



ASPIRE

ANNUAL REPORT 09





The next generation aircraft (Airbus A380 & Boeing 787) use less than 3 litres of fuel per 100 passenger-kilometres (78 passenger-miles per US gallon). This exceeds the efficiency of any modern compact car on the market.

“Through collaboration, the FAA [the US Federal Aviation Administration] Airservices Australia and Airways NZ have become world-leaders in developing initiatives which help airlines in their quest to reduce greenhouse gas emissions. ASPIRE is a tangible example of the willingness of airlines, industry and governments to work together to reduce aviation emissions on a global scale”

Ashley Smout, CEO Airways New Zealand

» ASPIRE

The ASPIRE Partnership is a comprehensive approach to environmental stewardship for a region where significant disparities exist in the level of available service provision.

Under ASPIRE, current and future partners pledge to adopt and promote best practices that have demonstrated and proven success in the reduction of greenhouse gasses, as well as to the development of work programs to promote future gains for the environment.

» CONTENTS

- Messages from the ASPIRE Partners 2 & 3
- Introducing ASPIRE 4 & 5
- The ASPIRE work program 6 - 9
- Demonstration Flight Stories 10 - 13
- Looking Forward 14 - 17

» ASPIRE’s goals are to:

- accelerate the development and implementation of operational procedures to reduce aviation’s environmental footprint for all phases of flight on an operation by operation basis, from gate to gate;
- facilitate world-wide interoperability of environmentally friendly procedures and standards;
- capitalise on existing technology and best practices;
- develop shared performance metrics to measure improvements in the environmental performance of the air transportation system;
- provide a systematic approach to ensure appropriate mitigation actions with short, medium and long-term results;
- communicate and publicise ASPIRE environmental initiatives, goals, progress and performance to the global aviation community, the media and the general public

» PERFORMANCE HIGHLIGHTS

2008

FEBRUARY

signing of the ASPIRE trilateral joint-statement between FAA, Airservices Australia and Airways New Zealand

SEPTEMBER 12

first of three demonstration flights departs Auckland bound for San Francisco.

OCTOBER

release of ASPIRE Strategic Plan – our blueprint for action

OCTOBER 22

second demonstration flight departs Los Angeles for Melbourne

NOVEMBER 14

final demonstration flight flies Sydney-San Francisco

2009

MARCH

ASPIRE wins 2009 Jane’s ATC Global Award, in recognition of its groundbreaking potential to reduce the environmental impact of aviation.

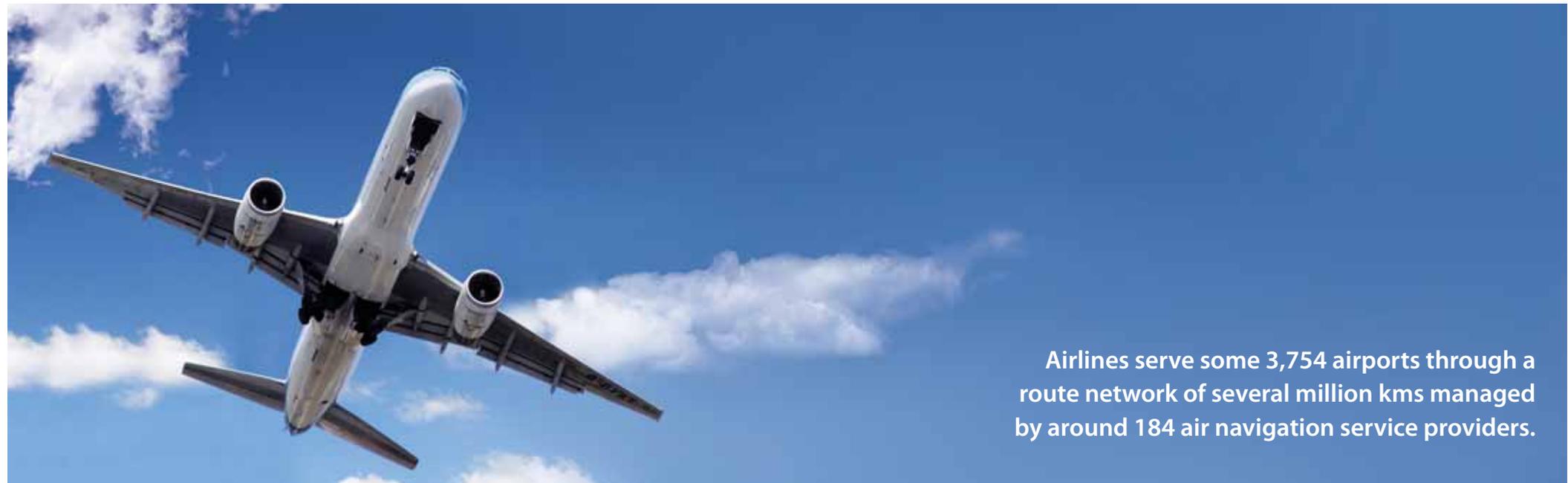
MAY

completion of Past Performance Model to demonstrate efficiency gains in the South Pacific over the past 10 years.

AUGUST

publication of ASPIRE Strategic Plan for 2009/2010

» MESSAGE FROM
THE CHIEF EXECUTIVES



Airlines serve some 3,754 airports through a route network of several million kms managed by around 184 air navigation service providers.

Despite its global nature, the aviation sector is one of the most regulated industries in the world. Not only do Air Navigation Service Providers (ANSPs) have to contend with the competing commercial interests of the airlines themselves; making changes or improvements to the routes they can fly means collaborating with governments and military organisations, as well as working within the limits of differing processes, rules and regulations. The fact that any of the ASPIRE demonstration flights even got off the ground is testament to the inspired determination and commitment of the ASPIRE partners, our colleagues and our airline partners.

ASPIRE, in its early days, was a test of whether we could get all the different aviation 'factions' working together for a common cause. The exponential rise in fuel costs in the latter part of 2008 hit airlines hard and whilst it was dire news for their operations, ASPIRE's potential to reduce fuel consumption became a unifying goal, providing a catalyst for gaining airline interest and ultimately, their buy-in.

The ASPIRE partners have long been ardent supporters of developing and trialing new air navigation service technology and procedural enhancements in the oceanic environment. The maturity of the region's fleet and route structure and the demonstrated willingness of airlines, industry, ANSPs and governments to work together offers a valuable opportunity to showcase the Asia and South Pacific region's leadership in aviation emissions reductions to the rest of the world.

ASPIRE is our commitment to ensuring the very best environmental stewardship along these Asian and South Pacific routes. We believe aggressive action to 'make real' new concepts of operation and take advantage of innovations in aircraft and air traffic management technology are absolutely crucial if aviation is to become recognized as an environmentally-responsible industry.

This inaugural ASPIRE Annual Report looks back at our progress over the past year and casts an eye towards some of the initiatives we have planned in future. Our ultimate goal is that our work programme will inspire others in the industry and around the world to work with us and with each other to reduce the carbon footprint of the aviation sector.



GREG RUSSELL
CEO Airservices Australia

"ASPIRE demonstrates a significant step towards improved operational procedures and a reduction in greenhouse gas emissions in our region."



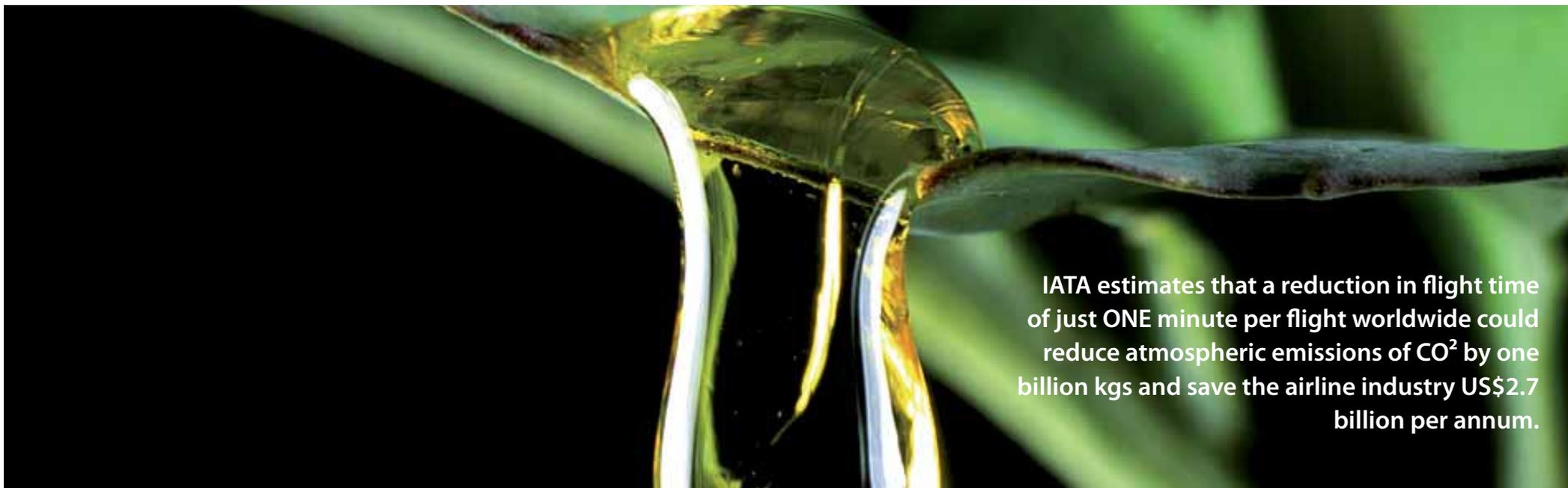
HENRY P. KRAKOWSKI
Chief Operating Officer FAA-ATO

"Safety and efficiency have always been priorities for air traffic service providers. Now we're adding the environmental imperative. ASPIRE represents a partnership between nations to demonstrate how air traffic systems can be more environmentally responsible."



ASHLEY SMOUT
CEO Airways NZ

"End to end collaboration is what ASPIRE is all about. It facilitates world-wide interoperability – there is no other form of transport that is as truly global as aviation."



IATA estimates that a reduction in flight time of just ONE minute per flight worldwide could reduce atmospheric emissions of CO² by one billion kgs and save the airline industry US\$2.7 billion per annum.

» INTRODUCING ASPIRE

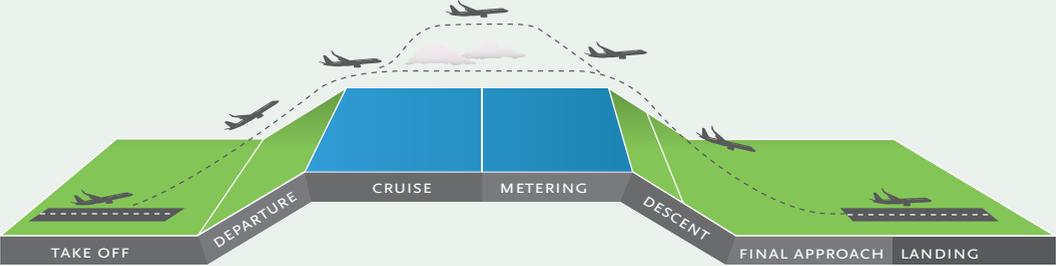
» In the beginning...

The ASPIRE concept began as an exchange of ideas during the APEC Environmental Summit in Singapore in September 2007. This 'seedling' of an idea for a collaborative approach to air traffic management along key Asian and South Pacific routes was nurtured by Kevin Chamness (FAA), Greg Houghton (Airservices Australia) and Dave Rollo and Mark Goodall (Airways New Zealand). Within 6 months a tripartite agreement had been signed in Singapore and within six months of that, three demonstration flights had crossed the Pacific on their way to creating a safe and sustainable future for aviation.

Australia and it took off from there. Because of the nature of the Asia-Pacific, it was important that this be a comprehensive approach to ATS environmental stewardship – involving all phases of flight”, said Kevin Chamness, Chair of ASPIRE.

» What’s happening now...

The fact that ANSPs can have a big impact on helping airlines reduce their fuel burn and emissions was proven following the ASPIRE series of demonstration flights in 2008. “But while efforts by individual ANSPs are important” says head of ANS at Airways New Zealand, Dave Rollo, “it’s only through collaboration that we’ll be able to generate



“Essentially, I was asked by our Office for Environment and Energy if there was anything on the environment that could be done in the Pacific. Given all the work that we were already doing, I pitched the concept of a holistic regional environmental partnership to Dave Rollo from Airways New Zealand and Rob Porteus from Airservices

the fuel savings that the airlines need. Unless all phases of a flight - from pushback to arrival - are coordinated, all the gains that might be made in the enroute phase, for example, may be lost in the approach. This is what ASPIRE is all about. It’s a commitment by Airways, the FAA and Airservices Australia to collaborate with airlines and

other stakeholders in order to accelerate the development of ‘gate to gate’ operational procedures to reduce the environmental footprint for all phases of flight.”

ASPIRE is just one of many multi-nation initiatives emerging around the world. Partnership, it seems, has become the new way of working in the aviation industry, indicating a growing commitment to ensure that as aviation grows, its environmental impacts are reduced.

» And in the future...

Asia is predicted to become the biggest global aviation market by 2010. In order to meet the growing regional demand for air transportation, while maintaining the industry’s leadership position, it is essential for Asia and Pacific aviation partners to collaborate on environmental stewardship.

The success of the ASPIRE partnership is defined by the ASPIRE Strategic Plan. This document lists a series of recommended procedures, practices and services that have been demonstrated or have shown the potential to provide efficiencies in fuel and emissions reduction management. These recommendations

encompass all phases of flight from gate-to-gate, and are designed to reflect the unique nature of the Asia and Pacific region, where international flights often exceed 12 hours in duration.

Progress towards the stated goals of the ASPIRE partnership is reported on pages 6-9.

The Strategic Plan for 2009/2010 is currently being compiled and will include a new partner, the Japan Civil Aviation Bureau. A second Asian partner, the Civil Aviation Authority of Singapore, is expected to join in 2010. Continued growth of the partnership is one of the stated goals in the ASPIRE Strategic Plan, with the intended result: a collaborative network of partners across the Asia and Pacific region dedicated to world’s best practice in air traffic management and environmental stewardship.

“Less fuel burn, less time; in short it’s good for the industry, it’s good for the passenger and it’s good for the planet. The bottom line is that this [ASPIRE] is going to change how we fly.”

Robert Sturgell, Acting Administrator (October 2008), FAA

» THE ASPIRE WORK PROGRAM



The air transportation industry provides approximately 32 million direct and indirect jobs worldwide. Aircraft carry approximately 40% of the value of all world trade.



The ASPIRE Team (L-R): Dave Rollo, Mark Goodall (Airways NZ); Kevin Chamness (FAA); Peter Curran and Greg Houghton (Airservices Australia)

This work program was initiated in June 2008 by the ASPIRE partners to focus on South Pacific initiatives. Additional work programs will be created with the expansion of the ASPIRE partnership to other parts of the Asia Pacific region. The goals outlined in the inaugural ASPIRE Strategic Plan Work Program were:

» **Demonstrate progress in oceanic fuel and emissions reductions** – through the development of a model that will assess performance gains over the past decade.

- The ASPIRE Partners have developed a Past-Performance model. Please see Page 14 for a detailed overview.

» **Develop the “Ideal Flight” benchmark metric** – to demonstrate the best-case fuel and emissions scenario and create a set of goal targets for improvement on each phase of flight on a gate-to-gate basis.

- Work commenced in July 2009 on the development of a shared ‘ideal Flight benchmark’. It will be established and reported on in the 2010 ASPIRE Annual Report.

» **Develop the “Baseline” flight metric** – using air carrier-supplied fuel data, develop a continually updated performance metric based on actual fuel burn between North America and Australasia.

- Work commenced in July 2009 on the development of a shared South Pacific baseline performance metric. It will be established and reported on in the 2010 ASPIRE Annual Report

» **ASPIRE flight demonstration program** – conduct a series of demonstration flights using concepts and technologies in flight efficiency and emissions reductions in all phases of flight.

- Three demonstration flights completed and analyzed. Please see details on pages 10-13.

» **Dynamic Airborne Reroute Program (DARP) Enhancement** – identify limitations and constraints to the existing Pacific DARP and where possible, remove constraints via procedural, cultural and automation change.

- DARP is available for all FANS 1/A flights in FAA/South Pacific airspace.

- A program is also currently in place in Australian airspace to enhance the ATM system to fully automate the DARP processing. Delivery of the final optimized DARP automation will be aligned to their User Preferred Routes Program.
- For NZ airspace, DARP is available to all FANS 1/A flights in Auckland FIR and expected to be available throughout South Pacific by June 2010

In 2008, the ASPIRE Partners, through the Informal South Pacific ATS Coordinating Group (ISPACG), conducted surveys of air carriers to identify procedural and technical obstacles to DARP use.

Based on their responses, ISPACG developed DARP Guidance procedures to encourage greater utilization of DARP. The ASPIRE Partners will continue to monitor DARP utilization and expect significantly greater participation in 2010.

- » **User Preferred Route (UPR) Expansion** – identify constraints limiting the availability of UPRs and recommend action plans to remove constraints.

- UPRs are available between the North American West Coast and East Coast Australia & NZ destinations.
- Limited UPRs are available across remainder of the Pacific and Asia airspace currently.
- A UPR expansion project is underway in Australia which will see the progressive implementation of UPR across the continent (excluding East Coast Services) by 2nd Quarter 2011
- UPR is available to all flights in Auckland FIR and expected to be available throughout South Pacific by June 2010

The ASPIRE Partners continue to add additional city pairs to other parts of Asia and the South Pacific through regional working groups.

In 2008/09, UPRs were opened between Auckland and Santiago and between Tokyo and four Australian ports and Auckland. Guidance materials have been developed by ISPACG to further promote and support the use of UPRs in the region.



Aircraft entering today's fleets are 70% more fuel-efficient than they were 40 years ago and aircraft operations have become 20% more fuel-efficient over the past 10 years.

» THE ASPIRE WORK PROGRAM

» **Oceanic and remote In-Trail Procedures (ITP) for reduced separation** – collaborate on the standards development and the execution of operational trials for ITP in oceanic and remote airspace.

- The business case for ADS-C CDP was completed in 2008 and procedures for its use were developed in the first quarter of 2009. A safety case and collision risk analysis will be completed in September 2009 and operational trials will be staged in the first quarter of 2010.
- The ADS-B ITP initiative is included in the ASPIRE Strategic Plan for 2010.

» **Oceanic separation below 30/30** – determine if separation standards below the current 30/30 add sufficient value to airlines to justify the cost of their development and implementation.

- Oceanic 30/30 separation is in place. Analysis for separation below 30nm will begin in 2010

The introduction of a reduced 30/30 nautical mile horizontal separation standard within New Zealand's Oceanic sector – a world first at the time of implementation for such a reduced separation standard - is providing

for further efficiency and emission reductions for international flights through improved access to their preferred routes and flight levels, with no reduction in safety.

» **Arrivals Optimization (Continuous Descent Approach; Tailored Arrivals)** – collaborate on the development of common procedures and standards for arrivals optimization via the principles of CDA.

- TA trials began in San Francisco in December 2007. They now include flights from the South Pacific, Hawaii and Asia. Their expansion into LAX is proceeding with an initial trial conducted in March 2009. A full safety case is currently being undertaken to establish TAs as a fully implemented procedure.
- In Australia, RNP is in implementation phase into Terminal Areas, with a completion target of 2012.
- An Optimized Descent research and development program is underway and trials into Melbourne to test and define operational concepts have begun.
- Airways NZ has implemented Collaborative Arrivals Manager (CAM) and as a result, reduced airborne

delays at its two major ports - Auckland and Wellington - by 24,000mins per annum.

» **Departure Optimization** – collaborate on the development of standards and procedures for the efficient management of departures.

- The FAA's principal program, Pre-Departure Oceanic trajectory management 4-D (OTM4D), is a mid-term NextGen program to improve flight efficiency. Currently, a high level business case and demonstration plan is being developed.
- In Australia, Auto Release is now available at required airports and RNP optimised extraction routes are rolling out with the RNP program.
- Airways NZ is using optimizing departure trajectories on an aircraft by aircraft basis to facilitate un-interrupted climb for jets.

ASPIRE supports the ICAO Strategic Objectives for 2005-2010:

- Strategic Objective C: Environmental Protection - Minimize the adverse effect of global civil aviation on the environment
- Strategic Objective D: Efficiency - Enhance the efficiency of aviation operations

And is consistent with environmental planning under the Civil Air Navigation Services Organisation (CANSO) Environmental Work Plan 2008 to 2010:

- Defining and advancing best practice,
- Influencing environmental policy to balance safety, capacity, efficiency and the environment,
- Developing metrics and targets for reduction,
- Enhancing the understanding of ATM's impact on the environment, and
- Communicating the benefits and actions throughout the industry and beyond.



The ASPIRE project is aggressively seeking to reduce emissions and conserve precious resources. I am extremely proud that San Francisco International Airport is a key participant in this effort to meet the ever-growing demand for commercial aviation and, at the same time, reduce its impact on the environment.

(Martin, Director, San Francisco International Airport)

» DEMONSTRATION FLIGHT STORIES

» Creating the 'Perfect' Flight

On September 12, 2008, the first of three carefully orchestrated ASPIRE test flights took off from New Zealand heading towards the future. It was the culmination of months of cross-border collaboration and cross-authority planning and cooperation. It resulted in the realisation of a long-held dream – to enable airlines, ANSPs and governments to work together to reduce aviation emissions on a global scale.

“ASPIRE 1 further demonstrates Air New Zealand’s commitment to sustainable air travel, following on from our involvement in the tailored arrivals initiative into San Francisco; a number of fuel savings measures already introduced and our bio-fuel aspirations.”

*Captain David Morgan,
GM Airline Operations, Air New Zealand*

AIR NEW ZEALAND 8 AUCKLAND >> SAN FRANCISCO | 12 SEPTEMBER 2008



Re-named ASPIRE 1, the inaugural test flight – an Air New Zealand Boeing 777 – was a demonstration of the capabilities of the most advanced Air Navigation Services and airline fuel optimisation initiatives in current operation. This flight had all practical operational restraints - including air traffic congestion control vectoring, air traffic fixed route structure, procedures, flow restrictions and airline restraints - removed.

It resulted in a clear and measured understanding of the potential savings achievable (based on current technology).

OVERALL SAVINGS	
FUEL	3,500 kg
EMISSIONS	11,200 kg

QANTAS 94 MELBOURNE >> LOS ANGELES | 22 OCTOBER 2008



“What this perfect flight demonstrates is an innovative approach to the management of air travel across three areas - improving efficiency en-route, reducing delay on arrival in the terminal airspace and an efficient descent onto the runway.”

Greg Russell, CEO, Airservices Australia

Under the ASPIRE initiative, Qantas’ brand-new A380 - operating as QF94 - used electrical power on the ground in Los Angeles rather than running its auxiliary power unit, and was given:

- priority clearance from air traffic control for taxiing and departure;
- a priority departure route out of Los Angeles and unimpeded climb through to cruise altitude, allowing it to reach its optimum cruise altitude as quickly and efficiently as possible;
- a user preferred route for the most efficient path taking into account winds and aircraft weight and;

- two real time updates of current weather and wind conditions that allowed the flight crew to modify their flight path.

Qantas Chief Risk Officer, Mr Rob Kella, said the flight demonstrated that a high level of cooperation between all sectors of the aviation industry could achieve world’s best practice efficiency.

“Airlines like Qantas are investing billions of dollars in the most fuel efficient aircraft and in reducing the environmental impact of their operations,” Mr Kella said.

“By working with key industry partners like Airservices Australia, we can fly the most fuel efficient flight paths which, if translated across our fleet, would deliver significant reductions in fuel burn and reduced impact on the environment.”

Airservices Australia CEO, Greg Russell, said the flight demonstrated that a high level of cooperation between all sectors of the aviation industry, coupled with the development of new technologies and advanced air traffic management techniques, could achieve world’s best practice efficiency.

“Partnerships such as ASPIRE will allow us to work towards a more sustainable and fuel efficient future.”

OVERALL SAVINGS	
FUEL	8,900 kg
EMISSIONS	28,000 kg

» DEMONSTRATION FLIGHT STORIES



California Governor, Arnold Schwarzenegger, was in LA to welcome one of the ASPIRE test flights

ASPIRE demonstrates that when several efficient air traffic procedures are integrated and applied to a single flight, we see the potential for reductions in delays, fuel usage and emissions. These procedures will come to represent air traffic services in the NextGen system.

Hank Krakowski, COO, FAA-ATO

"It is now up to the airlines, airports and air navigation service providers (ANSPs) to develop these techniques in everyday operations. In essence: to maximize efforts to make every flight across the vast expanse of the Pacific Ocean a perfect flight."

Ashley Smout, CEO, Airways New Zealand

UNITED AIRLINES 870 - SYDNEY>>
SAN FRANCISCO | 14 NOVEMBER 2008



"This [ASPIRE's] amazing coordination on the international level shows the world that working together we can fly smart and move aviation into the future while curbing our greenhouse gas emissions."

California Governor, Arnold Schwarzenegger

On 14 November 2008, United Airlines charted a new path across the Pacific as the first US carrier to participate in ASPIRE. United, Boeing, Airservices Australia and the FAA demonstrated how next-generation technologies could save significant amounts of fuel and cut carbon emissions on a trans-Pacific flight.

UAL 870, Sydney to San Francisco, used up-to-the-minute fuel data, priority takeoff clearance, the opening up of restricted airspace and new arrival procedures – all of which are possible with new technology – to generate these significant fuel and emissions savings.

Data from the flight was analysed by NASA, Airservices Australia and the U.S. Federal Aviation Administration, in their ongoing effort to accelerate the development and implementation of new operational ground systems and pilot procedures to reduce the environmental footprint for all phases of flight.



CANSO, FAA and Airservices Australia VIPs on hand for the ASPIRE-United departure from Sydney.

"ASPIRE United' has demonstrated the tremendous environmental and fuel savings potential if our nation invests in next-generation technology and in updating our air traffic control system," said Pete McDonald, United's Chief Administrative Officer. "New technology will also improve air travel for millions of consumers by reducing delays and ensuring a more consistent travel experience."

THE ASPIRE FLIGHTS DEMONSTRATED:

- Just-in-time fueling
- Minimized use of APU
- Single engine taxi
- No-Delay taxi to the runway
- Unimpeded climb-out on departure
- User Preferred Route for the oceanic phase of flight
- Reduced Vertical Separation Minima (RVSM)
- Cruise Climb
- Variable optimized speed
- RNP-4 oceanic separation minima (30/30)
- Dynamic Airborne Reroute Procedures (DARP)
- Tailored Arrival to the approach
- No-Delay taxi to the gate

OVERALL SAVINGS

FUEL	4,800 kg
EMISSIONS	15,000 kg



With approximately 156 flights per week between Australia, New Zealand and United States and Canada, the potential annual savings of initiatives such as ASPIRE are in excess of 10 million US Gallons of fuel or reduced CO2 emissions of over 100,000 tonnes.

» MEASURING SUCCESS

“Its been a terrific experience working with Airservices and Airways to get ASPIRE going this past year.

The collaboration has been extraordinary, allowing us to accomplish a lot of work in just one full year of partnership. This is an example of real harmonization of ideas and mission.”

Kevin Chamness
Outgoing Chair of ASPIRE

» Measuring the past to understand the future: The ASPIRE Past Performance Model

In order to fully appreciate gains in aviation efficiency in the South Pacific over the last decade, the ASPIRE partners took on a task to better understand the flight limitations that existed between North America and Australasia. To make this work, the ASPIRE team looked to performance modeling to create the environment of the past with the aircraft fleet of the present.

Over the last ten years, there have been significant improvements in oceanic air traffic control capabilities. The incremental efficiency gains from these changes have been captured in this analysis by using today’s traffic. Because the most innovative changes occurred in the South Pacific area, the analysis focused on flights between the west coast of the United States (San Francisco and Los Angeles) and New Zealand (Auckland)/Australia (Sydney, Brisbane, and Melbourne). These city pairs experienced the greatest separation reductions (*illustrated in Figure 1*):

- longitudinal separation has been reduced from 20 minutes to 30 NM
- lateral separation has been reduced from 100 NM to 30 NM

Reduced Vertical Separation Minima was also introduced and flight paths moved from great circle fixed routes to user-preferred routes (UPRs).

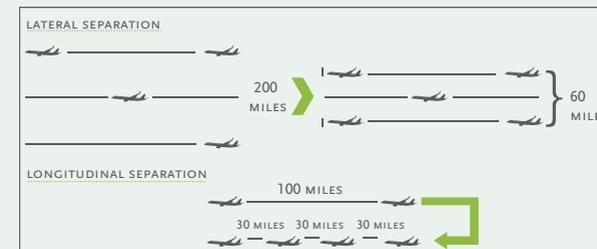


Figure 1: Separation Changes in the Oceanic Airspace

To model these changes, the flight plans from November 2007 were chosen as the demand and a baseline of fixed great circle paths was generated.

Each scenario’s traffic was processed through a tool that checked for conflicting trajectories and deconflicted these using an altitude-speed combination along a given path. The scenarios were processed with full day winds to capture the changes in winds throughout the day. In the later scenarios when flights can deviate from the input path (either great circle or user preferred route), the functionality was added to check if a lateral offset would improve fuel burn as part of the dynamic re-routing, the check for a more efficient path occurred about every three hours.

Table 1: Benefits from Incremental Improvements in the Oceanic Environment Compared to the Baseline Scenario

	AVERAGE
10 Minutes Longitudinal	0.4%
Reduced Vertical Separation Minima (RVSM) 1000 ft.	1.6%
50 NM Lateral	1.7%
50/50 NM	1.7%
User Preferred Routes	2.4%
Dynamic Reroutes	2.6%
30/30 NM	2.6%

The extrapolated benefit of the modern system is over 51 Million pounds of fuel and 161 Million pounds of CO2 per year! This is equivalent to about 7.6 Million US gallons of Jet A-1 saved and the annual emissions from over 13,000 passenger vehicles.

“The combined savings of around 3.5% for the enroute sector in airline terms, that is massive. You’ve [ASPIRE] created an oceanic environment, collectively, that’s pretty damn near perfect.”

Bob Fletcher , Manager Operations Support,
Air New Zealand

Airways' vision of the future and its embraced philosophy of partnership with its customers combine to lead the industry in its approach to future Air Traffic Management development.

» MEASURING SUCCESS

» Tailored arrivals

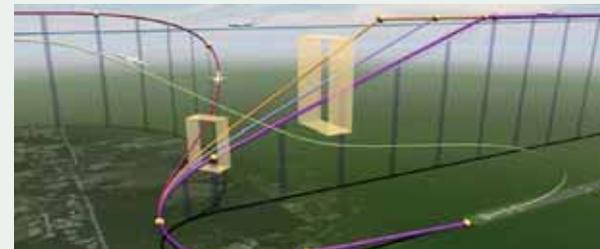
A cornerstone of the 2008 ASPIRE work program has been the use of fuel and environmentally efficient descent paths known as Tailored Arrivals (TA). TAs are a sophisticated application of a type of fuel-efficient arrival known as a Continuous Descent Arrival (CDA). CDA allows an aircraft to fly a continuous descent path to land at an airport, rather than the traditional "step downs" or intermediate level flight operations. The aircraft initiates descent from a high altitude in a near "idle" engine (low power) condition until reaching a stabilization point prior to touch down on the runway. This smooth, low power descent requires significantly less fuel, and creates fewer emissions than a traditional descent clearance.

The Tailored Arrival takes the principles of the CDA a step further by creating the most beneficial flight path available as a result of the integration of all known aircraft performance, air traffic, airspace, meteorological, obstacle clearance and environmental constraints expected to be encountered during an arrival.

Versions of Tailored Arrivals have been tested by the ASPIRE partners at multiple airports including Auckland, Los Angeles, Melbourne, Sydney and San Francisco. Although technical and operational obstacles must be resolved before full implementation, the evidence is clear that Tailored Arrivals and other optimized arrival techniques provide major environmental benefits.

For example at San Francisco alone, a fully executed TA boasts fuel savings of an estimated 1400 to 2800 pounds of fuel per flight, depending on aircraft type.

A Tailored Arrival has the potential to allow the aircraft to:



- Fly an optimized descent trajectory for the given conditions while meeting a proposed time at an arrival feeder fix. This leads to reduced fuel-burn, noise and emissions while maintaining runway capacity
- Avoid terrain and restricted airspace while taking sequencing flow constraints into account,
- Reduce voice communications during arrival and approach,
- Improve predictability for both aircraft operator and Air Navigation Service Providers (ANSPs),
- Reduce pilot workload by taking full advantage of aircraft automation,
- Reduce controller workload by reducing the need to devise and provide discrete clearances for each arriving aircraft in order to build the required arrival stream.

» ASPIRE Wins Prestigious Jane's ATC Global Award

The ASPIRE partnership was announced as the winner of the Service Provision Award at the 2009 Jane's Global ATC Awards, announced in Amsterdam in March 2009.

These awards are renowned globally as the definitive event for recognising and rewarding excellence in the global ATM industry.



On hand to accept the award, L-R: Greg Russell, CEO Airservices Australia, Ashley Smout, CEO Airways NZ and Hank Krakowski, COO, FAA-ATO.

ASPIRE was acknowledged for its commitment to promote best practices in the provision of ATM; to accelerate the development of new procedures and technologies to reduce aviation's environmental footprint and to develop shared performance measurements on emissions. The ASPIRE demonstration flights were cited as examples of how existing procedures and technologies, when properly synchronized across international airspace borders, can result in extensive fuel and emissions savings.

Nominees for Jane's ATC Global Awards are judged by a panel which includes representatives from ICAO, IATA,

the Federal Aviation Administration, Eurocontrol, CANSO and Jane's.

"Jane's has once again received strong nominations from all sectors of air traffic control, and the winners represent the best achievements by industry players over the past year. The judges have made their selections from flight efficiency programmes, safety initiatives and technical developments that will make flying safer and greener in the future. Air traffic control is under pressure to deliver more in all these areas, and the Jane's awards demonstrate there is no shortage of innovation to help meet this need."

Jenny Beechner - Editor, Jane's Air Traffic Control

Also receiving a Jane's ATC Global Award in the category of Industry Contribution was our ASPIRE Industry partner, Boeing. This award acknowledged Boeing's leadership in the development of Tailored Arrivals initiatives around the globe.

The Federal Aviation Administration, Airservices Australia, and Airways New Zealand are committed to advancing the implementation of ASPIRE along key Asian and South Pacific routes and welcome participation from other key stakeholders.

We will work together to realise benefits from current innovations in aircraft and air traffic management technology as we exercise our proper stewardship of the environment.

www.aspire-green.com



ASIA & SOUTH PACIFIC
INITIATIVE TO REDUCE EMISSIONS



Federal Aviation
Administration



AIRSERVICES AUSTRALIA

AIRWAYS
NEW ZEALAND

UNITED
A STAR ALLIANCE MEMBER

QANTAS

BOEING


AIR NEW ZEALAND