Title:

Implementation of Authority-to-Carry Scheme under Section 124 of Nationality, Immigration and Asylum Act 2002

IA No: HO0060

Lead department or agency:

Home Office

Other departments or agencies:

Impact Assessment (IA)

Date: 16/02/2012

Stage: Final

Source of intervention: Domestic

Type of measure: Secondary legislation

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Summary: Intervention and Options

RPC Opinion:

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	**In scope of One-In, One-Out?**	**Measure qualifies as**
-£37 million	-£9 million	£0.7-1.6 million	Yes	NET IN

What is the problem under consideration? Why is government intervention necessary?

As one of the highest priorities for UK national security, the Government is committed to addressing the threat from terrorism and protecting the UK and its interests. In response to the attempted terrorist attack over Detroit in December 2009, work was commissioned to consider how such arrangements could be used to prevent individuals who pose a threat from travelling to the UK. In addition to security screening at airports, the UK conducts checks on visa national passengers before they travel through the visa regime, and on all passengers through the e-Borders system. However, whilst e-Borders checks result in alerts to and responses from UK law enforcement bodies, they are not used to prevent the passenger boarding the aircraft and flying to the UK. It is estimated that there are 1 to 3 persons per year whom the UK would wish to prevent from flying to the UK. Government intervention is necessary since it is the first responsibility of any administration to protect the safety and security of its citizens and it is the Government that manages the sensitive information and intelligence on individuals that pose a terrorist threat.

What are the policy objectives and the intended effects?

The objective is to improve aviation security by making changes to pre-departure checks to better identify foreign nationals who pose a terrorist threat and prevent them from boarding a UK-bound flight. This is proposed to be achieved through the implementation of a statutory authority-to-carry scheme to be operated by the Secretary of State under section 124 of the Nationality, Immigration and Asylum Act 2002 which will require carriers to seek authority to bring passengers to the UK. The intended effect is to reduce the probability of a terrorist attack on an aircraft bound for the UK.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

1. **Do nothing**. Internal analysis suggests that the UK could expect up to three people who pose a terrorist threat and who come within the scope of the scheme to fly to the UK each year. However, they would be stopped from entering the country and sent back.

2. **Manual alerts sent through e-Borders underpinned by Authority to Carry legislation**. This is the lowest cost option. Because it relies on notification being actioned by emergency contact points within the airline, there is a low-to-medium level of risk that some carriers will not successfully prevent the individual from boarding/flying.

3. Automated Authority to Carry underpinned by Authority to Carry legislation. This is the preferred option. 'Notifications refusing Authority to Carry are integrated into the airlines' check-in systems and processes, leading to a more efficient operational arrangement that gives greater certainty that a passenger can be prevented from flying to the UK. If only one attack is prevented then the benefits will substantially outweigh the costs. Whilst the automation is put in place, option 2 would be implemented in the interim.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** One year from implementation, expected in April 2013**.**

Does implementation go beyond minimum EU requirements?			N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** No	**< 20** No	**Small** No	**Medium** No	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** Negligible	**Non-traded:** Negligible	

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs.

Signed by the responsible Minister: THERESA MAY Date: 26 APRIL 2012

Summary: Analysis & Evidence — Policy Option 2

Description: Manual alerts sent through e-Borders underpinned by Authority-To-Carry legislation

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2012	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -£21,000	**High:** -£1.7 million	**Best Estimate:** -£0.9 million

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0		£2,500	**£20,000**
High	0		£220,000	**£1.7 million**
Best Estimate	0		£110,000	**£0.9 million**

Description and scale of key monetised costs by 'main affected groups'

The main cost is to UK carriers when a 'notification refusing Authority to Carry' occurs. The cost is made up of annual staff training to ensure that 'notifications refusing Authority to Carry' are correctly dealt with when issued; operational costs of unloading an aircraft in the circumstances that a passenger has already boarded and must be prevented from travelling; and staff costs of dealing with the 'notification refusing Authority to Carry alert. There is also a potential cost to individuals who are incorrectly prohibited from flying. The value of lost time, food and accommodation costs have been included.

Other key non-monetised costs by 'main affected groups'

Reputational costs to the UK if an individual is wrongly denied boarding.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		0	**0**
High	0		£12,000	**£0.1 million**
Best Estimate	0		£6,000	**£50,000**

Description and scale of key monetised benefits by 'main affected groups'

Under this option, carriers would not need to pay detention and removal costs for individuals who would otherwise have been carried to the UK and then denied permission to enter.

Other key non-monetised benefits by 'main affected groups'

The main benefit of the policy is in reducing the probability of a terrorist attack on a UK-bound aircraft, by prohibiting individuals who are known to pose a terrorist risk to the UK from flying. This benefit cannot be quantified, but since the cost of such an attack would be extremely large, it is estimated that if the probability of a successful attack reduces by between 0.001% and 0.1% (assuming one attempted attack per decade), the policy will have been worthwhile.
Another benefit is reputational if the UK successfully prevents suspicious individuals from boarding.

Key assumptions/sensitivities/risks — **Discount rate (%)** 3.5

The key risks are that a) the subject of interest boards the aircraft before the airline has received the "notification refusing Authority to Carry", b) the effectiveness of the policy is dependent on the advanced passenger information having been submitted correctly; and c) risk of displacement (as the policy may push terrorist to seek alternative ways of carrying out an attack).
Key assumption: the cost of a terrorist attack on an aircraft is estimated at around £2.1bn (discounted).

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: £110,000	**Benefits:** £6,000	**Net:** -£0.1 million	Yes	In

Summary: Analysis & Evidence — Policy Option 3

Description: Automated Authority-to-Carry underpinned by Authority to Carry legislation

FULL ECONOMIC ASSESSMENT

Price Base Year 2012	PV Base Year 2012	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low:-£22 million	**High:** -£53 million	**Best Estimate**:-£37 million

COSTS (£m)	Total Transition (Constant Price) 8 Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	£27 million	£400	**£22 million**
High	£64 million	£4,000	**£53 million**
Best Estimate	£46 million	£2,000	**£37 million**

Description and scale of key monetised costs by 'main affected groups'

This option requires significant investment in IT, both by carriers and by HMG. Once the system has been implemented, there will be no further annual costs and no additional costs when a "notification refusing Authority to Carry" occurs, except if a passenger is incorrectly prohibited from travelling.
Additionally, the costs of Option 2 would be incurred during the transition to automation.

Other key non-monetised costs by 'main affected groups'

Reputational costs to the UK if an individual is wrongly denied boarding.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0	0	**0**
High	0	£12,000	**£0.1 million**
Best Estimate	0	£6,000	**£50,000**

Description and scale of key monetised benefits by 'main affected groups'

Under this option, carriers would not need to pay detention and removal costs for individuals who would otherwise have been carried to the UK and then denied permission to enter.

Other key non-monetised benefits by 'main affected groups'

The main benefit of the policy is in reducing the probability of a terrorist attack on a UK-bound aircraft, by prohibiting individuals who are known to pose a terrorist risk to the UK from flying. This benefit cannot be quantified, but since the cost of such an attack would be extremely large, it is estimated that if the probability of a successful attack reduces by between 0.001% and 0.1% (assuming one attempted attack per decade), the policy will have been worthwhile.
Another benefit is reputational if the UK successfully prevents suspicious individuals from boarding.

Key assumptions/sensitivities/risks — **Discount rate (%)** 3.5

The key sensitivities/risks are that a) ICT costs estimates are too low; b) the effectiveness of the policy is dependent on the advanced passenger information having been submitted correctly; c) risk of displacement (as the policy may push terrorist to seek alternative ways of carrying out an attack); and d) negative impact on the business case of flying to the UK for some airlines and passengers wrongly denied boarding.
Key assumption: the cost of a terrorist attack on an aircraft is estimated at around £2.1bn (discounted).

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: £0.7-1.6 m	**Benefits**: £6,000	**Net**: -£0.7-1.6 m	Yes	In

Evidence Base (for summary sheets)

A. Strategic Overview

A.1 Background

International terrorism affecting the UK or its interests is identified as a Tier One Priority Risk in the National Security Strategy. As one of the highest priorities for UK national security, the Government is committed to addressing the threat from terrorism and protecting the UK and its interests at home, at our border and internationally. In response to the attempted terrorist attack over Detroit on 25 December 2009, a range of work has been undertaken to consider the effectiveness of aviation and border security. This included a review of the UK's counter-terrorism watchlisting arrangements. Work was commissioned to consider how these could be used to prevent those who pose a threat from travelling to the UK. This is a key priority for the Government. The Strategic Defence and Security Review and the Home Office Business Plan include a commitment that changes will be made to pre-departure checks to better identify people who pose a terrorist threat and prevent them flying to or from the UK.

Existing powers are available to direct airlines not to carry a UK national who poses a threat to an aircraft, and to prevent people who pose a terrorist threat from travelling outbound from the UK. Powers are also available to refuse entrance or admission to the UK to passengers of all nationalities (with the exception of UK nationals). The Home Secretary has existent powers to exclude certain individuals from the UK. The visa regime is a further mechanism to deny entry clearance to passengers seeking to travel to the UK. However, these powers cannot prevent a foreign national attempting to travel to the UK and carriers will not always be aware that an individual has been excluded from the UK. The Secretary of State is able to make a scheme to require carriers to seek authority to bring passengers to the UK, and may operate different schemes for different purposes. The Government wishes to enact a scheme that can deny airlines the authority to carry foreign national passengers to the UK who pose a terrorist threat, in order to close this gap in powers and further reduce the probability of an attack on an aircraft.

A.2 Groups Affected

We expect the following groups to be affected:

- The airline industry, as they would bear some of the implementation costs, but also benefit from the proposal in terms of enhanced security;
- Passengers, who may incur costs if incorrectly prevented from boarding, but would also benefit from enhanced security;
- UK Government, who have responsibility for UK national security and bear some of the costs under Option 3; and
- The UK public, who may benefit from enhanced security.

A.3 Consultation

Within Government

All relevant government departments were involved in the preparation of proposals in advance of public consultation. This included the Police, UK Border Agency, Security and Intelligence Agencies, the Foreign and Commonwealth Office, and the Department for Transport.

Public Consultation

There was a considerable amount of engagement with the airline industry at the pre-consultation stage. The consultation documents were then pro-actively distributed to airlines operating in the UK, airline trade bodies, passengers' representative groups, community and faith groups, civil liberty groups, the European Commission and the UK data protection authority, to invite their contributions. The consultation document was also placed on the Home Office website for the interest of the wider public.

The majority of respondents strongly supported the purpose of the Scheme and agreed that it is feasible in the short term for the numbers envisaged. The majority of airlines (80%) and all the

airline representative bodies that responded to the consultation supported or strongly supported the development of automation (Option 3) as a more suitable and effective long-term solution that also has the potential to deliver immigration as well as security benefits. The airline trade bodies that responded were IATA, BAR-UK, SITA, AEA and BATA, who represent a significant majority of airlines operating to the UK and across the world. Some airlines provided suggestions of how the scheme could work best in practice, which has been considered in the preparation of the final scheme. Some airlines provided estimates of the costs and benefits, which have been incorporated in this Final Impact Assessment. A response was received from a member of the public who was very supportive of the scheme and advocated its application on other grounds such as crime and immigration. This will be considered in the development of policy for the automated option in the longer term. Another response was received from an academic specialising in terrorism law, who was supportive of the scheme and made queries relating to the exclusion of British nationals and some suggestions on how to continue to protect civil liberties, which will be considered and addressed in the Government's response. Although no responses were received from civil liberties groups received, a telephone conversation was held with a one such group prior to their planned submission of a response. The group was supportive of the purpose and general application of the scheme, and made a number of queries aimed at ensuring it better achieved its intended effect without impacting negatively upon genuine passengers.

B. Rationale

At present, the UK has powers to refuse entry to foreign nationals at the UK border. However, aside from powers relating to the visa regime and entry clearance regime, which do not apply to all passengers, the UK does not have an enacted immigration power to prevent foreign nationals from flying to the UK, even if they pose a terrorist threat. Through the RALON network, the UK conducts liaison with airlines at the points of embarkation across the world and is able to make recommendations relating to the potential admissibility of passengers at the UK border. However, this is not legally enforceable on the carrier and cannot possibly cover all flights from all destinations around the world. In addition, Advance Passenger Information (API) is sent by airlines to the e-Borders system before the flight departs. However, whilst e-Borders checks result in alerts to and responses from UK law enforcement bodies, they are not used to prevent the passenger boarding the aircraft and flying to the UK. This situation presents both risks to the security of the aircraft, its passengers and the UK, and airlines incur incidental costs as they are responsible for meeting the cost of the individual's detention and removal from the UK.

The Joint Terrorism Analysis Centre currently assesses the threat to the UK from international terrorism to be "SUBSTANTIAL", meaning an attack is a strong possibility. Internal analysis suggests that the UK could expect up to three people who pose a terrorist threat and who come within the scope of the scheme to fly to the UK each year. These are individuals the UK would wish to prevent from flying given the terrorist threat they pose. Whilst they would currently be denied entry at the UK border, given the aspiration to target the aviation sector for terrorist attacks, it is better to prevent such persons boarding aircrafts to the UK in the interests of UK aviation and national security. If the UK did not make changes, this would allow persons known to pose a terrorist threat to the UK to successfully board aircraft bound for the UK, in circumstances where this was known in advance and was possible to prevent. The UK is right to act to ensure that terrorist attacks are prevented wherever possible, to maintain the safety and security of the UK.

Government intervention is necessary since it is the first responsibility of any administration to protect the safety and security of its citizens and it is the Government that manages the sensitive information and intelligence on individuals that pose a terrorist threat. This is subject to data security arrangements and so cannot be shared outside of Government. However it is in the interest of both the public and the airline industry to improve aviation security.

Options that avoid regulation have also been considered, such as voluntary arrangements with airlines. However, this approach cannot fully or adequately meet the policy objective. Regulation is necessary to apply the scheme fully with alignment to the roll-out of e-Borders to ensure best possible mitigation of the threat. Further, it is anticipated that carriers may prefer a clear instruction from Government rather than needing to rely on voluntary arrangements.

The Strategic Defence and Security Review and the Home Office Business Plan therefore set out that changes will be made to pre-departure checks to better identify people who pose a terrorist threat and prevent them from flying to or from the UK.

C. Objectives

The objective is to improve aviation security by making changes to pre-departure checks to better identify foreign nationals who pose a terrorist threat and prevent them from boarding a UK-bound flight. This is proposed to be achieved through the implementation of a statutory authority-to-carry scheme to be operated by the secretary of State under section 124 of the Nationality, Immigration and Asylum Act 2002 which will require carriers to seek authority to bring passengers to the UK. The intended effect is to improve aviation security by reducing the probability of a terrorist attack on a UK-bound aircraft.

D. Options

Option 1: Do nothing

In addition to security screening at airports, the UK conducts checks on visa national passengers before they travel through the visa regime, and on all passengers through Advance Passenger Information (API) sent to the e-Borders system. However, whilst e-Borders checks result in alerts to and responses from UK law enforcement bodies, they are not used to prevent the passenger boarding the aircraft and flying to the UK. Doing nothing does not achieve the policy objective or give the intended effect of reducing the probability of attacks on an aircraft flying to the UK.

Option 2: Manual alerts sent through e-Borders underpinned by Authority-to-Carry legislation

The provision of API to e-Borders will constitute a request by the carrier for authority to carry all the passengers within the scope of the scheme to the UK. The authority to carry scheme will apply to all air passenger carriers travelling to the UK which have been issued with an IS72 form by UKBA requiring submission of passenger data to e-Borders. Private chartered flights will not fall within this category.

The submission of API will constitute a request by the carrier for 'authority to carry' all the passengers on the flight who come within the scope of the scheme. Carriers will be informed by the UK Border Agency if they do not have authority to carry any of the passengers. Those passengers should not be brought to the UK. If they do not seek authority to carry, or if they carry a passenger in respect of whom they have been denied authority to carry, carriers will be liable to a financial penalty. The UKBA will alert the carrier of a "potential" charge. The carrier will have 30 days to make representations as to why the charge should not be imposed. UK Border Agency and the Office for Security and Counter Terrorism will jointly consider the case and reach a mutual agreement on whether to pursue a civil penalty and if so, the amount to be charged. UK Border Agency will issue the carrier with a Notification form. If the carrier disputes the charge, they will have 28 days to provide a written notice of objection to the Secretary of State setting out reasons why they consider they are not liable. The Secretary of State will consider the written notice and decide whether or not to cancel the charge. The carrier may appeal this decision through the courts. This process follows current practice where a charge is brought against a carrier under section 40 of the Immigration & Asylum Act 1999 "where a person requiring leave to enter arrives in the UK and fails to produce a valid "immigration document" which satisfactorily establishes identity and nationality or citizenship**,** and if the individual requires a visa, a visa of the required kind".

Under this option, the following occurs:

- The airline submits API for passengers to the UK Border Agency (UKBA) before or shortly after check-in; the UKBA check the details against watchlist data, as per normal business;
- If a passenger falls within the scope of the scheme, UKBA will phone and then email a notice to the airline at their nominated contact point to inform them that they do not have authority to carry the passenger;
- The airline will coordinate a response so that the passenger is not carried, and can also provide the passenger with information from the notice issued by UKBA. The airline will then confirm with UKBA;

- The passenger is able to make official enquiries as directed by the notice. Information on the scheme will also be available on the Home Office website. The RALON network and the Foreign and Commonwealth Office will also be notified in each circumstance;
- Should the airline fail to confirm a denial of boarding or were unsuccessful in doing so, proportionate contingency arrangements will be in place and will follow existing UK Government practice for responding to contingencies.

Option 3 Automated Authority to Carry underpinned by Authority to Carry legislation
Option 2 would be implemented whilst the architecture of the IT systems for Option 3 is designed and put in place.

The provision of Advance Passenger Information (API) to e-Borders will constitute a request by the carrier for authority to carry all the passengers within the scope of the scheme to the UK. Carriers will receive an automated response to their check-in systems at ports of embarkation to confirm whether they have the authority to carry them to the UK or not. This integration of processes and systems is expected to be fully effective and will be subject to tests before going live[1].
Under this option, the notification is provided automatically and quickly to the carrier at check-in. This means that any individuals identified is prevented from passing beyond check-in, and therefore cannot board the aircraft. As under option 2, the individual who was denied boarding would be able to make official enquiries.

Further consideration will be given as to whether this technology could deliver a wider set of benefits against a wider legal framework. This could include all passengers, cover inbound and outbound routes, include other modes of transport and to deliver immigration and crime benefits as well as security benefits. These benefits have not been considered in this Impact Assessment.

E. Appraisal (Costs and Benefits)

- **General assumptions and data sources**The costs and benefits of the various policy options are assumed to fall on all carriers equally, regardless of the carrier's nationality or volume of journeys. Since only 14 of the 122 carriers affected (11%) are UK operators, only 11% of the costs and benefits to the airline industry should be considered. We accept that the costs may be more of a burden for small carriers, but in the absence of further evidence, we have taken a simple approach and assumed that the costs are distributed equally because all relevant airlines, regardless of their size, will have for example, to implement the IT system.

- Internal analysis suggests that the UK could expect up to three people who pose a terrorist threat and who come within the scope of the scheme to fly to the UK each year;
- The number of false positives is assumed to be equal to the number of individuals correctly identified (i.e. 1-3 individuals per annum. See box below for the full background);

"Hit" rate and "false positive" rate assumptions

- An analysis was performed in September 2011 to assess 'match', 'hit' and 'false positive' rates. A 'match' is defined as an individual who is identified by the e-Borders system but does not meet the agreed hit criteria (name, date of birth, gender and nationality) and so would not be progressed as a 'hit'. A 'hit' is defined as an individual who is identified by the e-Borders system, meets the hit criteria and who should be prevented from flying under PDCS arrangements. A 'false positive' is defined as an individual who is identified by e-Borders, meets the hit criteria, who would have been prevented from flying under PDCS arrangements, but is assessed not to be the individual who was intended to be prevented from flying.

- The most reliable way to estimate future 'hit', 'match' and 'false positive' rates was assessed to be through historical analysis of e-Borders travel history against the current no fly list. Possible traces were then analysed against the hit criteria (name, date of birth, nationality) to confirm whether they would have been treated as a 'hit'. Although visa nationals would ordinarily be detected through the visa regime, they were included in this assessment to account for the possibility of such individuals attempting to travel without a visa under transit concessions. As the movement search covered 5 years of travel and as e-Borders coverage of flights in this period was less than the present 74% (which will continue to rise in the future), these two factors are considered to equal each other out to give a reasonable estimate of 1 years travel. A planning projection is then made by multiplying the result by 300%, which allows for a reasonable margin of

[1] As for any system, 100% effectiveness cannot be guaranteed.

error and ensures a prudent planning response. Where the result is zero, the planning projection is taken to be 3 (as zero cannot be multiplied upwards).

- A Movement Search on the no fly list was completed on 10 September 2011, which recorded all traces of no fly individuals for international flights covered by e-Borders in its complete history. The size and composition of the No Fly list is operationally dynamic, but included approximately 215 individuals at the time of the search. The Movement Search revealed 41 traces of travel and 3 possible traces. The possible traces were compared to the criteria for a 'hit' (name, date of birth, gender and nationality): 1 trace met the criteria and 2 did not. No hits or false positives were recorded for inbound travel by foreign nationals. As nil cannot be multiplied upwards by 300%, **planning should be based upon an average of up to 3 'hits' and up to 3 'false positive' per year under the Authority to Carry scheme, although in reality this may be lower.** This is also supported by operation of PDCS Phase 1 from June 2011 to date, under which no 'hits' have been recorded against e-Borders data.

- Although the Movement Search exercise showed no 'hits' for inbound foreign (or visa) nationals, such individuals would ordinarily be identified through the visa regime and prevented from travelling to the UK unless they were able to exercise transit concessions. The visa regime is the first line of defence in preventing inbound travel to those nationalities that pose the highest threat. At time of the exercise approximately 70% of no fly individuals were visa nationals.

- ASHE data for hourly wages of air travel assistants are used as a proxy for the value of carrier staff time;
- Department for Transport's estimates for the value of working time spent travelling are used to calculate the time cost to individuals of being falsely delayed, and these individuals are assumed to be UK residents;
- ONS estimates of the average spend per visit abroad, per day are used to calculate the food and subsistence costs of individuals falsely delayed;
- International Passenger Survey data on the cost of an average flight are used to calculate the benefit to carriers of avoiding removal costs;
- Information about the cost of detaining an individual refused entry to the UK was obtained from the UK Border Agency, and used to calculate the benefit to carriers of avoiding detention costs;
- Estimates of the costs of a delayed flight were provided by two airlines;
- Estimates of the costs to Government for option 3 are taken from a scoping study by Ernst and Young commissioned by the Home Office and completed in September 2011;
- Estimates of the ICT costs for option 3 were provided by two airlines, one during consultation and one outside consultation;
- Appraisal period over 10 years with a discount rate of 3.5% as per HMT Green Book guidance;
- We do not have firm estimates of training costs from the airlines and so assume £76/hour for training. This is an average obtained from the American Society for Training and Development (http://www.astd.org/LC/2009/0809_kapp.htm), uprated to 2012 prices. We assume 2 hours training for one member of staff per UK carrier at their 24 hour contact point; we assume the training costs are recurring every year to account for staff turnover. The two hours did not come from the Consultation. In the absence of evidence it was assumed (based on common sense and in the absence of real life examples which to draw from) that two hours would be enough to provide adequate training for what should be a simple procedure (passenger's name appears as a "no fly" on a screen, the check-in operator then has to contact airline security and tell the passenger to wait). There should not be any technical training involved;
- The watchlists are up-to-date.

Option 2 – Manual alerts sent through e-Borders underpinned by Authority-to-Carry legislation

Costs:
Total Costs: approximately between £2,500 and £220,000 per annum.
Present Value over ten years: approximately between £20,000 and £1.7 million.

The followings costs to **airlines** have been identified:

- **Training Costs**: to ensure that staff are aware of the protocol to follow when a notification refusing 'Authority to Carry' has been issued. It was raised as a potential cost by one airline during the consultation, although no airline provided information on costs for this. Therefore, in absence of real data, it is assumed that each carrier spends 2 hours per annum one

member of staff at its contact point centre, at a cost of £76 per hour (see section above for more details).

- **Cost of staff time handling a "notification refusing Authority to Carry"**. Again, no data was obtained from the Consultation exercise so it was assumed (based on common sense and in the absence of real life examples which to draw from) that a period of one hour was necessary to handle a notification, which would involve making and receiving phone calls to/from the airline's security staff and possibly to engage the airport's security staff.

- **Cost of unloading an aircraft under the circumstances that the person for whom the carrier has been denied authority to carry has boarded the aircraft.** Most airlines can provide the majority of their passenger data by 30 minutes before departure. However, some operate a business model that involves processing late passengers, including transfer passengers connecting from other commercial partners, which means they can not send majority of data at +30 minutes. Several carriers commented that given the short time-window between a notification refusing Authority to Carry being issued and passengers boarding the plane, it is possible in some cases that the individual would have already boarded, and their baggage already loaded onto the plane. In this case, there could be significant costs to the carrier of a delayed flight, including airport charges for delay beyond scheduled departure time, customer care packages and re-booking costs for passengers who miss their connections as a result. Two airlines provided suggestions of the potential cost of a delayed flight, and these have been used to estimate upper and lower bound costs.

- **Cost of setting up a 24-hour contact point.** This cost was included in the consultation stage Impact Assessment. However, airlines' consultation responses indicated that 24-hour contact points already exist for all airlines. Therefore, no additional cost would be incurred by this requirement.

There is also a potential cost to **passengers** if they are incorrectly prohibited from boarding their flight, due to being incorrectly identified as an individual whom the carrier should be denied the authority to carry. The cost of food, accommodation, and the cost of passenger time have been quantified.

There may also be reputational costs for the UK if an individual is wrongly denied boarding. It is not possible to quantify these are they would be extremely situation-specific.

Table of annual costs for Option 2

Activity	Estimated annual cost	Source
Staff training	£2,125 (carriers)	Based on an estimated two hours per carrier at a cost of £76 per hour, multiplied by the number of UK carriers (14).
Staff time handling a notification refusing Authority to Carry	£0-£94 (carriers)	Assume 1 hour staff time per alert, at an average wage of £15.73[2]. Assume at the minimum that all alerts are handled by foreign carriers, and at the maximum all alerts are handled by UK carriers. Assume between two and six alerts per annum (based on a hit rate of 1-3, and a false positive rate of 100%).
Unloading an aircraft under the circumstances that the passenger (and/or his/her baggage) has already boarded	£0-£198,780 (carriers)	Estimated cost per flight is £19,000-£33,130[3]. Assume at the minimum that all alerts are handled by foreign carriers, and at the maximum all alerts are handled by UK carriers. Assume between two and six alerts per annum (as above) and that the individual has already boarded the plane in 10-100% of the occurrences.
Food and accommodation cost for passengers who are incorrectly prevented from boarding their flight	£29-£1,205	An estimated £57.40 per day for food and accommodation[4], multiplied by an average delay of 0.5 days to 1 week[5], multiplied by a false positive rate of 1-3 individuals per annum.
Passenger time cost incurred if they are incorrectly prevented from boarding their flight	£348-£14,621	Passenger time is valued at £29.01 per hour[6]. Multiplied by an average delay of 0.5 days to 1 week, and by the false positive rate of 1-3 individuals per annum.

Benefits:
Negligible quantifiable benefits and
Significant non-quantifiable benefits.

A minor benefit that can be quantified is the cost saving from the **detention and removal of individuals** who are not granted permission to enter the UK. In the baseline, this cost falls to carriers whenever a subject of interest arrives at the UK border, and is not granted permission to enter. The average detention cost for such an individual is £3494[7], and the average removal cost is taken to be the cost of a single flight, estimated to be £445[8].

For costs, we have considered the lower-bound scenario to be a case where all notifications refusing Authority to Carry fall on foreign airlines. In this case, there is no saving to UK airlines of detention and removal costs avoided. At the upper bound, we have considered a case where all notifications refusing Authority to Carry fall on UK carriers. In this case, the saving from the baseline in terms of detention and removal costs avoided will be £11,848 per annum (based on three individuals refused permission to enter each year, and a cost saving of £3,945 per person).

The main benefit of the policy is the **reduction in probability of a terrorist attack on a UK-bound aircraft.** If it were to occur, the cost of such an attack would be substantial – with costs potentially

[2] Wage of an air travel assistant from the Annual Survey of Hours and Earnings, for all employee jobs, UK 2011. Table 14.6(a): Median hourly pay excluding overtime. 2011 wage = £12.74. Uprated to 2012 prices using ONS GDP deflator. A 21% uplift factor is applied, to account for non-wage labour costs.

[3] As provided by airlines at consultation.

[4] Accommodation and food costs based on ONS Travel Trends 2008: http://www.statistics.gov.uk/downloads/theme_transport/Travel_Trends_2008.pdf; Table 3.06: Average spend per visit abroad, per day. Average across all regions, all purposes of visit. 2008 prices uprated to 2012 prices using National Accounts figures from ONS.

[5] Two airlines commented at consultation that the previous assumed delay time of 24 hours was too low, as airlines do not always operate daily flights. In order to reflect uncertainty around this figure, the range has been widened.

[6] DfT guidance on the value of work time spent travelling (average for all transport types) 2002 prices, uprated to 2012. Available at: http://www.dft.gov.uk/webtag/documents/expert/unit3.5.6.php

[7] Provided by the UK Border Agency

[8] Average Cost of a single flight to the UK £455.50 in 2012 prices. This is based on data from the International Passenger Survey, for the years 2007-2009. Data was collected on the average single fare paid for a flight to the UK from 16 different long-haul destinations. Both business class and standard class ticket prices were collected, and the price is a weighted average according to the total numbers of business and standard class passengers entering the UK from each of these 16 destinations in 2010.

reaching around £2.5bn[9] (we do not provide a range for this number as it derives from a specific scenario). If this policy were to result in just one of these attacks being avoided, it would represent very high value-for-money.

It is not possible to quantify the expected benefit of this policy, because we do not know what effect the policy will have on the probability that a terrorist commits a successful attack on a UK-bound aircraft. Given the cost of a single attack[10], and the cost of the policy over the ten-year appraisal period, we can do a break-even analysis to show the reduction in risk that would be necessary in order for the policy to break-even (see box 1). Note that in order for this policy to be worthwhile, it must result in a reduction in the probability that a terrorist attack on an aircraft is successful. The benefits would be realised in a situation where someone known to pose a terrorist threat attempts to board a UK-bound aircraft with the intention of carrying out an attack on-board; is not otherwise prohibited from boarding the plane by airport security and travels using an identity known to the UK; and is prevented from boarding by the carrier due to their not being granted "authority to carry". Note that under this option, there is a risk that despite being denied "authority to carry", the carrier fails to prevent the individual from flying (for example because a message does not reach the boarding gate in time). In cases where this occurs, the benefit of the policy is not realised.

Another non-quantifiable benefit would be the **reputational benefits** for the UK if an individual was rightly prevented from boarding a UK-bound aircraft.

[9] This is based on the estimated value of the damage, lives lost, casualties and tourism losses caused.

[10] We assume the cost of a single attack on an airline in the appraisal period is £2.1bn (assuming that the attack occurs in the middle of the appraisal period, and is discounted at the standard rate of 3.5% per annum).

Box 1: Break-even analysis for option 2

Baseline: Over a ten-year period, the total cost of terrorism on UK-bound aircraft can be calculated as:

$$Cost(terrorism) = n \times pr(success) \times cost(attack)$$

Where:
$n = number\ of\ attempted\ attacks$;
$pr(success) =\ probability\ that\ an\ attempt\ is\ successful$

Option 2: Under option 2, the total cost of terrorism on UK-bound aircraft can be calculated in the same way, but using the reduced probability that an attempt is successful, and adding the cost of the policy as an additional expenditure:

$$Cost(terrorism) = n \times pr(success|policy) \times cost(attack) + cost(policy)$$

Where:

pr(success|policy) = the probability that an attempted attack is successful, given that the policy is in place

At the break-even point, the cost of terrorism under option 2 is equal to the cost of terrorism in the baseline.

By equating these two expressions, we find that:

$$n \times (pr(success) - pr(success|policy)) = \frac{cost(policy)}{cost(attack)}$$

By substituting in the known values for the cost of the policy and the cost of an attack, we find the following:

$$n \times \left(pr(success) - pr(success|policy)\right) = 0.001\% - 0.081\%$$

Assuming that the expected number of attempts per decade is one and that the cost of an attack is £2.1bn, then the probability that this attack is successful must reduce by between 0.001 and 0.081% (depending on the cost of the policy) in order for the policy to have been worthwhile. If the expected number of attempts is in fact higher than one, then the reduction in the probability of success required to break-even will be even lower.

ONE-IN-ONE-OUT (OIOO)

This policy is a "NET IN".
Costs (INs): £110,000 p.a.
Benefits (OUTs): £6,000 p.a.
Net: -£100,000 p.a.

Option 3 – Automated Authority to Carry underpinned by Authority to Carry legislation

Costs:
Total cost per annum: approximately between £2,500 and £0.2 million for years 1-3; and £5 million and £12 million for years 4-8; and between £0 and £4,000 for year 9-10
Present value over 10 years: approximately between £20 million and £49 million.

The followings costs have been identified:

- **Costs of Option 2** for three years (from 2012 until 2015, which is the expected year automation would be operational). The annual costs would be between £2,500 and £220,000.

- **Cost to carriers of implementing the automated system.** The Consultation IA had used estimates provided by Ernst and Young for a study commissioned by the Home Office in September 2011. The cost to the airline industry as a whole was estimated at between £40 million and -£85 million over a five-year implementation period[11], or between £0.2 million and £0.3 million per carrier. Consultees were of the opinion that this was an underestimate and an airline provided a figure of £0.5 million per carrier. Outside of consultation, another carrier suggested between £0.5 million and £1 million per carrier. So it was decided that for this IA, in the absence of further evidence, a range would be used (as is best practice). We therefore use here the £0.5-1 million range, although we acknowledge that some carriers may be better able than others at minimising the costs (e.g. they may benefit from economies of scale, or their current ICT systems may be more flexible. Also,since a UK Impact Assessment only considers costs to the UK, we only need to consider the portion of these costs that falls on UK carriers. Assuming that the costs are distributed equally only 11% of the total cost should be considered (since 14 of the 122 carriers affected, or 11%, are UK operators). However, there is an unquantified risk that by imposing costs on foreign carriers, UK interests may be affected (for example through reduced tourism and business flows, if the costs of the policy are passed on to travellers to the UK through air fares). Implementation of the automated system is assumed to start in year 4 and anticipated to last five years (i.e. until year 8).

The Ernst and Young "Automated pre-departure checking feasibility study: The Ernst and Young study was commissioned to consider, **within a short time frame**, the benefits of increased automation of the matching and alerting process to improve its effectiveness. The automation of the Pre-Departure Checking Scheme (Phase 3) would address vulnerabilities associated with the manual scheme (Phase 2). It could also extend pre-departure checking to other objectives beyond counter-terrorism, such as to crime and immigration. Interactive messaging is valuable to the carriers as it allows them to manage passengers earlier at check-in (online or in person) rather than when they reach the gate during the boarding process. **The proposal was for more detailed work to be done to size costs once the ATC consultation was complete and with proper technical requirements available. This work is now underway.**

The study concluded that an automated capability could be procured, built and operated in one of two ways: as an enhancement to e-Borders (Option 1); or, as an additional product or service that is integrated with it (Option 2). Option 1, to enhance e-Borders, would be faster to implement and is cheaper - primarily due to avoidance of a possible "per transaction" fee imposed by a third party solution provider. This option was recommended in preference to the extension of e-Borders by incorporating a Commercial Off The Shelf (COTS) product (Option 2) for the following reasons:

- A COTS package will be more difficult and costly to integrate;
- A COTS package will duplicate capability that is already present in e-Borders;
- The procurement for the COTS package will be slower and it would be more costly to run;
- The COTS solution is more likely to include per-transaction costs, which will be significantly more expensive in the long run and place additional sustainment costs on UKBA – and potentially carriers;
- The COTS option will increase UKBA's management overhead; and,
- Introduction of a COTS package will have an impact on the security architecture, which will need to be revisited and probably accredited – again, at a cost.

Implementation of either option would require a significant change to be made to the carriers' check-in and departure control systems. The majority of cost and effort will be in this area as it will involve a high degree of technical change in order to integrate the response with the various check-in and departure control systems involved, together with change to carriers' business process in order to incorporate the new functionality; training for the affected workforces (including subcontractors, via changes to contracts) to implement the new business process, e.g. what to do when the passenger is "no-board" and regression testing to ensure there is no impact to the Carriers' IT systems. Where carriers already operate flights to the US, their systems should already have the capability to handle the pre-departure checking response and hence, the technical cost will be lower.

[11] 'Automated Pre-departure Checking Feasibility Study' report by Ernst and Young, September 2011.

The study recognises that what it sets out is an outline estimate of costs. The cost for the integration work is estimated at £ 0.2M per carrier. This was agreed to be in the right order of magnitude and provided a reasonable starting point. Given that changes would be needed to both booking and departure control systems, a factor of 50% is added to this (i.e. £0.3m). In addition, carriers may also incur additional transaction costs from their existing or new aggregators – perhaps as much as under Option 2 (around £25m over 5 years). The assumption was made that some carriers would require minimal or no change – so a volume of 200 carriers was used (around 40 less than the total). **Low end estimate is £40m (200 carriers times £0.2m). Mid estimate is £60m (200 times). High end estimate is £85m (200 times £0.3m, plus £25m transaction costs).**

Responses to the ATC consultation considered that costs to industry had been largely underestimated. Based on experience of implementing the US no fly scheme, it has since been suggested that costs are more likely to be between £0.5M and £1M). Therefore we would estimate costs to be closer to the high end estimate.

- **Cost to HMG of implementing the automated system.** This is estimated to be in the range £20-£50m over a five-year implementation period[12]. For UKBA, the Ernst and Young study concluded that an automated solution would be feasible, straightforward to procure and cost between £20 - £50 million to build and run for 5 years as an enhancement of the current e-Borders (preliminary estimates, but including a 30% increment for optimism bias). e-Borders already has the capability to deliver the majority of the pre-departure checking requirements, with some re-engineering.

- **Cost to passengers who are incorrectly prevented from boarding their flight.** This is as for option 2, with food, accommodation and time costs included.

There may also be reputational costs for the UK if an individual is wrongly denied boarding. It is not possible to quantify these are they would be extremely situation-specific.

Table of annual costs for Option 3

Activity	Estimated annual cost	Source
Cost to UK carriers of implementing automated system	£1.4-2.8 million over 5 years	A carriers suggested £0.5 million per carrier and another between £0.5 and £1 million per carrier so we use the latter (range). There are 14 UK carriers, therefore the costs, over 5 years would be between £7 and 14 million, so between £1.4 and 2.8 million per annum.. As is best practice and in the absence of detailed data on carriers' systems, a range (as opposed to a "best" estimate) is used here and gives a good idea of what the minimum and maximum would be because some carriers may incur less costs than others and some may incur more costs than others, depending on the systems they already have in place.
Cost the UK government of implementing the automated system	£4-£10m over 5 years	The cost to the HMG is divided by five to give the annual cost.
Food and accommodation cost for passengers who are incorrectly prevented from boarding their flight	£29-£1,205	An estimated £57.40 per day for food and accommodation[13], multiplied by an average delay of 0.5 days to 1 week[14], multiplied by a false positive rate of 1-3 individuals per annum.

[12] 'Automated Pre-departure Checking Feasibility Study' report by Ernst and Young, September 2011.

[13] Accommodation and food costs based on ONS Travel Trends 2008: http://www.statistics.gov.uk/downloads/theme_transport/Travel_Trends_2008.pdf; Table 3.06: Average spend per visit abroad, per day. Average across all regions, all purposes of visit. 2008 prices uprated to 2012 prices using National Accounts figures from ONS.

[14] Two airlines commented at consultation that the previous assumed delay time of 24 hours was too low, as airlines do not always operate daily flights. In order to reflect uncertainty around this figure, the range has been widened.

Passenger time cost incurred if they are incorrectly prevented from boarding their flight	£348-£14,621	Passenger time is valued at £29.01 per hour[15]. Multiplied by an average delay of 0.5 days to 1 week, and by the false positive rate of 1-3 individuals per annum.

Benefits:
Negligible quantifiable benefits and
Significant non-quantifiable benefits.

As for option 2, a minor quantifiable benefit of the policy is the avoidance of detention and removal costs that would otherwise be paid by carriers when an individual is denied permission to enter the UK. Estimated benefits are exactly as above, ranging from £0 to £11,848 per annum.

Again, a break-even analysis can be performed to test the change in the probability that a terrorist attack is successful that would be necessary in order for the policy to break-even (see box 2). Since this policy is more expensive than option 2, the effect on the success rate of an attack must be significantly higher than for option 2 in order to break-even. However, note that under this option, there is a much lower risk that an individual who is denied "authority to carry" would be carried, since the individual would be denied boarding at check-in.

Another non-quantifiable benefit would be the **reputational benefits** for the UK if an individual was rightly prevented from boarding a UK-bound aircraft.

Box 2: Break-even analysis for option 3

Break-even analysis is performed exactly as for option 2.

However, in this case, the higher cost of the policy means that we find the following outcome:

$$n \times \left(pr(success) - pr(success|policy)\right) = 1\% - 3\%$$

In this case, if we say that the expected number of attempts per decade is one and the cost of an attack is £2.1bn; then the probability that this attack is successful must reduce by between 1% and 3% (depending on the cost of the policy) in order for the policy to have been worthwhile. If the expected number of attempts is in fact higher than one, then the reduction in the probability of success required to break-even will be even lower.

ONE-IN-ONE-OUT (OIOO)

This policy is a "NET IN".
Costs (INs): £0.7-1.6 million p.a.
Benefits (OUTs): £6,000 p.a.
Net: -£0.7-1.6 million p.a.

F. Risks

Option 2 – Manual alerts sent through e-Borders underpinned by Authority to Carry legislation

- The risk of not receiving timely and high-quality Advanced Passenger Information from airlines for all flights to the UK. This will be mitigated by the roll-out plan and compliance regime for e-Borders under the e-Borders Programme in UK Border Agency.
- The short time available in some circumstances for airlines to deny boarding to the passenger. Based on responses to the consultation from airlines, we estimate the scheme will successfully prevent the individual from flying in 80% of the time. This is mitigated by

[15] DfT guidance on the value of work time spent travelling (average for all transport types) 2002 prices, uprated to 2012. Available at: http://www.dft.gov.uk/webtag/documents/expert/unit3.5.6.php

both the testing of processes conducted during the consultation period; the resultant improvement of processes identified here and through the consultation; and the development of automation to provide a more effective long-term solution.

- Risk of displacement as the policy may push terrorist to seek alternative ways of carrying out an attack. Mitigation: e-Borders fully rolled out in due course; also the UK constantly monitors terrorist threats to the UK and its interests, which it mitigates through the delivery of its counter-terrorism strategy CONTEST.
- Passengers wrongly denied boarding may review future business cases for flying to the UK.

Option 3 – Automated Authority to Carry underpinned by Authority to Carry legislation

- The risk of not receiving timely and high-quality Advanced Passenger Information from airlines for all flights to the UK. This will be mitigated by the roll-out plan and compliance regime for e-Borders under the e-Borders Programme in UK Border Agency.
- ICT costs: ICT costs are subject to optimism bias (see HMT Green Book), especially at the proposal stage, and could have been underestimated, which is why a conservative range was used..
- The costs involved could impact the business case of flying to the UK for some airlines.
- Risk of displacement as the policy may push terrorist to seek alternative ways of carrying out an attack. Mitigation: e-Borders fully rolled out in due course; also the UK constantly monitors terrorist threats to the UK and its interests, which it mitigates through the delivery of its counter-terrorism strategy CONTEST.
- Passengers wrongly denied boarding may review future business cases for flying to the UK.

G. Enforcement

Enforcement will be compliant with Hampton principles. Consideration was given as to whether existing arrangements and/or voluntary arrangements would be sufficient to deliver the policy requirement. The regulation is targeted according to the risk posed by the aviation sector by those who pose a terrorist threat. Consultation with the affected parties has been conducted, and the airline industry was involved in the drafting of the proposals. The scheme uses the existent “single data window” of e-Borders, so that airlines do not need to provide the same information twice; management systems will be in place to identify those that do not comply with the scheme, and a sanction will be administered accordingly, on a sliding scale according to severity; full guidance will be made available to the airline industry.

H. Summary and recommendation

The table below outlines the costs and benefits of the proposed changes.

Table H.1 Costs and Benefits

Option	Costs	Benefits
2	£20,000 - £1.8 million (PV over 10 years)	£0 - 0.1 million (PV over 10 years)
		Benefit to UK carriers, air passengers, and wider society of reducing the probability of a terrorist attack on a UK-bound aircraft (not quantified)
3	£22 million - £53 million (PV over 10 years)	£0 – 0.1 million (PV over 10 years)
		Benefit to UK carriers, air passengers, and wider society of reducing the probability of a terrorist attack on a UK-bound aircraft (not quantified)

Source: See Assumptions section

Option 2, whilst lower cost, does not fully satisfy the policy objective. Option 2 presents a non-negligible risk that a notification refusing Authority to Carry would be received too late to prevent the boarding of a subject of interest.

The adoption of Option 3 is preferred because it is expected to have the highest success rate in preventing a foreign national known to pose a terrorist threat from flying to the UK, and because even if only one attack is prevented, the benefits will substantially outweigh the costs. The development of this option is now underway with a view to delivery by 2015.

As the ICT required for this option will take some time to design, build, test and implement, we also recommend that option 2 be delivered now as an interim measure to mitigate the threat in the meantime.

I. Implementation

The Government plans to implement these changes on 6 April 2012.

J. Monitoring and Evaluation

Management Information will be collected by UK Border Agency to inform future Impact Assessments that review this policy. The impact will initially be reviewed a year after implementation, and may also be formally reviewed as part of any reviewed Impact Assessment on e-Borders that takes place in the interim.

This review is likely to include a review of management information to determine the number of notifications refusing Authority to Carry that were sent to airlines; the proportion that were successfully denied boarding by the airline; a review of the costs and benefits; an assessment of the operational processes for Government, airlines and passengers; and an assessment of the overall efficacy of the regulation in achieving the intended effect.

K. Feedback

Feedback will be sought from the main practitioners of the scheme, passenger airlines who provide data to e-Borders. This will be done through established e-Borders communication channels.

L. Specific Impact Tests

See Annex 1.

Annex 1. Specific Impact Tests

Statutory Equality Duties

Equality Impact Assessment

An Equality Impact Assessment has been conducted and is provided alongside this Impact Assessment. This was made available as part of the consultation exercise. No further data was received.

Social Impacts

Human Rights

Consideration has been given to the impact of this legislation on the UK's human rights obligations, and it is considered that there is no engagement of these obligations.