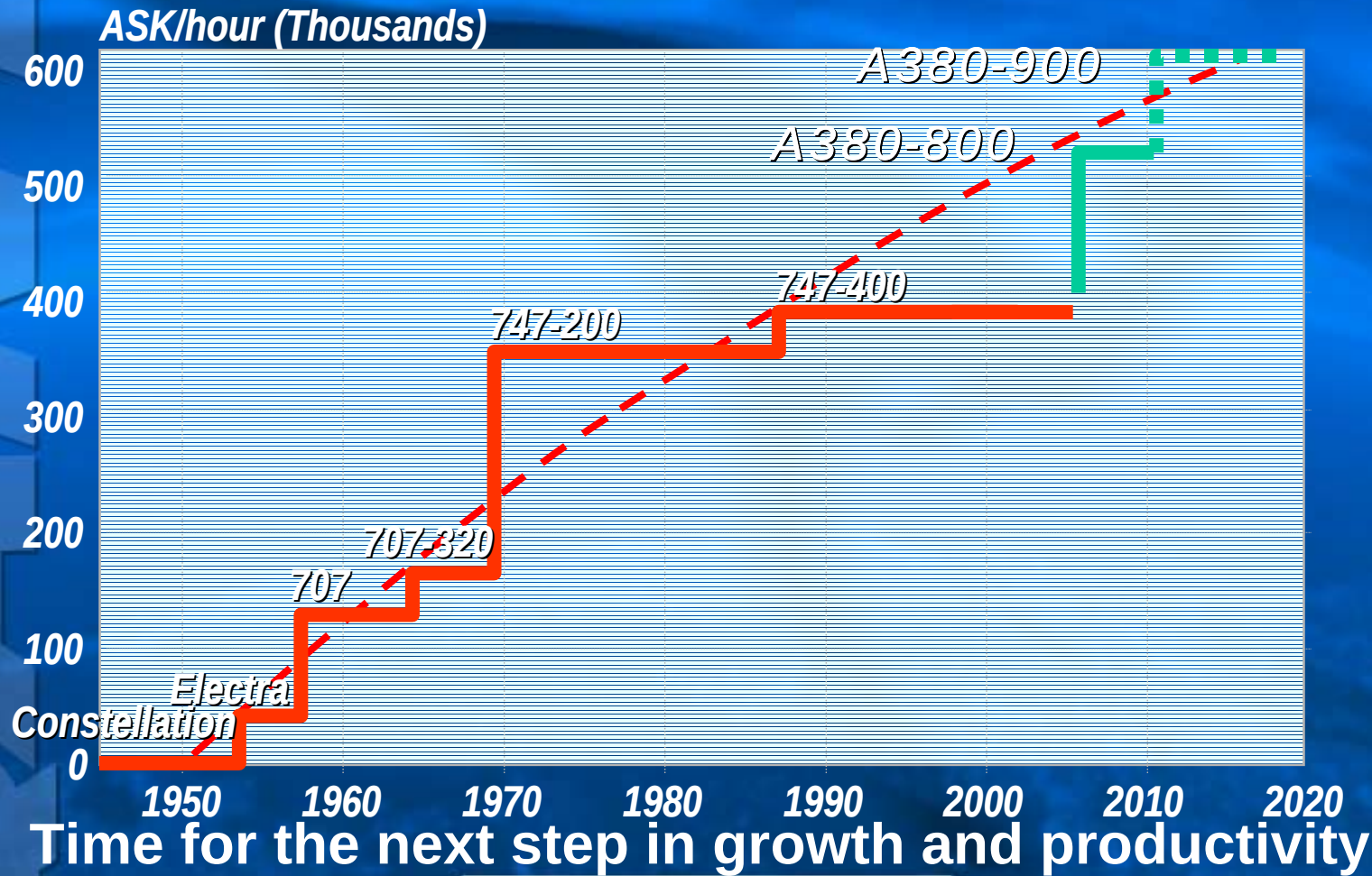
Low-risk growth strategy:



Increasing capacity and reducing unit costs

The Next Logical Step for Qantas

Productivity of the Qantas fleet over time:



Magnitude of the Program

- \$9.6b
- 1st non-Boeing airliner since the B707 in 1959
- Step changes
 - new technologies and designs
 - detailed technical specifications
 - maintenance
 - pilot training and systems

Magnitude of the Program

- **Leveraging new type to drive step changes**
 - dual aerobridges
 - latest e-distribution and workflow software
 - major increase in GE engine numbers
 - new RR engine for A380
 - innovative in-hold concepts
 - new EBAs
 - major new supplier relationships

A330 Program

- **13 A330 aircraft delivered Dec 02 - May 05**
- **Smoothing the introduction for the A380**
 - Airbus relationship development
 - Program experience on new “Type” introduction
 - Experience with Airbus “family”
 - Strategic step changes introduced

Product

- Qantas pioneer in longhaul travel
 - 1st to sign A380 contract
 - 1st to introduce Business Class
 - end to end experience
- New aircraft and hence new cabin design
 - new manufacturing technologies & materials
 - intelligent use of space
- Ground Experience
 - highly efficient and seamless ground proposition

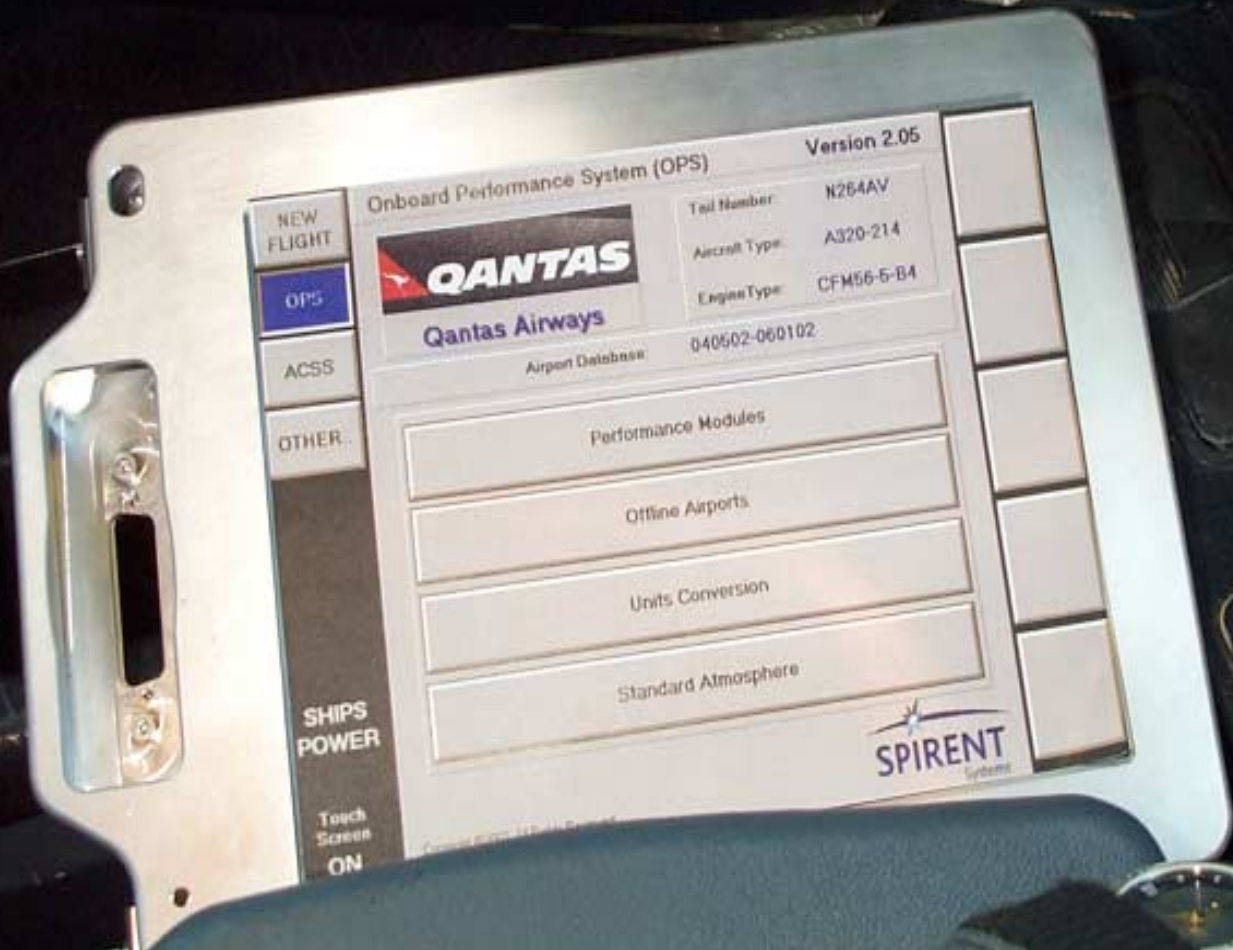


Flying environment

- New cockpit technologies; fly by wire
- New training techniques introduced
- Different aircraft characteristics
- New EBA
- Security implications

New Cockpit Technology





NEW
FLIGHT

OPS

ACSS

OTHER

SHIPS
POWER

Touch
Screen
ON

Onboard Performance System (OPS)

Version 2.05



Tail Number: N264AV
Aircraft Type: A320-214
Engine Type: CFM56-5-B4

Airport Database: 040502-060102

Performance Modules

Offline Airports

Units Conversion

Standard Atmosphere

SPIRENT
systems

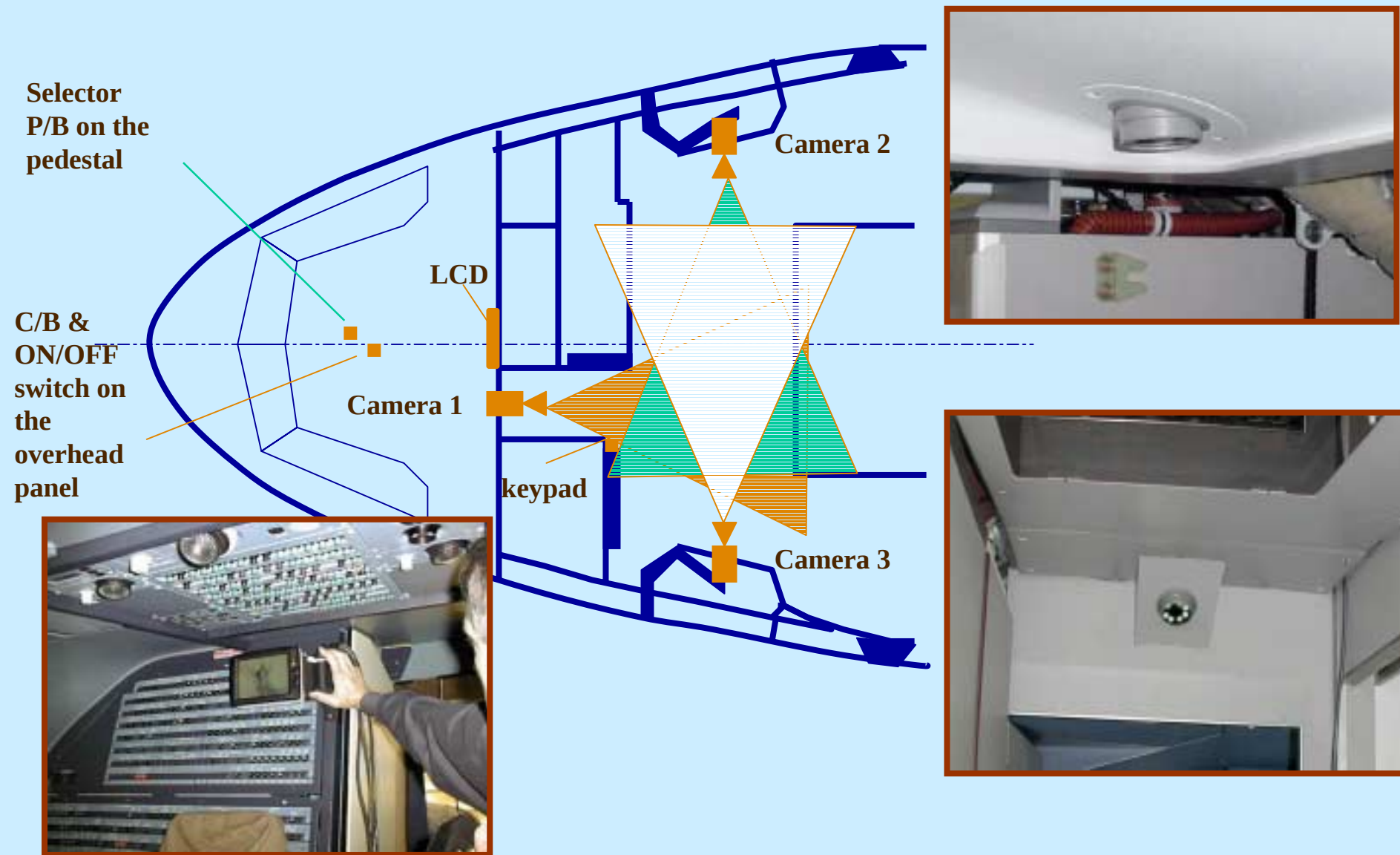
Electronic Flight Bag

- Instant access to aeronautical charts and flight planning information
- Ease of access to necessary flight information
- Navigate around airports whilst taxiing
- Eliminate folders of charts and books

Head Up Display Development

- **Enhanced Operational Safety**
 - Improved situational awareness
 - Precise flight path and energy control
 - Improved windshear awareness
- **Operational Benefits/Improved Aircraft Capability**
 - Lower take-off, approach and landing minima

Cockpit Door Surveillance System (CDSS)



Flight Simulator



Cabin Technical specification

- Lining and servicing
- seats & galleys
- safety systems
- door arrangements

TRAINING

- 2,500 shorthaul crew, pilots & LAMEs
- 1,350 airport staff
- Custom flight simulator and cabin service trainers



Cabin Service Trainer

- Business and Economy Class galleys
- Business and Economy Class seating
- IFE simulator
- CIDS simulator
- Functionality as per aircraft



A380 Training

- 50% higher than A330
- First of type Flight Simulator
- Custom Cabin Service trainer
 - 2 storey
 - new building to house

Maintenance

- Maintainability
- reliability / cost
- technical data
- concepts, tooling, formats

New maintenance philosophy

- phased maintenance
- new technology aircraft
- non-Boeing aircraft and related change pain barrier
- new maintenance systems; IT systems, etc
- new tools, hangar
- Interim arrangements

Facilities

- New tailored A330 hangar
- ground support equip
- test equipment
- airframe / avionics & line station spares
- A380 specific hangar

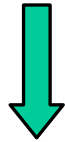
Innovative In-hold system

- **Innovative Concepts**

- Incorporating specific design features that improve safety on the ramp, efficiency & reliability

... a significant investment in safety for Ramp

High BTU density
and dual lift cam



Continuous side rails
and higher roller density



A380 Program

- **12 A380 aircraft delivered from 2006**
- **Leveraging the A330 program**
 - Airbus relationship & “family” experience
 - Program experience on new “Type” introduction
 - New flying environment, technologies and systems
 - Lessons learnt

Airport Formalities

- “Pulse” impact:
 - “Clean skin” analysis at each airport
 - No decrease in performance standards
 - Most areas of the terminal need consideration.
- Airport readiness

A380 Turn-time

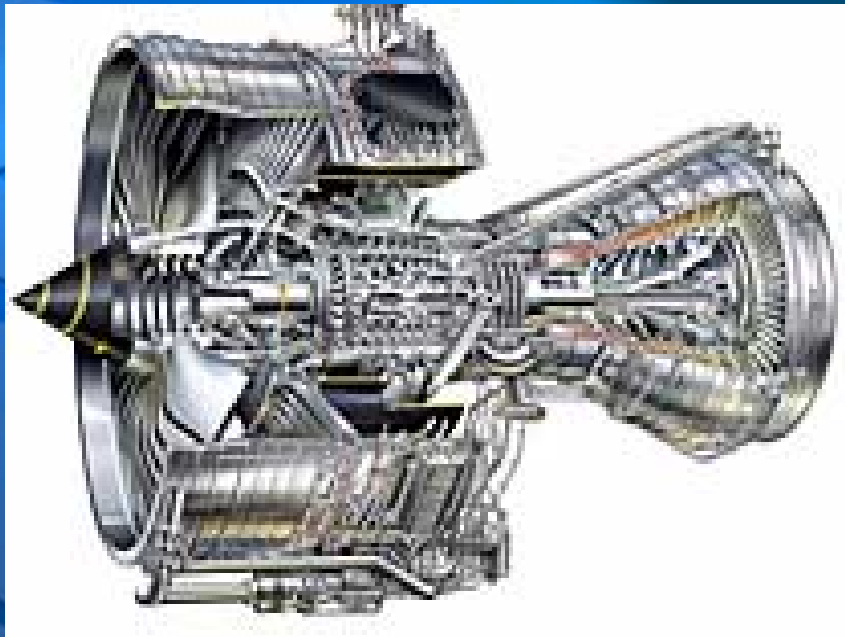
- Drivers
 - Compatibility / interchangeability
 - On Time performance
 - Passenger connecting times
- Parameters
 - GSE positioning in typical ramp layouts being assessed



Airfield study items

- Runway and taxiway width and separations
- Cross wind implications for runway operations
- Environment

QC2 Noise Target



- Rolls-Royce Trent 900
- 80,000 lb thrust
 - Larger fan
 - Low exhaust velocity
 - Optimised blades
 - Advanced acoustic liners

Safety Implications

- Transformational change
 - Maintain strong safety culture
- 'New type' risks
 - New routes / product
 - New cockpit technologies and systems
 - New aircraft characteristics
 - New maintenance approach, procedures and systems
- OH&S issues

A330 Lessons Learnt

What worked well - Safety

- Managing transformational change
 - Step change strategies
 - Innovative program structures
 - Accountability
 - Collaboration
 - Benchmarking & peer reviews
 - Vendor management focus

A330 Lessons Learnt

What worked well - Safety

- Extensive tech crew training and off-shore line flying
- Benchmarking with other A330 operators
 - Best practice focus and risk mitigation
- Comprehensive end to end proving flights
- Substantial investment in operational training
- Peer review by Cathay Pacific
- Comprehensive SAFE assessments e.g. OH&S

A330 Lessons Learnt

What worked well - Safety

- Underwritten by strong focus on:
 - Extensive planning
 - Minimising changes to plans and staffing
 - Operational procedural manuals, reference data, etc
 - Best of breed training simulators, facilities, IT tools
 - Leveraging experts and experience
 - Risk areas; high risk projects, load control, etc
 - Strong safety focus during EIS phase

A330 Lessons Learnt

Areas for improvement - Safety

- Some OH&S reviews left late raising risk
 - impacted vendor schedules and delayed training
- Initial training & familiarisation commenced later than planned
 - increased pressure on training schedules
- Access to Qantas configured aircraft was limited to EIS
 - increased pressure during EIS period
 - increased pressure on Airports staff training

Airbus, Airports and Airlines

..... working together
towards the A380 vision

