

## **RADIO SPECTRUM MANAGEMENT REVIEW**

### **Response by British Airways to Consultation Paper by Professor Martin Cave**

#### **Introduction**

British Airways welcomes the opportunity to contribute to the government's radio spectrum management review and to comment on the consultation paper issued by Professor Martin Cave.

The key objective of the review is to ensure that more efficient use is made of a scarce resource - radio spectrum. British Airways supports that objective. However, economic efficiency is not the only objective that should guide policy-makers on this issue. In the face of rising pressure for commercial use of radio spectrum, it is essential that sufficient spectrum is made available to "safety of life" applications, including the use of radio spectrum for aeronautical purposes.

In addition, the charging regime for radio spectrum could have an impact on the international competitiveness of user industries, notably aviation. Given the importance of aviation to the national economy, the UK should not pursue policies which penalise UK-based producers relative to their competitors based overseas. This should mean ensuring that any approach to charging for aviation spectrum remains consistent with the international framework laid down in the Chicago Convention, its related annexes and policies, the UK's bilateral aviation treaties and ICAO resolutions.

British Airways believes that the allocation of radio spectrum for aviation use should continue to be agreed between governments at the international level - to ensure that safety is not compromised by interference from mobile communications networks. Charging should continue to be consistent with ICAO guidelines of cost-recovery, and applied in a way which does not disadvantage UK-based airlines relative to their competitors.

Specific answers to questions posed in the paper are set out below:

#### **Economic gains from efficient use of spectrum**

*i) How best can Government assess the economic gains from enabling more efficient use to be made of spectrum?*

*ii) How could information from market transactions and economic impact studies best help inform the design of spectrum management policies?*

Market mechanisms provide a useful means of ensuring that resources are allocated towards the most efficient use, but they are not appropriate mechanisms where safety-critical systems are involved. It is essential that the cost of safety-critical systems does not become prohibitive, or that UK-based producers face significantly higher costs for access to these systems than their international competitors. It is therefore important to "ring-fence" the safety-critical elements of spectrum use in any discussion of charging and market allocation.

It is worth noting that aviation has not increased its demand for spectrum since 1972 and has accommodated the substantial increase in traffic growth over the last two decades (in which air traffic has trebled) within the allocated bands, through increased efficiency and tighter global harmonisation. Looking ahead, continued efficiency improvements should ensure the requirement for aviation spectrum is contained within the current allocation.

Economic impact studies may be helpful in assessing economic benefits and costs where market signals are not available. However, such studies require a large range of assumptions to be made and need to be used with care in policy-making. In particular, British Airways would question the low value ascribed to the use of aviation spectrum in the table on page 8 of the Cave report. This does not appear to take into account the high value of maintaining a safe and secure aviation industry. Nor does it appear to reflect the very substantial economic benefits to the UK economy from a successful aviation industry.<sup>1</sup>

### **Economic principles of spectrum management**

*iii) How far can the over-arching principle, that spectrum users should bear the opportunity cost of their usage, be applied in practice?*

*iv) How can the trade-offs between competing economic and social uses of spectrum be more clearly articulated in the principles governing spectrum management?*

While the principles of opportunity cost and economic efficiency might be applied to commercial users of radio spectrum, this approach is not appropriate for “safety-of-life” uses, including aviation. We should aim to reserve adequate amounts of radio spectrum for these uses and to ensure through international agreements that this is done not just in the UK but in other countries where international aviation operates. In the domain where safety is important, different principles of charging would appear to be appropriate - to avoid safety being compromised by the high cost of operating safety-critical equipment.

### **Legislative basis for spectrum management**

*v) To what extent would a separate spectrum management duty for Ofcom be helpful, and how could this best be articulated in a new statutory framework for communications regulation?*

*vi) What additional statutory alternatives to apparatus licensing could assist Ofcom in meeting its spectrum management objectives?*

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<sup>1</sup> In 1998 the aviation industry contributed £10.2 Billion to the UK economy (1.4% GDP) and directly employed 180,000 people, with at least three times that number employed in associated activities. It also transported £35 Billion in UK exports and conservatively contributed £2.5 Billion to the UK Exchequer. Aviation contributes directly to the economic growth of the UK and many sectors of the UK economy rely heavily on aviation for their success in a global market. These are all factors which should be taken into account when considering the economic impact of additional charges on the overall UK economy. (For further details, see *The contribution of the Aviation Industry to the UK Economy* Oxford Economic Forecasting, Nov 99)

*vii) How far can new modes of licensing, based upon access to defined spectrum rather than defined wireless apparatus, assist in enabling more efficient use to be made of spectrum?*

Each UK registered aircraft is required to carry a valid Radio Licence, which reflects the fact that an aircraft is defined as a “radio station” under the Radio Telegraphy Act. However, such a licence is a redundant requirement as a radio is also a mandatory requirement for an Airworthiness Operating Certificate. UK operators already pay Civil Aviation Authority (CAA) charges which include the cost of administration of the aviation spectrum by the CAA. Hence UK aviation is effectively paying twice for the administration of the radio spectrum.

We would therefore suggest that the aircraft Radio Licences are abolished and the new powers available under the Regulatory Reform Act 2001 should allow this to be done without primary legislation.

## **Regulatory framework for spectrum management**

### ***International dimension***

*viii) How can the UK’s stance towards international spectrum management policy best reflect the opportunity costs of different spectrum uses?*

*ix) What scope is there for greater autonomy in domestic spectrum policy within the constraints imposed by the UK’s international commitments?*

*x) How should the UK Government judge the trade-off between a more liberal approach to spectrum management and one in which technology standards and spectrum access are mandated as part of a strategic industrial and trade policy?*

*xi) If there were greater latitude in international allocations and/or the UK’s implementation of such decisions, to what extent would market mechanisms result in harmonisation of equipment and transmission standards?*

The allocation of radio spectrum for aviation purposes must continue to be the subject of international agreement, with ICAO principles of cost recovery used as the basis for charging. Only on this basis can we be sure that the use of this spectrum for to ensure safe aviation services will not be compromised. The attempt to ensure greater flexibility and autonomy at the national level should not encroach on these essential “safety of life” uses.

Within the spectrum which is made available for commercial uses, however, British Airways supports a liberal approach. In particular, the areas of wireless products and services utilising the “licence-free” ISM band is constrained in terms of allowing the development of services to our customers when compared to other countries in Europe, far east and the USA. In these areas, where access is unconstrained, there has been tremendous growth.

## **National dimension**

*xii) Within the current and proposed statutory framework, what improvements (if any) could be made to the institutional arrangements for spectrum management in the UK?*

*xiii) To what extent would greater transparency of specific data on current and prospective spectrum uses support efficient spectrum use? What are the key issues and trade-offs pertinent to the provision, by RA, of an on-line database containing spectrum-utilisation details? How far is transparency compatible with commercial confidentiality and public safety and security considerations?*

*xiv) To what extent could intermediaries play a valuable role in buying rights to manage a particular frequency band and then selling access to parts of this spectrum to users on a commercial basis?*

As far as spectrum allocation to aviation is concerned, it is inappropriate to provide access via a third party - which would merely increase the cost of provision of a safety service without any improvement in spectrum utilisation, as assignments and specifications are internationally agreed. The current arrangement where RA delegate the administration of the aviation spectrum to Civil Aviation Authority, who ensure ICAO standards and recommended practices are implemented, works extremely well.

## **Spectrum use: marketed and non-marketed outputs**

*xv) To what extent is the review's distinction between radio spectrum used for marketed and non-marketed goods a helpful one?*

*xvi) How far can public policy objectives for the delivery of non-marketed goods be separated from the regulation of access to the spectrum necessary to deliver such services?*

This distinction is essential if we are to avoid "safety of life" uses of spectrum being compromised by increasing commercial demand. While aviation itself is a commercial activity, its use of spectrum is driven by the need to maintain safety, rather than the commercial exploitation of that spectrum. A competition in spectrum can only be fair between those industries selling communication and navigation services on a commercial basis. As a result, aviation spectrum should not be traded alongside commercial uses and the current practice of reserving parts of the spectrum for aviation through international agreements should continue.

## **Issues in non-marketed uses of spectrum**

### ***Defence and Broadcasting***

British Airways has no comments on these sections

## ***Aeronautical and maritime services***

*xxiv) Is this a valid description of the factors affecting use of radio spectrum by aeronautical and maritime services?*

*xxv) Given the international harmonisation constraints, where could new economic incentives most encourage more efficient use of spectrum in the UK?*

*xxvi) How far could changes in spectrum use charges be reflected in air traffic control fees which are passed on to users of UK airspace and landing services?*

Aviation does not treat radio spectrum as a commodity, it is a basic part of the infrastructure which supports the aviation industry. This spectrum is not used for public correspondence as is the case for other spectrum allocations, with the exception of the Terrestrial Flight Telephone System (TFTS). The spectrum allocated to aviation is required to support safety of life communications, navigation and surveillance applications on a global basis. The standards for these applications and their associated equipment are governed by the International Civil Aviation Organisation and through the member states Civil Aviation Authorities. Equipment and services are either mandated as basic for given categories of aircraft or are mandated within given sectors of airspace to support communications with Air Traffic Control, distress communications, aircraft separation and aircraft navigation. Hence the carriage of radio and its operation is a mandatory requirement and aircraft operators have no option but to use the State facilities. The aviation spectrum is recognised as a safety of life facility and is protected as such by the International Telecommunications Union through the Radio Regulations.

Though some airlines and their suppliers (British Airways included) have deployed or are planning internet and email services to the passenger whilst on-board, these services are dependent on using Satellite communications services and use separate equipment and systems.

Any consideration of spectrum sharing between such safety of life applications and commercial telecommunications must be very carefully considered to ensure that safety is not compromised. Design and manufacture of aviation airborne and ground systems are subject to a very strict set of regulations and standards which include those for electromagnetic interference. Commercial electronic equipment is not subject to these same standards as it would no doubt be difficult to justify on economic grounds so it must be left to the aviation regulatory authorities and the ITU to determine where such sharing can be achieved without compromising safety or operation of the aviation services.

Given that the aviation spectrum is regulated on a global basis we would not accept that UK registered aircraft alone absorb any additional cost and foreign operators go free. If any additional charge is raised then all users should be treated equally which implies that the UK government set a precedent in charging for the spectrum to support services which are governed by international agreement. For example, the ICAO Chicago convention restricts States to cost recovery for the provision of aeronautical facilities &

Eurocontrol Convention constrains States to recover no more than 8% on assets employed.

This argument would equally apply to provision of the primary and secondary surveillance radar services which are currently recharged to the airspace users through overflight charges. It should be taken into account that the UK already has the highest unit rate for overflight charges in Europe and charges for this spectrum could only serve to increase this charge still further which would be particularly penalising for UK operators.

Whilst it is the long term aim to rationalise the equipment and hence the spectrum requirements for aviation, such rationalisation can only occur at a global level and cannot be carried out unilaterally by an individual state.

In summary, in our view no premium above cost recovery should be charge for what is a Safety of Life facility. If additional charges must be made ,all users should be equally treated on a global basis.

### ***Emergency services***

British Airways has no comments on this section.

### **Spectrum pricing, auctions and trading**

British Airways has no comments on the general issues of spectrum pricing, auctions and trading but believes these mechanisms should not be applied to aviation spectrum, given the important safety aspects, and should be confined to the commercial use of spectrum.

### **The boundaries of spectrum regulation**

*xxxix) What factors should guide regulators in setting the boundaries of licence-exempt spectrum use?*

*xl) What remit should regulators hold over licence-exempt spectrum use, other ensuring that it does not interfere unduly with licensed spectrum use?*

*xli) How far can developments in radio technology provide an alternative to regulation in licence-exempt spectrum bands, particularly where the potential for interference with other users is very low given the propagation and power characteristics of the signals concerned?*

Throughout history, industry and commerce has expanded tremendously with the advent of transportation (road, sea, rail and air) and communications -the telegraph, telephone, mobile-phone and now the internet. One of the factors that contributes to the speed of growth of communications technologies is the absence of regulation. This is evident in the ISM bands of the radio spectrum where there is tremendous growth in new applications and uses.

Here in the UK, relative to the international arena, there is more constraint in the allowed use of the licence free radio spectrum band.

Ref-RA294: *Radio Local Area Networks (RLANs) Information sheet (revision3 May98)* which states in answer to the question of what the licensing requirements for using a Radio LAN.

“However, some RLANs may be required to operate in a licensed regime. This would apply to any applications providing Third Party services. Operators of any public telecommunications service (radio or wired) also need to have a Telecommunications Act licence.”

As an example, British Airways may be restricted in deploying internet access facilities using Wireless LANs in the 2.4 Ghz (and future 5GHz) band. Our major OneWorld airlines alliance partners are all offering this as a value added service to their passengers in their home hub airport lounges.

Overall, the business competitiveness of UK industry could be impacted by over-constraining the usage of license-exempt radio spectrum.