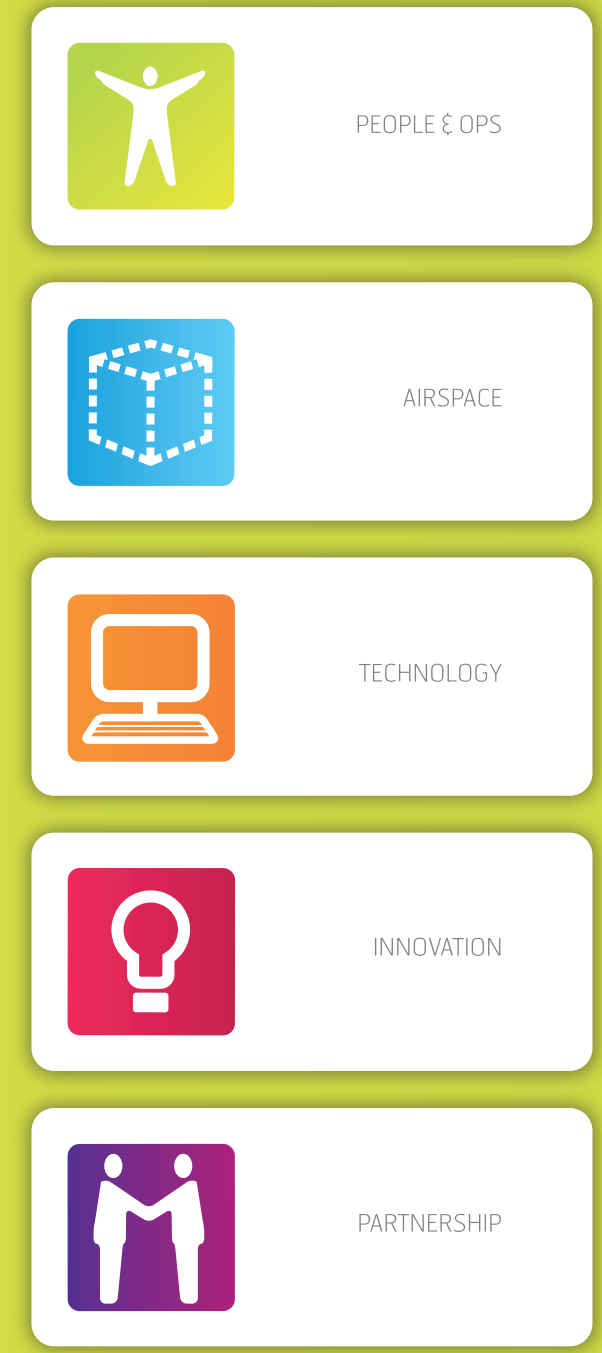
NATS

Acting Responsibly:
NATS and the Environment 2010

“expanding environmental awareness within our air traffic operation...”



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Richard Deakin
Chief Executive Officer

In 2008, NATS became the first air traffic management company in the world to calculate the baseline CO_2 performance of its airspace and to set a clear target to reduce air traffic related CO_2 by an average 10% per flight by 2020. In March 2009, we published our first annual report on our progress – NATS and the Environment – explaining how we planned to achieve the target. We also set out our aims to reduce the environmental impact of our air traffic control units and offices and improve our interaction with the communities where we live and work.

This was landmark work; it took a year of data analysis to establish our baseline performance and we were breaking new ground in committing to targeted improvements in performance. That work set us up with a good understanding of what we needed to do to achieve our targets.

We promised to keep you informed on progress and this interim report for 2010 provides the first of those updates. It has been written to inform our external stakeholders and our staff about progress and to show how NATS is performing against the sustainability aspirations which we have set ourselves.

I'm delighted to say that we have made great strides in changing our mindset, ensuring that environmental impact is considered in how we control aircraft on a day-to-day basis, in how we develop our airspace and procedures, the investment decisions we make and how we run our business. We continue to work with our customers and the regulator, the CAA, to develop measurements and to incentivise our environmental performance – another world first.

This report demonstrates encouraging progress over the last year but this is a long-term strategy and big challenges lie ahead. We have the right tools, techniques, understanding and expertise – and we have a passion to improve. But it is more than that – our drive for better environmental performance is absolutely vital to the future sustainable growth of our industry. And as CO_2 emissions are directly related to fuel and energy consumption, our reduction targets also contribute to the wider economic health of NATS and of our airline and airport customers. I have underwritten these targets and I am confident that we will continue to lead our industry in environmental performance management.

Richard Deakin
Chief Executive

September 2010

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2009/10 Highlights and Achievements

In 2008, we set three headline targets to drive work to create a more sustainable business – as part of our Vision 2011 programme:

- By March 2020, we will have co-operated with the industry in reducing ATM CO_2 emissions by an average of 10% per flight (against a 2006 baseline).
- Through the commitment of our employees, we will have created a carbon neutral estate by 2011.
- By April 2008, we will have introduced a social responsibility fund, administered to support worthy causes and encouraged our employees to support local community projects.

This section reports our recent progress against these targets.

1.1 Aviation CO_2 emissions

Reducing aviation's environmental impact and saving fuel are top of the agenda for our customers, the airlines and airports. Last year, we delivered over 50 emissions improvements and accelerated our work programme towards achieving our challenging environmental target we set ourselves.

Air traffic controllers have an important role to play in delivering flight efficiency and we have now put in place an extensive training and awareness programme. The aim is to make the environment a key part of our culture, with people at all operational units able to identify opportunities for improvement and being supported in delivering them.

We have introduced a more structured approach to delivering better environmental performance, by embedding environmental considerations into our business practices and processes. As part of this effort, the environment is now a strategic driver for change in our long term investment plan, alongside Safety, Service and Value. Our operational units have also set annual environmental targets in order to drive fuel and emissions benefits.

We continue to work in collaboration with airlines, airports, industry partners and regulators to find new and quicker ways of implementing environmental solutions.

2009/10 Highlights and Achievements

Pauline Lamb
Operations Director Prestwick

"This year marks a new beginning for the Prestwick Centre – the new teams are coming together and I think it absolutely right that we now have, for the first time, a target to reduce Prestwick's carbon footprint and on the CO_2 performance of the airspace we control. I'm looking forward to working with my team, and our customers, to deliver these environmental benefits this year."

Lee Boulton
Swanwick ATC
Procedures & Systems

"In our planning and in our day-to-day operations NATS is working hard to simplify the choices for airlines by providing more direct routes to reduce their track miles flown and to provide better speed profiles to allow more efficient flight."

We have hosted a series of one-day workshops with customers bringing controllers, pilots, flight planners and others together to identify opportunities for fuel and emissions savings. Working with our airline customers and people across NATS we have identified over 170 near term opportunities.

And we are working with industry groups – such as UK Sustainable Aviation, the International Civil Aviation Organisation (ICAO), the Civil Air Navigation Services Organisation (CANSO) and other air navigation service providers – on operational improvements, performance metrics and benchmarking to share our knowledge of environmental best practice.

In 2009, we enabled 25,000 tonnes of CO_2 savings from near term operational improvements and longer term investments. In 2010 to date, we have enabled 40,000 tonnes of CO_2 savings and are confident we will meet and exceed our target to save 50,000 tonnes of CO_2 by year-end.

A significant contribution to these savings has been the introduction of Night Time Fuel Saving Routes under the auspices of the UK-Ireland Functional Airspace Block. The new arrangement means airlines can flight plan for direct routes and benefit from the corresponding savings to time and fuel.

Working with others through Sustainable Aviation, NATS has delivered two further significant achievements: a video, Towards the Perfect Flight DVD – a film promoting uptake of best environmental practice in aviation operations – and the UK's first 'Perfect Flight' – a trial flight that followed an optimised flight profile and saved more than 10% of the usual CO_2 emissions for that route.

Our progress demonstrates we are serious about getting into action and delivering against our targets and proves what can be achieved when the industry works together in collaboration.

1.2 Our Local Environment

Carbon Neutral Estate

While most potential CO_2 savings lie in the management of air traffic, we are also making good progress in our local environment towards our target of a carbon neutral estate by 2011.

Like our ATM CO_2 work, we benchmarked our estate to help us understand the amount of carbon we emit as a company in our buildings and from commuting and business travel. From this we developed annual targets to reduce the amount of energy and water we use, the amount of waste that goes to landfill, and miles we travel.

By the start of 2010 we had reduced our carbon footprint by 20% – reducing energy consumption by 17%, waste to landfill by 44% and water consumption by 24%. Business and commuting mileage have reduced by 54% and 34% respectively.

By continuing to optimise the efficiency of our buildings and making everyday changes to reduce our carbon footprint, we are on track to achieve a carbon neutral estate by 2011.

Action in the Community

Our 2008 target was delivered – the social responsibility fund is established and much support has been provided to local communities by our staff.

We have continued to develop strong partnerships with the communities in which we live and work, extending our support for local activities, charities and conservation projects.

In the last two years, more than 350 NATS staff have dedicated their time to community volunteering, many forging relationships with local community groups and providing repeated help and support. Our website features a Community Volunteering Portal to help connect volunteers to community projects and a 'Footprint Fund' to channel charitable giving and support. A wide range of organisations have benefited from our community programme including schools, youth groups, day centres and hospices.

Simon Hocquard
Operations Director Swanwick

"At Swanwick we achieved a 10% reduction in our carbon footprint last year, which is a great result. Achieving our target of another 10% this year is going to be a huge challenge."

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The Scale of the Challenge

We have made good progress in this last year. But the targets we set on reducing our ATM CO_2 emissions, reducing the CO_2 emissions of our estate, and supporting local community activities remain extremely challenging and we need to step up the pace. This section describes the scale of challenge ahead.

2.1 Aviation CO_2 emissions

Our 2009 report explained the analysis of operations in 2006 which enabled us to establish a baseline on which the ATM CO_2 Action Plan and 10% reduction target were established. It also showed how the five strategic themes were expected to contribute to the target reduction (see opposite).

We recognised from the outset that a mix of long term major investments and short term procedural or tactical changes would be needed to meet our emissions target, but we didn't know from the projects we are planning to deliver whether we were on track to achieve it. Through 2009 we have refined our analysis techniques and tools (see Innovation Page 15) and can now calculate the environmental performance of our airspace far more accurately and systematically than before. We have also produced estimates of the CO_2 benefits expected from the majority of planned changes between now and 2020. Together these enable us to predict whether we will achieve our target.

The chart on page 10 shows the August 2010 forecast of future emissions savings. There is a gap between where we expect to be by 2020 and our target; the key challenge is how to close that gap.

2.2 Our local environment

Carbon Neutral Estate

NATS has committed to deliver a carbon neutral estate by 2011. While the amount of carbon we can save from our estate may seem small compared to the potential CO_2 savings in NATS airspace, reducing our carbon footprint by 30% from a 2006 baseline of 66,000 tonnes of CO_2 is a major challenge within a 24/7 safety critical operation.

Our carbon management programme follows a three level strategy. Firstly, we are reducing power use, carbon rich forms of travel, waste to landfill and water usage. Secondly, we are investigating alternatives such as power through micro-generation, green energy and alternatives to high carbon travel modes (for example more teleconferencing etc). Finally, and only as a last resort, we will seek to offset any remaining carbon we cannot take out of our system.

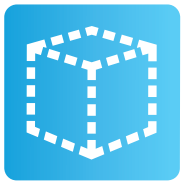
People & Operations

NATS people are engaged and aware of opportunities to improve environmental performance and are routinely making safe and informed choices to deliver them

PEOPLE & OPS

Airspace & Procedures

Airspace is designed around environmentally efficient flight. Air routes and procedures are crafted and operated to deliver environmentally efficient flight profiles through climb, cruise and descent phases



AIRSPACE

Technology

Exploiting technology to improve environmental efficiency

TECHNOLOGY

Innovation

Better understanding of the air traffic operation and its environmental impacts, better management of this and informed investment for the future

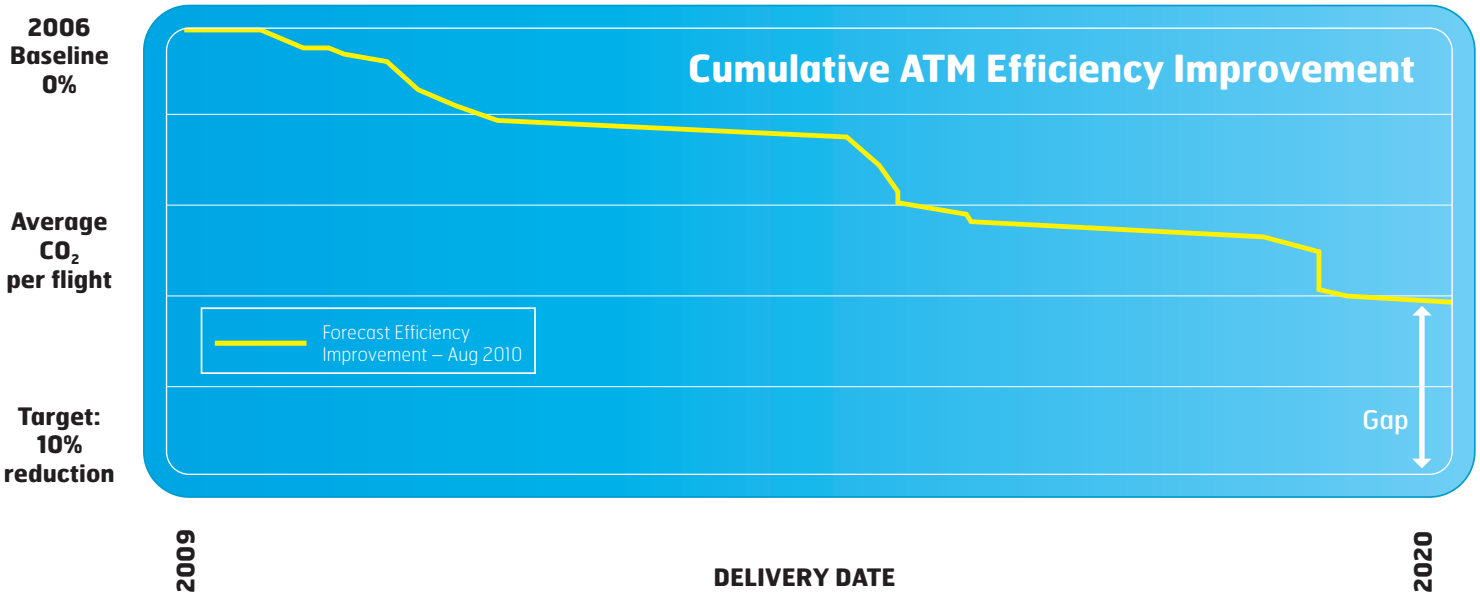
INNOVATION

Partnership

NATS is working with others to agree priorities and tackle the challenges of improving environmental performance

PARTNERSHIP

The Scale of the Challenge



Our challenge is to continue to deliver savings and at an accelerated rate. Recognising that every member of staff can help reduce NATS footprint, we have launched an internal website that includes a toolkit for people to calculate their carbon footprint and obtain advice on further reducing their environmental impact. To help embed a process of continuous improvement within the business, we are now setting annual targets at our operational units to further increase efficiency, preserve natural resources and reduce waste.

Beyond 2011, we are now working to develop a target for reducing our carbon footprint further.

Action in the Community

We will continue to develop community partnerships that benefit local activities, charities and conservation projects. We will further develop our Community Volunteering Portal to be responsive to our staff to better help them connect to community projects. We will also ensure we learn from other organisations' community experience. And we will set a new target to further enhance the social and community benefits we deliver.

3

Getting into Action

This chapter reports on our actions for reducing aviation CO_2 emissions based around the following themes:

- **People & Operations:** raising environmental awareness within our air traffic operation and engaging our staff in driving environmental performance improvements.
- **Partnership:** working with industry partners and regulators to find new and quicker ways of implementing environmental solutions.
- **Innovation:** extending our pioneering environmental baseline work into ground breaking operational analysis and research and ensuring technology choices help us progress towards our environmental targets.
- **Airspace Design & Management:** identifying priority areas for improvement across our route network, with the primary focus on continued delivery of emissions benefits in the immediate short term.
- **Technology:** To exploit new technology, tools and precision navigation techniques that will allow aircraft to fly closer to their optimum route, profile and speed.

3.1 People and Operations

Building Environmental Awareness and Sharing Best Practice

Many people in NATS are passionate about the environment, have strong views and want to do as much as they can to help. For example, every day our controllers contribute to reducing CO_2 emissions by providing direct routes, better flight levels and better climb and descent profiles. We believe it is important to help our staff to understand their valuable contribution and bring environment into the mainstream culture of our operation.

Making environmental performance meaningful to everyone in NATS will take time, but we are pleased with progress over the last 18 months and believe there is already a tangible improvement in the level of debate and discussion regarding NATS' activity on the environment.

Getting into Action

Training and awareness

Small changes to operational procedures can greatly improve fuel efficiency. Our aim is to help staff identify opportunities to improve environmental performance and support them in making safe and informed choices to deliver them. To help realise this goal, we have built an extensive environmental awareness programme including:

- A two-day NATS-specific environmental awareness course available to all staff. This provides basic grounding in the subject, highlights examples of best practice and provides opportunities to suggest solutions.
- Appointment of and training for our airport environment focal points, forming a network of people to champion and share best practice in reducing emissions at our airport units.
- An environment module is also now embedded within the training programme that NATS runs for newly recruited trainee controllers.
- At our operational units, additional briefings are provided to air traffic controllers as they gain validation on specific sectors of airspace, highlighting unique opportunities for environmental efficiency.
- Tailored environmental awareness briefings are provided for air traffic control watch managers, individual watches and airspace sector groups.

An important development this year has been the creation of an online environmental awareness e-learning package. To be launched during Autumn 2010 this will enable all staff to complete an introductory module to establish a basic grounding in the subject.

We will continue to expand this programme of awareness, information sharing and promoting best practice through 2010/11.

The Airspace Efficiency Group

Building on the aim of engaging our people and raising environmental awareness, an Airspace Efficiency Group was established in October 2009. This marks a significant step in linking operational practice with the longer term environment plan. Each member's role is to champion environment and fuel efficiency for their watch, help identify opportunities for improvement and drive action to meet the unit's fuel burn and CO_2 reduction targets.

The Swanwick Group currently comprises 11 controller volunteers from across the watches. In April 2010 the Group was strengthened with the appointment of a full-time secondee to co-ordinate the Group's activities.

A complementary group is being established at Prestwick to drive environmental improvements.

3.2 Partnership

We fully recognise that cooperation across the industry is vital if aviation is to reduce its impact on the environment, and specifically to help us achieve our CO_2 reduction target. We are therefore working in partnership directly with our airline and airport customers and more widely with the whole industry.

Airline and Airport Customer Partnerships

We are working in collaboration with airlines, airports and our Regulator to realise opportunities to establish more fuel efficient routings, holding procedures, arrivals and departures and ground movements.

We have opened a dialogue with our airline customers leading to a number of subtle changes in the route structure, procedures or tactical handling to enable more efficient flight profiles. We have also established a customer and controller workshop to look for specific fuel saving opportunities. All such proposals are now captured in the Customer Requirements Register (CRR), which provides a structured approach to tracking and progressing ideas through to implementation (see Airspace Design and Management Page 17).

At Heathrow, we have established a similar environmental partnership specifically to generate ideas and actions for reducing CO_2 emissions on the ground and in the air. In particular, the first operationally focussed 'Big Green Event' was held at Heathrow in June 2010 and saw NATS and BAA working in partnership to engage the wider airport community and aviation industry. The event raised awareness of operational changes to reduce emissions and generated further new thinking on airside environmental issues.

Our objective is to expand this type of collaboration across all of the airports where we provide an air traffic control service. Through our airport environment focal points, we also work in partnership with other airport operators and user communities to support local CO_2 emissions reduction activities.

Wider Industry Collaboration

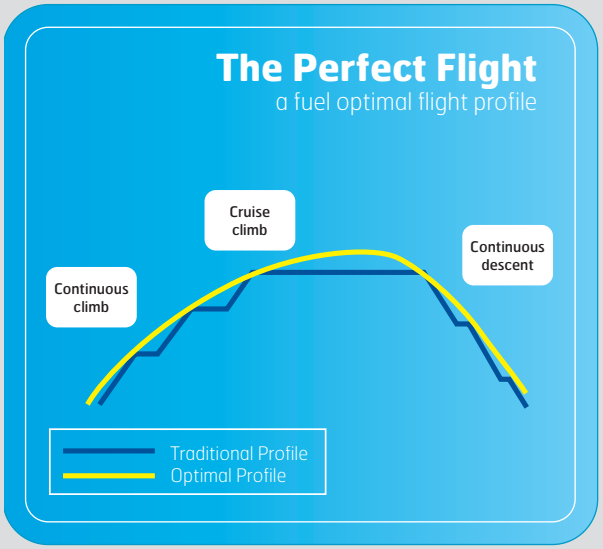
We are working with industry groups – such as UK Sustainable Aviation, the International Civil Aviation Organisation (ICAO) and the Civil Air Navigation Services Organisation (CANSO) and other air navigation service providers – in order to play our full part in reducing the environmental impact of aviation.

We were a founding member of the UK's Sustainable Aviation coalition (established in 2004) which is using cross-industry expertise to work together on improving the long term sustainability of aviation. Through Sustainable Aviation, the UK aviation industry is committed to a target to reduce aviation CO_2 emissions to 2000 levels by 2050.

Paul Reid
Managing Director NATS Services

"In the last year we've worked hard to identify the environmental opportunities at our airports. Now is the time to work with our airport customers to put in place robust measurement processes and deliver on these opportunities. We will then be able to realise the environmental and business benefits for NATS, our airport customers and the airlines using our airport ATC services."

Towards the Perfect Flight: a video film promoting best environmental practice



Towards the Perfect Flight DVD was produced by NATS under the umbrella of Sustainable Aviation with input from BAA, BA, easyJet, Flybe and Virgin Atlantic. Released in the summer of 2010, it is proving a valuable tool, primarily with controllers and pilots, for conveying the main opportunities for environmental efficiency in aviation operations and promoting wider uptake of environmental best practice.

The video sets out a three-stage plan to its 2020 target date:

- From today – improving flight planning and route availability to favour the most fuel efficient routes, altitudes, and flying economic speeds.

- By 2015 – improved procedures, such as for arrivals management, and new technology will see airborne holding reduced, better management of airport ground operations and airlines gaining more access to preferred routes and optimum flight levels.

- By 2020 – airspace changes will enable continuous climb departures and continuous descents, delivering aircraft closer to their fuel optimum profile or 'Perfect Flight'.

The film evolved from a NATS hosted controller-pilot environment workshop in October 2009. It's a great example of what can be achieved when the industry works together.

To find out more, visit http://www.nats.co.uk/environment

NATS chairs the Sustainable Aviation Operational Improvements Group which is driving innovative low noise and emissions procedures, including continuous climb departures and reduced approach speeds as well as promoting best practice via its recently launched DVD (see text box).

We are also leading the communications work package in Sustainable Aviation which is pivotal in engaging governmental bodies on the sustainability commitment of our industry.

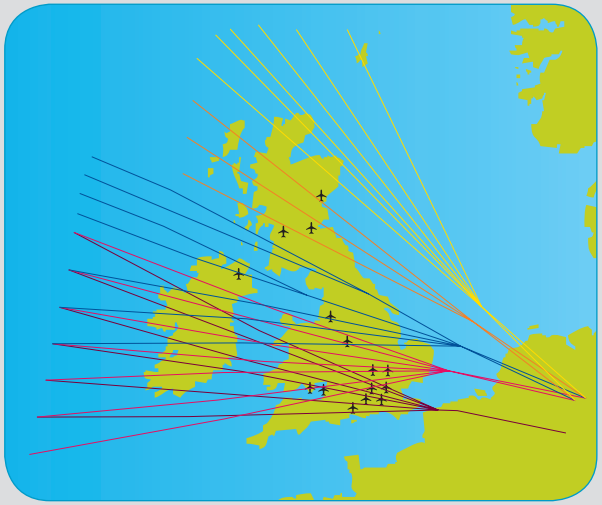
We are working with ICAO and CANSO in spreading environmental best practice amongst air navigation service providers and stepping-up the momentum for change. Examples include:

- Leading a CANSO Metrics and Methodologies group – sharing NATS' experience of benchmarking CO_2 performance with other air navigation service providers.

- Participating as CANSO representative on the ICAO Committee on Aviation Environmental Protection (CAEP) – driving global actions to reduce ATM's impact on the environment.

We are also engaging with other air navigation authorities to deliver operational and environmental efficiencies though bilateral agreements and formal coalitions such as in the case of the UK-Irish Functional Airspace Block (see text box).

Night Time Fuel Saving Routes



Under the auspices of the UK-Ireland Functional Airspace Block both NATS and the Irish Aviation Authority (IAA) have made changes to airspace in order to facilitate new, more direct air routes.

Night Time Fuel Saving Routes allows for flight plannable routes across both Shannon and UK airspace for overflying traffic. The initiative is being delivered in two phases, the first of which went live at Swanwick in December 2009 and the second at Prestwick in March 2010.

The new arrangement means airlines are now be able to flight plan for direct routes and benefit from the corresponding time and fuel savings. On average this will lead to a reduction of 270kg of CO_2 emissions per UK night time over-flight. For Amsterdam and Brussels arrivals, the average reduction of CO_2 per flight is expected to be 525kg.

This translates to an annual saving of approximately 5,700 tonnes of fuel and 18,000 tonnes of CO_2. With aircraft likely to carry less fuel from take off as a result of the reduced track mileage the fuel and CO_2 savings could be even greater.

Many partners and stakeholders were involved in delivering these changes which involved liaison between the IAA, the military and airline customers, Prestwick and Swanwick, Engineering and the Airspace Development teams among others.

A further phase is planned for November 2010 providing similar night time direct routes for Oceanic flights into the London terminal area.

3.3 Innovation

Analysing Our Operations

Our 2009 report explained the analysis of operations in 2006 which enabled us to establish a baseline from which to measure our future CO_2 performance. We have now further developed this understanding, extending our CO_2 calculations to incorporate assessments of each year up to 2009.

We now have the capability to track the CO_2 performance of UK airspace using a range of analysis techniques, tools and metrics. Recent refinements have enabled us to calculate the CO_2 performance of our controlled airspace on a daily basis. This data is helping us to understand how the environmental performance within UK airspace responds to the changes we make and how external factors, such as traffic volume, weather, or airline behaviour, affect environmental performance.

We have also baselined our airport operations to a greater level of detail in order to understand their CO_2 performance, and to

start the process of setting reduction targets. This information is also being used to drive collaborative discussions with local airport operators and airlines.

Testing our CO_2 Performance

Throughout 2009/10 we have been working closely with the CAA and customers to understand whether our en-route environment performance can be financially incentivised as part of the next regulatory control period (CP3). This has involved a significant amount of analysis to understand the suitability of the current known environmental metrics and the bespoke development of new metrics to better reflect fuel burn and CO_2 inefficiency.

We have developed one new metric in particular – the 3D Inefficiency Score – which has the potential to be used to incentivise our delivery of fuel burn and CO_2 performance improvement. Analysis against historical data shows the metric has a strong correlation with improved flight profiles and therefore fuel burn and CO_2 performance. However, while changes to airspace, procedures and tools will be captured and reflected in the inefficiency score, the metric also currently captures the effects of factors outside NATS' control, such as changes to traffic volume and changes in the way traffic is presented across NATS boundaries.

Therefore, work will continue through 2010/11 to further develop the 3D Inefficiency Score as an incentivised metric for our en-route business later in CP3.

Embedding Environmental Performance into Business Processes

Our Development and Investment team have embedded environmental considerations into the process governing investment requests. All requests for investment must now incorporate emissions analysis and carbon costing to track the impact on NATS targets for ATM CO_2 and carbon neutral estate. We expect this to identify environmental opportunities and instigate the creation of an environmental benefits delivery contract to ensure environmental improvements are appropriately targeted in all projects.

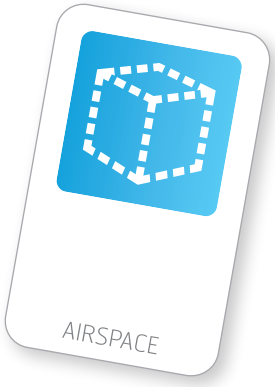
For the longer-term, our investment programme incorporates 'environment' as a strategic driver for change, alongside Safety, Service and Value, marking a fundamental shift in our future investment strategy. By embedding environmental priorities into future developments, we expect the planned implementation of new technology, air traffic tools and airspace design over the next decade to specifically target optimum flight profiles and yield greater fuel efficiency in order to substantially 'close the gap'.

Developing a Sustainable European Airspace Network

NATS is participating in the Single European Sky R&D programme (SESAR) with other industry stakeholders to develop a future ATM system for Europe. We are a member of the SESAR Joint Undertaking which is carrying out the R&D work.

Most of SESAR's 300-plus projects include environmental opportunities. Crucially, NATS is leading a number of key projects that have the potential to influence and shape the environmental performance of Europe's future ATM system. For example, NATS leads the Terminal Airspace Operations work package of projects where smooth climb and descent profiles will eliminate some of the main inefficiencies in the current ATM system. NATS also leads the work package responsible for setting environmental performance targets across SESAR. And we lead the environmental work package where our ground breaking operational analysis and environmental baseline work is helping to inform research and technology choices, as well as supporting environmental impact assessment of SESAR's proposed implementation projects.

NATS' experience, developed through our environmental programme at the UK airspace level, will offer valuable lessons for the development of a sustainable European airspace network.



3.4 Airspace Design and Management

In our 2009 Report, we recognised that infrastructure improvements that change the design or operation of our airspace will deliver the biggest CO_2 savings. Small changes to airspace, routes and procedures could generate annual fuel savings in the near-term. Airspace design and management is therefore a strong focus of our CO_2 reduction activity where the scale of action and rate of progress is substantial.

Delivering Customer and Staff Suggestions

The Customer Requirement Register is a collaboration between NATS Customer Affairs, Network Management, ATC procedures and Environment teams. It provides a central database as a framework to help identify, prioritise and deliver near-term fuel burn and CO_2 savings.

Ian Mills
Ian Mills, Managing Director, NATS (En-Route) PLC

"Looking forward in order to deliver environmental benefits we have to work in partnership with other ANSPs. The SESAR programme is going to be vital to deliver those benefits for the whole of the industry and for the whole of Europe."

Getting into Action

The CRR database now holds over 170 potential improvements suggested by airline and airport customers or NATS staff. Analysis is carried out on each to estimate their likely fuel and emissions benefits in order to prioritise the best ideas.

Of course, not all ideas can be delivered immediately – viability, cost, resource and regulatory requirements all need to be factored in, but the procedures teams at Swanwick and Prestwick are working hard to select and deliver those that are viable and offer greatest potential fuel and emissions savings.

Since the start of 2009, more than 50 of these fuel and CO_2 savings ideas have been delivered into operation. Most of the changes take the form of flight plannable direct routes and/or changes to procedures, for example:

- A new shorter flight plannable route between Belfast City and Newcastle providing savings of 460 tonnes of fuel (1450 tonnes of CO_2) per annum.
- Removal of a procedural restriction on aircraft operating into Edinburgh (to fly at FL130 for approximately 30 miles inbound) saved 1250 tonnes of fuel (4000 tonnes CO_2) per annum.
- A joint initiative with the IAA (through the UK Irish FAB) which has enabled a change to the procedures of aircraft between Irish and UK airspace saving 1250 tonnes of fuel (4,000 tonnes of CO_2) per annum.

Managing Airspace Better

Optimal Routes: Aircraft operators cannot always flight plan optimal routes due to a number or route network restrictions in place across the UK. We have implemented a sector-by-sector review of our airspace and relaxed some of the route network restrictions, thereby providing airlines with more choices to flight plan an optimal route. This review is now an on-going process.

Airspace Sharing: We are making progress to improve the use of shared airspace in several key areas:

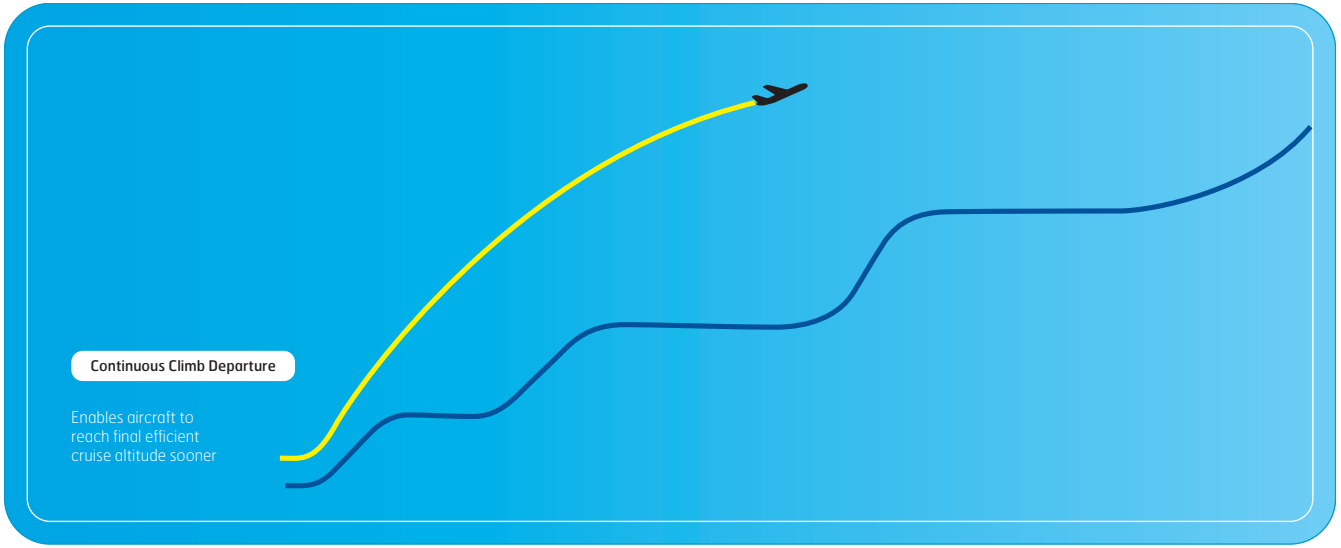
- NATS are continuing to review existing Airspace Management practices and pursuing policy changes in order to improve airspace availability and allow both civil and military airspace users to take full advantage of Flexible Use of Airspace.
- Improved predictability and management of UK danger areas through the joint civil/military Airspace Management Cell to improve the availably of shared airspace.
- Improved availability of conditional routes both through and above military airspace when it is safe to do so.
- Implementation of an airspace management system in 2011 to enhance civil/military airspace management arrangements – called The Local and Regional Airspace Management Supporting System (LARA), this will lead to a single source for danger area information and a huge step towards collaborative decision making.

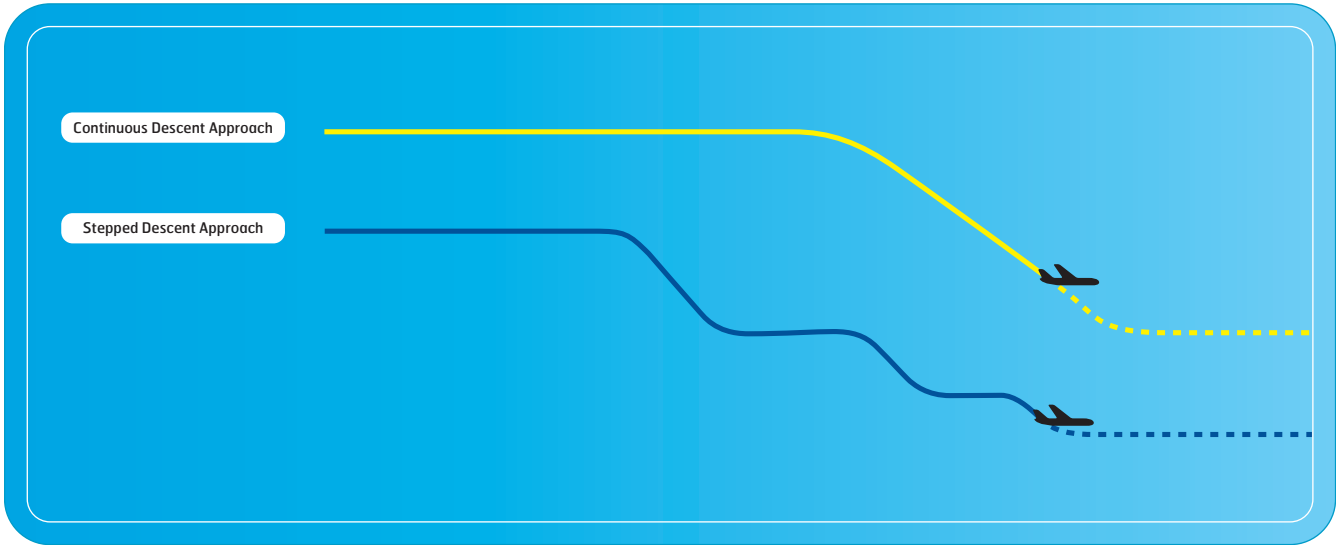
- Improved cross border coordination – for example military airspace above the French Belgian border which impact traffic flows on major routes – where better sharing arrangements are improving optimal routes.

- In conjunction with MOD and Eurocontrol, we continue to improve the notification of available flight plannable routes.

Arrival and Departures: Continuous descent approaches (CDAs) are already in use at many airports and we continue to extend the availability of their use. A CDA from 7,000ft can save up to 0.3 tonnes of fuel (nearly 1 tonne of CO_2). A CDA from top of descent has the potential offer even bigger savings.

Work to design continuous climb departures (CCDs) will continue over the coming year. Specifically, work we have done in the Sustainable Aviation coalition has combined airline data with our fuel and emissions model to calculate the potential benefits of widespread adoption of CCDs at Heathrow. Analysis of the CO_2 performance of departing aircraft has shown that a typically unobstructed continuous climb can be between 10 and 20% more efficient than a profile with a standard length level-off at 6,000ft . Flight data has shown that a CCD can save up to 1.5 tonnes of fuel (4.5 tonnes of CO_2) compared to a typically held profile. These results are being fed into our airspace redesign projects.





Holding Higher: Airborne holding is an outcome of very high runway utilisation, the low level holds providing a reservoir of aircraft to ensure maximum runway utilisation. The concept of holding at higher altitude, where there is better fuel efficiency is not new, and a limited operational trial was carried out at Heathrow in winter 2009/10 to assess feasibility. While current airspace structures preclude permanent adoption in the short term, methods to enable higher holding or even to eliminate holding altogether are being scoped and explored as part of NATS' future airspace redevelopments.

The UK's First 'Perfect Flight'

NATS, in collaboration with Sustainable Aviation members British Airways and BAA, worked together to reach an important environmental milestone, turning the normal Saturday evening service from Heathrow to Edinburgh into the UK's first 'perfect flight'.

Every step of the journey – from pushback from the stand and taxiing to an optimised flight profile and continuous descent approach – was calibrated to achieve minimal emissions and delay.

The flight burned some 350kg less fuel than usual on the route. This represents a saving of over 10% of normal fuel consumption – almost one tonne of CO_2 emissions. Importantly, perfect flight has enabled us to test the emissions reduction techniques we have been researching. Analysis of this perfect flight will now be used to calibrate emissions modelling tools and inform future airspace redesign.

The congested airspace in the UK limits our ability to achieve perfect flight as the norm – but we have proved what it can deliver and it's a great example of what can be achieved when the industry works together.

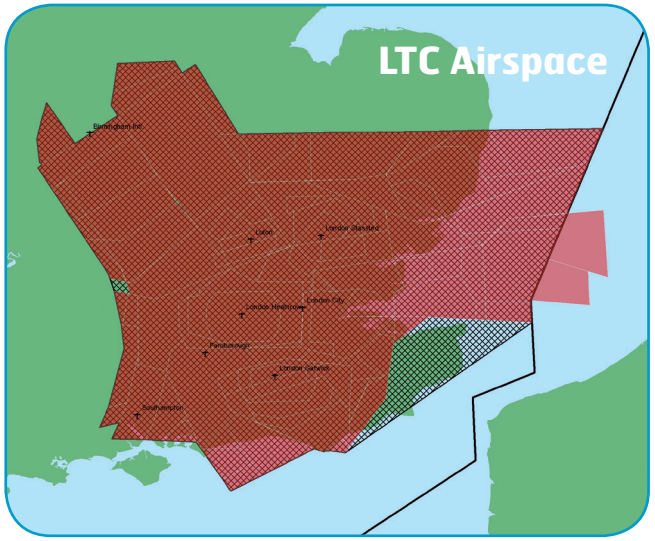
Developing More Environmentally Efficient Airspace

Investment projects to develop and redesign airspace provide the opportunity to deploy improved navigation capabilities to enable more efficient use of finite airspace, and to implement new operating procedures to deliver smoother, more efficient flight profiles.

London Terminal Control airspace is a priority area for development, reflecting our customers' key priorities of safety and environment together with the need to cater for recovering traffic growth.

Terminal Control North: This large scale airspace change planned in phases through to 2012 is a key first step in implementing an initial precision navigation environment in the London TMA combined with new arrival metering points for airports. Fully implemented, it will provide greater flexibility in airspace design to better meet the needs of the airport and of flight profiles, and will enable aircraft capabilities to be used to fly precise trajectories.

London Terminal Control Airspace Management Programme: This longer-term development is currently at the feasibility and options stage and will involve a significant capability change for London Terminal Control in order to improve flight efficiency and safety. The latest environmental design and operating concepts, driven by NATS' understanding of optimal profiles, are being considered as part of the design principles.



UK-Irish Interface redesign:

As part of the UK-Ireland Functional Airspace Block the first joint airspace development in Europe became operational in May 2009 improving the efficiency for flights between the Republic of Ireland, Northern Ireland and Scotland. In the last 12 months this change is estimated to have enabled a reduction in CO_2 emissions of around 5,500 tonnes.

3.5 Technology

It is recognised that future ATC tools can deliver significant emissions savings. Some of the major technology projects currently underway are summarised below:

Interim Future Area Control Tools Support (iFACTS): Currently in limited operational service and due for full operation in 2011, iFACTS will provide Swanwick's en-route controllers with detailed information about the expected position of aircraft at a future point in time – enabling better planning of aircraft trajectories and with it more efficiency. iFACTS is also a major step towards future concepts. Ongoing work is being undertaken to assess the full environmental benefit of this technology.

Arrival Management (AMAN) and Departure Management (DMAN): AMAN tools have been deployed in London Terminal Control to assist traffic sequencing into some of London's airports. Our plan is to deploy advanced arrival and departure management tools to support reduced airborne holding, improved flight profiles and lower CO_2 emissions. These will be made possible once we have an advanced flight data processing system in place around 2015.

Airport Collaborative Decision Making (A-CDM): We are providing A-CDM services which allow operational stakeholders to share accurate information in real-time. By facilitating the best use of runways, stands and slots, A-CDM significantly increases the efficiency of the airport's handling of aircraft, with reduced emissions in the air and on the ground.

New Common Workstation: Our long-term investment plan includes a new common workstation at our operational units in around 5-7 years time onto which further advanced technologies can then be added. These functions include multi-sector planning which will facilitate optimum routes and profiles across several airspace sectors.

4

Conclusion

Rachael Bristol-Reid
Director, Corporate, Customer and Environmental Affairs

When I think back to setting environmental targets for NATS in 2008, we've come on an incredible journey in terms of our understanding. We now know so much more about the impact of our air traffic operations on the environment. But it's not just that, our programme has also called for us to understand our impacts on local communities and the performance of our offices and operational units.

I believe this report demonstrates our growing understanding and, more importantly, that we have solutions and we're starting to deploy them. We are improving our community outreach, we've made big cuts to our carbon footprint as an organisation and we've started to deliver changes to the way we control air traffic to reduce fuel burn and CO_2. We are actively engaged with the whole industry in reducing aviation's environmental impact, and having a significant influence in vitally important areas of work. We have achieved these advances despite the unprecedented economic difficulties facing the industry, and with the full support of our airline and airport customers.

We are still at the start of our journey. Now is the time for NATS to pick up the pace – to drive for a more efficient estate and a better relationship with our local communities. Where the biggest benefits lie, in our ATM CO_2 reduction programme, we are completely focused on delivering more.

This year, working with our airport and airline customers we delivered a UK first – a perfect flight. But that was just one flight. I hope this report shows how we, through our people, through partnership, innovation, airspace design and technology are shaping the airspace system of tomorrow to bring the perfect flight closer to an everyday occurrence for our airlines and the travelling public.

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