



STRATEGIC AVIATION SPECIAL INTEREST GROUP
of the Local Government Association

Aviation Duty: a Consultation by HM Treasury and HM Revenue and Customs

SASIG RESPONSE

Introduction

- 1 SASIG is a group of around 60 local authorities constituting the Strategic Aviation Special Interest Group of the Local Government Association. SASIG seeks to ensure that any national aviation strategy for the UK is implemented through regional planning guidance and other planning processes so as to reconcile economic, social and environmental issues in a sustainable way. SASIG wishes to assist in the development of an aviation duty regime that drives environmental improvements within the industry.
- 2 This report sets out the questions posed in the consultation document, an analysis of the issues, and SASIG's responses.
- 3 SASIG would like to preface its responses by stressing that it supports the principle and concept of aviation duty in that charging the duty per plane sends a better environmental signal to the aviation industry than the current per passenger charge. It is however considered that aviation duty should be applied specifically as an environmental tax, in order to direct development of the aviation industry along a path which actually achieves environmental benefits.

SASIG has the following general comments on the design of the duty:

- The use of Maximum Take Off Weight (MTOW) would not incentivise the production of cleaner engine technology, and should be rejected in favour of a calculation of total NO_x and CO₂ emissions per aircraft, combined with the noise certification standard.
 - The use of distance bands is appropriate, but the bands themselves should be refined and narrowed, with additional bands added to increase accuracy. Actual mileage to the destination (using great circle distance) should be used.
 - 5.7 tonnes is an acceptable de minimis limit. The fuel duty regime (for aviation gasoline – Avgas, and aviation turbine fuel – Avtur) should be reformed to incentivise the production of cleaner technology in light aircraft and helicopters.
 - Flights to/from remote or economically underprivileged areas should not be exempted from the duty, but instead offered a partial rebate based on their circumstances.
 - Freight only aircraft should be subject to the duty.
 - The duty should apply to all planes, including those carrying transit and transfer passengers.
 - The cost of the duty should be made clear to consumers on the ticket.
 - Efforts should be redoubled to reform the Chicago Convention (1944) to remove the prohibition on duty schemes being based on the quantity of fuel used on international flights.
- 4 Currently the aviation industry has tended to hide the actual cost per passenger within other surcharges. Aviation duty, on a per-plane basis, should be implemented by the industry and included along with all the other per plane charges, such as fuel, crew,

maintenance, capital costs, catering, etc. and this should then be reflected in the ticket price.

- 5 It is also important, in SASIG's view, to make the air passenger aware that the benefits derived from those journeys have a consequential detrimental effect on many of the people who live and work around airports. To do this the industry would have to make clear the amount of the ticket price that comprises the aviation duty, just as VAT is clearly shown on retail receipts.
- 6 Of more importance to SASIG is that the government's extrapolation from air passenger duty (APD) and aviation duty (AD) to directly related reductions in emissions must be supported by the tax being used to mitigate environmental impact. This means that at least part of it, perhaps the current suggested increased income of £520m, should be hypothecated for this purpose.
- 7 It is acknowledged that the government does not like hypothecation but that is exactly what has been done by using all or part of the Aggregate Levy and the Landfill Tax for environmental enhancements. Those industries have been subject to similar environmental criticisms as the aviation industry and yet the public has a similar love-hate attitude to them. We all make use of aggregates in our day-to-day life. We all make waste that needs to be disposed of. Many of us choose to fly for leisure or business purposes. But the impact of all three industries is similar in that there are important economic and social benefits that need to be set against the associated detrimental impacts.
- 8 One way of visibly demonstrating a mitigation of those impacts as far as aviation is concerned would be to set up some form of trust fund, managed at arms length from government and the industry, which allocates an agreed percentage of aviation duty to the widest possible range of environmental mitigation measures. This could include broad-ranging research as well as environmental improvements around airports.
- 9 There may be scope within the new duty regime to incentivise research into environmental improvements and mitigation measures, by the use of a rebate. This is in addition to the need for tighter statutory improvement targets for the industry, and more generous mitigation packages from the industry. Such a rebate must only be applied after all of the required statutory measures for enhancements and mitigation have been fulfilled. The price of any such incentive must be explicit on passenger's tickets.

Questions from the consultation document, SASIG analysis and responses

Maximum Take Off Weight (par. 2.20, p. 15)

- 1) What would be the simplest and most transparent method of using maximum take-off weight: banding or straight calculation of either the constant MTOW or some function of MTOW?
- 2) Are there any possible distortions/problems caused by using MTOW?
- 3) What do you think the environmental benefits of using MTOW would be?
- 4) How well do you think that using MTOW as the basis for the duty helps the Government achieve its objectives?

SASIG ANALYSIS

- 9 The use of Maximum Take Off Weight (MTOW) as the basis for aviation duty has advantages and disadvantages. In its favour, it relates directly to individual aircraft types, allowing for the tailoring of the duty to impact more on less-efficient models. This also

reduces the risk of impacting heavily on regional airports flying mainly small jets and narrow-body aircraft.

- 10 As it is a hypothetical figure based on full loading, calculated for each plane type rather than per individual flight, MTOW is also free of the complicating influences of precise conditions for each flight, e.g. thrust, stacking/delay, and weather conditions.
- 11 However, currently some of the cleanest/most efficient planes are the largest, and consequently, the heaviest. This may de-incentivise the introduction of larger, more efficient planes. A newer, fully-loaded and fuel-efficient plane could, under this scheme, have a higher rate of Aviation Duty (AD) than an older, less fuel-efficient plane. In real terms this model would result in lower emissions over a given distance, however per passenger emissions would actually increase.
- 12 As the frame and fuel tanks of the aircraft make up a significant proportion of the weight, and this is not directly related to engine efficiency, the incentive for airlines to replace engines with newer, better technology would also be reduced.
- 13 This measure may also incentivise airlines to reduce free baggage allowances or the use of aircraft for dual purposes such as belly freight. There is a possible risk of the increased use of baggage tariffs (as currently seen in low-cost models of flying), which could disadvantage/penalise families who combine baggage allowances, and those with bulkier items.

SASIG RESPONSE

- 14 *The use of take off weight is rejected. See answer to Q11/12 below.*

NOx emissions in the landing and take-off cycle (par. 2.21, p. 15)

- 5) What would be the simplest method of using NOx emissions: banding or straight calculation of either the constant NOx emissions or some function of NOx emissions?
- 6) Are there any possible distortions/problems caused by using NOx emissions in the landing and take-off cycle as the basis for the duty?
- 7) What would be the best source of robust data on NOx emissions in the landing and take-off cycle?

CO₂ emissions in the landing and take-off cycle (par. 2.22, p. 16)

- 8) What would be the simplest method of using CO₂ emissions in the landing and take-off cycle: banding or straight calculation of either the constant CO₂ emissions or some function of CO₂ emissions?
- 9) Are there any possible distortions/problems caused by using CO₂ emissions in the landing and take-off cycle as the basis for the duty?
- 10) What would be the best source of robust data on CO₂ emissions in the landing and take-off cycle?

SASIG ANALYSIS

- 15 The use of emissions to determine the rate of tax could incentivise the production of cleaner technologies and promote the sustainable growth of the industry. It is likely that the figures used will have to come from engine manufacturers; in which case, they should be independently verified rather than disregarded on the basis of a possible bias. This will provide the most environmentally favourable outcome.

- 16 If the mechanisms available for measuring the emissions of either gas look at overall fuel consumption, they are restricted under the Chicago Convention. SASIG welcomes government initiatives to reform this legislation.
- 17 Manufacturers estimates of emissions levels per plane are sufficient to put planes into a bracket based on their combined NO_x and CO₂ emissions. This could be at different proportions relative to the environmental impacts of these pollutants. If this system were to be implemented, the following principles could also be taken into account.
- 18 A radiative forcing factor of 1.9 could be applied to emissions, in accordance with current Department for the Environment, Food and Rural Affairs (DEFRA) figures. The 'unit' cost of AD needs to be at an appropriate rate to guarantee environmental improvements, but the inclusion of radiative forcing would indicate awareness of the damage caused by aviation, and of the joined-up governance called for by, amongst others, the Environmental Audit Committee.
- 19 There should be built in criteria to ensure that engine modifications for gains in emissions reduction and engine efficiency (as should be the overall goal of AD) do not result in significant deteriorations in local air or noise quality.
- 20 As aircraft fly in variable conditions, engine efficiency and thus emissions may occasionally be compromised in the interests of safety. Assurances should be given that aircraft obeying emergency Air Traffic Control (ATC) orders, or forced to divert from fuel-efficient routes due to weather or technical problems, would not be over-penalised by increased AD charges.

SASIG RESPONSE

- 21 *See answer to Q11/12 below*

Other basis questions (par. 2.23, p. 16)

- 11) Is there another aircraft measure that would be better for aviation duty than the three options described above?
- 12) The Government would also welcome views on the extent to which the new aviation duty could play a role in covering other environmental costs as well as incentivise airlines to use quieter aircraft.

SASIG ANALYSIS

- 22 The main objective of AD should be to reduce environmental impact in terms of emissions *and* noise. Ease of calculation should be a secondary consideration. For commercial aircraft, which make up the vast majority of the remit of AD, National Air Traffic Service (NATS) operators are currently party to detailed information from pilots about the efficiency of operation of their aircraft and what action should be taken to maximise engine efficiency during every flight. If aircraft systems can suggest optimal rates of operation for various altitudes and speeds, small modifications could easily be made to record the overall efficiency of each flight. The detailed information available for all flights and has the potential to be used more effectively.
- 23 Tabulating the overall length of the flight with the engine efficiency to produce variable figures for AD (rather than with catch-all bandings and the possible de-incentivising of more efficient, environmentally friendly aircraft) would be an option that neither disadvantages smaller airports nor those with high-occupancy, newer fleets, and could have environmental benefits in terms of reducing overall emissions.

- 24 A more complicated metric would be needed to set up a more complex and variable rate of AD, but on the basis that this technology is already available in the cockpit (and, according to NATS, can be integrated into air traffic control procedures) this system would provide an equitable solution, whilst avoiding the prohibitions in the Chicago Convention on taxing aircraft fuel. That said, the practicalities of conveying such a system as part of a centrally administered duty scheme are likely to mean that the previous solution of combining emissions with distance would be a more practical proposition.
- 25 The question is also posed as to whether the duty could be modified to include additional environmental impacts such as noise. At the moment, various technical restraints can mean that energy efficiency is compromised by the engine improvements required to reduce engine noise. The technology currently available demands a larger engine diameter in order to increase the bypass ratio of air, which in turn improves noise impacts. This means that the government's preferred option of MTOW as the aircraft factor for AD may actually have a negative impact in terms of noise. Noise reduction also requires a slower fan speed to reduce the outflow of exhaust gases, which can limit engine efficiency. The duty should cover the environmental impacts of aviation, however it would be better to achieve technological solutions that tackle noise and emissions in concert rather than prioritising one factor.
- 26 The Advisory Council for Aeronautics Research in Europe (ACARE) has set two ambitious goals for 2020, cutting by half both the perceived aircraft noise (a reduction of 10 dB) and CO₂ emissions. The sustainable development of air transport depends on achieving significant reductions in environmental impact, in terms of greenhouse gases, local air pollution and noise around airports. However, ACARE estimates that even if the industry were to perfect current technologies, it would still not meet these goals. Technological breakthroughs are needed, and this requires cross-industry funding and innovation for intensive research. Revenue from the duty, as well as a commercial incentive from reduced rates for quieter aircraft, could well provide the initiative for such projects. Additional support from EU strategic programmes for Research, Technological Development and Demonstration would then be available.
- 27 Metrics for gauging the noise impact of commercial jets are freely available from the International Civil Aviation Organisation (ICAO), as part of its noise abatement programme, contained within the *Environmental Technical Manual on the use of Procedures in the Noise Certification of Aircraft* (Doc 9501). This contains roadmaps for the certification of aircraft within four distinct 'Chapters', each relating to the noise impact of the model. A simple way of mapping these existing well-defined standards onto the duty would be to offer a slightly rebated rate for those aircraft achieving Chapter 4 certification (currently the highest available standard) over and above aircraft that remain at Chapter 2-3 standards. (Chapter 1 or Unclassified aircraft are usually excluded from flying at licensed airfields, due to their poor noise profile.)

SASIG RESPONSE

- 28 *If aviation duty is to be an effective environmental tax, the test for its successful design should not be the ease with which it can be calculated but the extent to which it reflects the environmental damage caused by individual aircraft movements. Every aircraft (type) has specific data available on its noise characteristics (ICAO Chapters) and this is used when calculating noise contours. Aviation duty needs to reflect all kinds of environmental pollution in the same way, and should thus be based on a calculation of total NO_x and CO₂ emissions, with an additional factor based on its ability to meet ICAO noise standards. This will have to be calculated for each aircraft, and airlines will therefore be incentivised to use less polluting aircraft.*

- 29 *If such a calculation and method is used for each aircraft, then the environmental costs are better represented than using take off weight. This would have the benefit of ensuring that airlines do not choose to use the lowest polluting aircraft if that aircraft itself has the noisier profile, and encourage the development of aircraft that reduce these adverse environmental impacts.*

Distance factor (par. 2.32, p. 18)

- 13) Do you agree that banding is the most appropriate measure?
- 14) Do you agree with the banding system that the Government has suggested?
- 15) How well does a banded approach to distance achieve environmental objectives, given the need to avoid a perverse incentive to fly via intermediate hubs?
- 16) What are the possible distortions/problems caused by using distance?
- 17) What would the advantages/disadvantages of using great circle distance be?
- 18) How would you combine distance with other criteria?
- 19) Are there other alternatives for including a distance factor, not already covered?

SASIG ANALYSIS

- 30 The bands used are too simplistic. A vast range of locations is covered by a single band, especially in the higher bands. Banding sizes should be reduced to allow a greater subtlety of pricing and reduce the perverse incentives provided by intermediate hubs. Over the shortest distances, AD should be higher, to account for the impact of landing and take off overheads, and to encourage the use of more appropriate modal options where available. Better still would be an accurate measure of each journey distance, airport to airport, using great circle distance, with AD being calculated on the basis of this as a sliding scale. Consideration was given as to whether or not this type of measurement was within the grasp of airlines to calculate, and whether or not it avoided disadvantaging regional airports with reduced proximity to popular European destinations; it was considered that these elements were achievable.
- 31 Reducing the size of the bands could have a two-fold effect, depending on the ratio of charging. There are two objectives at stake: reducing overall emissions levels, and incentivising sustainable transport to ensure the UK maintains connectivity. Bands at 0-500, 501-1,500, 1,501-3,000, 3,001-4,500, 4,501-6,000 and 6,001+ miles were considered to give a greater degree of subtlety to the scheme, and reduce the perverse incentive to fly a short-haul leg to Europe before beginning a long-haul flight. The rates of duty for each of these bands should be set such that use of rail for shorter distances is encouraged. The distance travelled should be combined with overall emissions to promote accurate allocations of AD.
- 32 It has been declared that the smallest possible band is that covering the European Economic Area (EEA) on the basis that the Single Europe Act precludes any further division within the EEA. It would seem to be the case that the requisite element is fair application of rules, meaning that no matter what the rules are they must be fairly applied, and that our suggested further banding could be adopted.

SASIG RESPONSE

- 33 *A banding approach seems appropriate but additional bands should be added. The Single Europe Act may preclude the addition of bands over shorter distances, but these should not be overlooked without first testing the Act to see if they can be put in place. Bands encompassing the European Economic Area (EEA), then bands from 1,501-3,000, 3,001-*

4,500, 4,501-6,000 and 6,001+ miles from the airport of origin should be implemented. Banding should be inputted using the actual mileage to the destination not to each country, collected using great circle distances. The currently proposed bands put the whole of Canada within the 3000+ 'Band C' with Quebec as its capital, but it is considerably further to fly to Vancouver than to Quebec from the UK. The use of additional bands avoids that inaccuracy.

General and business aviation (par. 3.28, p. 25)

- 20) Do you agree that a de minimis limit based on the weight of an aircraft a suitable measure?
- 21) Is 5.7 tonnes a suitable level at which to set a de minimis limit?
- 22) Is there an alternative measure that you feel is more appropriate?
- 23) Can you suggest an alternative way in which to ensure that aviation is captured either by aviation duty or fuel duty while minimising administrative burdens and complying with international law?
- 24) Do you agree that all helicopters should be placed within the fuel duty regime rather than the aviation duty regime?

SASIG ANALYSIS

- 34 The placing of all aircraft, including helicopters, under the de minimis limit of 5.7 tonnes within a fuel duty regime is a good proposal. 5.7 tonnes is a suitable measure that will limit the potential for damage to the leisure/hobbyist sector, and yet captures the environmental impact of small business jets. One concern is that the current levels of tax levied on aviation gasoline (Avgas) and aviation turbine fuel (Avtur) are so low (especially when rebates are given) that they fail to provide an effective incentive to account for emissions from flying.

SASIG RESPONSE

- 35 *5.7 tonnes seems a suitable de minimis limit, with aviation or fuel duty being charged to light aircraft as well as helicopters. SASIG has concerns that the high rebates and low levels of taxation currently in operation with the Avgas and Avtur systems fail to provide incentives for improvement. This should be addressed as a priority, and reforms to the system implemented.*

Exemptions (par. 4.10, p. 28)

- 25) Do you think that there is a strong case for any of the exemptions listed?
- 26) Are there any other categories of flight for which there is a strong case for exemption? If so, how would those exemptions be defined and enforced?
- 27) Would there be a strong environmental case against any of the possible exemptions?

SASIG ANALYSIS

- 36 Many of the exemptions suggested by the government are acceptable, including:
- Military - domestic and foreign;
 - Diplomatic flights - foreign heads of state and other foreign government ministers;
 - Emergency services - air ambulance, search and rescue;
 - Public services - police, fire, customs, any flights that may involve the aerial application of fire suppressing retardant, humanitarian relief flights;
 - Training flights - flights specifically used to gain a pilot's licence and not to maintain flight skills, where there may be multiple take-offs; and

- Maintenance flights - many of which are mandatory and will take place in another country if not the UK.

There is an especially strong case for the exemptions of emergency and rescue flights.

- 37 The development of rapid-transit ferry and/or rail services to remote or outlying regions of the UK should be supported in order that a choice of viable alternative modes is provided for such trips.

SASIG RESPONSE

- 38 *On the basis that the system needs to be simple and apply to all commercial flights, SASIG feels that, rather than exempting remote regions, these regions should be offered a rebated rate of AD. Where there are ongoing issues about accessibility to remote regions, this should be tackled through other measures, for example support from Regional Development Agencies.*

Freight (par. 5.6, p. 29)

- 28) What economic impacts do you think there will be? You might wish to consider the Impact Assessment of freight in Annex B.
- 29) What would be the economic impacts on freight-only flights?
- 30) How might freight operators pass the costs through to consumers? How sensitive have consumers been in the past to a change in price?
- 31) What would be the environmental impacts of applying aviation duty to freight?
- 32) What would be the impact on freight hubs and modal transfers of goods from these hubs?
- 33) Do you have any other comments about the application of aviation duty to freight?

SASIG ANALYSIS

- 39 To perform as an environmental tax, AD should cover all types of commercial flying, freight, passenger or mixed. It should be applied to freight aircraft on an equitable basis with passenger aircraft, based on aircraft emissions, noise profile and distance flown. There is a tendency for freight only aircraft to be larger, older models, and this would incentivise the industry to upgrade existing fleets, providing overall environmental benefits.
- 40 The impact of AD on freight flying should be to increase the value and suitability of freight cargo, reduce the attractiveness of flying bulky, non-perishable, non-time-sensitive items over relatively short distances, and reduce congestion around those airports with current high levels of heavy road traffic.
- 41 The application of AD to freight may have an impact on the current spoke/hub model of operations. It is possible that some regional airports may see increased freight business, and may therefore have to put additional infrastructure in place to cope with demand. The diversion of freight aircraft away from existing modal hubs may reduce congestion in these areas, but increase the use of night flights and overall ATMs in other, smaller airports. Care should be taken that this does not have an adverse impact on local populations, which may be achieved through the licensing of airports and planning restrictions.

SASIG RESPONSE

- 42 *If aviation duty is being treated as a method of seeking to minimise the environmental impact of aviation, then it should apply to all freight-only aircraft. On the other hand, if aviation duty is being designed to reduce the growth in air passengers then the judgment needs to be made if there is also a need to reduce the transport of unnecessary air freight.*

Reliable information needs to be put into the public domain to provide for a greater understanding of the relative merits of different modes of freight transportation.

Transit/transfer passengers (par. 5.12, p. 30)

- 34) What evidence can you provide about the impact of moving to aviation duty on the provision of transfer services?
- 35) What are the economic and environmental implications of these impacts?
- 36) How might airlines change their business model in response to this design of the duty?
- 37) How might passenger behaviour be affected? How sensitive have consumers been in the past to a change in price?
- 38) What, if any, specific routes would be affected?

SASIG ANALYSIS

- 43 All transit/transfer flights should be covered, as long as they take off in the UK. In as much as a slight increase in fares (likely to rise as oil prices increase) will be off-putting to some passengers (a trend yet to be established), then this is likely to have a larger impact on regional airports providing services to hub airports. The impacts could include slight reductions in the number of purely domestic flights and domestic transfers, and there is some concern about the extent of those impacts. The resulting revenue from the inclusion of all passengers should be used to develop more sustainable transport links to enhance integrated transport provision and hence the choice of modes, particularly to improve the accessibility of regional areas.

SASIG RESPONSE

- 44 *Aviation duty should be an attempt to ensure that the aviation industry is encouraged to reduce its environmental impact. The impact is the same for all passengers and should be applied per aircraft irrespective of whether or not there are any transit or transfer passengers on board.*
- 45 *SASIG does not have any evidence on passenger's sensitivity to price changes but it seems unlikely that passengers will be deterred by a relatively small additional cost when that is compared to the many hundreds of pounds likely to be being spent on the overall trip.*
- 46 *SASIG urges HMT and HMRC to work with the DfT to address the impacts of the duty on purely domestic flights and domestic transfers, with the aim of developing an integrated transport network providing travel choice across a range of transport modes.*

Administration of per plane duty (par. 6.12, p. 34)

Option a (par. 6.13, p. 34): aircraft operators to collect and account for aviation duty:

- 39) Would having all aircraft operators registering to pay the duty be an appropriate and workable way of administering the duty?
- 40) Do aircraft operators have the means to report the appropriate information on the number of flights taken and any relevant information on the duty basis to HMRC? Would any of the measures mentioned under the duty section cause problems for aircraft operators?
- 41) What reporting requirements do aircraft operators have to airports, the CAA and other bodies? How are these carried out i.e. monthly, annually, per flight?

- 42) Do the estimates in the Impact Assessment for the administration burden reflect your expected costs?
- 43) What problems might arise from having aircraft operators as the registered tax payer?

Option b (par. 6.14, p. 35): licensed airports to collect and account for the duty. When answering these questions please consider how collecting the duty would fit in with current fee structures, how other fees are collected, how debt management currently works at airports and possible distortions that could be caused by this method.

- 44) Would the alternative of using airports to collect the duty be an appropriate and workable arrangement? (i) For the users of licensed airports? (ii) For licensed airports themselves?
- 45) Do licensed airports have the means to collect and report the appropriate information? Would any of the measures suggested for the duty basis cause issues for these airports in collecting the duty?
- 46) To what extent could general aviation and business aviation traffic move to non-licensed airports?
- 47) Please refer to the Impact Assessment; does our assessment of the administration burdens for airports collecting the duty reflect your knowledge of how much this might cost? If not please let us know where it differs.
- 48) Any further comments on this issue?
- 49) Are there any comments raised on the issue of the impact on unlicensed airfields?

SASIG ANALYSIS

- 47 Aircraft operators have all of the technology in place to measure their contributions. They also collect the current Air Passenger Duty, through ticketing. Use of aircraft operators to administer AD would need to be independently vetted, but to the extent that any duty requires a certain level of administration this should not be too onerous.
- 48 Use of airport operators to administer AD has several advantages: they are fewer in number than aircraft operators so will require a smaller administrative infrastructure overall, and they are also a more stable market than airlines. Airport operators already have the technology in place for the collection of landing fees etc, making the need for additional administrative investment less challenging.

SASIG RESPONSE

- 49 *Aviation duty is all about encouraging the aircraft operators to make business decisions in relation to the environmental impact of their aircraft. Thus the aviation duty needs to be very visible. If costs are added to ticket prices, then it should be made explicit to the consumer exactly what it is they are paying for, in terms of cost breakdowns. SASIG remains neutral on the issue of whether airport operators or aircraft operators should administer the duty.*

Contact Officers: Anna Mahoney and Laura Simpson. Tel. (020) 8541 9459.
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