

strategic review of general aviation in the UK



Strategic Review of General Aviation

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

Why a Strategic Review of General Aviation?

1. On 15 June 2005 the Civil Aviation Authority (CAA) Chairman invited the UK General Aviation (GA) community and representatives of UK Government to join the CAA in carrying out Strategic and Regulatory Reviews of GA.
2. The aims of the Strategic Review were, inter alia:
 - to describe the GA sector and explain its existing policy context;
 - to examine the interfaces between GA and commercial aviation, GA and the CAA and Government, and GA and the wider community;
 - to discuss the major issues likely to affect GA in the future; and
 - to liaise closely with the Regulatory Review as necessary and to make appropriate recommendations.
3. The Strategic Review examined the high-level issues affecting GA in the UK, whereas the Regulatory Review focussed on the detail of CAA regulation.
4. The Strategic Review was chaired by Alex Plant of the CAA's Economic Regulation Group. Eight full plenary meetings and a number of other working groups were held between September 2005 and May 2006. The full terms of reference and membership of the Strategic Review are set out in Appendix 2.
5. For the purpose of this Review, GA was defined as "a civil aircraft operation other than a commercial air transport flight operating to a schedule."

What is "the GA sector"?

6. GA is a diverse sector and parts of it are changing rapidly. At one end of the spectrum are high value business aircraft; at the other end paragliders and hang gliders. GA also serves many purposes, including business usage, sports and recreational activities, and as a means of personal transport, much like a car.

The economic and social value of GA

7. GA is perceived by some to be purely a leisure pursuit and the preserve of the wealthy. However this masks the real picture. In fact GA covers a very wide range of activities, has many participants, and is not insignificant in terms of economic size. This Review concludes that the estimate made by Terry Lober¹ of £1.4bn of direct economic contribution from UK GA in 2005 seems reasonable. This makes UK GA roughly the same size as Virgin Atlantic, which reported turnover in 2005 of some £1.6bn. It is also estimated to employ over 11,000 people in the UK. The business aviation sector, which is growing strongly, makes up the lion's share of the overall economic contribution.
8. On this basis, GA represents around 8% of the economic contribution of UK commercial aviation. This needs to be considered in terms of the proper balance of regulatory and government resources between commercial and

¹ Terry Lober, General Aviation Small Aerodrome Research Study, UCL 2006.

general aviation. The overall conclusion is that GA is a sizeable sector that is growing in economic value, and that in some areas it is also important as a facilitator of other business activity.

Current trends in UK GA

9. Although often presented as a sector in decline, this Review has not found evidence of this. Many parts of GA are growing strongly, in particular the business aviation market and the smaller end of the market (such as microlights and helicopters).
10. The performance of other parts of the sector, such as more traditional fixed-wing touring aircraft, is less impressive, but the evidence available shows that the total number of hours flown by GA aircraft in the UK has not fallen in the last decade, and is likely to have increased. The total number of GA aircraft has increased, although hours flown per aircraft has gone down, in part reflecting a move to increasing self-ownership of aircraft.

Links between GA and commercial air transport

11. There are several links between GA and commercial air transport (CAT), in particular the flow of people. Most pilots and many engineers come into CAT from GA, and the training of pilots is an integral part of the GA sector. The Review finds that there is no cross-subsidy from GA to CAT. However, the increased activity levels of CAT have in general increased the difficulties – and, in some cases, the costs – for GA in accessing airspace and airport infrastructure.

Infrastructure

12. Overall, GA is facing some increased difficulty in accessing infrastructure, both airspace and airfields. Increases in controlled airspace can limit the GA sector's freedom to fly where it chooses. Some increase in controlled airspace is inevitable in order to accommodate a greater density of traffic safely within the airspace system, and the economic value of CAT and the associated public benefit make it desirable that CAT operations be facilitated. However, all stakeholders should strive for an outcome that allows all users to enjoy the maximum use of airspace consistent with safe operation. In this respect, the Ministry of Defence, the UK's other major airspace user, and air navigation service provider, also has a significant role. Like GA, MOD aircraft operate mainly in uncontrolled airspace, often autonomously, and GA is a major customer for MOD air traffic control services.
13. At some airports the growth of CAT has reduced GA's access to both slots and parking facilities. At these airports GA has often been squeezed out through increases in the prices charged for landing, parking and handling. GA aircraft can generally still make use of these airports, but it is more expensive than in the past, and many airports may now find it less economically worthwhile for them to accommodate GA operations.
14. The operation of the planning regime also affects GA's access to airfields, as decisions can lead to closures of airfields, or conditions being imposed on their operation. This is a difficult issue, where a balance needs to be maintained between local and national interests. However the Review indicates that the value of maintaining a national network of airfields needs to be more fully considered in the context of planning decisions.

The environment

15. The environment, and in particular aircraft noise and emissions, is becoming an increasingly important issue, with evidence that public opinion towards aviation is worsening. This affects GA as well as CAT and the importance of the issue needs to be recognised and appropriate action taken.

Regulation and taxation

16. The responsibility for the regulation of GA is moving more and more to the EU. This should in theory begin to reduce the cost of certificating new technology and new aircraft, and may in time help to bring about more of a level playing field for the regulation of European aviation as a whole. However, it can also create difficulties where new EU regulations differ from those previously in place. It is incumbent on the CAA, Government and the GA sector to seek to ensure that new regulations are both beneficial and proportionate to risk.
17. The VAT treatment for UK flight training is tougher than that of some other countries, and this can, among other factors, affect the ability of UK-based flying schools to compete effectively with schools abroad.
18. Overall costs to GA (non-regulatory as well as regulatory) are perceived to have increased, and the increasing prevalence of foreign-registered aircraft permanently based in the UK suggests that some form of “regulatory shopping” is going on.
19. There are also increasing pressures for GA operations to comply with new security requirements primarily aimed at CAT, and this is an area where it may be hard to find the right balance between achieving regulatory objectives and the burdens this places on GA.

Labour market issues

20. Looking to the future, the supply of labour to the aviation sector could become tighter; there is some evidence that UK GA is not producing the numbers of pilots that it was, and perhaps even more importantly, there are fewer new engineers coming into the industry. Currently airlines are able to recruit the people they need from a combination of the GA sector, the military and other countries. Whilst aviation labour markets have traditionally experienced cyclical trends that affect the availability of key staff, it may be that the predicted increase in demand from growing economies such as India and China represents something of a structural shift, and that this could lead to there being fewer pilots and engineers available for UK airlines in the future. Any gap could be plugged through the reintroduction of airline cadet courses, but there may be some time lag. It is likely that the UK GA sector will need to play a part in ensuring sufficiency of future labour supply.

Consultation and dialogue

21. A more effective dialogue between CAA, Government and GA would help to improve policy and regulation affecting the sector. All sides should aim to raise their game. To achieve its objectives the GA sector needs to organise and present itself better. It can at times undermine its own case, and it needs to take some responsibility for putting its case effectively, recognising that it is operating

in a world of competing interests. Similarly, the CAA and Government should ensure that they make every effort to consult fully when developing regulation and policy in relation to GA.

SUMMARY OF RECOMMENDATIONS

- It is recommended that Government and CAA take note of the overall economic and social value of GA and consider whether there are areas where national policy guidelines or objectives may be needed in relation to GA and its future, including:
 - i) Government to consider making a policy statement on the value of maintaining a viable network of GA airfields, to be considered by those involved in planning decisions in the future
 - ii) Government to revise the CAA's statutory objectives at section 4 of the Civil Aviation Act at the next opportunity to remove any suggestion of bias toward commercial air transport over GA
- There is a need for a more effective dialogue between GA and CAA and Government – with all parties needing to work to improve this. Steps to be taken include:
 - i) establishing people as “GA focal points” within CAA and Government
 - ii) setting up a quarterly forum – perhaps by elevating the CAA's current General Aviation Consultative Committee to a more strategic body and setting the agenda at the right level
- GA needs to co-ordinate and present itself better in order to put its case more effectively. Its ability to lobby would be improved if it could coalesce around a smaller number of groups for interface with Government and regulator. The structure of European GA (where Europe Air Sports, the International Aircraft Owners and Pilots Association and the European Council of General Aviation Support are the three active representative bodies) may offer a model that could sharpen the focus and enhance the effectiveness of GA's contribution
- CAA, Government and GA to work better together to influence legislative changes emanating from the EU with the aim of maintaining a fair balance for all aviation interests. A current example is a need to ensure that the requirements for private pilots to gain an instrument rating are relevant and proportionate
- GA-related policy at all levels to be developed in accordance with the Better Regulation Task Force's five principles of good regulation
- Government to consider whether the current VAT treatment applied to flight training places UK flying schools at a competitive disadvantage to those based in other countries and imposes too great a burden on the self-sponsored trainee
- Skilled labour for the UK aviation sector (pilots and, particularly, engineers) may be in shorter supply in the future as global demand increases and traditional sources prove less fruitful – this should be factored into future planning by industry, Government and the CAA
- Responses to the increased public sensitivity to environmental issues to include:

- i) GA redoubling efforts to be considerate neighbours
 - ii) CAA issuing all new pilots with guidance about noise
 - iii) A joint CAA-industry working group to be set up to review whether there are regulatory barriers preventing technological solutions to the environmental impacts of GA, such as noise and emissions
- Notwithstanding the development of any national statement on the value of a network of GA airfields, it is recommended that the GA community develop balanced and informative documentation to describe the particular facets of GA operations, for use in planning and safeguarding decisions. Where an issue has specific safety aspects it may be appropriate for the CAA to publish material
 - There is a need for increased awareness of GA by air traffic controllers and continued GA pilot education and awareness in relation to the risks of infringing controlled airspace – GA and all air navigation service providers should work together to achieve this
 - Government to consider setting up a committee to examine the GA-specific elements of aviation security requirements
 - Government to re-visit the 2003 Report of the Inter-Departmental Working Group on the Training of Aircraft Maintenance Engineers² in the light of the findings of this Review and consider possible further action
 - CAA to publicise to training course providers that academic courses at the right level can provide exemptions to Part-66 examinations towards Aircraft Maintenance Engineer Training
 - CAA to set up a working group, with GA representation, to look at options for improving the data that is available in relation to GA activity

² http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_026256.pdf.

OVERVIEW OF THE STRATEGIC REVIEW

Introduction

- 1 The General Aviation (GA) sector covers a very wide range of activities. It includes flying for the purposes of recreation, personal transport, and business. The types of operation are also very different. At one end of the spectrum are balloons, gliders, hang gliders, microlights, gyrocopters and small helicopters, all of which will tend to operate from relatively small sites that may not even be readily recognisable as airfields. At the other end of the spectrum are corporate jets, which may include variants of airliners. In between are thousands of aircraft of all shapes and sizes from amateur-built to mass-produced touring aircraft to ex-military fast jets.
- 2 This is a remarkably diverse sector. However, despite this, there are many common concerns. These include the way in which GA is affected by wider developments that affect the aviation infrastructure that GA uses, many of which are commercially driven, others of which may stem from regulatory decisions.
- 3 The question of how GA is perceived by the general public, and by Government (national and regional) is another area of shared interest across the spectrum of GA, as is the impact of regulation and taxation.
- 4 The CAA, as regulator, has a primary duty to ensure that safety standards relating to aircraft and air navigation are maintained or enhanced. But, as the specialist aviation body in the UK, it also has an interest in the wider, strategic and policy issues that affect the aviation sector as a whole, and, of relevance to this Review, how such issues may affect GA in particular. The pace of change for the GA sector has increased in recent years, as the growth of commercial air transport at regional airports has accelerated, and as regulatory changes in the UK and in Europe have gathered momentum.
- 5 Against this backdrop, the CAA instituted the Strategic Review of General Aviation to provide an assessment of the current strategic and policy issues facing GA, its economic role and overall trends in the sector.¹
- 6 In parallel, the CAA instituted a Regulatory Review of General Aviation. This exercise comprised a comprehensive review of its regulatory approach to the GA sector. This has culminated in the completion of a separate but related report. Although the focus of each Review differed, there are inevitably some areas of overlap. The Chairmen of each Review kept in close contact throughout the process, and there was some common membership (drawn from GA and the CAA) across the two teams to ensure consistency.

Structure of the report

- 7 This report is structured along the lines of the issues that were identified as being of most relevance to the GA sector in the UK. These include:
 - analysis of the main trends in GA activity;
 - the economic and social benefits that GA brings to the UK;

¹ The appendices to this report include the letter from the CAA Chairman announcing the Review, the terms of reference and membership of the Review Team, and a list of the workstreams that contributed to the final report.

- the infrastructure that GA uses – i.e. airfields and airspace;
- the impact of regulation and taxation, including foreign-registered aircraft, taxation and security initiatives;
- the growing influence of the EU;
- the way that GA interacts with government and regulators and how the representative bodies of GA operate
- the labour supply position;
- the impact of innovation and new technology; and,
- some international comparisons.

The scope of the Strategic Review

- 8 The term “General Aviation” does not mean the same thing throughout the world, or even within countries. Many consider it to mean all aviation activity except that performed by major airlines and the military. Some find it helpful to recognise that all operations below a particular maximum weight threshold (say 5700kg for aeroplanes) share much in common, irrespective of the purpose of the flight.
- 9 In scoping the Strategic Review, it was agreed that there would be little merit in attempting to create a definitive interpretation of what is and what is not GA. The Review considered definitions used in ICAO documentation, and those being proposed by EASA for inclusion in Article 3 of Regulation (EC) 1592/2002 ('the Basic Regulation'). Not wishing to rule any particular sector totally out of bounds, a fairly inclusive view regarding its possible remit was adopted. So, for the purpose of scoping the Strategic Review:
- “General Aviation is considered to mean a civil aircraft operation other than a commercial air transport flight operating to a schedule.”
- 10 It was considered sensible to depart from the ICAO definition² to some extent by including aerial work operations and certain minor commercial air transport operations within scope, because of the interrelationship of such operations with the GA sector.
- 11 As regards the activities of the armed services, military aircraft³ have not been considered, since the majority of these are military registered and operated directly by the armed services or through civil contractors. They are not within the remit of the CAA or the Department for Transport. However, a number of aircraft, which are civil registered, are operated by civil contractors on behalf of the military. The activities these aircraft undertake are focused upon primary flying training, including training of civil pilots, and therefore subject to the normal requirements and legislation for similar civil operations. There was, in addition, some consideration of the various services that are needed in support of GA flying activities, and these were thought to be adequately included within the adopted definition.

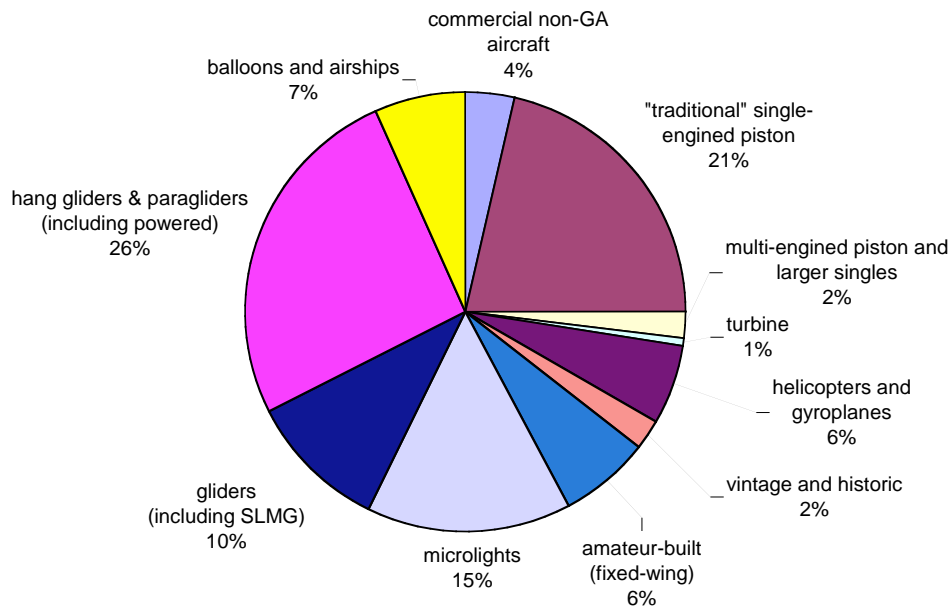
² The ICAO definitions necessarily reflect the fact that there are no international standards for aerial work operations.

³ “Military aircraft” is as defined in Article 155 of the Air Navigation Order 2005.

The GA sector in the UK

- 12 The adopted definition of GA covers a broad span, including private transport, commercial and recreational activities. For the purposes of the Strategic Review, some attempt has been made to divide the sector further into several segments. There is no easy way to segment GA, and there is often significant overlap, but some attempt to distinguish different areas seems helpful.
- 13 UK civil aviation legislation currently distinguishes between private flying, aerial work and public transport. Aircraft with a certificate of airworthiness (CofA) can generally be used for any of these purposes. Provision is also made for a Permit to Fly that allows aircraft that are unable to satisfy the requirements for a CofA to be flown privately, subject to additional conditions – for example, prohibitions on flying at night, in cloud, or over populated areas. Pilots may be licensed for private flying only, or for commercial flying with private privileges included.
- 14 Recreational flying is where people fly for fun. This happens in a very wide range of aircraft, from modern to historic and vintage, and from hang gliders to relatively sophisticated touring aircraft. It includes those who own their own aircraft, or participate in group aircraft ownership, as well as those who are members of a flying club, and even those who build their own aircraft. Recreational flying may involve simply flying circuits around an airfield, touring, visiting other countries, sports such as aerobatics, and many other variations.
- 15 GA aircraft are often also used as a form of personal transport, as distinct from any recreational element. In other words, GA aircraft can be a means to get from A to B, like a private car. This may of course be for business or personal purposes.
- 16 GA flying where payment is involved is categorised either as aerial work (for example, crop spraying or pipeline inspection) or public transport (for example, carrying passengers that have chartered an aircraft from an air-taxi operator). These differences have implications for operational regulation and oversight, and for flight crew licensing and airworthiness.
- 17 Figure 1 shows how the estimated 27,000 civil aircraft in the UK⁴ (excluding foreign-registered aircraft) are made up, including the full spectrum of certificated, self-regulated and unregulated aircraft that comprise GA in UK. Also included are airliners and other commercial aircraft which fall outside the definition of GA adopted for the Review. The general picture is that the total UK fleet is dominated by GA aircraft in terms of numbers of aircraft. Airliners make up only 4% of the total, but they are of course very significant in financial terms.

⁴ This is based on the UK register and will therefore include some inactive aircraft.

Figure 1 Make-up of UK GA, 2005

Notes: Data for hang gliders and powergliders is estimated as at 2004.

All data includes temporarily inactive aircraft.

Vintage and historic aircraft have been segregated by type but are broadly defined as aircraft built during or prior to the Second World War.

Source: CAA and relevant associations for each sector.

High-level trends in the GA sector

18 The GA sector is very diverse, and any overarching description of trends in the sector is likely to be simplistic. This high-level summary of some developments in the different segments of GA draws from CAA data, and from the work of Terry Lober, who carried out extensive research on the economic impact of the GA sector.

GA aircraft

19 In 2005 the GA sector accounted for about 9,000 fixed-wing aircraft (excluding microlights), 4,100 microlights, 1,300 helicopters and 1,800 airships/balloons on the UK register of civil aircraft. In addition, there were around 2,500 gliders, and an estimated 7,000 hang gliders and paragliders including powered versions.⁵ The total has been increasing steadily, but the number of microlights and helicopters, for example, has recently grown strongly.

20 In recent years there has been a rise in the number of foreign-registered GA aircraft based in the UK, the majority falling in the fixed-wing category. Estimates of their numbers vary, but are thought to be in the region of 900 in 2005⁶.

⁵ CAA data from G-INFO database; glider data from BGA; hang glider and paraglider estimates from BHPA.

⁶ Chapter 4 looks at the issue of foreign-registered aircraft and contains more detail.

- 21 The average age of GA aircraft has been steadily increasing. Single and multi-engined piston aircraft have an average age of 19–20 years. GA turbine aircraft are comparatively younger, with an average age of 10 years.⁷

Movements

- 22 It is extremely difficult to provide an accurate overall picture of GA movements. The CAA reports movements at about 60 airfields, and differentiates between GA and commercial air transport (CAT) movements at these airfields. It has also recently started to collect data at a few of the smaller GA airfields. However, there is no comprehensive database of GA movements at other airfields.
- 23 Given the increase in CAT movements, and the impact that this has had on GA operations at the larger commercial airports, there has inevitably been a slight reduction in GA movements at the airports that are captured in CAA data. But simply to infer the health of the GA sector from this partial picture would be incorrect. We cannot be sure what the true picture is for total GA movements. However, the hours data would suggest that, overall, GA activity is holding up, and what limited evidence is available for those airfields not in the CAA data would indicate that movements from these perhaps make up some three-quarters of all UK GA movements⁸.

Pilots

- 24 The total number of pilots licensed to fly powered aircraft in the UK is 47,000. Of these 19,000 have professional licences, and 28,000 have private licences of which 3,400 have the more basic national licence.
- 25 Lober conducted a survey of GA pilots.⁹ The survey data is somewhat inconsistent, reflecting the problems in conducting the survey, and as a whole it is unlikely to be representative of all GA pilots (with microlight pilots for example being underrepresented and only powered-aircraft pilots included). Nonetheless, it offers some useful insights, suggesting that:
- pilots fly on average 45 to 55 hours a year, on 70 flights, with the average flight lasting an hour;
 - 14% of all flights and 37% of overseas flights were work-related;
 - half of all reported flights took off and landed at the same airport, and only 9% led to a night or more away; and,
 - on a third of trips the pilot was the sole occupant, whilst half carried just one passenger.

Flying costs

- 26 The total costs of flying a GA aircraft are made up of a number of factors, ranging from the capital cost of purchasing an aircraft and the fuel costs of running it, through to the costs of parking it or renting hangar space, where needed.
- 27 Flying costs vary widely across the different types of aircraft used within the GA sector. A serviceable second-hand paraglider can cost £1,000. Microlights can cost between £2,000 and £65,000, whereas large corporate aircraft can cost tens of millions of pounds. Similarly fuel costs vary widely, with small microlights costing as little as £10 an hour to fly, and large corporate aircraft up to £3,000 an hour.

⁷ Terry Lober, General Aviation Small Aerodrome Research Study, UCL 2006.

⁸ *ibid.*

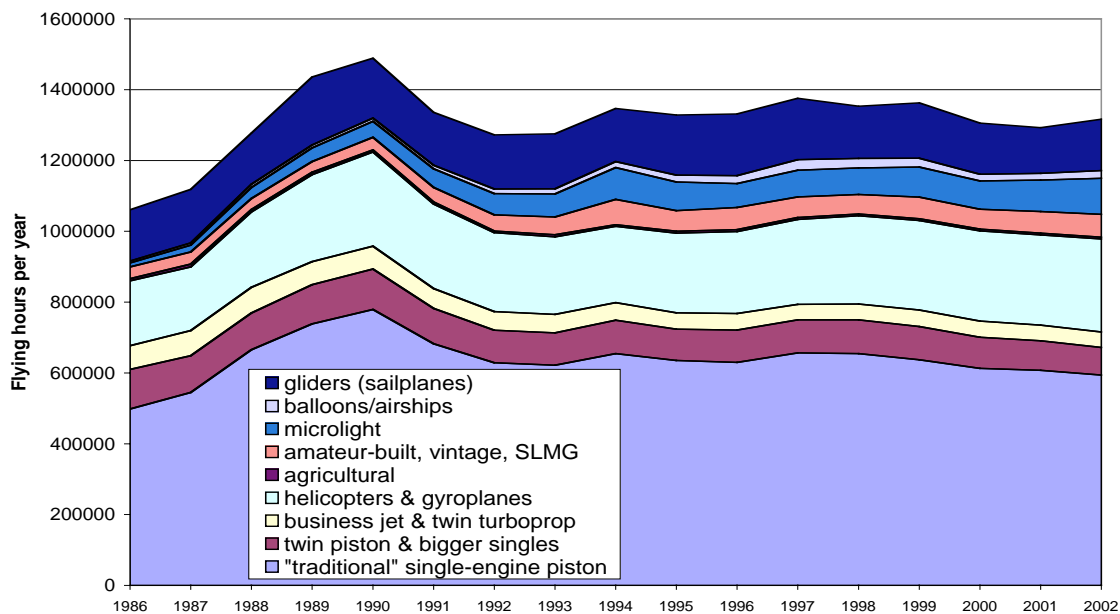
⁹ *ibid.*

- 28 Fuel forms a significant part of the overall cost of flying, and it is unclear what impact the recent increases in fuel prices have had. However they may have served to reduce the amount of flying. If so, this could be expected to show through over the next few years.
- 29 The cost of hiring a small single-engined piston aircraft provides a useful yardstick for the costs of “traditional” GA flying. Lober’s work suggests that hiring costs have increased very slightly over the last 20 years, rising in real terms from £103 an hour in 1984 (in 2005 prices) to £110 an hour in 2005.

Hours flown

- 30 The total number of hours flown by GA aircraft (excluding hang gliders, paragliders and parachuting) rose during the second half of the 1980s from an estimated 1m in 1986 to a peak of nearly 1.5m in 1990. Since then, flying hours have remained relatively steady in the 1.25–1.35m range (Figure 2).¹⁰ The total figure is dominated by the “traditional” single-engined piston aircraft, where hours have declined slightly from a peak in 1990, and remain at around the 0.6m mark (2002 figures). There has been a steady increase in amateur-built, microlight, balloon and helicopter flying, although individually these remain a relatively small proportion. These figures exclude foreign-registered aircraft permanently based in the UK, which are estimated to have been around 900 in 2005. Were these to be added to the UK-registered aircraft, it would increase the total of active GA aircraft in the UK by around 8%. Total flying hours would also rise, and, given the recent increase in the numbers of foreign-registered aircraft in the UK, it is likely that their inclusion would give a picture of overall growth in flying hours over the last few years.

Figure 2 Total GA flying hours by segment 1986–2002



Source: CAA, BGA

Notes: excludes hang gliders, paragliders, parachuting.

- 31 The combination of increasing aircraft numbers but unchanged total flying hours means that the estimated average annual flying hours per aircraft has gradually

¹⁰ CAA data from the G-INFO database, BGA.

fallen, from 157 in 1984 to 103 in 2002.¹¹ It is unclear whether the decline is a matter for concern. Lober suggests that declining usage damages the profitability of the sector. However, without more data on profit margins there is no way to tell whether lower utilisation is having a particularly damaging effect. The increasing age of the GA fleet suggests that their capital value may have depreciated, and in itself lower utilisation may not mean that a business is less sustainable if that coincides with a fall in the capital value of aircraft.

- 32 Two-thirds of GA aircraft are privately owned, but business use accounts for two-thirds of hours flown¹² and contributes disproportionately to the overall economic contribution of the GA sector, as is explored in Chapter 2. Business use includes flying training activity.

The history of UK policy relating to GA

- 33 GA in the UK is influenced by a range of policy decisions emanating from many branches of government, including local government, and from the CAA as regulator. The diversity of the GA sector means that there is no single or simple interaction with government or regulator.
- 34 The Regulatory Review provides significant detail on the history of changes in the regulation of GA and the way it varies according to the type of operation. It shows a pattern of increasing regulation of the safety aspects of GA operations, but also a trend towards ensuring that this regulation is carried out by those best placed to do it, with some sectors having devolved or self-regulation.
- 35 Government involvement in GA has primarily been in relation to decisions on aviation regulation, with arguably the most significant development being the setting up of the CAA. Beyond regulatory issues, which are principally devolved to the CAA, central Government has generally adopted a hands-off policy towards GA.
- 36 For example, on planning policy, the Government has neither put in place a regime that guarantees protection of airfields, nor done anything actively to discourage change of use. Local government also impacts on airfields through its role in planning policy. As later chapters show, planning is an important issue in relation to GA airfields.
- 37 Government decisions have, however, influenced the general climate in which GA operates. Areas as diverse as VAT policy decisions, fuel taxation and the removal of NVQ-related tax benefits for pilot and engineer training all affect GA. Generally, these decisions are made as a consequence of other considerations rather than with the intention of affecting GA.
- 38 Public policy has combined with commercial decisions to create some constraints on where GA aircraft can operate, and how. But beyond that there would appear to have been no active policy to encourage or discourage GA. It has largely been allowed to develop as it has chosen. This applies across the different types of GA, although they face differing levels of regulation and constraints on their operation.
- 39 Both the CAA and Government are more active in their approach to commercial aviation, which faces more stringent regulation, and is subject to many more areas of public policy concern, such as international bilateral agreements and the provision of

¹¹ CAA data.

¹² Terry Lober, General Aviation Small Aerodrome Research Study, UCL 2006.

airport infrastructure in the South East. In the past, the level of Government and CAA intervention in the commercial airline sector was far greater than it is today, with control of fares, traffic distribution rules, and other more interventionist policies far more to the fore. As markets have developed and competition increased, so the level of intervention has reduced.

- 40 However, the overall philosophy of UK policy towards commercial aviation is now similar to that towards GA; it attempts to leave it to the market to determine the overall level of demand and supply. The Government, with CAA as its advisor, is still involved in international air services negotiations, which aim to secure access to certain markets for commercial airlines, although this is increasingly moving to EU competence.
- 41 Where certain GA-specific issues arise internationally, for example fractional ownership¹³, governments tend to act in concert to reach a solution. In relation to this particular issue, the UK led the work at the European Civil Aviation Conference (ECAC). As policy and regulation moves more to the EU, so the importance of effective partnerships between Government, regulator and industry increases.
- 42 There remains a greater difference in policy approach between the GA and CAT sectors in relation to major airports. The issues relating to large and crowded airports are complex, and hence Government has a much more active role in policy relating to major airport infrastructure than for the smaller airports that GA aircraft tend to use.

Charges on GA

- 43 The CAA influences the costs faced by GA in various ways. The level of regulation is one example. Another is the means by which the CAA recovers its own operating costs from the various elements of the aviation sector, which in some other countries is a cost that is met from the public purse.
- 44 The CAA also regulates the air navigation charges levied by NATS for en-route services and the landing charges at the four designated airports. These charges only affect a very small proportion of GA.

Summary of the report's findings

- 45 This report attempts to paint an overall picture of where GA in the UK stands today. At the outset of the Review, there were suggestions that the sector was in serious decline. However, analysis of the available data seems to point to a different conclusion.
- 46 Whilst there are different trends within GA (as is set out in more detail in Chapter 1), the composite picture is one where GA appears to be roughly in steady-state, or perhaps experiencing slight growth.
- 47 Growth is strongest at the two extremes of the GA spectrum, with corporate and business aviation enjoying something of a boom, and the use of helicopters and microlights, for example, also growing swiftly. The bulk of GA activity is in the use of traditional, fixed-wing touring aircraft and here there is little or no growth.

¹³ See Chapter 4 for a fuller discussion of fractional ownership.

- 48 It became apparent to the Review Team, as it attempted to get to grips with the true picture in relation to GA trends, that there was a paucity of readily-available data to assist analysis. Certainly, the CAA data in relation to GA activity falls well short of what is available in relation to airlines and airports. The existence of Terry Lober's General Aviation Small Aerodrome Research Study therefore proved invaluable in providing a source for much of the data that is drawn upon in this Review. Whether the CAA should do more to enable systematic assessment of GA trends in the future is debated, and recommended for further analysis.
- 49 The perception of GA as a purely leisure-oriented activity, of little interest in terms of economic or social value, was a particularly important issue that the Review sought to address. The conclusion is that this is a misperception, that GA contributes an estimated £1.4 billion to the economy directly, as well as facilitating other economic activity and providing social and educational benefits.
- 50 A better understanding of the sector from policy-makers and regulators, the wider aviation community and the general public would perhaps help to improve the quality of future decisions that have an impact on the GA sector in the UK.
- 51 Linked to the issue of how GA is generally perceived is the question of the environmental impacts of GA. Public opinion toward aviation generally has worsened in recent years, with rising concerns over noise and the effect of aircraft emissions. As with all sectors of the industry, GA needs to re-double efforts to minimise its environmental impacts, and to find ways to work effectively with those who may be affected by GA activity, in order to create a stable and sustainable platform for its future development.
- 52 The interaction between GA and CAT (and indeed with the military) also emerged as a recurring theme. GA and CAT do not exist in discrete spheres. The activities of one very frequently has a knock-on effect on the other, whether that be in relation to the availability and cost of infrastructure, constraints on aircraft operations or the transfer of skilled labour between the two sectors. The continuing increase in global demand for airline pilots and engineers could, for example, result in a shortage of labour for UK airlines, and the ability of the UK GA sector to provide or train engineers and pilots may become more important.
- 53 The UK has a healthy and growing commercial air transport industry, which accounts for the vast majority of passengers and expenditure within UK aviation. Total passenger numbers have been rising over the last decade or so at an average annual rate of nearly 6%.¹⁴ However, in terms of numbers of aircraft and pilots, the GA sector outstrips the commercial sector.
- 54 In the UK at least, this growth in passenger numbers has been coupled with very rapid expansion in the number of scheduled services available from regional airports, in particular with the strong growth of the no-frills airline sector in Europe, which has significantly changed the choices available to UK passengers. A more direct effect on GA of this growth has been the implications for aviation infrastructure. More flights have also led to busier (and often, for GA, more expensive) airports and more pressure on airspace.
- 55 How infrastructure providers respond to this increasing demand, and how Governments and industry balance the benefits of growth with the environmental impact related to increased aviation activity will be one of the key challenges over

¹⁴ CAA data.

the coming years. Their success in delivering sustainable additional capacity will undoubtedly affect GA as well as CAT.

- 56 As regional airports become less attractive for GA operators, so the importance of a viable national network of GA airfields increases – not least because GA can offer an alternative means of transport for passengers, particularly business passengers, and can provide connectivity to parts of the country that are not well-served by CAT.
- 57 The way that the planning regime affects the continued availability of GA airfields is important in this regard, and given that planning decisions on airfields are taken locally, and are primarily driven by local considerations, there is a risk that the national benefits related to the validity of the network as a whole could be missed. It is recommended that this be reviewed, with a view to establishing some form of national policy element in relation to planning decisions for local airfields.
- 58 The regulatory and tax environment in which GA operates will also have an impact on how the sector fares in the future, and on how quickly innovative technologies can be adopted and brought to market.
- 59 The tax regime affects the costs faced by organisations and individuals in the GA sector. Where UK GA is in competition for business with their counterparts overseas, the need for a level-playing field becomes particularly important. The tax treatment of self-sponsored pilots, and the consequent ability of UK flying training schools to attract such students, is considered, and a recommendation made that the VAT treatment of flight training be reviewed by Government.
- 60 The main regulatory interaction is in relation to safety, but other factors such as new security regulations may also have a particular bearing on some elements of GA. A detailed analysis of safety regulation is contained in the parallel Regulatory Review, but the general conclusion is that, whilst the overarching aim of the CAA and the GA sector should be to maintain or enhance safety standards, care should be taken that the regulations that are imposed achieve this with minimum burdens on the sector, and that development and review of regulations should be done in accordance with the Better Regulation Task Force's five principles of good regulation.
- 61 As responsibility for rule-making moves away from the UK with the advent of EASA and SES, it will be important to ensure that the same principles and best practices are applied in the development of policy in Europe.
- 62 The challenges facing GA today are unlikely to diminish. Factors such as congestion, capacity constraints, environmental concerns and the difficulties of balancing effective regulation with minimal burdens will remain as key strategic issues for the foreseeable future.
- 63 In order for the GA sector to respond successfully to these challenges, there is a need for it to develop a stronger, more effective, and more coherent voice in major policy debates. There is also a need for far more effective partnerships than have existed in the past. Better relations with the CAA and with Government are essential, but so is an improved dialogue with representatives of commercial aviation, and with the general public. Fostering a better understanding of the role of GA, and gaining recognition of its importance as a part of the overall aviation sector, will be necessary if the challenges of the future are to be met.

1. DESCRIPTION OF GA AND ANALYSIS OF SECTORAL TRENDS

Summary

- 1.1 The Overview described the make-up of the different sectors of GA, and their diversity. This chapter looks at each sector in a little more detail and examines the trends in each case, again largely based on CAA data and the work of Terry Lober. It became clear during the process of analysing these trends that the available data relating to GA was less comprehensive than for airlines and airports.

RECOMMENDATION

CAA to set up a working group, with GA representation, to look at options for improving the data that is available in relation to GA activity

What is GA?

- 1.2 GA encompasses a wide range of activities. The paragraphs below describe these. The simpler forms of GA, where the activity is either unregulated, or where a voluntary representative body either supervises or regulates under devolved responsibilities authorised by the CAA, are described first. The section then describes the more traditional forms of GA flying, from single piston-engined aircraft to more sophisticated types, business aircraft, helicopters and so on.
- 1.3 All these types of flying will overlap to some extent with each other, and in some areas face similar issues, for example in relation to accessing airspace and airfields.

Devolved or self-regulated flying

- 1.4 Some activities which would normally be regarded as recreational flying are regulated by a combination of CAA control and the appropriate representative body for the sport or activity. Where regulatory tasks are carried out by a body other than the CAA this is termed "devolvement". In all cases, however, overall responsibility for safety regulation remains with the CAA and this responsibility has not been delegated.
- 1.5 This devolved segment is a broad one, and covers four large devolved groups, which are essentially balloons and airships, governed by the British Balloon and Airship Club¹, amateur-built aircraft, governed by the Popular Flying Association², microlights, governed by the British Microlight Aircraft Association, and parachuting, governed by the British Parachute Association.

¹ The CAA has more of a supervisory role for ballooning activity involving passenger payment.

² PFA also has oversight of some microlight and vintage/classic aircraft.

Balloons and airships

- 1.6 Airships and balloons are overseen by the British Balloon and Airship Club, a volunteer-based organisation which exists to promote the safety, enjoyment and advancement of lighter-than-air flight in all its forms – hot-air ballooning, gas ballooning and airships. Airships and balloons are operated for both recreational and commercial use. Commercial uses include sightseeing flights, advertising and television filming. There are around 1800 airships and balloons registered in the UK, of which at least half are active³. Little or no fixed infrastructure is required for their operation.

Microlights

- 1.7 The British Microlight Aircraft Association is responsible for regulating microlight aircraft. Microlights are very light aircraft meeting certain criteria, with either a wing that is flexible and can move relative to the main body of the aircraft, or a fixed wing that is rigidly attached to the aircraft's body. There were more than 4,000 microlights on the UK register in 2005. More than 2,500 are thought to be active, operating on a Permit to Fly rather than a Certificate of Airworthiness (CofA).

Amateur-built aircraft

- 1.8 The Popular Flying Association (PFA) regulates aircraft that are amateur built, and which operate on a Permit to Fly rather than a CofA. Amateur-built aircraft are built by individuals, as opposed to commercial manufacturers, under the supervision of the PFA. The total number of amateur-built aircraft on the register is about 2000, of which about half are active. A significant proportion of the remainder will be aircraft still under construction, dormant projects, or aircraft for sale.
- 1.9 The PFA also regulates a significant number of microlight aircraft, and also vintage and classic aircraft, mainly types which do not qualify for an ICAO-compliant CofA because of the demise of the manufacturer or other design authority.

Parachuting

- 1.10 Parachuting is a growing segment of GA. It is essentially a recreational and sporting activity, with the UK achieving excellent results in international competitions. The British Parachute Association was founded in 1962 to organise, govern and further the advancement of sport parachuting within the UK. The Association's aim today is to encourage participation and promote excellence at all levels of skydiving from novice to world class competitor. There are around 35 affiliated parachute clubs throughout the country and a membership of more than 30,000. The aircraft from which the parachutists jump are generally CAA-regulated.

Gliders

- 1.11 Separate to these devolved groups, is private gliding, which includes a significant sporting and competitive element, with UK competitors producing

³ All the figures quoted for active aircraft in this section are for 2002, the most recent year for which reliable CAA data (recorded at the time of the Certificate of Airworthiness or Permit to Fly renewal) is available. However, balloons operating privately do not require a CofA and so data regarding flying hours and activity may understate the true number.

outstanding results at international level. In the UK, gliding has remained unregulated as far as airworthiness and piloting are concerned, in that there have been no legally enforceable requirements. EASA has now imposed airworthiness requirements but piloting remains, for the time being, unregulated, although gliders are required to comply with the Rules of the Air. Within this formally unregulated environment the British Gliding Association has established its own requirements to be observed by its members. It issues its own gliding certificates under the FAI system (Fédération Aéronautique Internationale). It also does most of its own administration and rule making. The level of safety achieved is such that there has been no public or political pressure for formal regulation by the State. There are around 2,500 gliders in the UK.

- 1.12 Gliders are usually launched either by winch or by aerotow by a tug aircraft. Some gliders, known as self-launched motor gliders (SLMGs), have small engines able to lift the glider off the ground under its own power. However, SLMGs operate under essentially the same regulatory regime as other powered aircraft.

Hang gliding and paragliding

- 1.13 The British Hang Gliding and Paragliding Association provides the infrastructure supporting UK hang gliding and paragliding activities (that is, foot-launched gliders). It oversees pilot and instructor training standards, provides technical support such as airworthiness standards and runs coaching courses for pilots. This essentially recreational activity represents a low cost method of access to aviation. There are thought to be around 7,000 hang gliders and paragliders in the UK, including powered versions.

CAA-regulated GA

- 1.14 Other GA activities are regulated by the CAA as described below. The main representative bodies for these activities are the Aircraft Owners and Pilots Association (AOPA), which represents pilots and aircraft owners in national and international fora, and the British Business and General Aviation Association (BBGA), which represents companies trading in the business and GA industry.

Single piston-engined aircraft

- 1.15 The devolved and self-regulated categories above cover a substantial proportion of GA in terms of numbers of aircraft. However, the sort of aircraft that is probably most often associated with "traditional" GA is the mass-produced two or four seat single piston-engined training and touring aircraft. Examples are the Cessna 150, 152, 172 and 182 series, which had their origins in the late 1950s, followed shortly after by the Piper PA28 Cherokee series. A more recent example is the Cirrus series. Greatly modernised, although externally very similar, versions of the 172/182 and PA28 remain in production today, and Cessna and Piper aircraft together still represent 50% of the active aircraft in this category. Most aircraft in this category are simple types with a fixed-pitch propeller and fixed (non-retractable) undercarriage, although there are more sophisticated types with variable-pitch propellers, retractable undercarriage, more powerful engines and better equipment fit. All are required to operate under a CofA.

- 1.16 The mass-produced types in this relatively broad category tend to be associated with GA because of their sheer numbers (around 4600 active in 2002) and also their widespread use by flying schools. Such aircraft are more likely to be found at long-established GA airfields with a hard runway and support facilities, although also used at smaller grass-runway airstrips.
- 1.17 It is more difficult to establish what proportion of this 4600 is used for flying training or as a means of personal transport from A to B, rather than pure recreational flying as a leisure pursuit. Many flying training aircraft used by flying clubs are also hired out to club members in order to maximise their utilisation.

Light twin-engined aircraft

- 1.18 Light twins are perhaps comparable with the upper range of piston singles in terms of sophistication, and while some will be used for recreational flying, it could be expected that many are used for flying training (for example for instrument and commercial pilots licence training), for self-flown business flights and for lighter air-taxi work (see below). There are currently around 420 light twins registered, of which about three-quarters are active.

Flying training

- 1.19 Most flying training is a commercial business, although there are still some member-owned flying clubs that provide approved flying training. As noted above, flying schools tend to have close links to recreational flying as well, often maintaining and renting out aircraft for recreational flying. A significant proportion of trainee pilots move on to gain professional licences and work in commercial aviation.
- 1.20 UK flying schools have seen commercial pressures from competition abroad, with a trend for students to train in countries with better weather or lower costs, such as Spain and the US, both for PPLs and commercial licences. Several UK flying schools have responded by opening their own schools abroad.

Aerial work

- 1.21 There is a range of other commercial operations of light GA aircraft that are classed as aerial work. Although the dividing line between aerial work and public transport can be complex, in its simplest terms, this involves activities such as surveying and crop spraying that do not involve the carriage of passengers. Although not a large part of the GA sector, it is an important component of the light commercial segment.

Personal transport

- 1.22 Many GA aircraft are used for the purpose of personal transport for business and private purposes. This is a distinct segment of GA which uses different types of aircraft and faces different issues from the recreational segment. The primary purpose of this segment is travel as opposed to recreation. The aircraft are generally flown by their owners or a senior executive of a company. The aircraft used range from high-performance complex single-engine aircraft, through twin-engine piston aircraft to turbine-powered aircraft. This is also one of the segments at which the expected introduction of very light jets (VLJ) is aimed. Increased trade within the EU has reportedly significantly increased the demand for this segment of GA.

- 1.23 Many operators of such aircraft have opted to place their aircraft on the US register and operate under FAA rules. The reasons for this shift to foreign-registered aircraft are explored further in Chapter 4, but it does mean that there is a strong risk of underestimating the amount of activity in this sector when using aircraft data that is based solely on the UK register.

Historic and vintage aircraft

- 1.24 There is a strong vintage movement in the UK, operating factory-produced historic or classic aircraft from the full spectrum of aviation history, military and civil, propeller and jet. There are at least 500 historic aircraft on the UK register⁴, of which around two-thirds are active. However, this does depend very much on how “historic” is defined, and the figure could be regarded as much higher than that if a looser definition were adopted.

Light air-taxi and corporate charters

- 1.25 Air-taxi operations typically involve the carriage of a few passengers or light goods for hire or reward, i.e. commercially and usually on a whole-aircraft basis. Fixed-wing operators generally use twin-engined piston aircraft seating between 6 and 10 passengers. There is also a substantial segment offering larger aircraft, typically business jets, for corporate charter work.
- 1.26 The crucial distinguishing feature of all these flights is that they operate on an on-demand, charter basis, flying between points specified by the customer, including those where no scheduled service is available. The charter market will often involve the use of brokers to match the right aircraft and their availability and price with the needs of the customer. Carriage of VIPs would be a typical operation, providing comfort, discretion, security and privacy.

Business and corporate aviation

- 1.27 This segment uses a range of more sophisticated aircraft, typically twin-engined propeller aircraft, business jets or helicopters, owned by companies for the purpose of flying employees or clients in the course of their business. This could be over relatively short sectors or internationally.

Helicopters and gyroplanes

- 1.28 There are in total about 1,300 helicopters on the UK register of which around 1,100 are estimated to be active. There is significant use of helicopters for commercial purposes, for aerial work, public transport and corporate transport. As well as transporting people from A to B their versatility may involve their use in moving equipment, police or aeromedical work, television filming, sightseeing, and so on. About 60 are large helicopters (e.g. Sikorsky S-61, Super Puma) of 18 seats or more. These are used mainly as transport to and from oil and gas rigs, as are many smaller helicopters.
- 1.29 Over the last few years there has been an increasing move towards the recreational use of helicopters. This has been facilitated by the development of new light piston-engined two to four seat helicopters such as the Robinson R22/R44, bringing helicopters within a more affordable price bracket. The ability to operate from private helipads can make them a convenient

⁴ For the purpose of this Review “historic” has been broadly defined as pre-war. Many other post-war GA aircraft could be considered historic; for example in 2002 there were around 60 ex-military UK-registered jets active.

alternative means of personal transport where surface options involve poor or congested roads. On the UK register there are also around 70 helicopters classified as amateur-built and 200 gyroplanes, all operating under a Permit to Fly, although only around 120 of these were active in 2002.

Air displays

- 1.30 Air displays are claimed to be the second most popular spectator activity in the UK after football with 6.5m people reportedly attending displays in 2002. The exhibits include UK and foreign military aircraft and a wide range of GA aircraft. There is a growing number of World War II aircraft, whose restoration and operation has been made possible by use at air displays. These aircraft are generally operated under Permits to Fly, issued by the CAA.

Trends within GA

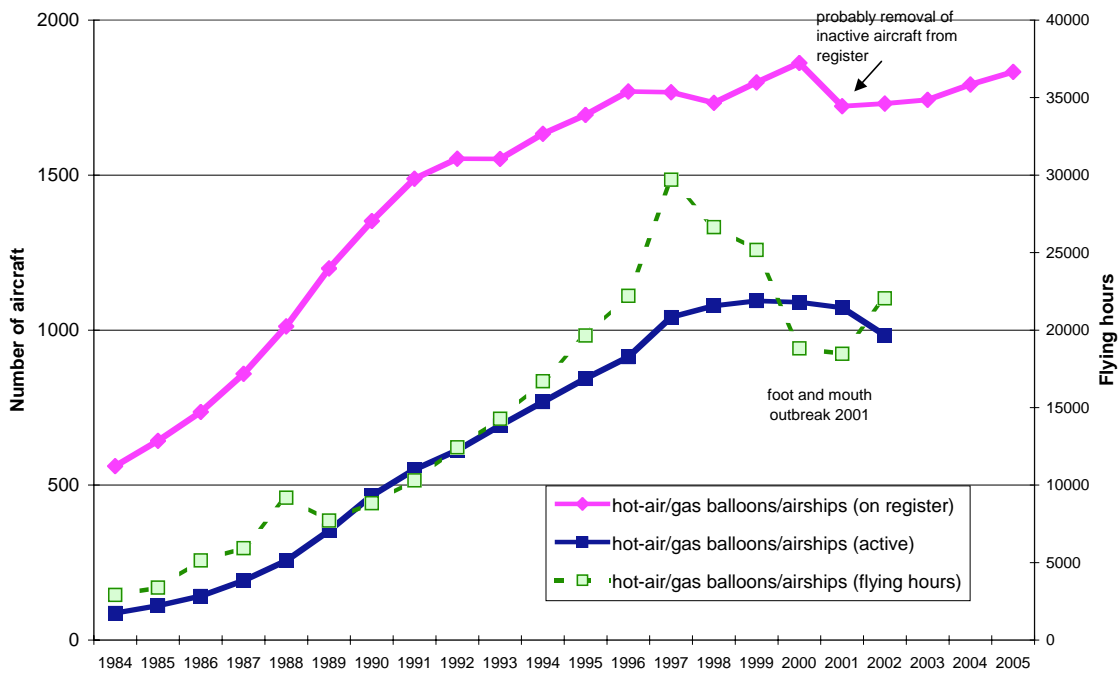
- 1.31 The following commentary and charts⁵ are derived from information taken from the UK register of civil aircraft spanning the period from 1984. They do not therefore cover aircraft that are not required to be registered, and therefore generally exclude most hang gliders, paragliders and gliders, although some glider (sailplane) data has been included. The register data is a reliable source for showing the number and type of aircraft that were on the UK register at any given time. However, a proportion of aircraft on the register are inactive. They may be in the process of being built, temporarily withdrawn from use and in storage, undergoing rebuild or maintenance, awaiting sale and so on. Therefore a more desirable data source for the purpose of detecting any trends is the number of aircraft actually active.
- 1.32 The number of aircraft that are active can be established from the flying hours recorded against each aircraft at the time of CofA or Permit to Fly renewal. (The figure recorded is hours flown as at 31 December of the previous year, in order to allow a consistent data set across the register.) This will also reveal the number of hours flown per year, and in turn an average number of hours per type of aircraft or segment of GA. However, any figures derived from the flying hours data can only be regarded as an estimate, and in the case of active aircraft should be regarded as a maximum. This is because CofA renewal takes place every three years, and different methods have been used to allocate the number of flying hours to the aircraft for each year. Also, if an aircraft is inactive for one of the three years between renewals, it may not be recorded as such (i.e. for the purposes of recording hours on the register, hours from the active years may be attributed to the inactive year).
- 1.33 By splitting off aircraft outside the scope of this Review and dividing the remaining aircraft on the UK register into GA segments, it is possible to discern some trends in terms of the number of active aircraft and flying hours. For the reasons given above, this data has to be treated with some caution. There are two further variables that are not accounted for. In some cases it is difficult to distinguish between different segments purely based on aircraft type, and some interpretation or judgement is required. Also, as noted above, foreign-registered aircraft are not shown, which could disguise the true trend, particularly in respect of business aircraft, for example.

⁵ All charts are based on CAA data except that for gliders, which is based on BGA data, and that for foreign-registered aircraft based in the UK, which is based on Air Britain data.

Balloons and airships

1.34 There was a rapid increase in the number of balloons and airships on the UK register from just over 500 in 1984 to 1,500 by 1992, and steadier growth through the 1990s with around 1,800 registered in 2005. The number for which flying hours have been reported is considerably less, about half, but the available data on flying hours and activity may understate the number of active aircraft. There was a severe impact on ballooning from the outbreak of foot-and-mouth disease in the UK in 2001, due to the inability of balloons to access farmland for take off or landing.

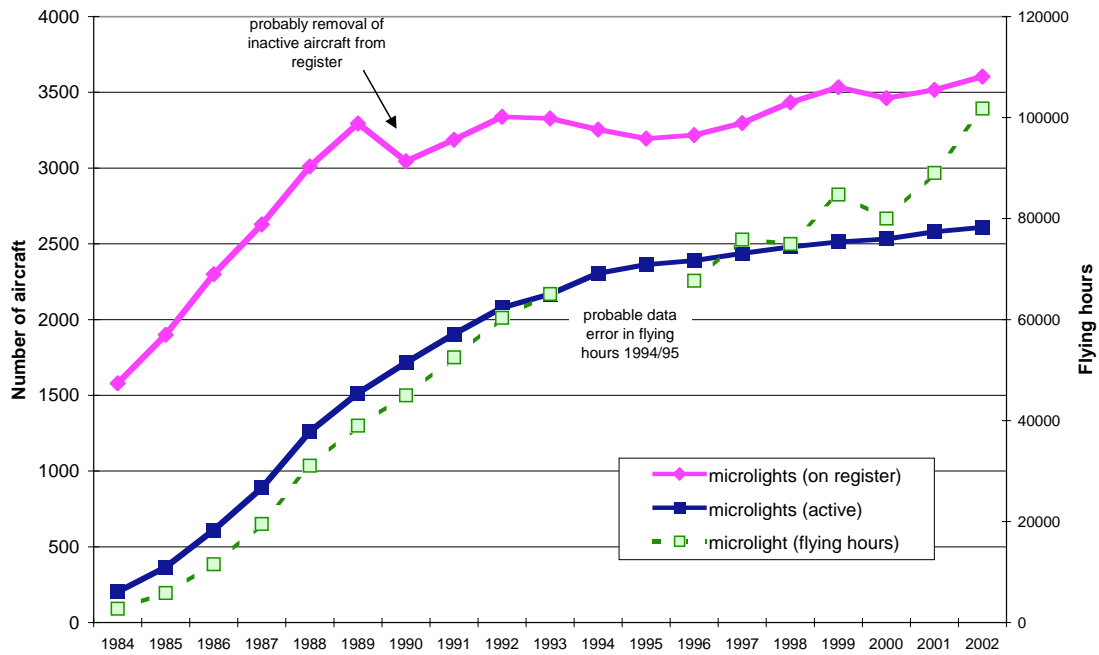
Figure 1.1 Registered and active balloons and airships 1984–2005



Microlights

1.35 There has been very strong growth in the use of microlights, the number registered increasing rapidly from 1,600 in 1984 to 4,100 in 2005, but nearly 1,500 of those have no Permit to Fly. The strong growth in microlights reflects changing consumer preferences. Some recreational flyers have moved away from traditional light aircraft towards microlights, and the cheaper microlights have allowed more people to fly. This increase has been driven both by the relative affordability of microlights compared with conventional light fixed-wing aircraft, and also the increased flexibility of microlights, in that they can take advantage of smaller airstrips or farm strips and may be more easily stored or hangared when not flying.

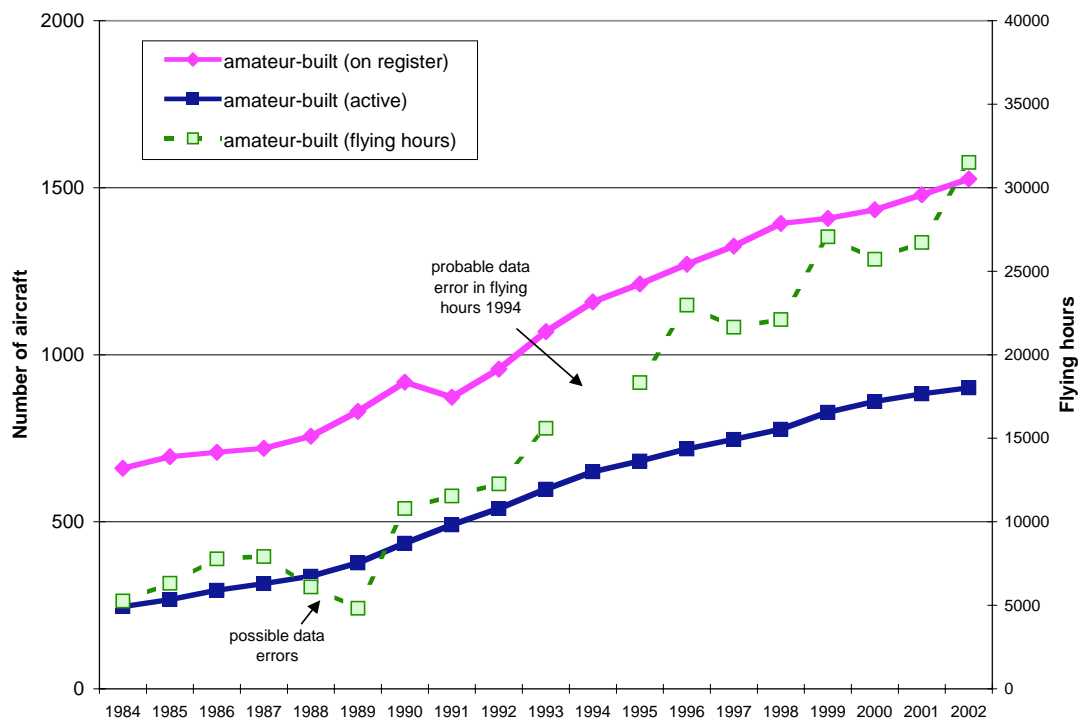
Figure 1.2 Registered and active microlights 1984–2002



Amateur-built aircraft

1.36 This segment has seen steady growth, resulting in a big increase in numbers from 650 in 1984 to 1750 in 2005, and while the rate of growth has fallen off in recent years, flying hours appear to be growing more quickly.

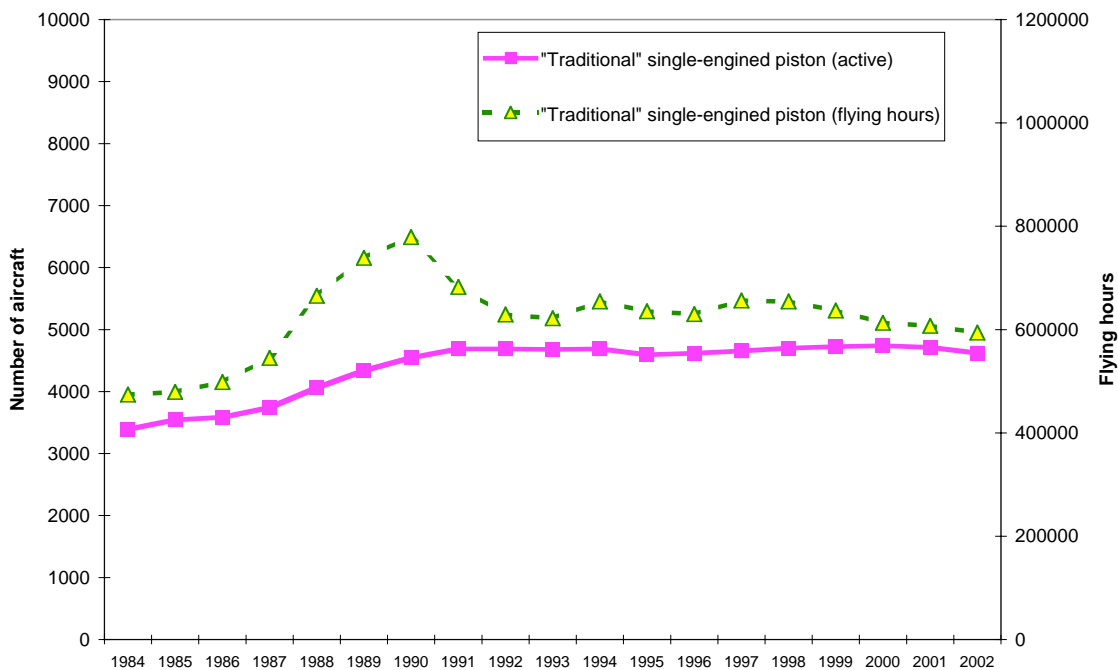
Figure 1.3 Registered and active amateur-built aircraft 1984–2002



“Traditional” single piston-engined aircraft

1.37 Flying in this category, which was described above⁶, will include recreational flying, personal transport, and flying training, and grew steadily through the 1980s. After a strong rise in the late 1980s (and a particularly strong rise in flying hours 1987–1990), this sector has been broadly static in terms of active aircraft and the numbers of hours flown, although it still easily outnumbers all other categories. Any slight decline in the number of hours flown over the last few years is likely to be offset to some extent by the increasing numbers of UK based foreign-registered aircraft.

Figure 1.4 Active “traditional” fixed-wing single piston-engined aircraft 1984–2002



Flying training

1.38 Flying schools operate a significant proportion of total UK GA activity, in terms of both hours and aircraft movements. This training is for both private pilots who want to fly recreationally once licensed, and pilots training to pursue a career in aviation. Although the aircraft used by flying schools are of similar types to those used for recreational flying, this segment of GA is very different. It functions as a business, and its activity will reflect the demand for its services, and the cost of provision.

1.39 It is hard to establish precise facts about flying training but the perception seems to be that flying schools are under pressure from increased competition from flying schools in other countries, rising costs (including VAT), and the complications afforded by the weather and congested airspace

⁶ This category is very broad and will cover everything from a Piper Cub or aerobatic aircraft (other than amateur-built) to a Piper PA32 or Cessna 206. However, it does not include aircraft defined here as vintage and historic, although that divide is admittedly informal and somewhat subjective.

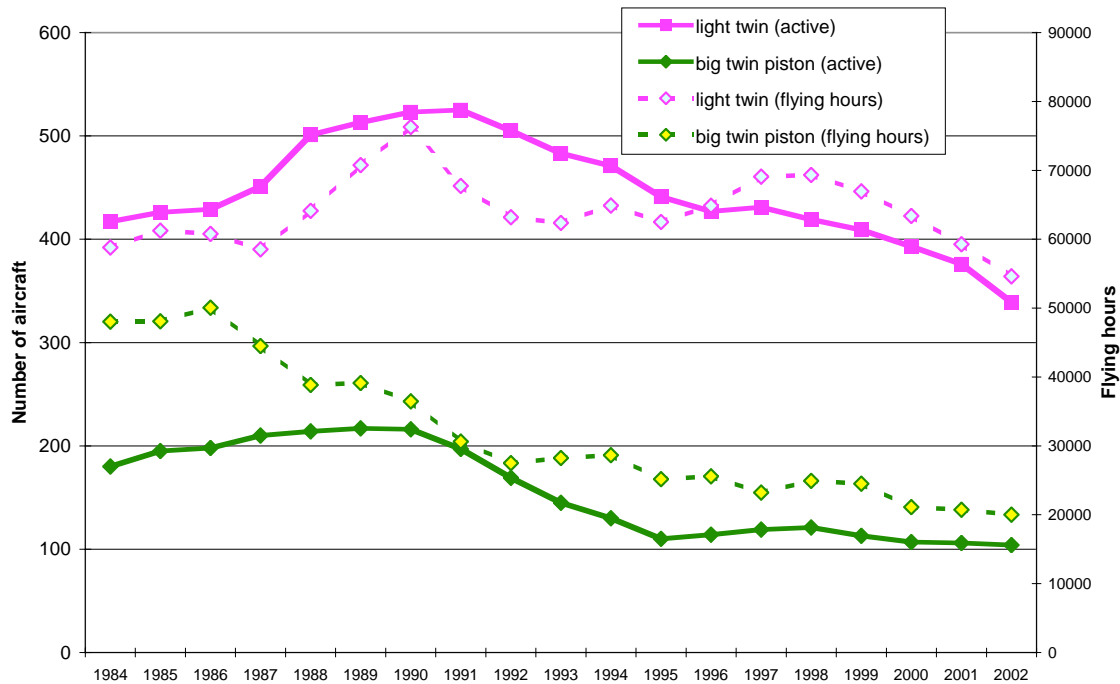
in the UK. They are also affected by the apparent decline in demand for Private Pilot's Licences. It appears that the amount of training performed in the UK has reduced from previous levels because of competition from flying schools located in other countries such as the USA with lower costs (including taxes) and better weather conditions.

Aerial work, light air-taxi and corporate charters

1.40 Data on this sector is also difficult to establish. Air taxis appear to have grown steadily in the 1980s, but reportedly now face significant pressures. Although there is no firm supporting data, the general consensus across the industry is that the business model of air taxi operators using piston-engined or turboprop aircraft is being challenged at one end by the development of more and cheaper scheduled flights, in particular from regional airports, and at the other end by more sophisticated corporate charters.

1.41 The number and activity levels of light twins and bigger twin pistons⁷ may offer an indicator for how this sector is faring. The data shows a gradual decline since the early 1990s, following a surge in the 1980s, with a similar rise and fall in flying hours. However, a significant number of such aircraft in the UK are now being operated on the US register.

Figure 1.5 Active twin piston-engined aircraft 1984–2002

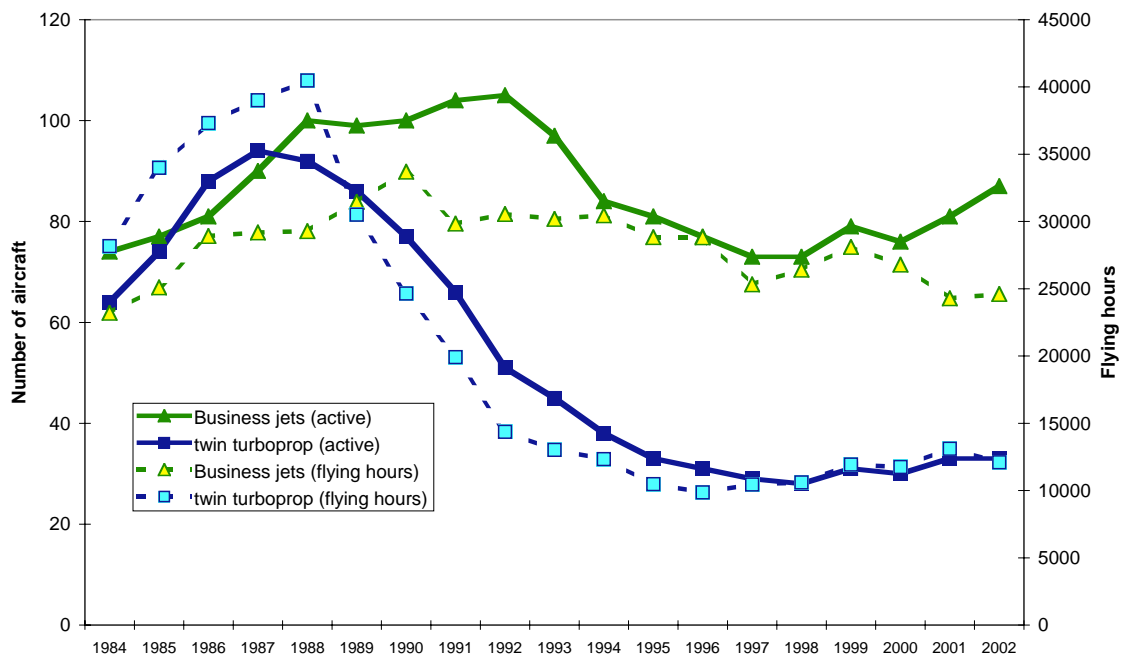


⁷ The definition adopted broadly equates to a breakpoint of 2730kg MTWA, with, for example, Piper PA23, PA30, PA34, Cessna 310, 337, Beech 58, Grumman GA7 classed as light twins, and Piper PA31, Cessna 340 and 400 series, Beech Queen Air classed as bigger piston twins.

Business and corporate aviation

- 1.42 Business aviation accounts for the majority of the expenditure on GA in the UK, reflecting the expense of operating large and high-powered aircraft, and the purposes for which they are used.
- 1.43 This segment has seen rapid growth recently as its customers increasingly place a high value on the time-saving and convenience afforded by this option over the scheduled airline alternative. The introduction of new business structures (e.g. fractional ownership) into the sector may also have increased the attractiveness of the offering to business and individual customers.
- 1.44 However, this growth is not reflected in the number of active turbine aircraft (i.e. jet and turboprop) on the UK register or their flying hours. Active turboprop aircraft fell in number from over 90 in 1988 to around 30 in 2002, probably reflecting a general shift to business jets. However, this is not reflected in an increase in business jet numbers on the register (Figure 1.6).

Figure 1.6 Active UK-registered business jets and twin-turboprop aircraft 1984–2002



1.45 In fact, the relatively small numbers of UK-registered aircraft involved are misleading. The significant numbers of active aircraft now on foreign registers but permanently based in the UK, when added in, completely alter the data and represent a truer picture of what is happening, as Figures 1.7 and 1.8 (which are necessarily estimates) illustrate.

Figure 1.7 UK and foreign-registered twin-turboprop aircraft 1987–2005

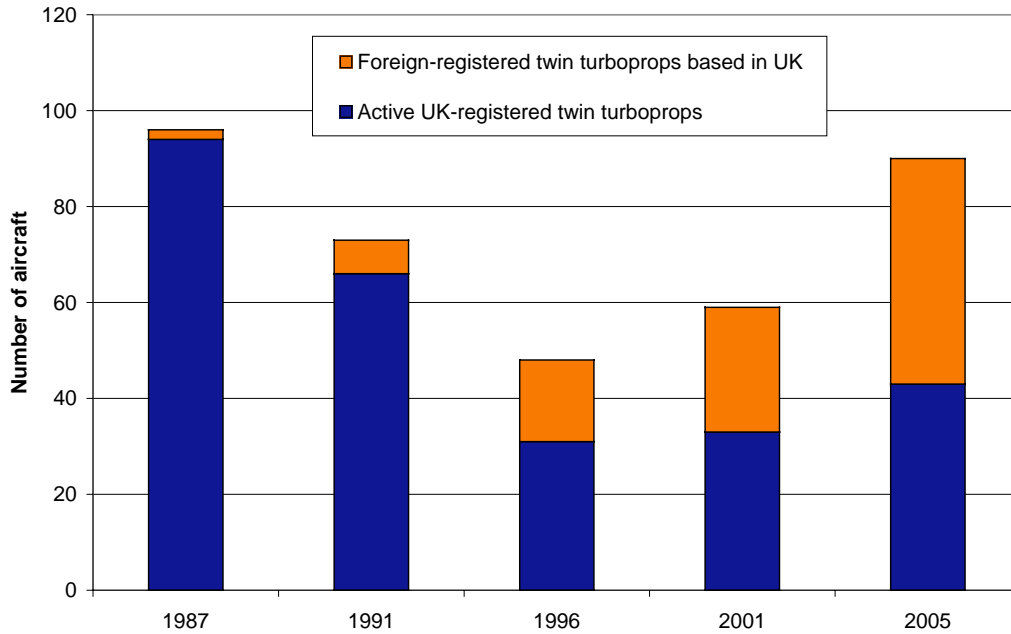
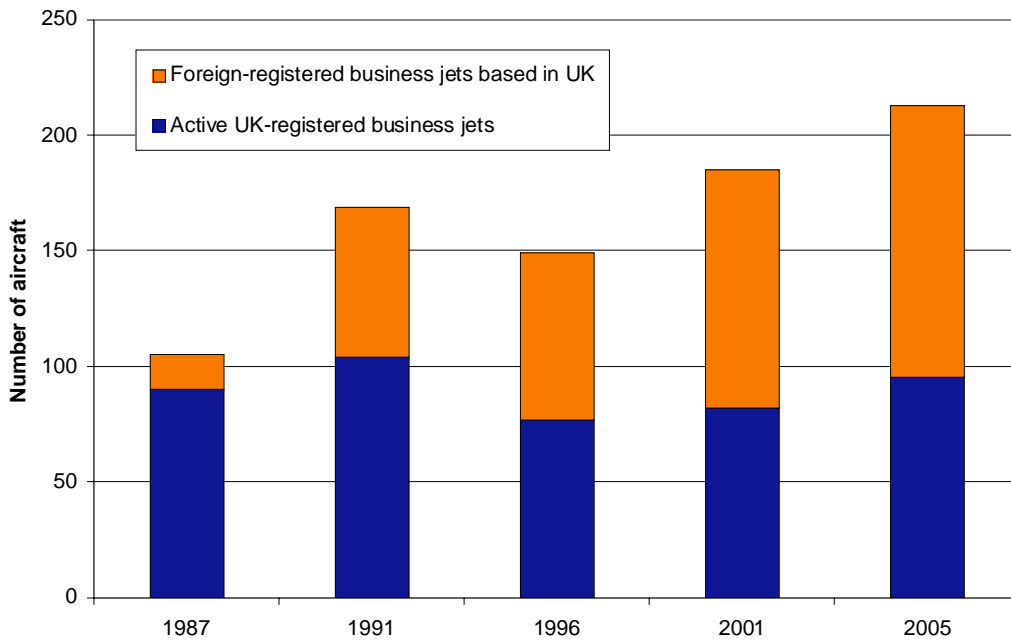


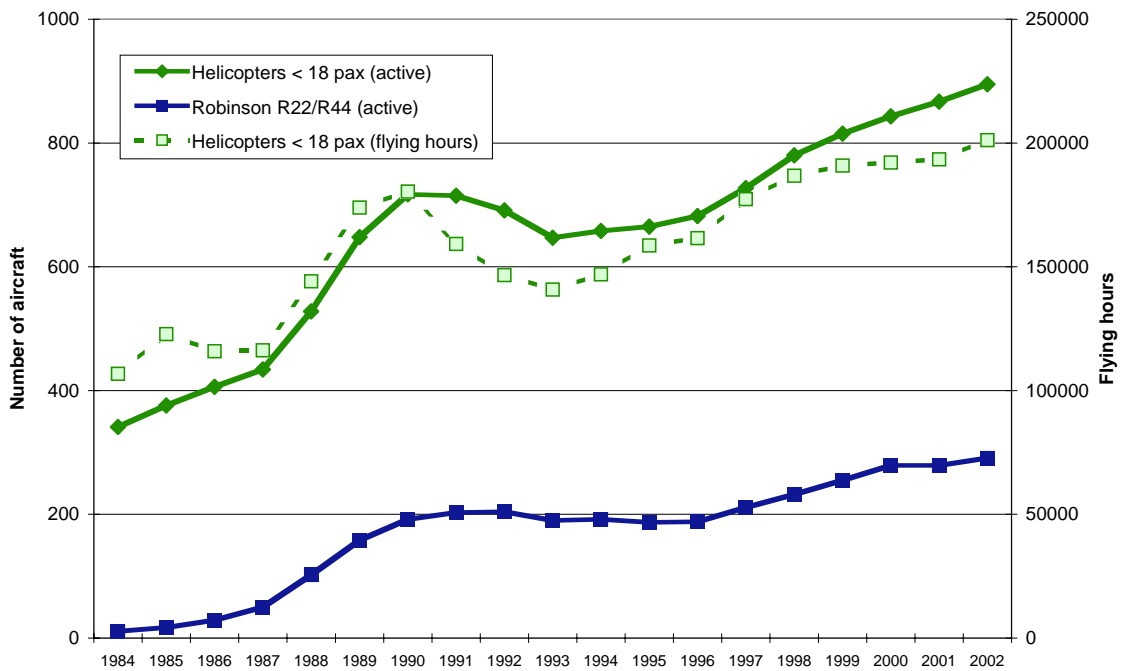
Figure 1.8 UK and foreign-registered business jets 1987–2005



Helicopters

- 1.46 Helicopters are used both for private recreational and for business flying, with business accounting for most helicopter use. Recreational flying has traditionally been a small part of helicopter usage. However, the increasing availability of smaller and cheaper types has expanded the recreational market.
- 1.47 Helicopter numbers and usage has seen steady growth over the last decade. The number of helicopters has risen from 570 in 1985 to 840 in 1995, increasing further to 1,300 by 2005. Flying hours have also increased steadily over the last decade. There is evidence of some increase in the numbers of helicopters moving onto overseas registers, but not to the same extent as for business jets and turboprop aircraft.

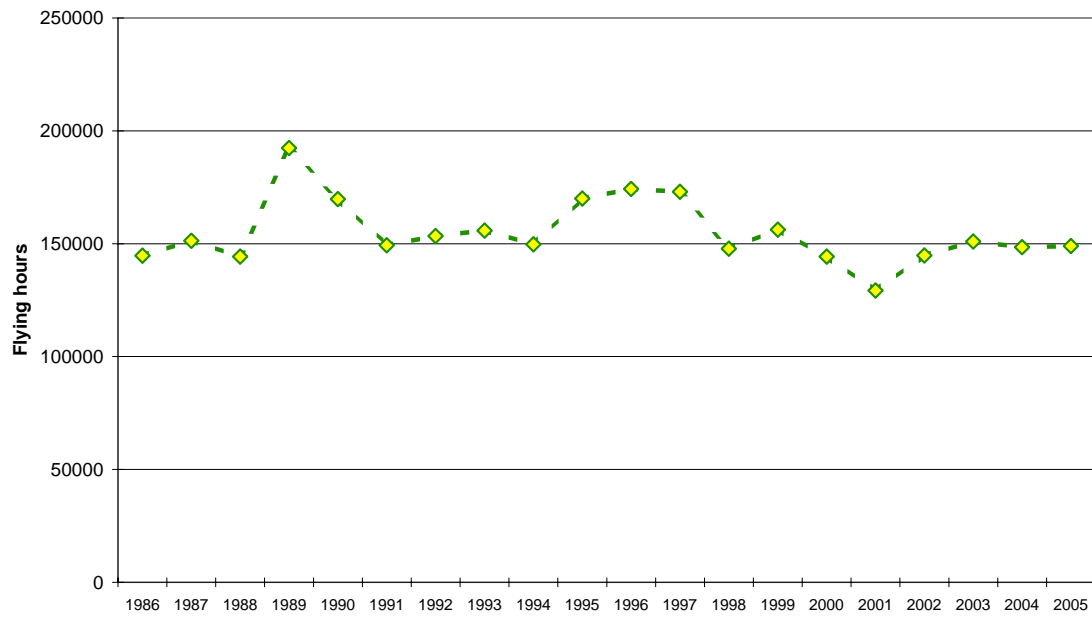
Figure 1.9 Active UK-registered helicopters (of less than 18 passengers) 1984–2002



Gliders

- 1.48 Gliding (sailplane) activity has been relatively static in recent years. Although dwarfed by the number of sailplanes, there has also been a gradual increase in the number of self-launching motor gliders.

Figure 1.10 Glider (sailplane) flying hours 1986–2005



Source: BGA

2. THE ECONOMIC AND SOCIAL IMPACT OF GA IN THE UK

Summary

- 2.1 A wide definition of GA has been taken as appropriate for the purposes of this Review, meaning that the sector under consideration ranges from the recreational flying of very light aircraft at one end of the spectrum to the business use of expensive corporate jets at the other.
- 2.2 The economic value of the various parts of GA will be equally varied. Recreational flying is, in general, likely to have very little direct economic value (although there may be considerable social or utility value) and marginal indirect benefit to the wider economy, whereas tailored GA business travel may have very high economic value, both direct and indirect.
- 2.3 Taken in aggregate, the available data suggests that GA is not insignificant in terms of its direct economic contribution. While direct comparisons are likely to be imprecise, this suggests that the economic contribution of GA is in the region of 8% of that of the commercial air transport (CAT) sector.
- 2.4 The wider impacts of GA are also considered. GA brings benefits in terms of providing an effective option for personal and public transport, and has recreational, educational and training benefits too. These need to be set against the negative environmental impacts in relation to noise and emissions.

The economic contribution of GA

- 2.5 GA has two direct economic impacts; its overall economic contribution in terms of expenditure, and its employment of people. In addition, there may be wider economic benefits from GA, through beneficial impacts it may have on other sectors of the economy. These potential wider benefits are covered later, including GA's role in the training of airline pilots; its role in air transport; and the role it may play in facilitating local or national economic development.

Expenditure

- 2.6 The Lober study¹ has estimated total expenditure within the GA sector at around £1.4 billion in 2005². This is all expenditure on GA, and does not include any indirect expenditure generated by GA activity. Just over half of this expenditure, some £740 million, is on turbine aircraft, the vast majority of which are operated for corporate and business customers. A further £280 million is spent on helicopters, a significant part of which is also likely to be for corporate and business customers.
- 2.7 Single engine piston aircraft account for around £230 million of expenditure, about a fifth of the GA total, this includes flying training costs.

Employment

¹ Terry Lober, General Aviation Small Aerodrome Research Study, UCL 2006. The Lober study does not specifically determine the economic contribution from non-powered flight activities such as parachuting, paragliding and hang gliding, but does include an allowance to recognise their value.

² The BBGA estimate is around £2.4bn; the main difference relates to the inclusion of manufacturing and service business in BBGA's estimate, not all of which relate to the UK-based fleet. Whilst the UK does not have any volume GA aircraft production, there remain a number of specialist manufactures, and sub-assembly work for GA aircraft.

- 2.8 Lober has provided estimates of GA employment, based on survey data. He estimates that some 11,600 people are employed in jobs directly related to GA. This estimate is not an exact one as it relies on the replies of airfields surveyed, and includes their estimates of the total number of people employed in the businesses based on their airfields, a number they may not have accurate data for. Many of these people may be employed in jobs not directly related to GA.
- 2.9 Employment on airfields classed as “mainly GA” is estimated at 5,900. The Government’s 2003 Air Transport White Paper suggested that total aviation-related employment in the UK is about 200,000.

Comparisons between the GA and commercial sectors

- 2.10 The CAT sector is of course very much larger than GA in economic terms. Precise comparisons of the economic size of the two are not readily available. This Review has relied heavily on the work of Terry Lober, due in part to the quality of his work, in part because of its independence, and in part because there is no other comprehensive source of economic data available on GA.
- 2.11 The table below provides a simple comparison between the two sectors. It shows that in the GA sector there are many more aircraft, but that CAT carries many more passengers. Although there is no estimate for passengers carried by GA, there is an estimate of GA flying hours – which is about half that of CAT. GA aircraft carry many fewer people than CAT; therefore by default CAT must carry significantly more passengers than GA.
- 2.12 Lober’s estimate for total expenditure on GA in 2005 of £1.4 billion shows that the sector makes a significant economic contribution – even before one considers the role played by some parts of the GA sector as a facilitator of other business activity. But this is dwarfed by the size of the CAT sector, and the facilitative role that this plays in the economy at large.
- 2.13 Total expenditure on the air transport sector as a whole (commercial and general aviation) is estimated by the ONS to have been in the region of £16 billion in 2002, and will have grown since then. On a very rough basis, rolling forward the 2002 ONS figure to 2005 would suggest the total expenditure on aviation in 2005 figures may be around £17.6 billion.
- 2.14 Precise comparisons of the ONS figure and Lober’s estimates need to be treated with some caution, as they will not have been produced in exactly the same way. However, both methodologies adopt an approach based on measuring direct expenditure, and are similar enough to permit some useful comparison.³
- 2.15 Using Lober’s 2005 figures for GA expenditure of £1.4 billion, and the scaled-up estimate for a 2005 ONS figure for all air transport of £17.6 billion, this would suggest a figure for (non-GA) commercial air transport of £16.2 billion. On this basis, GA would be around 8% of the size of CAT in terms of total expenditure. Expenditure on recreational GA would be less than 3% of CAT.

³ Lober’s calculations were developed by estimating expenditure on the different components of all the costs incurred within the GA sector, ranging from the costs of insurance to capital costs for purchasing aircraft. The ONS figure of total expenditure in the air transport sector reports total expenditure on capital goods; intermediate goods and services; and employees, where intermediate goods and services are those consumed by the air transport industry, against capital goods which have an ongoing use. The ONS estimate is only available for 2003, and has been scaled up to provide a 2005 estimate for comparison purposes.

- 2.16 The comparison between GA and CAT suggests that there is a relevant public interest consideration in the relative treatment of GA and CAT – as CAT provides benefits for the travelling public on a scale that GA does not.
- 2.17 In part this public interest consideration can be dealt with through the market, in the way in which infrastructure is charged for, but it also needs to be reflected in areas where market mechanisms do not exist. This may happen for example in consideration of airspace policy, where the CAA will seek to balance the needs of all airspace users, and will take into consideration the potentially greater public interest value of large commercial aircraft full of fare paying passengers, in comparison with small GA aircraft carrying few if any passengers.

Table 2.1 UK GA compared with UK commercial airlines

	UK GA	UK commercial airlines
UK-registered aircraft (2005/2005)	16,700*	920
Flying hours (2002/2005)	1.3m**	2.8m
Passengers carried (2005)	Not available	124m
Available seat kilometres (2005)	Not available	369bn
Total expenditure (2005/2005)	£1.4bn	£16.2bn
Employment (2005/2002)	11,600	200,000

* Excludes gliders, hang gliders and paragliders. ** Excludes hang gliders and paragliders.

Source: CAA data, BGA, Lober estimates.

The wider economic benefits of GA

Pilot training

- 2.18 During recent debates, it has been argued that GA plays a critical role in the training of airline pilots, and that this effectively represents a positive externality for airlines – airlines get the benefit of employing trained pilots whose training costs they have not met. A further point made in these debates was that the GA sector faces increasing pressures and rising costs and is in decline, and that this could threaten the future supply of pilots to commercial airlines. Others have suggested an opposite position; that there is no benefit to commercial airlines from the GA sector, that pilots could and would be trained anywhere, and that UK airlines are not therefore dependent on a healthy UK GA sector for pilots.
- 2.19 All pilots currently start their training on some form of small single-engined aircraft. Therefore, airline pilots who are not recruited from the military, trained through a dedicated airline cadet scheme, or trained abroad will have been trained within the UK GA sector.
- 2.20 An externality is defined in economics as an impact on others from an activity to which they are not party, that is not priced into the activity. The classic example of a negative externality is pollution, where a polluter does not pay the costs that their pollution imposes on a third party. A positive externality occurs where an activity has positive benefits on others that are not priced into the transaction. Education is often cited as an example here. The education of children benefits society as a whole, as well as benefiting the individual child; these benefits exceed the direct costs of educating the child and so suggest the need for education to be funded by the state.

- 2.21 There is no significant positive externality in the training of pilots under the current UK system. Unlike the generic education example cited above, there do not appear to be any significant spin-off social benefits from pilot training. Neither is pilot training provided below cost. Pilots who finance their own training in effect take on the burden of the cost of their training themselves, as opposed to it being borne by the CAT sector. It is not a transfer from the GA sector at large, as the GA sector provides the training at a price to cover its costs. It could, however, be argued that there is a cross-benefit from the individual pilot to the State, given that in other professions the State may contribute at least in part to the costs of professional training, which is not the case for pilots.
- 2.22 Airlines of course require pilots, and they essentially pay for their labour (and expertise) through the salaries they pay. If there were no training of pilots within the UK GA sector, they would presumably look to other sources of pilots, and if those dried up, they would have to re-institute their own training schemes. It may be reasonable to assume that the higher costs incurred by airlines through having to subsidise training would in part be recaptured through adjustments to the remuneration packages that pilots would receive.
- 2.23 There may be some spin-off benefit to UK aviation from pilots being trained in the UK (as opposed to overseas) in that UK-trained pilots will have some better initial understanding of UK flying conditions when they begin flying for UK airlines. But if pilots continue to be willing to self-finance, airlines can be expected to take advantage of this.
- 2.24 If there were a genuine risk that GA flying would be severely reduced in the UK, thereby threatening pilot training in the UK, there could be some merit to the argument that pilot recruitment would be threatened. However, the data⁴ on flying hours does not support such a gloomy outlook. This issue is covered further in the labour supply chapter.

Air transport role of GA

- 2.25 The vast majority of air transport trips are provided by commercial airlines. However GA can and does provide air transport services that are not available from commercial airlines, both in terms of the airports that can be flown to and from, and the timing of the services offered. GA undoubtedly plays a positive economic role in the provision of these services, in particular the provision of high value services.
- 2.26 There are two parts to this economic benefit. The first is a form of network benefit. GA can provide an effective transport link between areas that do not have commercial airline services available at all. Put simply, the more airports that people can travel to, the greater the likely usage of GA as a transport mode, and the greater the overall value of the GA network. This is not entirely dissimilar to the example of the telephone service; the value of the service was limited when few people could telephone each other, but grew in value once more widespread. Just as each node on a network adds value to the network as a whole (greater than its individual value) so the loss of nodes on a network reduces the overall value of the network. GA services may also offer a more attractive means of getting between two points, by avoiding the congestion of major airports for example. Scheduled airlines service some 60 UK airports, whereas at least 370 airfields are accessible to GA aircraft.

⁴ See Figure 2 in the Overview.

- 2.27 The second element of benefit is that the provision of high value private transport services can help to attract high value businesses and individuals to locate and to do business in the UK, or at particular locations within the UK, particularly where such services are readily available and well-used. Without these services, overall inward investment might, at the margin, be lower, and existing businesses less able to take advantage of some available opportunities.

Local economic development

- 2.28 Airfields can play an important role in local economic development. Whilst commercial airlines may bring the majority of visitors to an area, GA may both help sustain airfields that receive limited commercial flights, and also provide air transport options that would otherwise not exist.
- 2.29 The Lober survey of local authorities⁵ shows that this is recognised by them. When asked to respond to a question listing several possible impacts of a local airfield, potential economic benefits was more regularly noted as an impact.

Three airfield case studies

Little Gransden airfield in Bedfordshire is an example of a small GA airfield. It is a licensed airfield, entirely grass, and is a base for about 60 aircraft. The number of aircraft has not increased greatly in recent years. Most of the based aircraft are flown for recreation, but some pilots also use their aircraft as a means of personal transport or for business purposes. The airfield is required to comply with planning restrictions on the number of movements. Pilots using the airfield are required to avoid overflying particular areas on landing and take off to minimise the noise disturbance for local residents. The planning constraint on movements means that the airfield does not actively encourage visiting aircraft. If planning consent were possible, the owner believes that new hangarage could easily be filled.

There are four main activities or businesses on the airfield, two being the rental of hangarage to based aircraft, and a flying school, which also hires out aircraft. The owner of the airfield runs a business based on the importation, restoration, maintenance and conversion to the UK register of light aircraft from Eastern Europe. There is also a small engineering company specialising in the maintenance of vintage aero engines. In total around 20 people are employed on the airfield, although not all full time.

The inter-related activities on the airfield are a classic example of how small GA airfields operate, with a variety of aviation-linked businesses. They illustrate how smaller airfields tend to have a more localised economic footprint, creating jobs, some part-time, in engineering and training businesses that are relatively specialised.

⁵ Terry Lober, General Aviation Small Aerodrome Research Study, UCL 2006.

Shoreham (Brighton City) Airport in West Sussex is a medium-sized airport, although large in GA terms, and the oldest established airport in the UK. About 150 aircraft are based. A few limited scheduled services operate to the Channel Islands, but otherwise all the operations are GA. On weekdays there is considerable business flying, at weekends it is mainly leisure, the actual number of movements per day depending greatly on weather – perhaps 20 movements in relatively poor weather, whereas a good day might generate as many as 300 to 500.

The airport has been owned and run by the City of Brighton & Hove and The Borough of Worthing since 1971, but the airport is being sold to private interests because more capital needs to be invested, and local government has neither the money nor the ability to borrow it on the open market.

A wide range of businesses are located at the airport, about 50 in all, both aviation and non-aviation related, employing about 600 people, of which around 25 are directly involved in running the airport. The rent from buildings used by these businesses is a significant part of the airport's income, alongside fuel sales, and charges for landing, parking and hangarage. There are seven flying schools operating at the airport. Other aviation-related businesses include engineering and helicopter charter companies. However, a significant proportion of the employment is generated by companies that rent buildings on the airport, but do not themselves generate aircraft movements. Examples of this include a stock control operation for an Airbus component maker, a call centre for a travel insurance company, and Northbrook College (running aeronautical engineering courses). The airport is therefore a strong contributor to the local economy in terms of acting as a small industrial estate as well as contributing through its use as a business airport providing transport links for the region.

Farnborough Airport in Hampshire, 35 miles south-west of London, is an airport that has been developed by the operator TAG Aviation as a facility exclusively dedicated to business aviation. Around 40 aircraft, mostly business jets, are based. Planning agreements impose a cap on movements of 28,000 per year, with tight limits on flights at weekends and by larger airliner-sized business jets. Farnborough has some of the tightest environmental reporting of any airport. Scheduled and charter airlines, bulk freight, and recreational flying are not permitted.

TAG has invested significantly in the airport, building a new control tower, terminal, offices and extensive hangarage (with more planned), re-profiling and resurfacing the runway, and upgrading the ILS and airport lighting.

The airport's revenue derives from landing and handling charges, fuel sales and rental of property. The airport employs around 120 people plus another 30 in operational roles, but around 700 people are employed on the airport site, including those at a company providing aircraft simulator training, and it had been estimated that 3000 jobs locally were closely related to the airport operation. Movements have been growing at a rate of around 10% annually, faster than the industry average, as the airport attracts market share from other airports. The airport can offer passengers security, privacy and comfort, and operators no slot problems or delays along with parking, hangarage and engineering facilities.

Other impacts of GA

- 2.30 GA also has other positive and negative impacts. Negative impacts revolve primarily around its environmental impact, with positive social impacts relating to its educational and recreational value.

Environmental impacts

- 2.31 Aviation has a range of environmental impacts, to which GA contributes. The impact of aviation as a whole upon the environment has increased significantly over recent years, although GA's overall impact in terms of noise and emissions is far less than that of CAT, as would be expected given the difference in aircraft size and fuel consumption between the two sectors. GA also pays tax on much of the fuel it uses, unlike airlines.
- 2.32 Many GA airfields are predominantly covered in grass, and can therefore support flora, fauna, and wildlife. GA can however have significant negative environmental impacts at a local level, in particular in relation to noise. Although noise issues tend to be of most concern around airports, the impacts of aircraft emissions on local air quality are also becoming increasingly important, as is the impact of aviation on tranquillity and visual intrusion. Tranquillity is defined as 'a state of calm or quietude', but is difficult to quantify and there is no widely agreed and generally applicable measure of tranquillity that is based on solid scientific evidence.
- 2.33 There is no robust statistical data on GA and noise. However, evidence from the CAA's Consultation Section⁶ shows that some 2,000 complaints are received annually, with a peak in the summer months, and about 50% of those concern GA operations.
- 2.34 GA activities that generate the greatest response are aerobatics, helicopters using private sites, air balloon incidents, parachute dropping and alleged low flying. Most complaints about aerobatics concern the regular use of favourite areas by individual pilots, usually close to the minor aerodrome from which they operate, which is contrary to the advice contained in the General Aviation Awareness Council's leaflet called 'More Considerate Flying – a Code of Practice for General Aviation'. This states that "repetitive operations like aerobatic practice, glider towing, parachute dropping and pleasure flying can be made less intrusive by varying the location of the activity and the transit routes there and back at frequent intervals". Similar advice is contained in CAA General Aviation Safety Sense leaflets and CAA Environmental Information Sheets⁷.

Social impacts: educational and recreational value

- 2.35 Although it may have limited economic benefit, the recreational use of aircraft has a value to those involved, which is expressed through users' willingness to spend money and time to fly recreationally.
- 2.36 Sports and recreational flying provides the background from which many people develop their interest and love of aviation. These people may then move on to CAT. This form of flying also provides people with the opportunity to visit places they otherwise would never visit and participate in activities that otherwise would not be

⁶ A section within the Directorate of Airspace Policy, this provides a focal point for receiving and responding to aircraft-related environmental complaints from the general public.

⁷ Available on the CAA website.

available to them. There is also educational value in recreational flying, and it allows all pilots, including commercial pilots, to enhance their skills.

- 2.37 Significant numbers of people are involved in GA recreational activities. The total membership of sports and recreational associations in the UK is estimated at some 36,000. In addition there are 32,000 temporary members of the British Parachute Association (occasional and one-off jumpers) and some 37,000 people who fly model aircraft.⁸ There are also about 53,000 Air Cadets, aged between 13 and 18, attached to over 1000 squadrons and many scouts who seek “air-minded” badges.⁹
- 2.38 A further example of the extent of involvement is the Popular Flying Association. About 1,000 people are involved in its activities, although only 12 of these are full time. The PFA gave more than 1,400 experience flights in 2005, including many for disadvantaged children.

The implications of GA for the wider community

- 2.39 Anecdotal evidence suggests that the general public considers aviation as a continuum and is not necessarily aware of the many differences within the industry nor of the frictions that exist within it, for example between the competing demands for airspace and access to airports between component parts of the industry.
- 2.40 GA undoubtedly has many positive implications for the community in general. It can be an exciting and memorable leisure activity. Aerial work such as pipeline inspections, aerial surveying, filming and airshows provide a valuable enabler to many industries and, of course, there are many who rely on GA as an essential means of transport, for example corporate jets for large corporations.
- 2.41 However, the problems of noise and other impacts on the community that may derive from local airfields can colour perceptions negatively. GA will inevitably have to work hard in coming years to improve its public relations image.

RECOMMENDATION

Responses to the increased public sensitivity to environmental issues to include:

- i) GA redoubling efforts to be considerate neighbours**
- ii) CAA issuing all new pilots with guidance about noise**
- iii) A joint CAA-industry working group to be set up to review whether there are regulatory barriers preventing technological solutions to the environmental impacts of GA, such as noise and emissions**

⁸ source, BMFA.

⁹ source, websites of scoutbase.org.uk and scouts.org.uk.

3. INFRASTRUCTURE ACCESS

Summary

- 3.1 As with all forms of aviation, GA needs a certain level of access to infrastructure in order to operate, although this may vary widely across the different types of GA. There are two main infrastructure issues: airfields (or some form of fixed site to take off and land): and access to airspace. GA is currently facing increased difficulty in accessing both of these, particularly in the more congested areas of the UK.
- 3.2 This chapter sets out the issues surrounding access to airspace and access to airfields. In each case these issues are considered in terms how they affect GA, as well as the impact that GA may have on other infrastructure users and, more widely, the general public. The implications of this for the planning system are also discussed.
- 3.3 Increases in controlled airspace can limit the GA sector's freedom to fly where it chooses. Some increase in controlled airspace is inevitable in order to accommodate a greater density of traffic safely within the airspace system, and the economic value of CAT and the associated public benefit make it desirable that CAT operations be facilitated. However, all stakeholders should strive for an outcome that allows all users to enjoy the maximum use of airspace consistent with safe operation.
- 3.4 The chapter also discusses the relationship between GA and the military. It notes that these two groups often share a common interest in the use of uncontrolled airspace. However, there are issues surrounding the very different types of operations of GA and the military, and these will continue to need careful management.
- 3.5 Similarly, commercial airports, particularly regional ones, have seen rapid growth in CAT. This has squeezed out some GA operations, through airports charging higher prices, and directly limiting access. The main restrictions on local GA airfields relate to planning policy, which can cause problems for their operations. Furthermore, GA airfields may provide a national benefit, as part of the transport network, which is not taken account of when local planning decisions are taken. This Review recommends that the Government should consider making a policy statement on the value of a network of GA airfields.

ACCESS TO AIRSPACE

- 3.6 There is a perception among GA pilots that access to airspace is a growing problem. For the purpose of this chapter, airspace access issues are considered only insofar as they relate to GA.
- 3.7 Airspace is classified as either controlled or uncontrolled, and within this there are a range of further sub-classifications. In Controlled Airspace (CAS) an aircraft is always under the control of an air traffic controller. CAS generally covers the operations of large airports used by commercial air transport and higher level airways. In uncontrolled airspace, when operating away from the immediate vicinity of aerodromes, aircraft can usually operate autonomously, without air traffic control input. In such circumstances pilots must therefore operate on a see and avoid basis,

and ensure that potential collisions are avoided, without the assistance of air traffic control. The majority of UK airspace is uncontrolled.

- 3.8 The Lower Airspace Radar Service (LARS) provides a transit radar service outside controlled airspace to both military and civil aircraft, using existing air traffic service unit (ATSU) resources (wherever possible). The service is normally available during the published operating hours of the participating units, within 30 or 40 nautical miles of each unit.
- 3.9 GA makes use of all types of airspace, and can under certain conditions transit through controlled airspace. However, GA mainly uses uncontrolled airspace, and the biggest airspace issue is the extent to which controlled airspace is growing at the expense of uncontrolled.

Airspace organisation

- 3.10 The CAA's Directorate of Airspace Policy (DAP) determines airspace classifications and policy and is responsible for ensuring that the needs of all airspace users are met, taking the environment into account. DAP's process of consultation on Airspace Change Proposals seems unique in Europe; certainly no other State seems to have a forum like the National Air Traffic Management Advisory Committee (NATMAC), through which all airspace stakeholders can have their say.

Airspace users

- 3.11 There are three types of airspace users: airlines, the military, and GA. These groups all have different needs, sometimes conflicting, and the needs of different segments within GA may also diverge.
- 3.12 All airspace users fly in accordance with either Visual Flight Rules (VFR) or Instrument Flight Rules (IFR), depending on the prevailing meteorological conditions, the pilot's qualifications, and the aircraft's equipment. Under VFR a pilot can only fly subject to certain conditions on visibility and the weather, in essence VFR flight is only possible when the pilot is able to use their eyes to avoid terrain and other aircraft. IFR flight rules are based on the pilot using navigation instruments to determine positioning, and in controlled airspace, with air traffic control acting to ensure that aircraft are separated.

Growth in controlled airspace

- 3.13 The continued rise in the number of passenger flights in the UK, together with the more recent increase in passenger flights from regional airports, has placed further demands on airspace, which is an increasingly scarce resource. Demands for more CAS to protect the operation of large passenger aircraft, and for higher classifications and associated pilot qualifications for flight within that controlled airspace, mean that unfettered access for GA users is becoming more limited. Understandably, from the GA perspective, these increases in CAS are unwelcome, and there is a perception amongst the GA community that it is being slowly squeezed out of the airspace. Table 3.1 shows some basis for these concerns. Between 1997 and 2006, the extent of CAS in the combined UK FIR has increased from 13% to 22% of total airspace and in the London FIR from 24% to 43%. Further detail on CAS is contained in Appendix 7.

Table 3.1: Extent of controlled airspace, 1997 and 2006

Airspace	Total area of airspace (nm ²)	Coverage 1997 (%)	Coverage 1997 (nm ²)	Coverage 2006 (%)	Coverage 2006 (nm ²)
Scottish FIR	154,000	5	8,000	7	10,000
London FIR	108,000	24	26,000	43	47,000
Combined UK FIR	262,000	13	34,000	22	57,000
UK UIR	262,000	100	262,000	100	262,000
All UK Airspace	525,000	56	296,000	61	320,000

Notes:

All calculations are approximate, and reflect only the two-dimensional (or area) coverage, not the volume of the airspace involved.

Channel Islands airspace is excluded from the calculations, as it falls outside UK airspace.

- 3.14 The increases in CAS are a result of increasing the extent of controlled airspace around ever-busier airports, and expanding the zones of higher level controlled airspace, to provide for the safe operation of commercial aircraft. The CAS around airports can be particularly problematic for GA as it extends down to the ground whereas the extension of higher level CAS may still allow some lower level GA operations in uncontrolled airspace.
- 3.15 The CAA, through DAP, has a critical role in balancing the interests of all air users, and it seeks to do this both through its extensive consultation processes and by considering how best to manage competing interests. Being flexible in the way airspace is used in the future will be key to meeting the needs of all airspace users.
- 3.16 One of the main pressure points for GA's access to airspace is in the South East of England. The concentration of large busy commercial airports means that controlled airspace is extensive, this is coupled with the high demand for GA flying in the area. This raises issues for the operations of GA aircraft, which have to ensure that they do not infringe CAS, and for safety. There is an inevitable channelling of uncontrolled GA operations through certain areas, thus creating potential collision hot spots.
- 3.17 A key issue is continual and improved education of both pilots and air traffic controllers. The latter have an important role in handling GA traffic requests to use CAS, and there is a perception amongst the GA community that GA aircraft are seen as a distraction. GA pilots need to continue to be aware of the risks of infringing CAS. While this normally occurs accidentally, it is nonetheless an important safety issue.

RECOMMENDATION

There is a need for increased awareness of GA by air traffic controllers and continued GA pilot education and awareness in relation to the risks of infringing controlled airspace – GA and all air navigation service providers should work together to achieve this

- 3.18 The majority of the issues discussed above relate to traditional GA-type operations, with piston-powered aircraft. Gliders face particular issues in transiting to higher

altitudes for soaring. Microlights and amateur-built aircraft have the additional problem of planning their flights to avoid flying over built-up areas.

The future

- 3.19 Over the last 25 years, CAS has grown to meet the demands of the CAT sector and regional airports. In that time, Air Traffic Control has been modernised in order to keep delivering airspace capacity benefits, and further increases in traffic are likely to require Air Navigation Service Providers (ANSPs) to renew their focus on ensuring that more traffic can be handled safely.
- 3.20 There are a range of technical developments that may improve both the safety and operation of aircraft within both controlled and uncontrolled airspace. Improved navigation technologies may allow more aircraft to access CAS, and may also increase safety in uncontrolled airspace by improving the ability of pilots to avoid collisions. These are discussed in more detail in Chapter 8.

Implications of GA activities for other airspace users

- 3.21 The following paragraphs aim to help place GA in context by considering the implications of its activities, in terms of airspace issues, for other airspace users. The diversity and range of GA activity means that the assessment of its impact is in quite general terms. Discussions were held with a range of relevant stakeholders, but the observations that follow will reflect on some, but certainly not all, elements of GA, and some may be more relevant to one element of GA than to others.

The implications of GA for commercial air transport operations

- 3.22 The increasing demand for more CAS to protect the operation of large passenger aircraft, and the decline in unfettered access for GA users is unwelcome, from the perspective of GA and some other airspace users. From the opposing perspective, however, the protection offered by CAS and a 'known' air traffic environment is considered essential for the safe operation of commercial passenger aircraft and mixing operations with other users is considered undesirable, even untenable. Currently, great concern is being expressed in the aviation industry, and particularly by the air traffic management elements within it, about the increases in numbers of commercial air transport (CAT) flights from airports not protected by CAS and not connected to the air route structure. Technological advances may help address concerns surrounding CAT operations in uncontrolled airspace. The CAA is working closely with all users and providers to address the concerns raised by these operations, and their interaction with both military and GA activity, to ensure that the UK's excellent flight safety record is maintained.

The implications of GA for Ministry of Defence (MOD) operations

- 3.23 In many instances, the MOD and GA airspace users have similar interests; both groups operate mainly in uncontrolled airspace, and both may often prefer to operate autonomously, without the perceived constraints on freedom afforded by ATC and controlled airspace. Together they form a strong voice to counter further expansion of controlled airspace, and in this context, GA can work to the advantage of MOD operations.
- 3.24 However, military and GA flights are often very different, both in terms of the equipment being used, the type of flying and frequently the skills of the pilots. Sharing airspace between these undoubtedly brings challenges. Perceived

shortcomings of GA pilots, in areas such as navigation, can create safety concerns among the military.

- 3.25 However, on a positive note, effective processes have been developed over many years between the MOD and GA users to notify airspace users of the presence of others. These and various other initiatives provide clear evidence that the MOD fully accepts that GA users are entitled to operate unfettered in uncontrolled airspace and that the MOD commits considerable resources to develop and share information to promote safe operations.

The implications of GA for the provision of air traffic services

A civil ATC perspective

- 3.26 NATS provide air traffic services to GA pilots at many of their units, including under the Lower Airspace Radar Service (LARS) scheme, and information services in both the London and Scottish Flight Information Regions (FIRs). However, their primary business is the provision of air navigation services to commercial operators in CAS. NATS has highlighted that, for them, infringements of CAS are a significant hazard to flight safety and a major cause of concern. Not surprisingly, due to the nature of GA operations, GA aircraft account for the majority of airspace infringements, most of which occur in the complex airspace in the south of England. Analysis shows that there is no single cause for these infringements, rather that many factors contribute. These include navigational errors, out-of-date charts, failure to contact ATC or comply with instructions, and disorientation or distraction. Addressing this problem requires action by all stakeholders and includes measures to enhance both pilot and controller awareness, greater publicity through national and local campaigns and engagement amongst all users. Encouragingly, there are several positive examples where these initiatives have been successful in reducing infringements and therefore mitigating their negative impact. Technological advances may further mitigate some of the risks of infringements and so promote and enhance flight safety.

A military ATC perspective

- 3.27 Six military LARS units routinely handling GA traffic were asked for views on the implications of GA for their activities. Overall, they considered that they had a wide-ranging relationship with the GA community, and believed that they provided an invaluable service to GA. The workload generated by GA was entirely dependent on geographical location, but in general it was responsible for the vast majority of LARS movements, which were greatest during daylight hours. Most movements were transits, but a large percentage were aircraft on local sorties from adjacent airfields. At one of the RAF's busiest LARS units, RAF Brize Norton, GA traffic accounted for 87% of the Unit's workload, or 100,000 movements per annum, but at peripheral units the number was much lower.
- 3.28 The varying standards of airmanship and quality of radio phraseology among GA pilots is the greatest cause of frustration to military controllers. One anomaly is that civilian and military radio phraseology differs in some areas, which the RAF is constantly attempting to address. On the whole, GA pilots are content to follow ATC instructions and reasonably disciplined in calling for military air traffic zone/CTR crossings, the main problems occurring in areas densely populated with minor airfields. GA pilots' understanding of ATC services depends on experience and ability. Predominantly, Flight Information Service (FIS) and Radar Information Service (RIS) are the services most requested, although Radar Advisory Service (RAS) was also provided on a regular basis. The majority of flights were conducted under Visual Flight Rules (VFR) and it was evident that less experienced pilots do

not always understand the conditions of Air Traffic Services Outside Controlled Airspace (ATSOCAS). Controllers are inclined to provide an appropriate level of service to suit the perceived experience level of the pilot.

- 3.29 Liaison between military units and adjacent minor airfields is generally very good and, where necessary, procedures have been developed and drawn up in Letters of Agreement. It is felt that there is scope to increase the frequency of reciprocal visits to enhance GA's appreciation and understanding of military service provision. Military aerodromes are widely used for practice diversions by a wide range of GA aircraft. Many units accepted GA practice diversions to assist with controller training and currency, providing a direct benefit to the military ATC community. MOD provides a "distress and diversion" emergency position-fixing and alerting service – an invaluable service to GA pilots. Encouraging GA pilots to use this facility is seen as an important mitigation to the airspace infringements that NATS views as a high risk.
- 3.30 The continued growth of CAT and associated expansion of CAS has clearly had a negative impact on GA, but conversely the impact of GA on commercial operations has not been significant. GA and the MOD each have a requirement for unfettered access to uncontrolled airspace but the enormous range of experience and ability brings its own problems.

ACCESS TO AIRFIELDS AND THE PLANNING SYSTEM

- 3.31 Airfield access is important to most GA operations, as there is a general need for a site to fly *from*, and a place to base an aircraft, and often destinations to fly *to* as well. There is a wide range of airfield types, from very large commercial airports to grass strips on private farms used by one or two aircraft. GA faces different issues at these different airfield types. The focus here is on access to those airfields that provide runways. However there are parts of GA that either do not need an airfield at all, such as hang and paragliding, or only need a very small space, such as helicopters. These raise different issues, which are covered briefly.
- 3.32 There is a strong perception amongst the GA community that access to airfields, in particular to the larger established airports, has become considerably harder in recent years.

Airfield closures

- 3.33 In the last 50 years there has been a reduction in the number of airfields in the UK, a consequence of a range of factors, including increased urbanisation and the continued rationalisation of airfields used in World War II.
- 3.34 The Government's White Paper "The Future of Air Transport", published in December 2003 (the Air Transport White Paper) focused almost exclusively on delivery of airport capacity for commercial air transport, but it did note the "*important contribution made by small airports in the South East in providing capacity for business aviation*" and supported "*the adoption of policies which encourage the continued provision of these services*". The wider benefits of GA, and its sports and recreational aspects were not considered to be within the scope of the White Paper exercise.
- 3.35 There could be cause for concern if a significant further loss of airfields were to continue, especially if crucial nodes on the transport network were to be lost.

Large commercial airports

- 3.36 “Large commercial airports” are considered to be those used by air transport flights. They range in size from airports such as Heathrow, with virtually no GA operations, to smaller regional airports like Exeter, with significant GA operations, some of which may retain flying schools.

The growth in commercial air transport

- 3.37 UK airports continue to show strong growth in commercial traffic. Air transport movements¹ (ATMs) at UK airports grew from 1.4m in 1990 to 2.3m in 2005, an annual average of 3.4% per year (Table 3.2). At UK regional airports, ATMs grew from 0.8m in 1990 to 1.3m in 2005, with particularly strong growth in recent years (5% in 2003, 7% in 2004 and 8% in 2005). Table 3.2 shows the six UK regional airports with the largest rise in ATMs since 1990. Note the particularly big increases at Nottingham, Bristol and Southampton where commercial traffic in 1990 was relatively low. There are also other regional airports which have seen spectacular increases in commercial traffic in recent years – for example ATMs at Liverpool increased by 9,600 (24%) in 2005 alone.

Table 3.2 Air transport movements at UK airports, 1990 and 2005

	Air transport movements (000)		
	1990	2005	increase
London	646	1038	392
Heathrow	368	472	104
Gatwick	189	252	63
Stansted	24	178	154
Luton	40	75	35
London City	13	61	47
Southend	11	0.1	-11
Regional airports	772	1295	524
<i>Top six regional airports showing biggest numerical increase in ATMs 1990–2005</i>			
Manchester	122	218	96
Edinburgh	48	116	68
Nottingham East Midlands	5	54	49
Birmingham	66	113	47
Bristol	17	61	45
Southampton	4	44	40
Total UK	1420	2333	913

Notes: Excludes Channel Islands but includes Isle of Man. Excludes air-taxi operations.
Source: CAA airport statistics

- 3.38 The growth in movements at commercial airports has reduced available spare capacity, and has also had a knock-on effect on GA operations at some airports.

GA at commercial airports

- 3.39 For those airports which have seen significant increases in CAT, the relative attractiveness of GA traffic may have reduced. In some cases the focus of airports

¹ Defined as landings and take-offs of commercial aircraft.

has changed as they seek to meet the needs of scheduled airlines which may now represent the bulk of their revenues.

- 3.40 Airports charge for both take-offs and landings, and normally for parking and aircraft handling. Airports may also derive significant revenues from passengers flowing through their terminals. Traditionally, GA aircraft have paid comparatively low charges, and bring no or very little passenger traffic.
- 3.41 As CAT operations have increased airports are facing increasing pressures both to ensure a smooth flow of operations, and that their operational mix maximises revenue. Operational managers report that it is an increasing challenge to marry the requirements of CAT with the different needs of GA traffic, which can be characterised by slower runway movements and a need to carry out a large number of visual circuits for flying training. Circuits and modes of operation such as 'touch and go' can sit uneasily with the needs of commercial operators. Commercial constraints are also affecting the attractiveness of handling GA aircraft at these airports, particularly at peak times.
- 3.42 These pressures have led to several developments. Commercial airports are starting to charge much higher prices to GA aircraft, particularly during peak hours. In some cases GA aircraft are also required to pay a handling fee, although this is sometimes driven by security requirements. Some airports may also restrict or close off the option of basing GA aircraft there, or limit, or refuse to accept, certain GA activity.
- 3.43 There is no evidence that airports are unfairly discriminating against GA aircraft, and many airport managers say they do not want to see GA suffer. In most cases GA aircraft can still use the airport, but may be charged significantly higher amounts than before to do so. Similarly, where airports are refusing to accept new GA aircraft to be based at the airport, it generally seems to be due to a lack of apron space.
- 3.44 The increasing difficulty that GA aircraft have in accessing airports is a direct result of the significant increase in CAT and the airports' understandable desire to maximise their available revenue flows. GA activity has often been diverted to smaller, less busy, airports, or to GA airfields as a result.

GA airfields

- 3.45 These are established airfields, with very little or no CAT, but often large amounts of GA traffic. They perform a range of functions, and may be either privately owned or owned by local government. These airfields are at the heart of traditional GA, and host the majority of flying schools. At these airfields the main issues are not congestion but rather the conditions placed on the operation of the airfield and any threats to their existence.
- 3.46 The main threats to the existence of these airfields revolves around whether they have more profitable uses, and their ownership structure. Airfields that can be developed for alternative uses, such as housing, may be more valuable once developed than as airfields.
- 3.47 The planning system has a critical impact in determining how GA airfields can operate, and their potential value.

Case studies of UK regional airports' views on GA²

Manchester Airport reports that despite conditions becoming more difficult for GA aircraft in general, it still aims to encourage business aircraft to use the airport. The bulk of traffic is business aviation with some smaller GA aircraft. A flying training school remains. The site currently occupied by the school is due to be developed and the lease expires in June 2007. The airport believes that there will be some difficult decisions to be made at this point. Over the last 12 months, GA aircraft have been obliged to apply for slots like other aircraft using the airport. Although aircraft use a single slot some would argue that two slots might be more appropriate for some GA aircraft, which take off and land relatively slowly.

There have been a few incidents that have made Air Traffic Control more cautious about GA aircraft and the slots system in general. There is currently a special procedure where GA aircraft can land on the departure runway, but this still means they would have to cross a live runway. Historically, charging was on a simple weight-related basis, and charges for GA aircraft have been frozen for the last three years. 2006/07 sees the introduction of a minimum runway charge. This will likely result in prices at peak times being unattractive to aircraft of below about 50 seats.

Bristol Airport does not consider its GA business to be a revenue earner, but at the same time is not actively trying to reduce GA activity at the airport. Schools offering PPL and instrument flying training operate from the airport, as does a flying club, but new GA activity is not permitted. Runway occupancy is now becoming a constraint on GA activity. For example, a flying school might expect to complete 15–20 circuits in a 90-minute training session at a small aerodrome. This number will be considerably reduced at Bristol due to runway congestion.

GA charges at **Cardiff Airport** were reviewed in 2004. The airport offers a block training charge which includes parking for the year and all landing and take-off fees. It does not intend to increase charges substantially and there are no handling fees. There are at present no issues with runway occupancy and parking. GA activity is increasing gradually and is located on the south side of the airfield in a dedicated area. Cardiff is unlikely to invest in GA activity, but sees no reason to discourage it either.

Until the late 1980s/early 1990s, movements at **Southampton Airport** were largely GA and included business aviation. The airport handled around 0.4–0.5m passengers at that time and was largely seen as a gateway to the Channel Islands. BAA bought the airport in 1990 with a plan to redevelop it as a model regional airport. It constructed a new heavy-duty apron, resulting in fewer parking spaces for GA aircraft, which placed some pressure on the GA community. The airport did not accept further GA aircraft being based there as parking was taking place on commercial stands. Any non-scheduled flight requires prior permission and cannot stay at Southampton for more than a day.

There has been a flying school but it is about to close. The airport does not see a new GA parking area, costing several million pounds, as a viable project. However, the airport has no problem with visiting GA aircraft. There has been a deterioration in the service that the airport can offer GA aircraft at peak times, due to restrictions on airspace (priority being given to commercial aircraft) and also due to the runway having limited access points. The airport notes that there are few noise complaints relating to GA aircraft.

² Provided by the Airport Operators Association.

GA airfields and the planning system

- 3.48 This discussion centres on GA airfields. However, the issues regarding planning decisions in other scenarios may also be pertinent to the wider GA community.
- 3.49 The planning system³ is critical to the operation of GA airfields, and also their viability. Planning decisions relating to GA airfields are made at a local level, and against a decision-making framework that is primarily local in nature.
- 3.50 Planning decisions relating to GA airfields are perhaps particularly challenging as they involve balancing the concerns of local residents against other interests, and there may be particular difficulties where the benefits of the airfield go wider than the local area. The planning system itself is not the problem, it is merely the vehicle through which the pressures manifest themselves and take effect.
- 3.51 The main issues that the planning system affects are:
- Potential developments in the vicinity of an airfield which could adversely affect its operation.
 - Potential closure of an airfield for redevelopment.
 - Operational or building constraints imposed on an airfield.

Development proposed in the vicinity of an airfield

- 3.52 A range of potential developments can affect the operation of an airfield, for example the construction of wind farms. A wind farm built near an airfield may have safety implications and restrict operations around an airfield, limiting its economic viability.
- 3.53 Where technical and safety issues are involved, the CAA may provide expert advice. CAP 764 (CAA Policy and Guidelines on Wind Turbines), produced by DAP following external consultation, including contributions from the GA sector, is an example of regulatory input that could help inform those involved in making applications to planning authorities. But, crucially, it is for those involved in the planning application or decision to take action – the CAA has no formal role and has no veto over planning decisions.
- 3.54 Residential development close to a flying site can also have an impact. It can lead to complaints about noise⁴ from new residents and result in new operating restrictions for long-established flying sites. Elstree is reportedly a case in point, where complications in the circuit pattern and restrictive approach procedures have been imposed in an effort to reduce noise nuisance for local residents, but have hampered the operation of the airfield's business.

Potential closure for redevelopment

- 3.55 Airfields face potential closure due to the threat of redevelopment of the site for other uses, including large-scale mixed development. Sometimes this is because they cannot obtain planning permission to develop the facilities they would need to make the airfield operations viable. There is anecdotal evidence to suggest that in some

³ This chapter discusses the planning system, and recent changes to that system, as it applies in England and Wales. While some of the issues will be generic, there are different arrangements related to planning decisions in Scotland and Northern Ireland.

⁴ The GAAC has sponsored research into noise from GA airfields, available at <http://www.gaac.org.uk>.

cases the owner may prefer to realise value by selling outright for housing or other development or by converting to a more immediately lucrative recreational use.

Operational and building constraints

- 3.56 Conditions attached to airfield planning permissions can sometimes restrict movements. Conditions aimed at benefiting local residents could render an operation unviable. For example, a ban on Sunday flying for an airfield dependent on recreational activity. Other conditions may impact upon safety. For example, a restriction on how to fly the circuit pattern could take a single-engine aircraft out of gliding range of the aerodrome. In such cases, planning officers may take a particular decision because they tend not to have detailed knowledge of the specifics of GA, rather than with an intention to harm GA. Unfortunately, the implications for the airfield could be the same – an unworkable permission.
- 3.57 There are also sometimes planning restrictions on the building of new hangars and the like. This restricts the number of aircraft that can be based at an airfield, reducing activity and potential revenue for the airfield.

RECOMMENDATION

Notwithstanding the development of any national statement on the value of a network of GA airfields, it is recommended that the GA community develop balanced and informative documentation to describe the particular facets of GA operations, for use in planning and safeguarding decisions. Where an issue has specific safety aspects it may be appropriate for the CAA to publish material

Planning policy

- 3.58 The UK has no unified national planning policy that is specific to GA airfields. Policies relating to different aspects of aviation can be found in several Acts of Parliament and Planning Policy Guidance (PPGs), now being updated to Planning Policy Statements (PPSs).⁵
- 3.59 The majority of GA flights take place within a relatively small area. However, a significant element involves flying between two points. For this element of GA a functioning national network of GA airfields is critical, particularly as access to commercial airports is becoming increasingly difficult and expensive. In particular, where GA performs an air transport role there is additional value, particularly as the services it offers may not be available from commercial airlines. The loss of a key node of the network, for example an airfield for which there are no nearby alternatives, may have a greater effect nationally, or in terms of regional economic development, than would be considered if only assessing the local effect.
- 3.60 At the local level, it may be difficult for Local Planning Authorities (LPAs) to appreciate fully the role played by GA. Without an appreciation of the wider issues, decisions could be made which might make sense when considered in a purely local framework, but if due consideration of the “knock-on” effects on surrounding areas was given, then a different decision might emerge.

⁵ The issues surrounding planning issues in England and Wales, and the implications of the new regime, are explored in more detail in Appendix 6. This section gives a brief overview.

- 3.61 The important national issue is the availability of a network of GA airfields that can be used for air transport. Whilst the range of scheduled services has increased significantly, there are still many UK city pairs that have no scheduled services. GA air transport plays a key role in the provision of services for both unserved areas and unserved routes.

RECOMMENDATION

Government to consider making a policy statement on the value of maintaining a viable network of GA airfields, to be considered by those involved in planning decisions in the future

Aerodrome safeguarding

- 3.62 “Safeguarding” is a term in planning law meaning the preservation of an established land-use. It only relates to safety insofar as a land-use may be curtailed for safety reasons. The safeguarding of an aerodrome is the management of land-uses in such a way that the use of the land for flying operations may continue. Competing land-uses may curtail an aerodrome’s established use by obstructing airspace or increasing the hazard environment.
- 3.63 There are many forms of safeguarding, for example physical safeguarding and technical safeguarding, as well as public safety zones. Of particular interest in this context is physical safeguarding at officially safeguarded aerodromes⁶, as a result of changes to the Town and Country Planning Act in 2003. CAA has a role in providing advice about safeguarding maps and has explained aeronautical technicalities to planning authorities when asked to do so. Issues surrounding aerodrome safeguarding are explored in more detail in Appendix 6.

Helicopter operations

- 3.64 This Review has already identified the growth in the use of helicopters for personal and corporate purposes. However, helicopter operations are often perceived, sometimes incorrectly, as particularly noisy, and there may consequently be pressure for greater restrictions, for example over central London. That said, this may also depend on perceptions of people on the ground as to how essential the use of a helicopter is – few people would question the use of the helicopter as an air ambulance or by other emergency services, for example. London has only one heliport, at Battersea, which can accommodate just three or four helicopters for short-term parking only, and is not particularly convenient for the City. While London City Airport accepts business and commercial traffic, helicopters are prohibited, irrespective of their actual noise levels and the technological noise reduction improvements, made in the last 10 to 15 years. To the extent that modern helicopter types can be shown to be good neighbours, there may be value in planners being more aware of this, which may help to create an environment in which more adequate facilities can be provided for helicopter operations in London (and other UK cities) more akin to those available in major cities overseas.

⁶ Those aerodromes notified in ODPM/NAFW Circular 1/2003 and Scottish Executive Circular 2/2003.

- 3.65 Approximately 50% of helicopters are based at private, non-airfield sites. Most helicopter journeys involve use of such sites, which are essential to the health, utility and value of this sector.

4. THE REGULATORY AND TAX ENVIRONMENT

Summary

- 4.1 This chapter reviews how regulation and taxation affects GA. It considers the benefits that regulation provides to a wide range of stakeholders and the burdens and costs that it imposes.
- 4.2 Whilst the vital importance of effective safety regulation is stressed, the chapter also considers what regulators should do to ensure that the regulations they impose are fit for purpose and impose the minimum burdens consistent with effective regulation. The five principles of good regulation are recalled and there is a recommendation in relation to their use. How regulatory requirements can affect the development and adoption of new technology is also considered.
- 4.3 The chapter then considers the legislative wording setting out the expected approach of the CAA towards CAT as against GA. A recommendation is made that this be revised at the next available legislative opportunity.
- 4.4 The use of foreign-registered aircraft in the UK is briefly considered, and some of the reasons for the increase in their number are discussed. However, as the results of the recent DfT consultation on this issue are awaited, it is concluded that it would be premature to offer any recommendations in this area.
- 4.5 The tax position faced by the GA sector is examined, both with respect to the way that VAT is charged on GA activities, and the situation in relation to taxes that are levied on aircraft fuel. A specific recommendation is made in relation to the VAT treatment of training activity.
- 4.6 Finally, the changing security requirements for GA operations are discussed, and the different nature of business aviation activities compared with those of airlines is highlighted. A recommendation is offered as to how this issue should best be taken forward.

THE REGULATORY FRAMEWORK FOR GA

- 4.7 The CAA is the UK's independent aviation regulator, with all civil aviation regulatory functions (economic regulation, airspace policy, safety regulation and consumer protection) integrated within a single specialist body. It also has responsibility for providing advice to Government on aviation matters. The CAA's primary objective is to promote high standards of safety in all aspects of civil aviation, and its main interaction with GA is in relation to safety regulation. However some parts of GA have had certain safety regulation functions devolved to them, whilst gliding has always regulated its own activities.¹
- 4.8 Until 2002, when the EU established the European Aviation Safety Agency (EASA), the regulation of UK civil aviation was the sole responsibility of the CAA. Prior to EASA, the European grouping of Joint Aviation Authorities (JAA) had established common standards between EU member states for type certification and airworthiness, operations and flight crew licensing. EASA represents a new and more ambitious attempt to develop harmonised safety standards.

¹ The GA Regulatory Review provides more detail on the CAA's regulatory interface with GA.

- 4.9 The regulation of GA, as for CAT, is in a state of transition from UK regulation to EU regulation. Consideration of the impact of CAA regulation becomes less all-consuming than in the past, as the centre of gravity moves towards the EU. EASA and SES regulations introduced in the next year or two are likely in some aspects to affect the future shape of the UK GA industry. The impact of these European developments is examined in more detail in the next chapter.

The impact of safety regulation

- 4.10 The main impact of regulation on GA relates to the safety of operations. In the absence of regulation, GA operations would undoubtedly be more dangerous, and those engaged in GA activity would face higher risks. However, the cost of compliance with regulation should be taken into account, and safety regulation impacts on different groups in different ways. This is set out in more detail in the GA Regulatory Review – but the following paragraphs offer a brief overview.

Safety of members of the public

- 4.11 The protection of the members of the public from injury from GA aircraft has always been a high priority for regulation. Overall, UK GA has a good safety record. In part, this is due to the nature of GA, which tends to carry small numbers of people in small aircraft, limiting the extent to which injuries and death can occur, in particular compared with accidents in commercial aviation. Risk to people on the ground is negligible.

Safety of the travelling public

- 4.12 The safety of airline passengers is a very high priority for the CAA, and as a consequence, where GA aircraft interact with airline flights, this may well impact on GA operations through requirements for increased equipment, training, and operational rules. There has been no accident involving a GA aircraft colliding with a CAT aircraft in the UK in the post-war era. The implications for GA, if such an accident were to occur, could be far-reaching.
- 4.13 The principal regulatory steps taken to minimise the risk of collision between CAT and GA aircraft are to exclude GA aircraft from certain airspace (class A)² which is used by airliners, unless they carry certain minimum levels of navigational equipment and are flown by instrument rated pilots. GA aircraft are admitted to other airspace, class D, on a discretionary basis and are subject to restrictive operating conditions.

Safety of GA passengers

- 4.14 Where GA aircraft carry passengers, the CAA has in general sought to ensure that there is a higher level of safety protection than when no passengers are carried. This is particularly the case for public transport operations, as opposed to passengers known to GA pilots.

Safety of GA pilots

- 4.15 GA pilots are likely to regard themselves as being in the category of those stakeholders who have a high degree of control over the risks to which they expose themselves, and may take the view that they should be free to take their own decisions about what course of action is safe or otherwise. However, their actions still have the potential to affect others, and it is unlikely that pilots as a group would welcome a situation where there were no regulation of their activities or aircraft.

² See Appendix 7 for an explanation of the classification of airspace.

- 4.16 In its early days, microlight flying was very lightly regulated but suffered a very high accident rate. Efforts by the BMAA, PFA, and the CAA have raised safety standards for the activity and reduced accident rates.

Safety for GA aircraft owners and operators

- 4.17 GA aircraft owners and operators have come to expect some regulatory protection from the actions (and inactions) of others in relation to the airworthiness and safe operation of the aircraft they acquire including the competence of pilots who fly them.

Case Study: Fractional Ownership

Business Aviation is growing strongly at present, driven by a number of factors, including the growth in “fractional ownership” programmes.

Fractional ownership involves a number of "owners" holding a share in one (or more) of a number of aircraft included in the whole programme. The idea is to have so many aircraft that the problems that exist in normal shared ownership (that each owner wants the aircraft at the same time) are overcome. This model has created some complications for regulation, but the USA has now produced a regulation to deal with fractional ownership.

One European fractional ownership programme has already built up a fleet of 100 business aircraft, representing an investment of several hundred million pounds. It is expected that these schemes will continue to expand, with a European regulatory environment similar to that of the USA likely to emerge in the near term.

The economic impact of regulation

- 4.18 The regulation of GA brings benefits in terms of safety. However it also creates burdens; the costs of complying with safety regulation, and, under the UK system, the costs of the regulator itself, as the CAA is funded by the aviation industry, rather than by the taxpayer as in some other countries. There is no easy way to balance these costs and benefits, particularly in the regulation of GA. The GA sector covers a wide range of activities, including some where much of the risk is borne by the individual responsible, but others where third parties may be exposed to risk but have little or no means of controlling it.
- 4.19 The wide variation in GA activities means that there is no simple approach to the regulation of GA safety. In some areas more intensive regulation of safety will be needed than in others, and the regulation of GA will not always be perfectly balanced. Furthermore with the general focus on safety, it is likely that this balance is likely to err on the side of caution, leading to some parts of GA bearing more regulation than they might consider appropriate.
- 4.20 The CAA has sought to manage the balance of safety regulation versus the cost of compliance by treating the different parts of GA separately. So for example those parts of GA that are relatively self-contained and where there is less risk to third parties, such as gliding, are responsible for regulating their own operations.
- 4.21 This is no easy task for the CAA, or indeed for any regulator. However, the principles of good regulation, first published by the Better Regulation Task Force (BRTF) in 1998³, provide an excellent guide in this regard.

³ The BRTF now has an expanded remit and has been renamed as the Better Regulation Commission (BRC)

- 4.22 The BRTF's five principles of good regulation, which Government Departments and independent regulators should have regard to when considering new proposals and evaluating existing regulations, are that regulations should be:
- **Proportionate:** Regulators should only intervene when necessary. Remedies should be appropriate to the risk posed, and costs identified and minimised.
 - **Accountable:** Regulators must be able to justify decisions, and be subject to public scrutiny.
 - **Consistent:** Government rules and standards must be joined up and implemented fairly.
 - **Transparent:** Regulators should be open, and keep regulations simple and user friendly.
 - **Targeted:** Regulation should be focused on the problem, and minimise side effects.

RECOMMENDATION

GA-related policy should at all levels be developed in accordance with the Better Regulation Task Force's five principles of good regulation

The CAA's role in relation to GA and CAT

- 4.23 The CAA is not charged with any responsibility for the prosperity of the GA industry, beyond a recent requirement to prepare a Regulatory Impact Assessment (RIA) for significant regulatory proposals. This lack of responsibility for GA contrasts with the CAA's responsibility for airlines, set out in the Civil Aviation Act 1982 as follows:

"to secure that British airlines provide services which satisfy all substantial categories of public demand ... an economic return to efficient operators on the sums invested in providing the services and with securing the sound development of the civil air transport industry in the UK; and to further the reasonable interests of users of air transport services"

- 4.24 The language in this objective now seems anachronistic, given developments in the UK air transport industry over recent decades, and the requirements of European law. The wording also suggests that the CAA should have a greater interest in promoting the commercial air transport industry, which includes flying training and business and corporate flying, over the interests of other parts of the aviation sector.
- 4.25 When the legislation can next be reconsidered it would seem sensible, in addition to removing the reference to 'British' airlines, to consider this issue as well. It seems odd that the air transport industry receives a specific mention, whilst GA does not. What is clear is that the CAA is not, nor should be, in the business of automatically promoting CAT over GA, and that the legislation should properly reflect this.

RECOMMENDATION

Government to revise the CAA's statutory objectives at section 4 of the Civil Aviation Act at the next opportunity, to remove any suggestion of bias toward commercial air transport over GA

Impact of regulation on innovation and use of technology

- 4.26 Regulation inevitably imposes costs and can distort behaviour. In some situations this could hamper new products being adopted as early as might be desirable, or if regulation is not pitched at the right level, imposing regulatory hurdles that are higher than they need be.

Cost of product certification

- 4.27 New aviation products have historically required CAA certification to prove their airworthiness against an intended function. With increasingly complex technology, assessment must also be made to ensure that there are no unintended negative safety consequences.
- 4.28 The cost of airworthiness certification is a deterrent in some areas to producing new designs and incorporating new technologies. The continued use by modern GA light aircraft of aero engines that have changed very little in 60 years may be one example. Where rules for certification are less onerous, such as for some microlight aircraft, there has been greater innovation in the use of modern powerplant designs that are significantly more fuel efficient and less noisy.
- 4.29 Another example is the new diesel engines now available for light aircraft. Previously, light propeller-driven aircraft have almost exclusively used gasoline engines. The development costs associated with obtaining airworthiness certification for these diesel engines are significant. Specific grants have helped in overcoming the initial cost hurdle. Other factors, such as the savings that result from the lower tax rate attached to the fuel used by these diesel engines over traditional engines, may also serve to make them more attractive.
- 4.30 Another technology that has been relatively slow to emerge is the use of composites (more efficient wing and fuselage designs that can reduce weight and aerodynamic drag, and hence improve the efficiency of aircraft) in aircraft construction. Although gliders have almost exclusively been built with composites for the last 30 years, they have only recently been used more widely in other GA aircraft.
- 4.31 EASA has now taken over the responsibility for airworthiness approval of aircraft, including new (or newly imported) gliders. Gliders in the UK were previously regulated by the British Gliding Association (including airworthiness). Over the years, BGA has permitted modifications to gliders that have been proved to be safe, but that are now no longer allowed under EASA rules. For example, replacing skids with tailwheels on older gliders helps to improve directional control on landing and take-off, but this modification is no longer allowed by EASA. Another example is the modification of a seat design, which in its original form has failed on a number of heavy landings causing back injuries. These proven modifications are no longer allowed or will now be subject to significant costly investigation, even though they have been in use for many years. This illustrates of the potential impact that differing regulatory regimes can have on use of technology.

FOREIGN-REGISTERED AIRCRAFT BASED IN THE UK

4.32 This section reviews the recent trend of increasing numbers of foreign-registered GA aircraft based in the UK and the possible underlying reasons.

Background

4.33 The UK is a signatory of the Chicago Convention which established the International Civil Aviation Organisation (ICAO). This requires member states to admit civil aircraft registered in other member states to their airspace. In order to ensure that adequate safety standards are maintained the Convention requires member states to meet certain minimum requirements for airworthiness, flight crew licensing and air traffic management. Some differences from the common requirements are permitted, but must be published in the member states' Aeronautical Information Publication (AIP). When an aircraft registered in one member state operates in the airspace of another member state, it is required to comply fully with the airspace and air traffic management regulations of that state. The airworthiness and pilot licensing requirements of the state of registration will continue to apply. However, there may be instances where the visiting aircraft will be required to carry additional equipment, which is not required in its state of registration. For example, a US-registered aircraft is not permitted to operate under IFR in certain UK controlled airspace unless it carries Mode S equipment, which is not mandated in the US.

4.34 Some foreign-registered GA aircraft and airliners have been based in the UK for many years for a variety of reasons. But the available data shows that the number of such aircraft has increased significantly recently. There are no official statistics for the number of foreign-registered aircraft in the UK. However, aircraft enthusiasts organisations such as LAAS International and Air Britain publish comprehensive information on the subject, updated by information from and sightings of aircraft by their members. The LAAS International website, for example, lists around 1100 foreign-registered GA aircraft as being based in the UK, plus a number of inactive aircraft that are stored, being rebuilt, in museums etc⁴. Because the information is largely based on sightings it is subject to some margin of error and may slightly overstate the numbers⁵.

4.35 On 1 August 2005 the Department for Transport (DfT) issued a formal consultation⁶, which sought views on whether steps should be taken to ensure, so far as possible, that private aircraft based in the UK are subject to UK and any relevant European regulatory requirements and supervision by the UK Civil Aviation Authority. The document proposed that this could best be achieved by amending the Air Navigation Order to limit the time (for example to 90 days) that foreign-registered aircraft may spend in the UK in any 12 months – although such a requirement need not apply to aircraft which are registered in a state subject to EASA's requirements, or to public transport aircraft. The results of the DfT's consultation have not yet been announced.

⁴ Such inactive aircraft are, where possible, excluded from this analysis because they would not be expected to aspire to UK registration unless active.

⁵ Because aircraft that have left the UK may take longer to be recorded than aircraft that are new to the UK.

⁶ Consultation on the application of UK regulatory requirements to foreign-registered aircraft based permanently in the UK, see

www.dft.gov.uk/stellent/groups/dft_aviation/documents/pdf/dft_aviation_pdf_039541.pdf.

Statistics

4.36 Table 4.1 shows the estimated total number of foreign-registered aircraft based in the UK in 1987, 1996 and 2005.

Table 4.1 Foreign-registered GA aircraft based in the UK

	1987	1996	2005
Simple piston	28	134	248
Complex piston & turboprop	26	127	410
Business jets	15	72	123
Helicopters	2	18	86
Vintage/historic	16	32	8
Others	13	7	14
Total	100	390	889
% on US register	86%	61%	72%

Note: excludes aircraft known to be inactive

Source: Air Britain UK Register of Civil Aircraft

4.37 Table 4.1 shows that the number of active GA aircraft on foreign registers has increased nearly ninefold in less than 20 years (or twelvefold if more unusual types are excluded such as World War II aircraft, microlights, balloons/airships or aircraft operated for the military). Indications are that this rate of growth has continued in 2006 and that the total may have exceeded 1000 aircraft. The table also shows that a high proportion of aircraft are US-registered. Table 4.2 shows in more detail an analysis by country of registration for 2005.

Table 4.2 Foreign-registered aircraft based in the UK by country of registration, 2005

EU Member States	154
USA	636
Bermuda and Cayman Islands	63
Rest of the world	36
Total	889

Note: Excludes aircraft known to be inactive. Airliners include those built or converted as business jets but also some non-GA commercial aircraft.

Source: Air Britain UK Register of Civil Aircraft.

4.38 Aircraft from other EU member states have been included in Table 4.2 although it should be noted that, as stated in the DfT consultation, the single market aims of EU (including EASA) regulations generally allow for EU operated aircraft to be registered in any member state⁷. Excluding EU-registered aircraft, there remain more than 700 active GA foreign-registered aircraft based in the UK, of which 87% are registered in

⁷ Although Operating Licences held by commercial airlines have a principal place of business requirement.

the US. The remainder are spread across 32 non-EU countries, with business aircraft making up all of the aircraft on the Bermudan and Cayman registers.

Underlying reasons

- 4.39 A variety of factors may explain why so many aircraft based in the UK are now on foreign registers, particularly the US register.

Business aircraft

- 4.40 Historically, for corporate jets, the principal reason was the high cost of modifying aircraft to meet CAA safety certification requirements. The cost of such modifications could be considerable, as well as potentially devaluing the aircraft because returning the aircraft to the foreign register might necessitate a reversal of those modifications. The advent of EASA reduced the difficulty of achieving UK registration, as most of the previous CAA additional requirements have now been removed, and those that do remain will apply to all EU states.
- 4.41 Other reasons for corporate aircraft remaining on overseas registers may relate to overseas tax regimes, and a more generous treatment of the write-down value of assets. Some multinational corporations may also prefer to have common standards for operating their fleet and for the licensing of their aircrew. Such companies may tend generally to prefer the US register (and US regulation) for this purpose.
- 4.42 Table 4.3 analyses the foreign-registered multi-engine turbine fleet based in the UK since 1987 – which is a reasonable representation of business aircraft – and compares this with the number of aircraft on the UK register. It is apparent that the foreign-registered fleet has grown from only 2 turboprops and 15 business jets to 47 turboprops and 118 business jets in 2005. When compared with the UK-registered fleet the effect is even more obvious. The severe decline in UK-registered turboprops is nearly outweighed by the growth on foreign registers (allowing for some aircraft that are not used for business aviation), while the relatively static figures in UK-registered business jets are masking the true picture of significant growth. Table 4.3 also shows the effect on helicopter numbers, which will include many helicopters used for business purposes. The foreign-registered fleet based in the UK has risen from 2 in 1987 to 86 in 2005. The effect on the overall UK fleet is less dramatic than the turbine fixed-wing sector, adding around 8%, but is nevertheless significant.

Table 4.3 Foreign-registered GA turbine aircraft based in the UK

Multi-engined turboprop

	USA	Bermuda, Cayman Is.	Other	Total	Active UK- registered fleet for comparison
1987	2	0	0	2	94
1991	2	5	0	7	66
1996	10	6	1	17	31
2001	22	4	0	26	33
2005	31	4	12*	47	43 (estimate)

Business jets

	USA	Bermuda, Cayman Is.	Other	Total	Active UK- registered fleet for comparison
1987	11	4	0	15	90
1991	37	24	4	65	104
1996	26	39	7	72	77
2001	40	53	10	103	82
2005	56	49	13	118	95 (estimate)

Note: includes converted airliners, BBJ, ACJ

Helicopters

	USA	Bermuda, Cayman Is.	Other	Total	Active UK-registered fleet for comparison
1987	2	0	0	2	505
1991	5	4	0	9	785
1996	7	8	3	18	747
2001	34	6	15	55	925
2005	69	5	12	86	1133 (estimate)

Source: Air Britain UK Register of Civil Aircraft for relevant years

Owner-flown aircraft

4.43 In the case of owner-flown aircraft, used for personal transport, the reasons for foreign-registration are different. These aircraft are mainly complex singles and light twins with relatively high cruising speeds, some classified as “high performance aircraft”, requiring additional training and testing since the advent of European Joint Aviation Requirements for Flight Crew Licensing (JAR-FCL). In order to operate safely and efficiently they need guaranteed access to controlled airspace and therefore to have an instrument rating. Since the introduction of JAR-FCL in 2000, it has become more difficult for the holder of a UK pilot’s licence to gain a JAR-FCL instrument rating. Many pilots may therefore choose to obtain a US licence and instrument rating and place their aircraft on the US register, because the procedures are simpler, cheaper and less onerous than in the UK. This problem rarely applies to corporate aircraft because they are usually flown by professional pilots.

4.44 In the UK, there is a lesser instrument qualification called the Instrument Meteorological Conditions (IMC) Rating, which allows the pilot to fly in lower visibility limits, although not to the same extent as with a full instrument rating. The IMC Rating is a national rating, which the CAA can only add to a UK-issued pilot’s licence. IMC ratings have been issued in reducing numbers since the introduction of the European JAR-FCL, from an average of a 1,000 per year to only 400 in 2005.⁸

Barriers to achieving an Instrument Rating

4.45 A pilot who has an instrument rating can fly in controlled airspace, and in worse weather than one who holds only a basic licence. Achieving an instrument rating

⁸ The last two sentences in this paragraph were amended to correct a factual error shortly after publication of the report. They previously read “The IMC Rating is a national rating, which the CAA can only add to a UK (non-JAR-FCL) pilot’s licence. IMC ratings have consequently been issued in reducing numbers...”

under JAR-FCL is challenging, especially in relation to theoretical knowledge, and only a small number of instrument ratings are issued to private pilots (historically ranging between only 20 and 60 a year).

- 4.46 This may lead to circumstances where private pilots opt to fly in weather conditions that are marginal, reducing the safety of their flying. This could be avoided if they had the skills that an instrument rating would give them and it would seem desirable to increase the numbers of private pilots that do achieve an instrument rating. The Joint Aviation Authorities (JAA) are currently reviewing the instrument rating requirements for private pilots.
- 4.47 Table 4.4 analyses the US-registered aircraft based in the UK identified by manufacturer. This data is based on a different but more up to date source (March 2006) and shows a higher number of US-registered aircraft in total.

Table 4.4 UK-based GA aircraft on the US register by type, 2006

Manufacturer	Total	Simple piston	Complex piston & turboprop	Business jets	Helicopters
Piper	213	94	119		
Cessna	163	33	79	51	
Beech	81		79	2	
Cirrus	49		49		
Socata	27	5	22		
Mooney	22		22		
Agusta	21				21
Bell	21				21
Rockwell	18	9	9		
Boeing/Stearman	18	18			
Maule	12	12			
Hiller	11				11
Hughes	11				11
Sub Total	667	171	382	53	64
Other < 10	184				
Total	851				

Source: LAAS International website

- 4.48 The table classifies smaller aircraft into “simple” and “complex”. Simple aircraft are piston-engined types with fixed-pitch propellers and fixed undercarriages. Complex aircraft are those with variable pitch propellers and/or a retractable undercarriage. The table shows that there are more than twice the number of complex aircraft involved than simple aircraft – whereas simple aircraft on the UK register greatly outnumber complex aircraft.
- 4.49 Simple aircraft are primarily intended for training and recreational purposes. They mainly operate under visual flight rules and few are suitably equipped for instrument flight rules in controlled airspace. About 2% of simple single-engine piston aircraft based in the UK are on the US register. For example, there are only two Cessna 152 aircraft on the US register out of a total UK fleet of 300 aircraft based in the UK.
- 4.50 Some twin-engine complex aircraft are used for pilot training and under current UK legislation are required to be UK-registered. The need for an instrument rating is one possible reason for a high proportion of these aircraft, used for personal transport, being placed on the US register. For example, 35% of complex Mooney aircraft and

34% of complex Beech aircraft are on the US register. And in the case of the popular entry-level Cessna Citation corporate jet, some 59% are maintained on the US register.

- 4.51 It seems clear from the analysis above that there is a significant trend towards greater numbers of UK-based aircraft being placed on foreign registers, particularly the US register. This seems to be largely driven by the easier and less costly regulatory package that comes with US-registered aircraft when compared with UK-registered aircraft and the greater flexibility this may offer to pilots. However, such a situation may also raise difficulties in relation to the effectiveness of regulatory oversight and accountability. The DfT consultation on this issue is now complete, and a response document is awaited. Once that is received, the issue should be further debated in an open forum.

TAXATION

VAT and aviation

- 4.52 The supply of all goods and services in the UK is subject to Value Added Tax (VAT) at the standard rate of 17.5% unless expressly exempted or varied. The relevant legislation⁹ lists the supplies of goods and services which are exempt or zero-rated.
- 4.53 Among those areas benefiting from zero-rating is the transport of passengers in any vehicle ship or aircraft designed or adapted to carry not less than ten passengers and weighing at least 8 tonnes. Included in the exemption from VAT are services related to education, sport, sports competition and physical education. Exemption for education is restricted to education supplied by an “eligible body”, which includes certain schools, universities and not-for-profit bodies.
- 4.54 The more tax advantageous status is to be zero-rated. This means that no VAT is added to selling prices *and* the supplier is able to recover the VAT included in all purchases.
- 4.55 VAT affects aviation in different ways. In line with the definition above, the transport of passengers on scheduled airline services is zero-rated for VAT purposes. By contrast, most GA activities are subject to VAT, as they do not involve the offering of public transport or are under the weight threshold.
- 4.56 The impact of the UK’s current VAT regime is not material for those GA customers or users who are VAT-registered. They can simply deduct VAT payments made from the amounts due to HM Revenue and Customs. It is not, therefore, a concern for Business and Corporate Aviation as their customers usually are VAT-registered.
- 4.57 However for other GA customers, who are not VAT-registered, the VAT will increase the overall cost by 17.5% - as the VAT is irrecoverable. This makes the option of travelling by means of a private aircraft less attractive. As noted above, public transport modes, such as airliners, ships and trains, are zero-rated for VAT.

Taxation and its impact on the UK flight training industry

- 4.58 The flying training industry in the UK faces tax costs that companies in other countries do not pay, in particular VAT on course fees. This can mean that, in the market for self-sponsored students, UK flying schools are placed at a disadvantage

⁹ The Value Added Tax Act 1994.

to those operating in countries where VAT is not charged on training. There has been some recent contracting out of flying training for UK pilots, in particular to the US and Spain

- 4.59 A pilot's licence is one of the most expensive vocational qualifications to obtain, but is one of the few vocational areas where the student is expected to pay VAT in addition to the cost of their training. Typically, an integrated course of training for a professional pilot is in the region of £60,000, excluding any accommodation and subsistence costs during the 15-month duration of training. There is also a cost differential between individuals and airlines who sponsor pilots: whereas the private individual seeking to qualify as a professional pilot has to pay irrecoverable VAT on his training, an airline who is sponsoring a student will be able to recover the whole of the VAT charge. Although VAT is chargeable on other transport-related training (e.g. HGV driver training), other vocational training is often conducted fully at further education establishments and VAT is not charged. Even if a further education course relating to pilot training can be found, the practical training still has to be conducted at a commercial establishment.
- 4.60 There was an increase in the number of professional pilots' licences issued towards the end of the 1990s. After a significant fall at the beginning of this century, there has now been a recovery over the last few years. Out of the four commercial flight training schools approved by the CAA offering integrated Airline Transport Pilots' Licences, one has relocated to Spain, one conducts most of its operations in the US and another conducts most of its operations in Australia. Taxation, fuel, establishment costs and weather are the major issues. Although UK-owned commercial pilot training is enjoying a renaissance after a serious decline in the early part of this century, much of the flying operations are now conducted overseas for cost reasons.
- 4.61 The migration of some pilot training to countries outside the UK is unlikely to have a negative effect on UK aviation. However, were the bulk of training to move abroad, this could be a cause for concern, as new pilots would have little experience of the UK's congested flying conditions and weather. It could also affect the overall health of GA in the UK. Flying schools are a key part of the GA sector, and often provide the backbone income stream for GA airfields, which themselves serve as an entry point for people to become involved in the aviation industry.

RECOMMENDATION

Government to consider whether the current VAT treatment applied to flight training places UK flying schools at a competitive disadvantage to those based in other countries and imposes too great a burden on the self-sponsored trainee

Taxation and its impact on the recreational pilot

- 4.62 GA embraces a wide range of recreational activities including gliding, ballooning, parachuting, microlighting, amateur aircraft building and general recreational flying. As noted above, many sporting and recreational activities are exempted from VAT. However, GA recreational activities rarely fall within the scope of these exemptions.

Taxes on fuel

Hydrocarbon Oil Duty

- 4.63 There are two main types of fuel used in GA aircraft; aviation gasoline (AVGAS), which is taxed at 28.1 pence per litre and aviation turbine fuel (AVTUR), which is exempt from hydrocarbon oil duty.
- 4.64 The majority of powered GA aircraft have piston engines, which tend to use AVGAS. AVTUR is mainly used by airlines but also in corporate jets and turboprop GA aircraft. However, an increasing number of piston engines can now run on AVTUR, and the investment in the technology to allow this may have been driven by the more advantageous tax treatment that AVTUR enjoys, such engines can also offer a reduction in fuel consumption.
- 4.65 The majority of GA still uses AVGAS, pays a higher cost for its fuel than commercial aviation, and is consequently closer to meeting its environmental costs.
- 4.66 In the past, flying schools were able to recover the cost of hydrocarbon oil duty through a rebate scheme, but this rebate has been abolished.

Air Passenger Duty

- 4.67 An air passenger duty has been introduced in the UK, but aircraft that do not carry fare-paying passengers, have a maximum take-off weight of less than 10 tonnes, or have less than twenty passenger seats, are exempt. Air passenger duty therefore has no significant impact on GA. So in this regard GA has an advantage over the airlines that may counter the differential treatment in relation to taxation of fuel.

SECURITY REQUIREMENTS FOR BUSINESS AVIATION

- 4.68 The business aviation community has worked over many years with relevant bodies to ensure security of the sector; most particularly this is used to provide inputs to intelligence activities by the relevant authorities. This 'passive' security needs to be continually nurtured to ensure best results. In recent years, particularly since the events of 11th September 2001, the need for more active security measures have been both studied and implemented in the sector.
- 4.69 At present, formal security requirements are applied to commercial aircraft above 10 tonnes MTOW or more than 19 passenger seats. The DfT (TRANSEC) are currently consulting on applying security measures to aircraft between 2.73 and 9.99 tonnes.¹⁰ The European Commission is also currently reviewing EU Regulation 2320/2002 and 622/2003 including the current requirements for aircraft below 10 tonnes and less than 20 passenger seats. A similar debate is ongoing in the European Institutions as pan-European security standards are revised. It is noted that the UK can provide enhanced requirements over and above any common EU requirements should Government deem this necessary.
- 4.70 The business aviation sector uses a large number of departure points in an open system, rather like a railway, and very unlike an airline which flies between two closed areas that can easily be classified as Restricted Zones into which entry can be restricted. Several GA aerodromes have public footpaths across them; clearly entry cannot be restricted in the same manner as at Heathrow.

¹⁰ This could therefore apply to some air taxi operations.

- 4.71 Business aviation clients want to go directly to the closest airport to their ultimate destination rather than suffer lengthy airport transfers; the major rationale for most users of a business aircraft is to minimise lost time due to travelling. Interestingly, the next most important driver for the use of business aviation is its perceived better security than the airlines. Compared to an airline, business aviation aircraft passenger numbers are very small, but the economic value of each passenger is likely to be very high. A typical large charter company in the business aviation sector will have a client base in four figures, but with a list of over 1,000 destinations.
- 4.72 The costs and practicality of providing full airline-style screening at each of these 1000 plus departure points (in Europe alone, with helicopters having an infinite destination list) is prohibitive. Other open systems (rail networks, bus services etc.) recognise that providing airline style security at each station or bus stop is disproportionate. Airline style screening is redundant for most GA aircraft, with an open cockpit and easy access to safety items, such as the crash axe, meaning that removing items prohibited from carriage on an airliner serves little purpose. Airline style security also relies on a high level of passenger throughput, both to amortise initial equipment costs and justify the staffing costs, but also to ensure the security staff remain current. With the exception of a handful of larger GATs or FBOs the throughput of qualifying passengers is insufficient.
- 4.73 There is also an issue relating to the application of security requirements to helicopter operations servicing North Sea oil and gas platforms and whether this represents a proportionate response to the risks involved. However, with ongoing consultations and potential legislative changes in the UK and Europe respectively, the Review is not the correct forum for producing proposals on security measures.

RECOMMENDATION

Government to consider setting up a committee to examine the GA-specific elements of aviation security requirements

5. FUTURE ROLE OF THE EU

Summary

- 5.1 The European Community has been increasing its competence in aviation for a number of years. First, through the liberalisation of the European aviation market and more recently through implementation of Single European Sky (SES) and European Aviation Safety Agency (EASA) legislation. There is likely to be new legislation dealing with the environment, airports, security and other areas which may have a direct or indirect impact on aviation. Aviation regulation seems likely to continue to evolve, with the European Commission as the predominant rule maker.
- 5.2 Safety will always be of paramount importance. With the improvements in technology on the ground and in the air, through such initiatives as SESAR and GALILEO, the aim is to ensure that there is sufficient capacity to meet the future demand in traffic growth for all sectors of aviation.
- 5.3 Most EU aviation legislation is aimed at the commercial aviation sector. However, there can be an indirect impact on GA. CAA, Government and GA should work together to seek to ensure that legislative changes emanating from the EU maintain a fair balance for all aviation interests.

SINGLE EUROPEAN SKY (SES)

- 5.4 The SES Regulations¹ entered into force on 20 April 2004. The objectives for the SES initiative are: “to enhance current safety standards and overall efficiency for general air traffic in Europe, to optimise capacity meeting the requirements of all airspace users and to minimise delays”.
- 5.5 The main issues arising for GA from the SES are likely to be the reclassification of airspace and the re-equipment of aircraft as a result of interoperability requirements and SESAR. Initial GA concerns about the Commission’s proposals for a common charging scheme for air navigation services have now largely dissipated as there will be no changes to the current exemption policy and the charging formula for en-route air navigation charges will be consistent with the existing Eurocontrol system.
- 5.6 The CAA and Government think that the main changes at aerodromes will be at Heathrow, Gatwick, Stansted and Manchester, where aerodrome-ATC charges may in future have to be calculated in accordance with a new formula. The draft Regulation allows for the modulation of charges where the airspace is congested, for environmental reasons or for improvements in capacity. This may lead to an increase in costs in areas such as the London Terminal Manoeuvring Area (LTMA). Full consultation on such charges is also a requirement of the draft Regulation.
- 5.7 The Airspace Regulation requires Member States to establish Functional Airspace Blocks (FABs) in airspace above Flight Level (FL) 285 (28,500ft). The Regulation does not stop Member States including lower airspace. Establishing a FAB does not alter the airspace requirements and there is unlikely to be an impact on GA aircraft that regularly fly above FL285.

¹ The four Single Sky regulations, Regulation (EC) No 549/2004 to Regulation (EC) No 552/2004, published in the *Official Journal of the European Union*, 31 March 2004, OJ L 96, 31.3.2004, pp. 1-42.

- 5.8 Other key components of the SES include the reconfiguration of upper airspace to maximise capacity and safety and the flexible use of airspace concept – which aims to enhance civil/military cooperation and may allow GA to gain greater access to areas that were previously closed to them, such as permanent Danger Areas.
- 5.9 The most important issue for GA is likely to be the proposed reclassification of European airspace. In October 2005 the Single Sky Committee approved an implementing rule on harmonising the classification of airspace above FL195 (Class C airspace). This has subsequently been published as the Airspace Classification Regulation, requiring EU States to implement it by 1 July 2007.
- 5.10 The effect of these changes within the UK will be the introduction of significant new areas of controlled airspace between FL195 and FL245 replacing all Class G that exists in that band today. Access to VFR traffic will be accommodated through the introduction of Temporary Reserved Areas (TRA) to enable GA (mainly gliders) largely to satisfy their existing requirements. VFR flight would be permissible in such reserved airspace and the CAA as National Supervisory Authority will approve and publish the access rules. Aircraft that meet criteria for flight in controlled airspace will still be permitted VFR access to Class C airspace under an ATC clearance; however, this will only be granted when it does not compromise safety, or interfere with the IFR route structure and associated ATC capacity.
- 5.11 In preparation for Operational Improvement 2A of the ECAC Airspace Strategy² (to harmonise classifications below FL195), the CAA intends to introduce safeguards for ATC that will prohibit an aircraft from operating VFR along the ATS route structure. VFR access to controlled airspace will still be possible with an ATC clearance, but again on the basis that safety will be maintained, and that the IFR route structure and ATC capacity will be safeguarded.
- 5.12 The CAA will later this year publish procedures for aircraft operators requiring VFR access above FL195, and for crossing a Class C ATS route below FL195. Separate arrangements will be published for access to the planned portions of Class G airspace available on a temporary basis above FL195 and beyond any published ATS route structure.
- 5.13 The proposal to reclassify airspace below FL195 could have considerable implications for GA, particularly as there would be an impact on existing Class G airspace. Member States have yet to see any specific proposal, however, and so it is not possible to estimate the effects.

SESAR (Single European Sky Air traffic management Research programme)

- 5.14 SESAR is the technical implementation programme for the SES. It is designed to complement the existing Regulatory framework and to help implement new technology in air traffic management. It will deliver new technologies such as data links between aircraft and ground, satellite navigation, and more automated tools for controllers. It will allow best use to be made of developments in computing and communications technologies while taking care of safety, security and reliability aspects during the design phase of the system.
- 5.15 A Definition Phase to draw up the project plan for the modernisation of air traffic management in Europe is already underway, funded jointly by Eurocontrol and the

² Eurocontrol developing implementation; EC mandates largely based on strategy requirements.

European Commission (through Trans-European Network – Transport funding). In November 2005 the Commission issued a Communication setting out proposals for the Development Phase. It envisages the creation of a joint undertaking with legislation to define both its objectives and its constitution. Modernisation of the European ATM network through improved technology will result in less fragmented airspace, which is safer, more efficient and more cost-effective for all airspace users, including GA.

- 5.16 The challenge for States, air navigation service providers and airspace designers is to create sufficient new capacity to meet the expected growth in traffic and the future demands of all airspace users. The International Aircraft Operations and Pilots Association is involved in the Definition Phase to represent the interests of the GA community.

Impact of SES/SESAR on GA

- 5.17 SES is still in its infancy and the impact on GA is currently limited. However, the impact on GA may increase in the future if the scope of the SES legislation extends further.

EUROPEAN AVIATION SAFETY AGENCY (EASA)

- 5.18 The regulation of civil aviation in the UK was the sole responsibility of the CAA from its formation in 1972 until 2002, when the EU adopted Regulation 1592/2002 (on common rules in the field of civil aviation safety and establishing the European Aviation Safety Agency (EASA)). The duplication of fully resourced aviation authorities in each European State had long been recognized, and the creation of the Joint Aviation Authorities (JAA) improved the situation by establishing common, but not legally binding, standards between member states for type certification and airworthiness, operations and flight crew licensing.
- 5.19 JAA acted as a co-ordinating body, relying on the goodwill of national aviation authorities across Europe to implement the “common standards”. Despite significant achievements, there remained differences in the application of JAA rules in EU Member States. It has been suggested that the concept of the JAA was flawed in that no common requirement could be agreed without the consent of all the JAA member states, and some countries were slower than others in meeting agreed, but non-binding, obligations to implement change, with the JAA having no powers of enforcement. Member states were said to have been reluctant to surrender their national regulation as to do so would have implied either that they were agreeing to lower standards or that they had previously imposed unnecessary burdens, potentially propagating the most burdensome regulation existing in any one JAA member state to all member states. An example was the formulation of common requirements to obtain and maintain a Private Pilot’s Licence. The CAA, in response to a GA industry initiative, recognised the problem and introduced the National Private Pilot’s Licence for the recreational pilot, with more proportionate standards. Ultimately, the shortcomings of JAA risked undermining safety and business benefits that should result from harmonisation. EC Regulation 3922/91 incorporated some JAA requirements into Community law but with limited impact.
- 5.20 The creation of EASA was a new approach to creating harmonised standards and regulations for all civil aviation in the EU. In 2003, EASA took over responsibility from Member States for producing common rules on airworthiness and environmental protection. The rules are directly applicable throughout the EU with Member States

no longer able to deviate or impose additional requirements. It also established responsibilities for the certification of aeronautical products, parts and appliances; and the approval of organisations and personnel engaged in the maintenance of those products. Some functions continue to be carried out by the National Aviation Authorities (NAAs). The CAA, as the UK's NAA, continues to inspect and issue individual aircraft with Certificates of Airworthiness, but now in accordance with EASA rules. Such implementation by Member States' NAAs will be overseen by EASA to ensure standardisation throughout Europe.

- 5.21 In 2005 a proposal was made to extend EASA's responsibilities to air operations and flight crew licensing. The Commission plans to extend EASA's remit further to cover safety and interoperability of air navigation services, air traffic management and airports, the objective being to have by 2010 the whole field of aviation safety under the scope of a single system.
- 5.22 A detailed description of the workings of EASA appears in the parallel Regulatory Review of GA.

EASA and non-EASA aircraft

- 5.23 Future EASA regulation will apply to all aircraft, except those outside the scope of the basic EASA Regulation. EASA will therefore have a fundamental influence on the future regulation of the GA community. However, the categories of civil aircraft that are outside the scope do constitute a significant proportion of the GA fleet (something like 50% of aircraft on the UK register). These are aircraft listed in Annex II to the basic Regulation (1592/2002), for example amateur-built, ex-military, historic aircraft, and most microlights.
- 5.24 Some aircraft have been given time-limited exemptions under EASA Implementing Regulations, for example gliders which first flew prior to September 2003. Discussions are in progress to try to make this exemption permanent.

CAA and GA participation and influencing role in EASA fora

- 5.25 The GA community and the CAA are largely in agreement on the possible impact of EASA on future GA regulation in the UK. However, the amendment proposed in 2005 to the basic Regulation is very unclear in many areas. To assist EASA in clarifying matters, the Agency has instituted a Working Group (MDM.032) comprising representatives from industry and some NAAs, to examine in detail future regulatory arrangements. The UK (both the GA community and the CAA) is well represented on this Group and a common position between industry and the CAA has been established.
- 5.26 The Working Group's tasks include: developing a concept for the regulation of aircraft other than complex, motor-powered aircraft when used in non-commercial activities; developing requirements for a new Recreational Pilot's Licence, and developing general requirements for the operations of such aircraft. The continued engagement with EASA (and indeed on SES matters) by UK representatives from GA and the CAA would appear to be essential during EASA/SES formative stages – something that should be easier to achieve given the fact that UK GA representatives already hold positions on a number of key committees.

The impact of EASA on GA

- 5.27 In principle EU-wide rules on certification, licensing etc should bring single-market benefits that have been seen in other parts of the aviation sector such as route licensing, competition and passenger rights. A common certification requirement, for example, should reduce costs for manufacturers, allow greater freedom of movement of aircraft and personnel between member states, and thus generally improve the working of the market. It will, however, take GA time to adapt to the new airworthiness rules, and the subsequent changes proposed for flight crew licensing and operations.

RECOMMENDATION

CAA, Government and GA to work better together to influence legislative changes emanating from the EU with the aim of maintaining a fair balance for all aviation interests. A current example is the need to ensure that the requirements for private pilots to gain an instrument rating are relevant and proportionate.

6. CONSULTATION AND DIALOGUE

Summary

- 6.1 This chapter reviews methods and effectiveness of consultation and dialogue between GA interests and the CAA, Government and regional bodies. The various methods of consultation, both formal and informal are considered. The GA representative bodies are examined, making the distinction between trade and member associations. The chapter identifies a need for more effective dialogue between CAA, Government and GA. A smaller number of GA representative groups to liaise with Government and regulator would be beneficial, but the impossibility of obtaining a single representative body for GA is acknowledged. Likewise, it is considered that single GA “focal points” within CAA and Government would bring advantages, as would the setting up of a quarterly discussion forum for GA, perhaps by elevating the General Aviation Consultative Committee to a more strategic body.

Review of existing consultative processes

- 6.2 Consultation by Government and other public bodies such as the CAA can take several forms, both formal and informal.

Formal consultation

- 6.3 The most formal consultation is that on policy documents or on legislative proposals. Such consultations follow Cabinet Office guidelines and are usually accompanied by a full or partial Regulatory Impact Assessment (RIA). The consultation is also on the RIA itself, as Government needs to check with stakeholders what the impact of a proposal on them will be. Responses to such consultations are usually made public, with a summary of all of them made and submitted to Parliament. It is possible that the same issue is taken to consultation a number of times, from initial proposal to implementing legislation, if that is the route taken.
- 6.4 This is also the process used to consult on proposals for Directives, Regulations and other legislation from the European Commission, which needs to be agreed by the Council of Ministers. The consultation process is constrained by the time limits set out in the Commission process. Often, Government is seeking stakeholders' views on the impacts of Commission proposals to inform a negotiating position. Such proposals need Parliamentary approval and the results of industry consultation are usually fed into the Explanatory Memoranda for the appropriate Scrutiny Committee.
- 6.5 Written consultation is not the only (or even always the most effective) means of consultation. Other forms of consultation may help in the process, such as stakeholder meetings; public meetings; the internet; public surveys; focus groups; regional events; and targeted leaflet campaigns. These methods are often used where Government needs to impart information and extract views from a range of stakeholders, particularly those who may not be easily reached via the traditional written consultation route. This is especially appropriate for issues and proposals that need to be explored in depth, as it enables dialogue and debate and the opportunity for stakeholders to ask questions and hear others' views.
- 6.6 While it is true that events and meetings are a more targeted and, therefore, effective way of communicating information, there is a danger that the interests of one group may take over.

- 6.7 Although DfT is the main government department where policy has a bearing on GA, there are other departments which hold the policy lead for issues that can affect the sector. As well as the Department of Trade and Industry, Health and Safety Executive, and HM Revenue and Customs there are two other government departments of particular interest to GA:
- The Department for Environment, Food and Rural Affairs (Defra): While DfT has responsibility for controlling aviation noise, the overall policy in which those controls sit is run from Defra. The Royal Aeronautical Club and GAAC responded to Defra's 2002 consultation on the general approach to the implementation of the EU Environmental Noise Directive.
 - The Department for Communities and Local Government (DCLG): From 5 May 2006 the responsibilities of the Office of the Deputy Prime Minister (ODPM) were moved to a new department, the Department for Communities and Local Government (DCLG). This department is responsible for planning policy and for some major planning decisions. The regional and local structure of planning in England and Wales is being replaced following extensive consultation carried out over the past three years. GAAC, which focusses on GA planning activity, has contributed to this process, concentrating on the lack of a national planning policy for aerodromes.
- 6.8 There are also occasions where private companies have to carry out formal consultations. Where changes to an aerodrome require planning permission, it is for the applicant for that permission to carry out the consultation, according to relevant planning law. Many airports also have consultative committees to get stakeholders' views on airport operations and development. GA organisations are involved with these committees.

Informal consultation

- 6.9 Government and public bodies also conduct a great deal of informal consultation with stakeholders. This can include telephone conversations and informal meetings where views or information are exchanged. The effectiveness of the use of these channels for those being consulted, including GA, will depend on the level of trust they place, and generate, in officials. This relies as much on relationships between individuals as on the existence of the links themselves. It is therefore difficult to assess its effectiveness.
- 6.10 That said, the importance of informal consultation with stakeholders prior to formal written consultation processes cannot be over-emphasised. Not only does the informal exchange of statistical data, views and opinions lead to a better informed consultation exercise, but it also ensures that stakeholders are engaged early and have a better understanding of the policy. Some CAA/GA consultation arrangements could be included under the "informal consultation" banner.

Existing consultation requirements

Existing regulatory guidelines and consultative requirements

6.11 Guidelines on the purpose of “consultation” exist as follows:

- CAP 724 Airspace Charter (CAA DAP)¹: “Formal consultation with airspace users...with the aim of obtaining consensus, wherever possible...”
- CAA Sponsorship Statement²: “So far as is practicable, the CAA will consult the aviation industry and others affected by its activities on matters such as standards, new regulations and charges, in advance of decisions of specific interest to them. The CAA will conduct consultation in accordance with the Cabinet Office Code of Practice on Consultation where appropriate. Regulatory Impact Assessments will be conducted in accordance with the guidance issued by the Department [for Transport]”. On RIAs the statement says: “All primary and secondary legislation will be subject to regulatory impact assessment. The CAA should seek to reduce unnecessary and over-detailed regulation and ensure that necessary regulation is clear and fair.”
- Cabinet Office guidelines³: “The main purpose [of consultation] is to improve decision-making, by ensuring that decisions are soundly based on evidence, that they take account of the views and experience of those affected by them, that innovative and creative options are considered and that new arrangements are workable.” “Modern management and social practice would include consultation as both a part of the democratic process as well as a knowledge-management tool combining each to contribute to Government policy and decision-making to reach appropriate solutions.” Although these guidelines do not have legal force, and cannot prevail over statutory or mandatory external requirements (e.g. under European Community law), they are otherwise generally regarded as binding on UK departments, their agencies and other public bodies like the CAA.

6.12 Consultation can be a legal requirement – either expressly imposed by statute or arising from past conduct. There is often a statutory requirement to consult on proposed secondary legislation.

6.13 For example, in complying with Government requirements in the Transport Act 2000, ministerial directions that set out the CAA’s air navigation functions⁴ and in line with generic guidance material issued by the Cabinet Office (see above), the CAA routinely undertakes consultation involving the GA community. The CAA’s consultation responsibilities in respect of its air navigation functions and the role of the Directorate of Airspace Policy (DAP) are set out in CAP 724 – Airspace Charter (see above). DAP is charged with reconciling civil and military operational needs, without affording preferential treatment to either, and ensuring that airspace planning takes into account all user interests, including that of the GA community.

6.14 It is Government policy that all departments and agencies should produce Regulatory Impact Assessments where they exercise statutory powers or make rules with a general effect on others. Any decision, guidance or legislation made by a minister or public body can be challenged in the Administrative Court by the process of judicial review.

¹ www.caa.co.uk/docs/33/CAP724.pdf.

² www.dft.gov.uk/stellent/groups/dft_aviation/documents/pdf/dft_aviation_pdf_507559.pdf.

³ www.cabinetoffice.gov.uk/regulation/consultation/index.asp.

⁴ Civil Aviation Authority (Air Navigation) Directions 2001 and Civil Aviation Authority (Air Navigation) (Variation) Direction 2004.

- 6.15 A party affected by a decision by officials of the CAA (for example a decision concerning the registration of an aircraft, or a certificate, licence, approval, authorisation or rating, or an air traffic or an airspace policy direction) has the right to request a Review under Regulation 6 of the Civil Aviation Authority Regulations 1991. Reviews are managed by the CAA's Legal Department with support from the relevant area of the CAA. The Review is undertaken by a CAA Board Member or Members who may appoint a technical assessor who has not been associated with the case under Review. The Appellant may attend or be represented at the Review. If this right is not exercised the Review will be based on written representations. However, this process does not offer a remedy to persons who are unhappy with a proposal on which the CAA has formally consulted.
- 6.16 Assuming a Review under Regulation 6 is not possible, the formal consultation process has only one recall – judicial review. This is expensive and offers no other post-receipt debate and input, other than managed political intervention.

GA representative bodies and consultation

GA representative bodies

- 6.17 Appendix 5 lists organisations and associations representing the interests of GA in the UK. It is split into two sections:
- those which represent GA communities and associations and whose remit specifically includes consultation and lobbying activities; and
 - those with a prime remit of a “Club” or “Association” focussing on a specific area of GA.
- 6.18 The first section includes the following:
- those focussing primarily on consultation and lobbying activity, largely in the UK, on behalf of their member associations, such as GA Alliance (GAA) and GA Awareness Council (GAAC), as well as the Aircraft Owners and Pilots Association (AOPA), which is part of a broader international organisation;
 - trade associations such as Airport Operators Association (AOA), British Business and General Aviation Association (BBGA) and British Helicopter Advisory Board (BHAB);
 - those with a specific focus on safety, such as the General Aviation Safety Council (GASCo);
- 6.19 The second section includes over 20 bodies – among them are groups relating to:
- aircraft type, such as gliders or helicopters.
 - social groupings, such as the Lawyers' Flying Association, Flying Farmers or British Women Pilots' Association.
 - specific activities, such as The British Aerobatic Association and British Precision Pilots Association, as well as the British Model Flying Association, which has more than 36,000 members.

“Trade” and “membership” associations

- 6.20 The distinction between a “Trade Association”, commercially driven, and “Membership Association”, socially driven, is important in the context of this chapter.

Trade associations

- 6.21 Trade associations represent businesses in particular sectors and exist to protect and nurture the operating environment to allow profitable development of their sector. They act as a network for member organisations and companies and aim to represent a harmonised position. Membership can be small, although they aim to cover the sector adequately such that Government and regulators will tend to recognise them as the “voice” of the sector. A notable characteristic is that they tend to focus almost exclusively on regulatory lobbying and consultation matters.

Membership associations

- 6.22 These groups have very different characteristics. They are formed by individuals with a common interest and, in the case of sports and recreational aviation (S&RA), almost exclusively by the enthusiast with a non-profit motive and a “community spirit”. Activity is usually voluntary, but some of the largest employ full-time staff. Most member associations focus on one sector and within that have three objectives: technical support; a mandate to ensure the interests of the sector are considered when regulatory decisions are taken; and a social element. They do not concentrate exclusively on lobbying, and as a consequence can lose focus on this element of their mandate, particularly as they rely on volunteers who may or may not have the necessary knowledge, ability or interest in a particular area.

Consultation with representative bodies

- 6.23 The multiple roles and voluntary nature of the groups themselves make a clear GA (or even S&RA) consultation focus difficult. Many of the individual interest bodies are concerned that a single broad group would not adequately represent their specific interests, and so they tend to value their position on various consultation fora. S&RA is represented at individual association level as well as by three umbrella groups (GAA, GAAC and RAeC) and two specific interest groups (GASCo and RAeS – the latter a professional institution). Participants can often be members of more than one group. AOPA or PFA membership, for example, is often combined with another more specialist group.
- 6.24 GA representation, while clearly not as organised as the commercial air transport sector (trade associations such as IATA, BATA, BARUK and ELFAA) is not as diverse as often quoted. There is a varying “grey line” split between trade associations and the membership associations. Trade associations tend to be better focussed. Individual volunteer associations will always have specific interests and it is difficult for umbrella bodies to represent them fully. Consequently, there is no single body that can claim to act as sole representative for GA in all consultations.
- 6.25 An umbrella organisation for all GA (paralleling the Confederation of British Industry, representing business) is therefore perhaps not realistic when commercial activities and sport and recreational activities mix. Emphasis should perhaps be placed on a “coordinated voice” rather than one organisation.

RECOMMENDATION

GA needs to co-ordinate and present itself better in order to put its case more effectively. Its ability to lobby would be improved if it could coalesce around a smaller number of groups for interface with Government and regulator. The structure of European GA (where Europe Air Sports, the International Aircraft Owners and Pilots Association and the European Council of General Aviation Support are the three active representative bodies) may offer a model that could sharpen the focus and enhance the effectiveness of GA's contribution

Analysis of effectiveness of consultation

Consultation definition and implementation.

- 6.26 Formal consultation by the CAA, Government and regional or local bodies is generally defined by existing legislative requirements and guidelines. In short, this is a process of "consult in accordance with defined requirements". This provides input to those who have legal responsibility for decision-making. The rather different concept of working in partnership to develop a mutually acceptable result, or at least a position that is understood and accepted by the various parties, would not be consistent with such requirements, and would clearly be difficult (although perhaps more desirable) for large, complex matters.
- 6.27 The effectiveness of formal consultation depends on the consulting body targeting the right audience, in the right language and medium with appropriate timescales; hence the development of the Cabinet Office guidelines. It also depends in large measure on the resources of those consulted and their faith in their ability to influence the final outcome.
- 6.28 For those consulting, there are concerns about the coverage and robustness of the views expressed, such as whether the comments received represent the views of an association's members. 300 similarly expressed views may represent the opinions of only the 300 who are pressing for a particular course of action, and may not represent the majority position.
- 6.29 Government (or other body consulting) has to take a balanced view between the varying views expressed and the interests of those of society at large. As consultees often do not have visibility of the wider issues (for instance security) this can undermine trust in the system.
- 6.30 As noted above, informal consultation can sometimes take the form of a partnership approach, although this method is not widely used because of the numbers and diversity of the stakeholders involved. This partnership approach was used in development and implementation of the National Private Pilot's Licence (NPPL) (see below) and it could perhaps be used again for GA, to improve the effectiveness of more formal consultation processes.

CAA consultation methodology and effectiveness

- 6.31 Industry and CAA agree that, for regulatory matters, the National Air Traffic Management Advisory Committee (NATMAC) and the General Aviation Consultative Committee (GACC) should be the principal focal points for debate. NATMAC involves a wider forum with the inclusion of commercial air transport interests, whereas GACC does not and provides a better (indeed the only) opportunity for GA representation in the broader context of UK aviation.

- 6.32 The complexity of consultation interfaces exists on both sides. While GA and S&RA might appear to have multiple interests and representation, so do the CAA, Government, the regions and local government. There are nine English regional planning bodies, which consult locally, plus those in Scotland, Wales and Northern Ireland. Airspace changes at airports are handled by a local consultation. Within DfT's Aviation Section there are two clear sections, Airspace and Safety, as well as TRANSEC (Transport Security). Within the CAA, Airspace Policy (DAP) and Safety Regulation (SRG) are separate areas. The functions of the recently disbanded General Aviation Department (GAD) are now part of the Flight Operations Department within SRG. There are a number of working groups involving GA and the CAA. Overall, this leads to many consultations with GA (perhaps 70 to 100) being in progress at the same time. Much of this is down to organisational arrangements, which perhaps need some better focus.
- 6.33 There can be little doubt that, in terms of effort and allocation of resources, the CAA is fundamentally committed to the need for comprehensive consultation with the GA community. However, consultation requires resources both on the part of industry and the regulator. Ultimately, consultation costs of the regulator are passed on to the industry. A degree of proportionality is therefore applied to the consultation process. Greater resources are devoted to consultations with large impacts than to simpler changes with lesser impacts. In the interests of cost-effectiveness, and thus of the industry that ultimately bears those costs, the CAA deems it appropriate not to apply every detail of the Cabinet Office Code of Practice to some simpler issues.

Clearing the air: problems to be overcome

- 6.34 As part of the Strategic Review, views were sought from some GA organisations about their perception of the effectiveness of Government and CAA consultation. 29 organisations were emailed a short questionnaire, which included multiple-choice questions and an opportunity to comment at greater length. Of those 29, a significant number were aware of the GA Strategic Review and its potential importance to the sector. There were only nine responses in total, which was a disappointing response in the circumstances.
- 6.35 The main themes emerging from responses to the questionnaire were as follows:
- GA bodies have too few resources (of staff and/or funding) to cope with the volume of consultation generated by UK and European institutions.
 - Some respondents were very cynical of the existing consultation process (consultation is just a "tick box" exercise) and believed there should be more legal weight attached to the Cabinet Office guidelines.
 - Stakeholders' understanding of what is meant by "consultation" differed, with some respondents believing that consultation involves seeking consensus or agreeing a majority view; and then being displeased when resultant policy appears to have ignored their representations.
 - Respondents felt that there needs to be more engagement and dialogue with GA before a consultation paper is published.
 - GA needs to organise itself better. One respondent felt that GA could better organise itself into two representative bodies – one to cover business and general aviation, and the other to represent sporting aviation. Another felt that there needed to be better co-ordination between the existing representative bodies.

- The relationship works better with some stakeholders than others. GAA and BBGA were most satisfied with the existing consultative processes, while GAAC and BAeA were the least satisfied.
- GA involvement in policy making is considered to be significant, with the majority of respondents feeling that they had the chance to contribute to policy development, and most being clear on what they were being asked to contribute and why. However, only two were clear about how their contribution was used, and two respondents strongly disagreed with this statement.
- DfT/CAA are not consistently explaining why stakeholder views do not become policy. Three respondents felt that the consultative bodies communicated the reasons why GA views may or may not become policy. Six respondents either didn't know or disagreed.
- Stakeholders responded positively to the questionnaire process but emphasised the need for change as a result of it.

6.36 A key issue to emerge during this Strategic Review is that there seems to have been a loss of trust between the CAA on the one hand and GA organisations on the other. GA's perception is that they are being marginalised; this follows their recent experience of consultative processes and their widely differing understandings of what consultation actually means. The CAA's perception is that the GA community can sometimes seem unreceptive to explanations of developments, and that there may be insufficient realisation that some of their views will inevitably not find favour if the wider UK interest suggests a different direction. This has a knock-on effect for those consulting, particularly in consultation meetings. For example, recent experience in DfT has shown that the vociferous approach of GA representatives in the SES Stakeholder Forum has led to a withdrawal of a number of other key stakeholders and undermined the effectiveness of the consultation process as a whole. The behaviour identified above is not unique to the GA community, but this Strategic Review is about GA and the aim is to try to foster mutual understanding to lead to a better way forward.

6.37 The GA associations that usually interface with the CAA and Government have identified two recent examples of CAA consultation as good and bad.

- The partnership approach leading to the development and implementation of the National Private Pilot's Licence (NPPL) is viewed as an excellent example of consultation and co-operative achievement. Numbers of GA and S&RA organisations had sought simplified pilot licensing arrangements while maintaining an appropriate level of safety. AOPA produced a paper, the CAA formed a consultation committee with GA (AOPA, BGA, PFA, BMAA, GAPAN and GAMTA) to develop a document for submission through CAA due process. GA was invited to appoint the chair. In due course the proposal was developed, submitted and adopted.
- On the other hand, the Joint Review Team on CAA SRG's costs and charges is the cause of great resentment among the GA community, and it will take some time for wounds to heal. In inviting people to be members of the team CAA had chosen what it believed would be representatives of all the key stakeholders. The issues were contentious from the beginning, and it was unlikely that a solution could have been found which would have met the requirements of all participants. GA in particular felt the review was unfair and that the root cause of this perception was the inadequacy of GA representation. There were no representatives of the sports and recreational sector. A minority report had to be included in the recommendations of the Review Team.

- 6.38 Problems such as those outlined above would be lessened by more effective dialogue between CAA, Government and GA. The Strategic Review Team supports the Regulatory Review's concept of an Issues Log and its recommendation that a list of GA consultative fora and how they link with various groups and departments of the CAA is shown on the CAA Internet website. The Strategic Review also makes the following recommendation:

RECOMMENDATION

There is a need for a more effective dialogue between GA and CAA and Government – with all parties needing to work to improve this. Steps that should be taken would include:

- i) establishing people as “GA focal points” within CAA and Government**
- ii) setting up a quarterly discussion forum – perhaps by elevating the CAA’s current General Aviation Consultative Committee to a more strategic body and setting the agenda at the right level**

7. LABOUR SUPPLY

Summary

- 7.1 This chapter provides an overview of the labour market for commercial pilots and engineers in the context of the GA sector. Private pilots are also included so as to reflect the trends for new entrants to GA. The chapter includes trends in the numbers of licensed pilots and engineers, and discusses the different routes to achieving a licence.
- 7.2 GA plays a key role in the provision of these people into the airline market, in particular in relation to pilots. Definitive data is hard to come by, however, and this chapter therefore relies on indications from the data that is available.
- 7.3 The total number of professional pilots has been steadily increasing. However there is some suggestion that there may be a shortage of pilots in the future, in the light of demands for new pilots in the UK, and the very rapid increase in demand for pilots in India and China.
- 7.4 The picture for aircraft engineers is more worrying. The licensed engineer population is ageing, and there does not seem to have been the increase in the number of aircraft engineers that there has been in the number of airline pilots.

Pilots

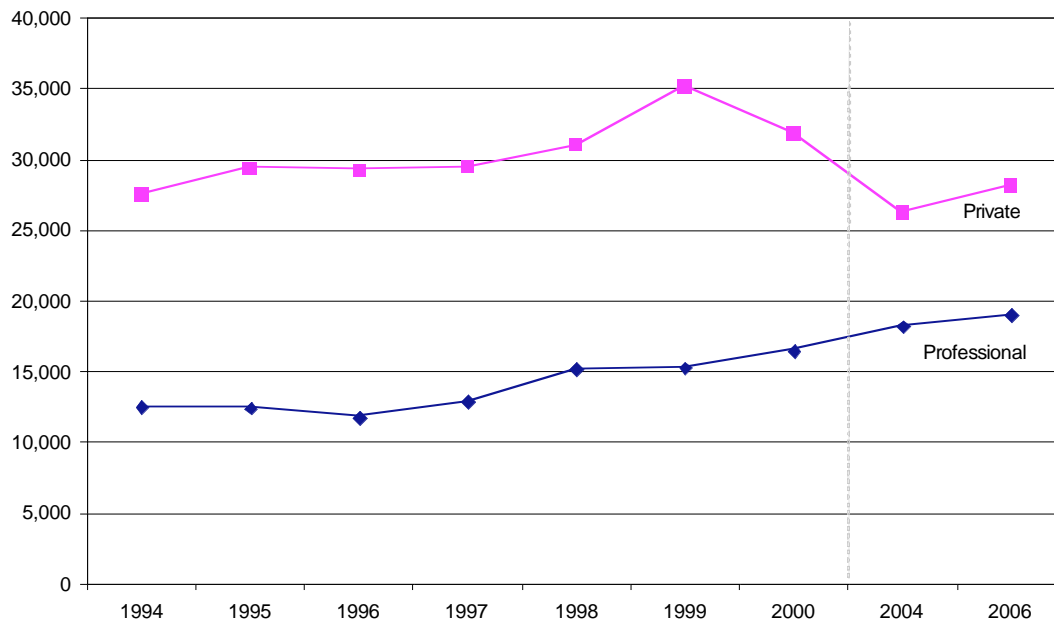
Professional pilots

- 7.5 There are five basic training routes for professional pilots to enter aviation. However, all professional pilots must complete JAR-FCL 1 (aeroplanes) or JAR-FCL 2 (helicopters) approved training, either integrated or modular. This training will be conducted at approved flight training organisations (FTOs).
- **Ab initio.** Candidates training from scratch at commercial FTOs, in the UK or abroad. The courses are either integrated (similar to a college course) or modular (training in distinct modules to suit candidates' needs).
 - **Private Pilot's Licence (PPL) entry.** Previously experienced (through PPL) candidates upgrading at commercial FTOs.
 - **Airline College.** Ab initio candidates from (now extinct in the UK) airline-operated FTOs.
 - **Military.** Ex-military pilots gaining commercial pilot licences.
 - **Foreign.** Already-licensed, foreign entries to the UK airline industry, with either a JAR-FCL licence or a licence gained in a State contracting to the International Civil Aviation Organisation (ICAO).
- 7.6 The cost of commercial pilot training is high (typically £60,000) and there is little or no sponsorship currently available. Whereas, in the past, many airlines would sponsor student pilots, individuals invariably now have to find their own funding. Furthermore, most candidates will aim at the higher-paying airlines and will only look for employment in GA if nothing else is available.

The number of active UK pilots

- 7.7 Figure 7.1 below shows the total number of currently licensed UK pilots by professional and private licences.
- 7.8 Professional pilots are those with Commercial Pilot's Licences (CPLs) and Airline Transport Pilot's Licences (ATPLs). To fly for an airline a pilot must have at least a CPL, or an ATPL if they are to act as pilot-in-command of a multi-crew aircraft. To fly commercially a pilot must have a minimum of a CPL.
- 7.9 Figure 7.1 below shows the total number of currently licensed UK pilots by professional and private licences. There is a discontinuity in the data for PPLs between 2000 and 2004, likely caused by a database change around that period.

Figure 7.1 Active pilot's licences¹



- 7.10 The number of professional pilots has continued to rise steadily, reflecting the growth of the airline industry, and perhaps also the increased demand for pilots for business aviation.
- 7.11 The advent of the Joint Aviation Authorities' Requirements for Flight Crew Licensing (JAR-FCL) Private Pilot's Licence (PPL) in 1999 may have affected the number of active PPL holders shown in Figure 7.1.
- 7.12 There has been a recent increase in private licences, possibly aided by the UK National Private Pilots Licence (NPPL), which was introduced in 2003, essentially for those wishing to fly for recreation. The NPPL brought many of those pilots back to flying who had lost their medical certification and who can now make a medical self-declaration.

¹ All the data in this chapter is CAA data.

7.13 To obtain some feel for the extent to which professional pilots may be working in the GA sector rather than for airlines, the Review looked at the proportion of ATPLs within the total number of commercial licences. This proportion hardly changed between 1999 and 2004 for aeroplanes, holding at around 75%.

Trends in the number of new pilots

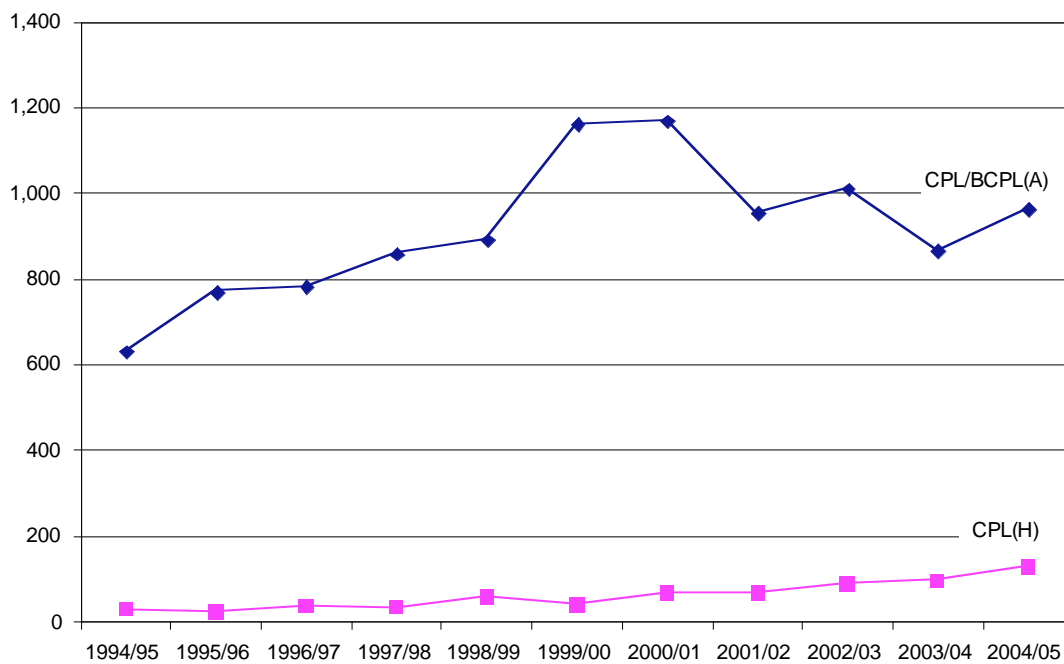
7.14 This section establishes the historic trend in new pilot licence issues and new instructor ratings.

Commercial Pilot Licence Issues

7.15 Figure 7.2 below shows the number of CPLs issued over the last 10 years. All professional pilots must obtain at least a CPL. CPL issues are the most likely indicator of new entrants to the GA sector. CPL(Aeroplanes) issues peaked at just under 1,200 in 2000/01, after rising steadily for several years, and then fell to a low of 850 in 2003/04, before rising again in the last year.

7.16 The number of CPL(Helicopters) issued has shown a steady increase across the decade, probably reflecting increased helicopter utilisation resulting from the availability of more cost-effective types.

Figure 7.2 CPL/BCPL new issues

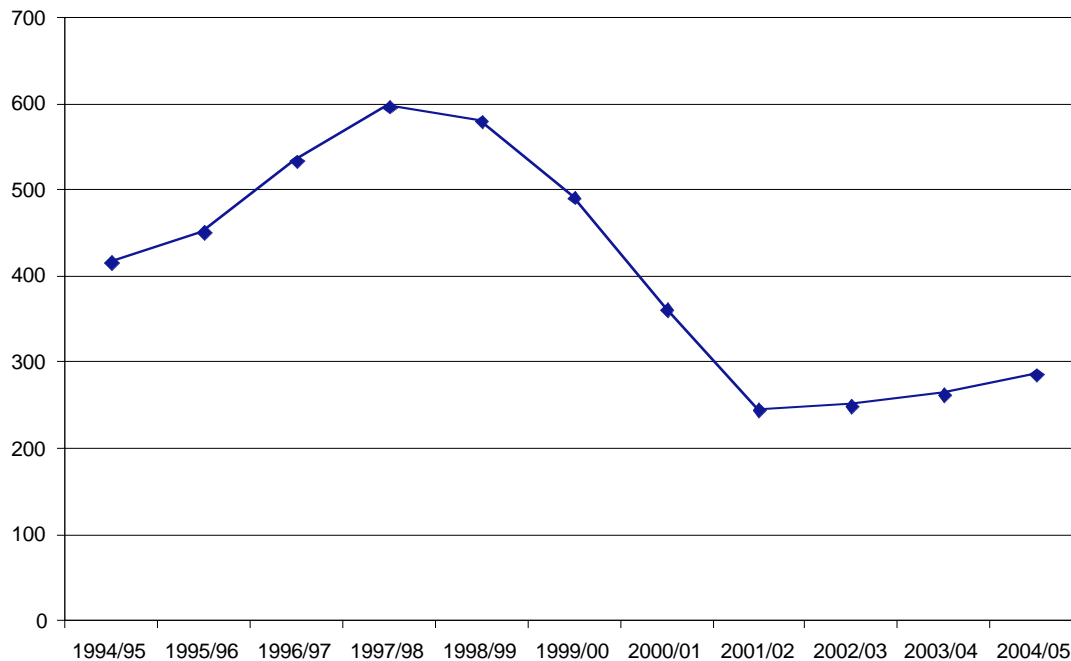


7.17 There is no accurate way of assessing how many new CPL holders enter GA, as opposed to using the CPL as a stepping-stone to the ATPL and airline employment. However, it is possible to determine the size of aircraft type for which CPLs are granted. About three-quarters of the CPLs issued in 2004/05 were granted for heavier types (maximum weight above 5,700kg) suggesting that the majority of CPLs were obtained with a view to moving into airline employment.

Flying Instructor ratings

- 7.18 Flying instructors train pilots, and need to qualify for an Instructor Rating. Flying instruction is part of the GA sector. There are two tiers of rating, although the qualifications have changed over time, with the second-tier (lower) qualification becoming harder to obtain following increased requirements under JAR-FCL, making historical comparisons difficult. Figure 7.3 shows the historic trend of new Instructor Ratings, and suggests that there was a significant fall in new ratings after 1997/98. However the number of new ratings has been increasing since 2001/02.

Figure 7.3 New Instructor Ratings



Description of new professional pilots

- 7.19 The route that pilots take in qualifying for their licences is not recorded on the CAA's database. However some work was carried out for the Review to provide an estimate of which routes pilots have taken to achieve UK licences, and where those pilots originated. However it should be noted that whilst all pilots flying UK-registered aircraft need to hold UK licences, some pilots may train in the UK, obtain a UK licence and then return to their home countries.

Nationality

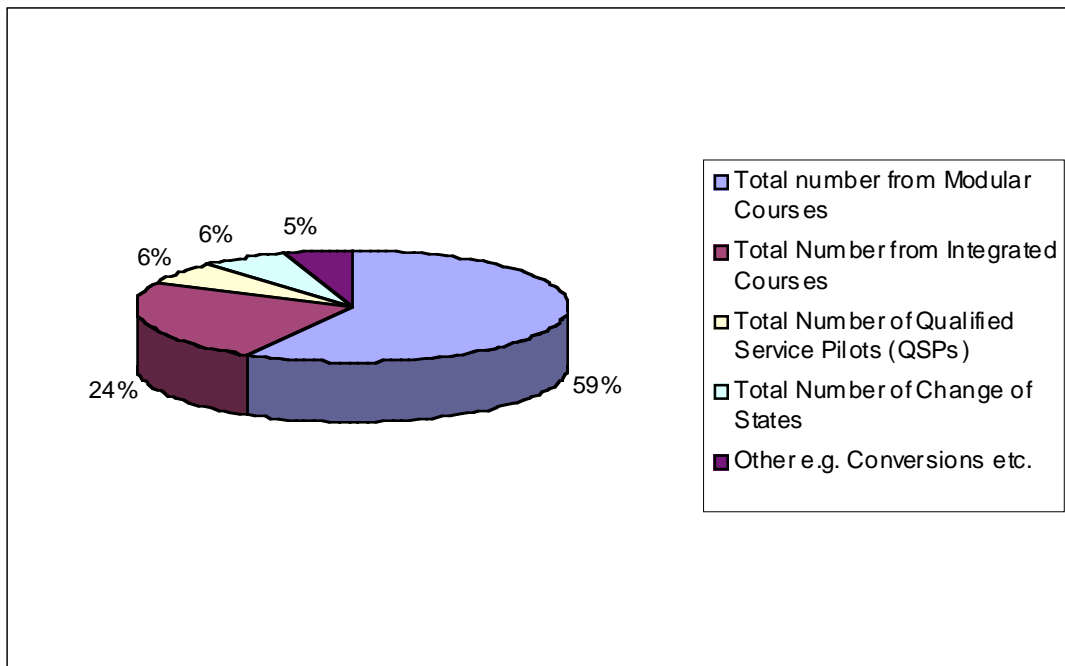
- 7.20 In 2004/05 about a third of all new professional pilot licences were issued to non-UK applicants. This is an increase from around a quarter over the last 10 years. This number includes any pilots who converted a foreign professional licence to a UK one.

Pilot qualification route

- 7.21 Detailed analysis of the last 10 years highlighted an increase in the percentage of applicants coming through the largely unsponsored modular training route from 48% of applicants in 1996 to 59% in 2006, although this situation was reversed in 2000, when there was a marked sponsored pilot recruitment regime.

7.22 The pie chart below (figure 7.4) describes the routes that pilots took to their professional licence. “Change of States” relates to the conversion of a JAR-FCL Licence from another European State, whereas “other conversions” relates to the conversion of other ICAO Licences.

Figure 7.4 Sources of professional pilots in 2006



7.23 This analysis also revealed a steady reduction in the number of ex-military pilots applying for commercial licences, indicating that this traditional source of pilots may be drying up.

The age profile of pilots

The age profile of pilots provides some indication of whether new pilots are being recruited, or whether pilots are ‘ageing’ as a group.

7.24 The three charts below illustrate the age profiles in 1999 and 2004 of all professional licence holders, ATPL holders, and CPL holders. They show that there were more pilots in 2004 than 1999, and that there were more older pilots. However, the number of younger pilots was much the same across the years. This suggests that the airline pilot population is not ageing, but instead that as the total number of pilots increases, there are more older pilots.

Figure 7.5 Age profile of professional pilots (aeroplanes), 1999 and 2004

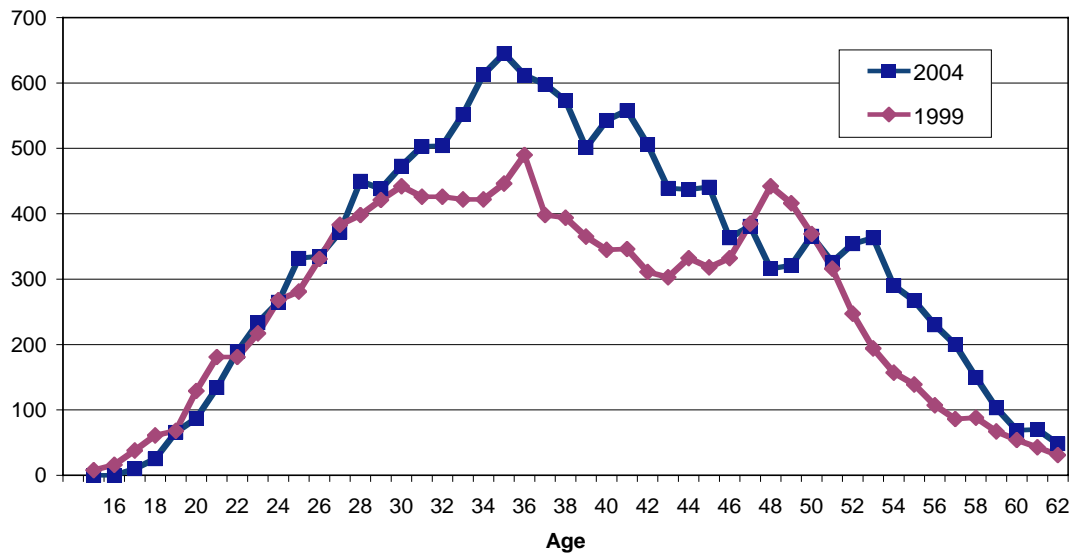


Figure 7.6 Age profile of ATPL(Aeroplanes) holders, 1999 and 2004

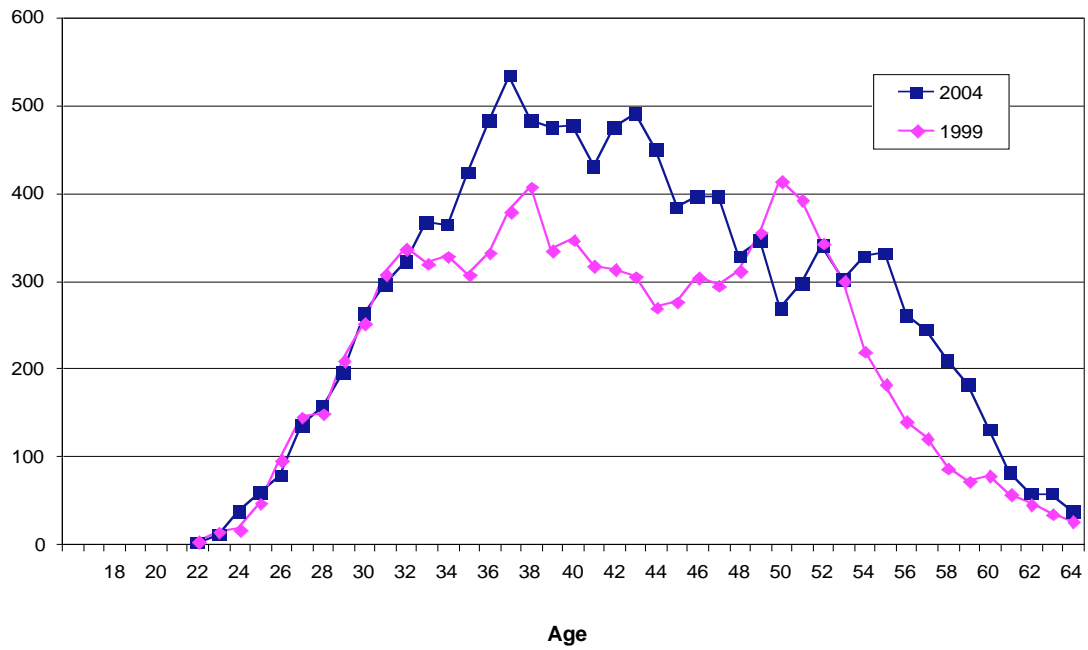
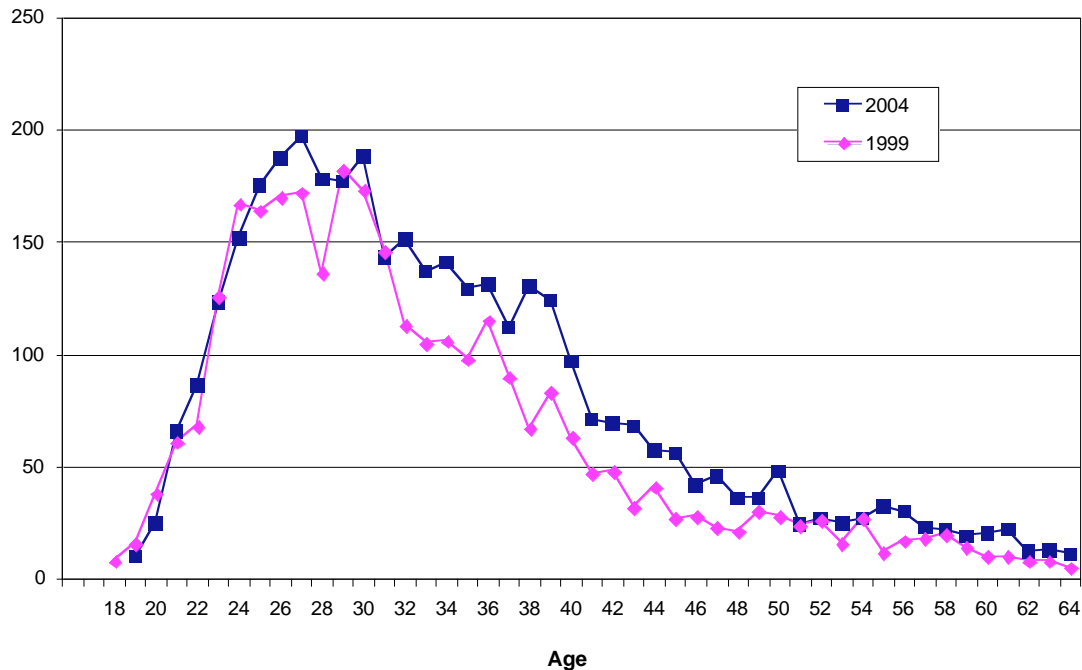


Figure 7.7 Age profile of CPL(Aeroplanes) holders, 1999 and 2004

Aircraft Maintenance Engineers (AMEs)

7.25 The picture for engineers is more complicated than for pilots, as not all engineers who work on aircraft and engines have to be licensed. Only those who certify engineering work must hold licences. Since 2000, a new European AME licence has steadily replaced the UK licence, complicating the picture.

7.26 Engineers wishing to gain licences now need to qualify for a Part-66 licence under EASA regulations. The appropriate regulation is EC2042/2003 and is common throughout the EU. There are six main ways to become an engineer.

- **Part-147 Approved Training Route** - plus minimum prescribed experience requirement, depending on category or sub-category applied for.
- **Self-Starter Route** - building experience in a civil aircraft maintenance environment to achieve minimum prescribed maintenance experience on operational aircraft.
- **Skilled Worker** - experience gained from other disciplines, where the qualifications and experience are accepted by the CAA.
- **Armed Forces** - authenticated experience on operational military aircraft plus one year's civilian aircraft maintenance experience.
- **Non-EU Applicants** - authenticated experience on operational aircraft.
- **Graduate Route** - to obtain Category C Base Maintenance plus minimum prescribed experience in a maintenance environment.

7.27 Engineers commonly work under supervision, often for years, before they gain their licences. This is particularly so in GA. New European regulations under

EASA have introduced Part-147 approval for engineer training organisations. There are around 50 Part-147 organisations in the UK, most of which specialise in aircraft type training rather than basic licence training. Colleges offering basic licence training often have limited syllabus coverage and the training is not covered by further education funding. There are few apprenticeships at present.

- 7.28 Engineers need to gain considerable practical experience before gaining their licence (the precise amount varies depending on the licence category).
- 7.29 Certain academic or semi-academic courses, such as in Universities and Colleges or provided under Qualifications and Curriculum Authority (QCA) auspices through organisations such as City & Guilds and Edexcel, could qualify for exemption by the CAA from Part-66 Licence modules, subject to pass mark. The course provider would need to demonstrate how the course maps against the Part-66 syllabus. There is a need for widespread publicity to make this feature available and the CAA needs to ensure that it is willing to consider proposals from course providers. There may also be a role here for the relevant Sector Skills Council (SSC), known as SEMTA.

RECOMMENDATION

CAA to publicise to training course providers that academic courses at the right level can provide exemptions to Part-66 examinations towards Aircraft Maintenance Engineer Training

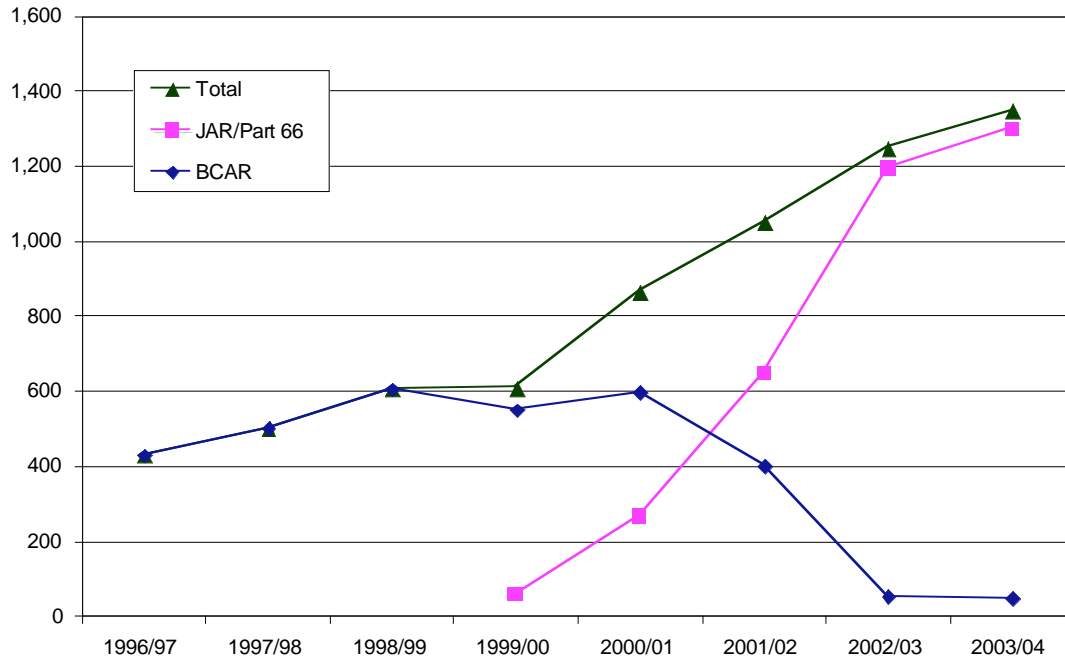
Total number of UK AMEs

- 7.30 With the European licence changes there is no easy way to determine the long term trend in the total number of engineers for large aircraft. However, it is possible to assess the trend in the number of engineer's licences for light (maximum weight less than 5,700kg) aircraft types – those more likely to be used by GA.
- 7.31 Between 2001 and 2004 there was little change in the number of engineers qualified to work on light aircraft types, with the number falling slightly from 1,785 to 1,738. The number of engineers licensed to work on piston engined aircraft, those generally used by GA, also fell slightly, from 1,186 to 1,147. However, the indicators in terms of the age profile, and the fact that rates of increase in numbers of engineers seem to be lagging those of pilots, suggest that there may be cause for concern.

Trends in the issue of new AME licences

- 7.32 Although the data is complicated by the changes in types of licences, it is worth reporting the trends over the last few years in the issuing of new AME licences, shown in Figure 7.8. AME Licences were historically issued under British Civil Airworthiness Requirements (BCAR) Section L. However, since 2000, European JAR or Part-66 Licences are replacing the BCAR Section L licences. Figure 7.8 shows the decline in BCAR Section L licences and the rise of JAR/Part-66 licences. The overall trend is upward. However, the new European requirements (brought about by EASA) also require engineers who formerly certified an aircraft under a company approval to now hold a type rating. This increase in licensing requirement contributes to the rise in licence issues.

Figure 7.8 New BCAR Section L, JAR/Part 66 licence issues 1996–2004



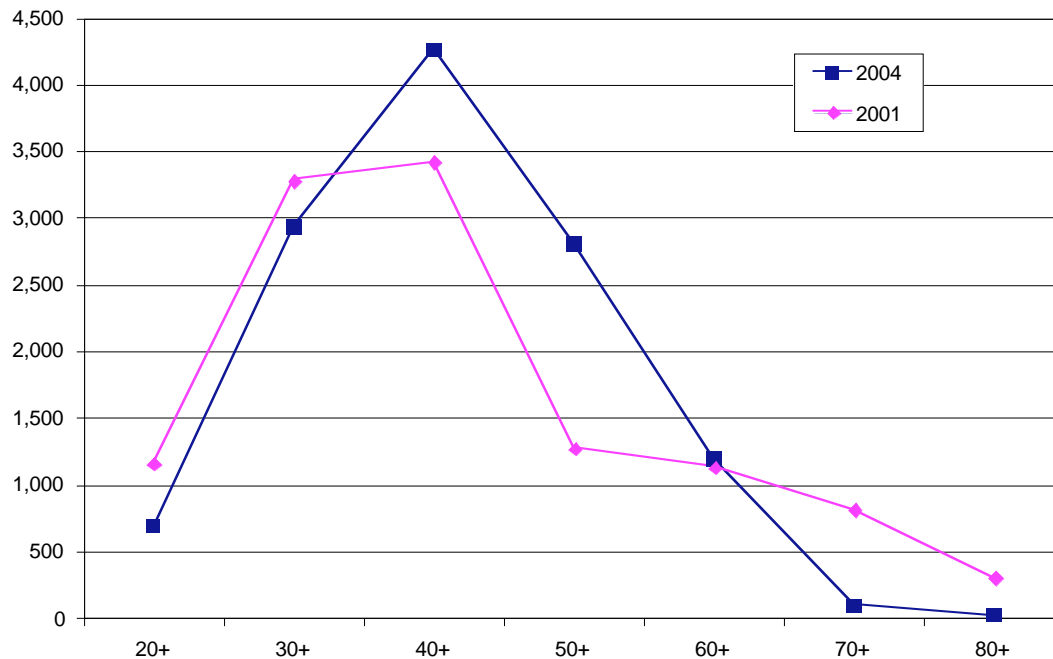
7.33 The number of licences issued (excluding Part-66 conversions) with type ratings for aircraft with a maximum weight of less than 5,700kg in 2003/04 and 2004/05 shows the remarkably low figures for potential new GA engineers. This is set out in Table 7.1 below.

Table 7.1 New GA AME licences in 2003/04 and 2004/05

New AME licences, GA aircraft <5,700kg	Aeroplanes	Helicopters
2003/04	15	4
2004/05	8	2

Age profile of AMEs

7.34 The age profile of UK-licensed AMEs was plotted for 2001 and 2004 (Figure 7.9). The data suggests that aircraft engineers are ageing, with fewer younger engineers in 2004 than there were in 2001.

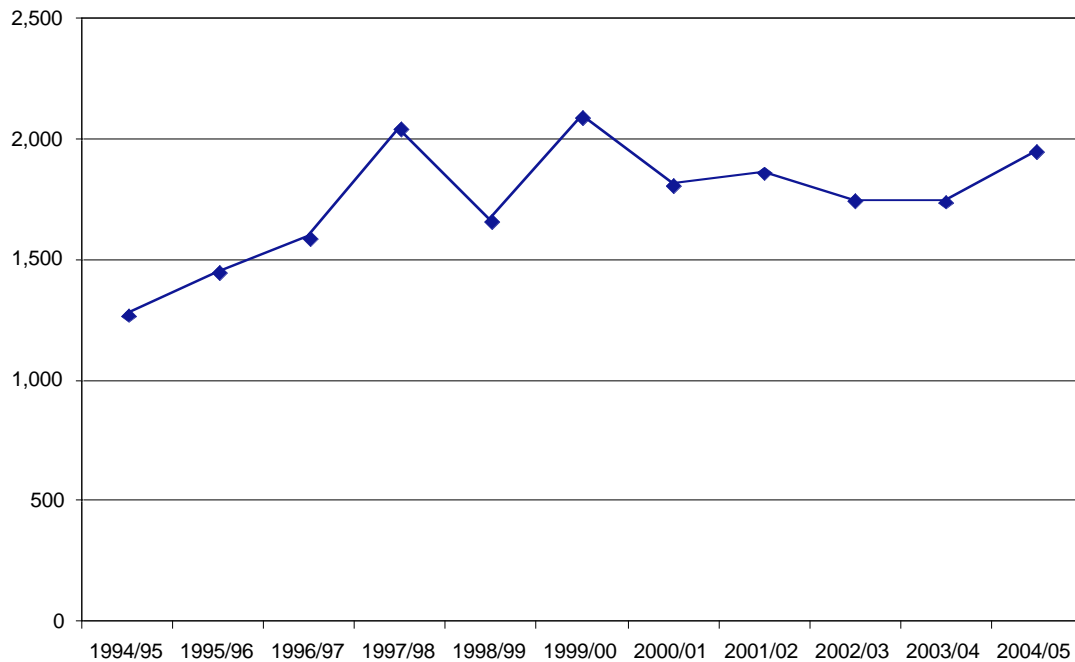
Figure 7.9: Age profile of UK-licensed AMEs, 2001 and 2004

Vocational and other qualifications

- 7.35 For pilots there are a limited number of degree courses: only two are available at present. These are structured university degree courses, which include the pilot theoretical training element. The learner must in addition undertake the practical training requirements at an approved flying training organisation.
- 7.36 For AMEs, there are also a limited number of degree courses offering the learner the required theoretical knowledge training and some practical skill. Successful candidates will receive exemptions from certain EASA Part-66 modular examinations and will be granted an EASA Part-66 Category C licence. The practical experience must be gained within three years.

Indicators of future pilot numbers

- 7.37 Forecasting is notoriously difficult, but the number of Class 1 medical certificates issued is a valid indication of the number of new pilot trainees, in that it is gained at the start of a pilot's course with pilots generally obtaining a licence around 18 months afterwards. The historic trend of Class 1 certificates issued is shown in Figure 7.10. There is an upward trend in the past two years.

Figure 7.10 Class 1 medical certificates issued, 1994–2005

The airline pilot market

7.38 The airline pilot market can be simplified as an inverted pyramid, with larger aircraft operators at the top, and GA flying at the bottom. Traditionally, higher salaries could be expected from the largest airlines, which will therefore tend to attract pilots from the second-level and regional airlines. In turn the regional airlines attract pilots from business aviation, and all levels attract instructors seeking to enter commercial flying from the flying training organisations. The airline recruiting market is notoriously volatile, with an 8–10 year cycle of “boom and bust”.

7.39 Fast-expanding airlines such as Ryanair and easyJet have added a new dimension in recent years, offering good remuneration albeit for longer working hours. These airlines are driving the increase in aircraft numbers, and therefore pilots. As yet there has been no sign that they will support direct pilot training and they are successfully recruiting abroad.

7.40 The current upsurge in airline activity could be affected by a shortage of pilots, and without a healthy UK GA industry, it is hard to see how the training demand could be met from UK sources. An ABN-AMRO report² notes that the “scale of pilot (airline) recruitment for the next two years is unprecedented”. A pilot shortage may affect the growth of the airline industry. The market for AMEs has similar attributes.

Recruitment from the Military

7.41 The three services have no central data collection point, nor do the individual services have a clear method for identifying where flying or engineering staff move to in civilian employment. Assumptions can only be made in regard to the routes that fixed-wing and helicopter flight crew may follow, although service

² ABN-AMRO Change of Forecast Report on Ryanair, 9 February 2006.

helicopter pilots are tending to move to fixed-wing civilian jobs. Whether they spend any time in GA is not clear. Those already subject to the military accreditation scheme or with fixed-wing qualifications have many opportunities to move directly into airline work, missing the traditional step of working as an instructor to build up hours.

- 7.42 Similar problems exist with AMEs, but again it would seem reasonable to assume that most move to airline work where the salaries are likely to be better.
- 7.43 The military is not the major source of pilots and engineers that it used to be.

Impact of overseas markets

- 7.44 The growth of the airline industry in Asia is set to have a profound effect on the world's pilot recruitment demand. States such as India and the Philippines have introduced laws to prevent pilots leaving their employer shortly after joining to stabilise the employment market. There is a long-awaited boom in airline activity in China. All of this activity could impact ultimately on GA as the airlines fight to recruit new pilots. The flying training organisations may be beneficiaries.

RECOMMENDATION

Skilled labour for the UK aviation sector (pilots and, particularly, engineers) may be in shorter supply in the future as global demand increases and traditional sources prove less fruitful – this should be factored into future planning by industry, Government and the CAA.

Government and industry initiatives, past and future

- 7.45 There have been a number of initiatives to improve training routes to people entering both pilot and engineer training.
- 7.46 In 1999, the Parliamentary Environmental, Transport and Regional Affairs Committee expressed concern over the potential shortage of employees in GA, especially AMEs. The Government formed an Interdepartmental Working Group to look into the education needs of AMEs and made some effort, in conjunction with representative bodies, to further those needs³.
- 7.47 In the 1990s, two significant National Vocation Qualifications (NVQs) were adopted by QCA; Level 4 Transport Pilot and Level 3 Aircraft Maintenance Engineer. Vocational Training Relief (VTR) was available for candidates, reducing the cost of courses by 17.5%. However, due to its cost, the training relief was withdrawn.
- 7.48 Various industry initiatives have taken place including the NVQ Level 2 course for GA engineers sponsored by SEMTA (then EMTA), the Aviation Training Association (now closed) and the British Business & General Aviation Association (then GAMTA). Employers were expected to fund only the student's food and recreational costs; all other funding was sponsored. Despite these benefits, the employer uptake was very small, with only 10 companies responding.

³ The report is at www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_026256.pdf.

- 7.49 GA does not generate the sort of publicity required to attract young people into the industry. There may be an opportunity for industry, the CAA and Government to work together to publicise the opportunities to be found for employees in GA.

RECOMMENDATION

Government to re-visit the 2003 Report of the Inter-Departmental Working Group on the Training of Aircraft Maintenance Engineers in the light of the findings of this Review and to consider possible further action.

8. IMPACT OF INNOVATION AND NEW TECHNOLOGY

Summary

- 8.1 This chapter considers the positive and negative benefits for the sector of forthcoming technological developments, particularly in the areas of navigation and surveillance. The use of technology to address environmental concerns is also analysed, with consideration given as to whether there are regulatory barriers to creating much-needed improvements.

Introduction

- 8.2 Because GA is extensive and diverse, there are many potential impacts of new technologies on individual parts of the sector. Some of these technologies may have a positive impact on one part of the GA sector but a negative impact on another.
- 8.3 Technologies that have a wide-ranging impact on the GA sector tend to fall into the groupings of navigation, surveillance and communication, and the key issues in relation to each are analysed in turn below. Advances in these technologies may offer improvements in how the GA sector as a whole can operate, as well as improving interoperability with military and air transport operations within the airspace system.
- 8.4 There are also two emerging GA sectors, namely Unmanned Aerial Vehicles (UAV) and Very Light Jets (VLJ), that are likely to have an impact on other GA sectors, so it was felt appropriate to include them. However, in the interests of brevity, technologies that are relevant only to particular parts of the GA sector have not been included.

Navigation

Global Navigation Satellite System (GNSS) instrument approach procedures

- 8.5 Instrument approach procedures using satellite navigation (GNSS) systems, such as the US Global Positioning System (GPS), are now widely available in the US and to a lesser extent other countries throughout the world, including in Europe. The GPS signal is free to use and there is reasonably priced GPS equipment for GA aircraft. A sizeable proportion of the UK-registered fleet has GNSS equipment installed, and non-UK registered aircraft tend to be well equipped. However, not all of these aircraft will have the equipment to enable them specifically to perform instrument approaches.
- 8.6 The CAA is trialling six GNSS approach procedures to be flown by GA aircraft in Visual Meteorological Conditions (VMC). The results are due to be published in early 2007, with the aim of allowing the CAA to assess whether GNSS approaches are safe to introduce as permanent procedures. Their introduction would offer improved accuracy over some existing forms of instrument approach. Because of the requirement to separate regulation from service provision, the CAA intends to delegate the task of designing instrument approaches to industry.
- 8.7 The advantages of GNSS instrument approaches would be that:
- an airfield would not be required to install expensive ground equipment;

- aircraft could save the installation cost of Automatic Direction Finding (ADF) equipment, subject to the necessary changes in CAA requirements. It is unlikely in the near term that there would be a mandate to fit GNSS equipment, so there would be no additional equipment cost on non-participating aircraft.
 - there would be improved opportunities to practise instrument approach procedures, both for the training of unqualified pilots and for those qualified in instrument flying, who still need to practise flying instrument approach procedures.
- 8.8 The replacement of instrument approach procedures based on older technologies is seen as a major safety goal. The introduction of GNSS-based instrument approach procedures will be a significant step towards this goal. As some GA sectors are less able to operate from the better-equipped airports because of the expansion of commercial air transport, the provision of these procedures could become vital for GA transport operations.
- 8.9 The year-round nature of transport GA operations requires instrument approach procedures to be in place at all likely destination airports to ensure the most viable transport network. In the short and long term these procedures can offer significant benefit to the GA community. For this benefit to be realised there must be resources available to design the increased number of new procedures. The cost of introducing new instrument approach procedures should be fairly borne by all beneficiaries, including a recognition that these procedures may add to the overall quality of the infrastructure, whether or not a particular aircraft flies a particular procedure.

GALILEO

- 8.10 GALILEO is a planned EU version of the US GPS. It is currently in a test and development phase. The introductory phase commences in 2008 with the aim of being operational by 2010.
- 8.11 The advantage of GALILEO over GPS is that it offers a civilian service independent of the US Department of Defense. It would have a clearly stated signal integrity, especially when coupled with EGNOS (see below).
- 8.12 The disadvantage is that aircraft systems would need to be updated to make use of GALILEO. The EU's cost-benefit analysis sees European airspace users paying €100m per year towards the operational costs. It is not yet known how the costs would be recovered.
- 8.13 In view of the expense involved it may be that there is very little take-up of GALILEO-charged services by the GA community. If a free service becomes available, and new equipment is capable of use with both systems at no extra cost, then take-up may grow as equipment is routinely upgraded or replaced.

Differential GNSS, European Geostationary Navigation Overlay Service (EGNOS) and GNSS Landing System (GLS)

- 8.14 The basic GNSS signal can be improved by applying a differential correction. This is done by measuring the signal received from each satellite at an accurately surveyed location and determining the error in the ranges of the satellites. The European Geostationary Navigation Overlay Service (EGNOS) is one system of differential correction over a wide area of Europe and will be fully operational in the near future.

Its improved accuracy potentially offers the ability to fly instrument approaches to a level equivalent to a Category I Instrument Landing System (ILS) approach.

- 8.15 For EGNOS to be received the aircraft must be updated with a compliant receiver. It is likely that there would be a slow initial take-up, but as more of these units are placed in aircraft there will be a demand for the publication of instrument approach procedures. A somewhat chicken-and-egg situation prevails while this type of equipment is not mandated in aircraft - without the publication of instrument approach procedures there is no advantage to installing the equipment, and without aircraft installing the equipment there is no demand to have the instrument approach procedures designed and published.

Publication and use of routes using defined navigation procedures (P-RNAV/ RNP-RNAV)

- 8.16 Area navigation (RNAV) permits aircraft operation on any desired flight path within the coverage of navigation aids. The use of more accurate navigation with associated published routes could increase the utilisation of controlled airspace. For GA aircraft, it may be possible to design tightly defined routes to enable the crossing of controlled airspace, such as busy terminal areas. This could allow ATC to manage consistent, predictable GA movements into aerodromes within, or close to, the controlled airspace of a large airport without the workload of direct communications.

- 8.17 However there are disadvantages. Currently these technologies are aimed at large commercial air transport aircraft. The cost of equipment, training and approval may be prohibitive for the majority of GA, although there would be some benefit for business operators of sophisticated GA aircraft. Also, the cost of introducing new routes may prove prohibitive for the air navigation service provider (ANSP) because the returns in the form of charges could be small, while the ANSP may need to carry out an environmental impact consultation.

- 8.18 The training, avionics equipment, operational approval requirements and aircraft complexity required for such operations could exclude a significant proportion of GA aircraft from the airspace where the procedures are used. For the fair and equitable use of airspace, the benefits to some users from these procedures therefore need to be balanced against any negative impact on other users who may be so excluded.

New-generation cockpit displays – Liquid Crystal Displays (LCD), Head-Up Displays (HUD)

- 8.19 Advances in LCD display technology offer alternatives to current aircraft cockpit instrumentation. Displays are now available that show multiple system information on one flat-screen panel. They offer improved functionality, possible lower capital cost, and lower maintenance cost. The cost-effectiveness of this technology is a positive development for GA, but safety considerations require that pilots are adequately trained in its use.

- 8.20 HUDs offer an alternative way to display flight information that can improve the safety of operations and provide a lower-cost alternative to autoland systems when landing in very low visibility conditions. Lower-cost HUDs are being developed that could be employed in very light jets, and sophisticated single-engine turboprop aircraft. HUDs will probably not affect other GA sectors until costs reduce further.

Surveillance

Collision Avoidance Systems

- 8.21 With the continued growth in commercial air transport operations and corporate flying there is increasing demand for airspace, including uncontrolled airspace. A

large proportion of GA operations takes place in airspace that does not currently require the use of radar air traffic services or collision avoidance systems, so flights operate using visual “see and avoid” principles and the Rules of the Air.

- 8.22 The majority of commercial air transport and corporate aircraft operating in Class G airspace are mandated by the CAA to fit an Airborne Collision and Avoidance System (ACAS), which provides a warning where the other aircraft involved is fitted with a functioning transponder. There is currently no mandate that all aircraft using Class G airspace should be fitted with a transponder, but aircraft operating at and above an altitude of approximately 10,000 feet must be equipped, except for gliders, which are currently exempt. Most sport and recreational GA takes place below this altitude and there has never been an aerial collision in the UK between a GA aircraft and an airliner.
- 8.23 Whilst systems such as ACAS do not necessarily meet the needs of all airspace users in terms of cost, functionality, size and weight, GA variants are being developed and could meet the needs of GA users. There would be a real benefit to all airspace users if a system were developed that could provide collision avoidance for all types of airspace user. The technological advances that are making UAV operations feasible may help to provide the spur to develop such technology further and developments based on existing technologies are beginning to emerge.
- 8.24 Systems such as Automatic Dependent Surveillance-Broadcast (ADS-B) transmit the position of the aircraft and velocity vector to other aircraft in the vicinity and any ground-based receiver. With this accuracy it may be possible for aircraft to avoid aerial collisions in a way that the wider GA community can benefit from. However, these systems can be expensive relative to the value of many GA aircraft.
- 8.25 In June 2006 the CAA published a consultation on enhancing the safety of aircraft flying in UK airspace through the use of new advances in radar technology in the form of a Partial Regulatory Impact Assessment¹. This proposed a mandate for “Mode S Elementary (ELS)” transponders by 31 March 2008, with the likely implementation of a two-year transition period until 31 March 2010 to allow for equipping difficulties. This Partial RIA, which addresses the interoperability issues in relation to transponders, ACAS, ATC and potentially ADS-B, explains comprehensively the implications of Mode S transponder equipment for collision avoidance in Class G airspace and the potential benefits to GA, and therefore addresses many of the issues described above.

Future ground-based and airborne surveillance based on data transmission (TIS, ADS-B/C).

- 8.26 These systems potentially offer a lower-cost alternative to ground-based radars. They could allow the provision of a radar service at smaller GA aerodromes, or work as an additional safety tool for an air traffic controller providing a procedural service. There are drawbacks in that there is potentially less redundancy compared with radar, as both the controller’s display and the aircraft position are determined by a single source. Furthermore, these systems may not address interoperability issues.

UAV Sense and Avoid Technology

- 8.27 The integration of UAVs into both controlled and uncontrolled airspace will provide challenges. Within controlled airspace, adherence to ATC clearances and

¹ The Partial Regulatory Impact Assessment, *Proposal to Amend the Air Navigation Order 2005 for the Purpose of Improving the Technical Interoperability of All Aircraft in UK Airspace*, is available on the CAA website at: www.caa.co.uk/default.aspx?categoryid=7&pagetype=90&pageid=6476.

instructions must be adequately addressed. A technical solution to allow UAVs to “sense and avoid” is critical in determining whether they can be safely operated in uncontrolled airspace. If a UAV is to be able to take avoiding action, for instance from an aircraft not fitted with a transponder and whose pilot fails to see it, then the technical challenges are significant. If technical solutions can be found, then there should be no safety impact on the GA sector. Moreover, such technology could provide a significant knock-on benefit in the form of systems fitted or retrofitted to manned aircraft. Nevertheless, interoperability remains an essential requirement.

Very Light Jets (VLJs)

- 8.28 There is a new sector developing, mainly led in the US, for very light “personal” jets. They are typically aircraft with a four-seat cabin, costing in the region of £0.5m–£1m with lower operating costs than aircraft with comparable performance. These aircraft could be expected to operate out of smaller aerodromes that are the preserve of the lower end of GA, as well as flying in the airways system at high altitudes along with commercial air transport operations.
- 8.29 The success of VLJs depends on their integration into smaller aerodromes and on whether pilot owners can meet the necessary standards to operate safely within controlled airspace. The current Private Pilot Licence training system may prove insufficient to provide all the skills necessary to operate such relatively sophisticated aircraft within the complex UK airspace environment. However, this can be tackled through the correct specification of training for the type rating for these aircraft.
- 8.30 Flights outside controlled airspace will suffer the same problems as military and commercial air transport in that the higher speeds involved reduce the effectiveness of “see and avoid” principles. There are already aircraft flying in the UK, potentially by single-pilot owners, that are capable of speeds greater than 250 knots. However, these aircraft are often flown by professional pilots on behalf of the owner or by the owner with the help of a professional pilot, and are subject to limitations below flight level 100.
- 8.31 VLJs are likely to open up high-speed transport from rural areas and the UK regions to more high-worth individuals, creating economic benefit for those regions. This will only be possible if there is a sufficient network of suitable regional airports with adequate runway lengths (a minimum of around 1000 metres).
- 8.32 The main impact of VLJs, should their numbers increase significantly, may therefore be increased pressure on the use of regional airports in the UK, and of uncontrolled airspace.

Communication

Datalinks of Air Traffic Services (ATS) instructions

- 8.33 The use of datalinked ATS instructions and likely introduction of satellite and other forms of internet access in the cockpits of GA aircraft will bring greater flexibility of operation, and ensure that the pilot makes better decisions based on better information. To the extent that they may encourage a shift away from pre-flight planning into performing tasks within the cockpit, there could be implications for safety, but this is likely to be easily managed.
- 8.34 Although this technology is not crucial to the future of GA, there will be some applications that will provide benefit to particular GA sectors. However, the potential spectrum implications may impact on GA (a significant user in this respect).

Miscellaneous*Environmentally friendly technology (aircraft noise and emission reduction measures)*

- 8.35 GA aircraft impact the environment in terms of noise and pollution. New technologies can address both, although sometimes one is at the expense of the other. They can often come at a higher cost, both in terms of purchase prices and sometimes fuel burn.
- 8.36 In many ways aviation powerplants have not developed significantly over the years, and many new-build light aircraft are still fitted with engines the designs of which date from the 1940s. For piston aircraft there have been advances in terms of propeller design and improved exhaust silencers, but there is considerable scope for improving fuel consumption in light aircraft, and even 50% improvements are easily achieved, reducing aircraft emissions and countering the effect of rising fuel prices. There are also technological improvements that can help to reduce aircraft noise: new helicopter types such as the EC120, EC130, EC135 and Notar employ noise reduction technology, so lessening the environmental impact of the helicopter.
- 8.37 However, new designs need to be investigated by airworthiness authorities and certificated before they can be used on new or existing aircraft. This represents a significant cost. Where the rules for powerplant certification are less onerous, for example those for some microlight aircraft, there has been greater use of more modern powerplant designs, which can offer far better fuel consumption and reduced noise. The need for such technologies may be key to improving relations between GA and local communities. However, it is possible the costs of airworthiness certification and modifications are acting as a barrier to making these improvements.

RECOMMENDATION

Responses to the increased public sensitivity to environmental issues should include a joint CAA-industry working group to be set up to review whether there are regulatory barriers preventing technological solutions to the environmental impacts of GA, such as noise and emissions

Use of simulators in PPL training

- 8.38 Aircraft simulators have been used for many years to train pilots to fly large transport aircraft. They have also been used as part of the training of commercial and private pilots in instrument flying techniques. In recent years the advances in computing power and improvements and reduced cost of image-projecting technology are increasingly offering lower-cost systems capable of training pilots in visual flight techniques.
- 8.39 In the pilot training sector of GA, the relatively poor weather and higher cost of flying (such as fuel costs) in the UK are factors that can lead trainees to select flying schools overseas. Simulator technology is not affected by these factors. Training can even take place at night, giving the individual greater flexibility in scheduling other activities. For these reasons, the development of simulators for initial pilot training could help UK flying schools compete with rivals abroad.
- 8.40 Simulator training is unlikely to replace completely the need for training in actual aircraft, but it does offer the potential to reduce the number of flying hours. This in

turn has the potential to reduce training costs and hence the cost of gaining a Private Pilot's Licence, and to boost the number of pilots entering GA and qualifying for licences. However, simulators are subject to approval. It is important that the requirement for such approval recognises the differences between this technology and that used to train airline pilots, such that the cost of approval does not stifle the development of simulators in this area.

9. INTERNATIONAL COMPARISONS

Summary

- 9.1 This chapter makes a brief assessment of the current state of GA in four other countries (the USA, Australia, France and Germany) in order to make comparisons with GA in the UK. Detailed comparisons of other regulatory models in Europe and elsewhere are provided in the Regulatory Review Annexes.
- 9.2 The information in this chapter shows that there are many common trends that could therefore be regarded as international factors rather than specific to the UK. It also illustrates that, whilst it is informative to understand how others have approached the same issues that affect UK GA, the different levels of congestion, infrastructure capacity and basic geography that exist in other countries make it dangerous to draw simple conclusions as to whether the UK system could “cherry-pick” particular elements from other administrations. It is notable that the funding for the CAA, which is met by the aviation industry rather than the taxpayer, is not mirrored in many other countries.

USA

- 9.3 Discussions were held in Washington with various GA representatives and the Federal Aviation Administration (FAA). Those discussions suggested that the key policy themes identified in this Review are broadly common to the US as well.

Overview

- 9.4 GA is a much bigger player in the US than in the UK (the FAA estimates that there were around 220,000 active GA aircraft on their register in 2004) and has a much higher profile in the country at large and within the FAA. The public perception of GA in the US is very different to the UK and much more positive. Remote communities rely on GA (and there are more remote communities in the US). This helps to create a more positive environment. The sheer volume of land and airspace in the US also means there are fewer congestion issues. GA is not seen as the preserve of the wealthy. Rather, it is viewed as a part of the transport system and a “public good” – despite increasing public concerns over noise.
- 9.5 The GA sector is far better understood among the US population and policymakers than in the UK. The US does not have a “GA Policy” as such, but policy-making seems to take greater account of the interests of GA as a relevant stakeholder.
- 9.6 GA is also expanding fast in some areas – a number of manufacturers are in the process of certificating new small jets. It is perceived that further proliferation of GA aircraft could put pressure on the airspace system and that this will be a major challenge for the future.
- 9.7 Culturally, the FAA seems to view regulatory relationships with its GA “customers” as helped by the fact that both want the same positive outcome in relation to safety – it therefore tries to do as much as possible through partnership approaches.

Airports

- 9.8 Local government ownership of airports means that issues relating to airport access in the US are different to those in the UK. The FAA seeks to support the US airport

network, liaising with local government, and seeks to preserve existing airports. But it has no strong statutory powers, and only limited funding that it can offer, so it needs to work through partnerships with local authorities.

- 9.9 The FAA deals with funding requests – and the ability to grant funds gives it a lever. It is noticeable that this scenario is very different in the UK, where airports are, for the most part, privately owned. FAA cash follows a prioritisation system – it has a budget of \$3.5bn per annum for all airport developments. 50% is earmarked for airports automatically, based on capacity levels. The other 50% is discretionary, but the more active the airport, the higher the priority. This means that the largest airports tend to feature most. But if a new GA airfield serves as reliever for an O'Hare-type airport, then its priority will increase. Congress has also set up a small fund (\$150,000 per annum) for GA-only airfields.
- 9.10 One big difference from the UK is the tax-exempt financing for airports. This chimes with the greater US belief in a wider public benefit from aviation as a contributor to GDP etc. However, GA only has a very minor role here in comparison with commercial air transport. It is perceived that it may play a bigger role in some remote regional economies (e.g. Alaska) but it is minimal when considered at the national level.

Airspace

- 9.11 In relation to airspace, the GA community is perceived as wanting as much access to the national air system as possible. The FAA's starting position tends to be to seek to maximise airspace availability for GA, subject to other pressures. It will, if there are competing demands for limited airspace, designate certain criteria and give particular focus to reliever airports.
- 9.12 The FAA's overall policy approach is to seek to balance any impact on economic activity against the identified safety value added.

Planning

- 9.13 In the US, it is the local community that will draw up aviation system plans – the FAA offers only guidance. The US planning process operates via a masterplan system. Local government is in the lead here, rather than the FAA, although the FAA did attempt to grapple with the issue on a national level in a recent study on future aviation capacity requirements (See "Capacity Needs in the National Airspace System", FAA, 2004).

Funding of FAA

- 9.14 GA does not fully meet the costs of the FAA's GA-related activity. The FAA is looking at a "needs-based system", partly to reduce the volatility of their income stream. 72% of the Air Travel Trust Fund comes from the airline ticket tax, but only 0.5% from GA. However, GA uses much more than 0.5% of FAA resource. The future funding of the FAA remains a live debate in the US.

Pilot training and licensing

- 9.15 Pilot training is another area of difference between the US and the UK. The US has a "licence to learn", whereas the UK (and EU) is perceived to have a "licence to prevent any risk". So it appears that a much higher standard is required before someone qualifies as a commercial pilot in the UK. The US system is based on "stepped stages" and so it is much cheaper for a pilot to achieve the first step. US

safety statistics are no worse than the UK, although it should be noted that prevailing conditions are in general different, weather tends to be worse in the UK, and UK airspace is, on the whole, more congested.

- 9.16 Training enhancement has also become more of an issue in the US. It is considered that GA skills need to become more akin to those of military/airline pilots as they begin to have to operate in a more complex environment. US GA pilots need to undergo formal flight checks biennially.

Security

- 9.17 As in the EU, security is a big and growing issue in the US, especially in relation to how it is handled for fractional ownership.

Noise and public complaints

- 9.18 As in the UK, noise is a growing issue. And the likely introduction of relatively large numbers of very light jets (VLJs) would be expected to raise levels of public resentment of aircraft noise. The US system for handling the impact on local communities of increased aviation activity places the onus on the local resident to look at available public information and undertake all the due diligence before any complaint can be considered valid, this represents a significant burden.

Economic contribution

- 9.19 The FAA estimates the economic contribution from GA at some \$3 trillion of business (mainly from business jets). There has been a big growth in self-fly recently, especially from CEOs.
- 9.20 GA is also seen as important as a labour supply feeder for commercial pilots, a feeder for the business jet sector, and a feeder for high-end technology development and innovation.

GA and its effectiveness as a lobby group

- 9.21 GA organisations in the US had been disjointed and at war with each other in decades past. But these bodies have now bonded to form a more efficient organisation for GA interests, and their views are listened to within the FAA. The UK could learn from this. In the US, AOPA now deals with representation for pilots, NBAA/NATA for business aviation, and EAA for sports and recreational activity. This structure seems to make sense and the internecine warfare that characterised previous years has been reduced.

AUSTRALIA

- 9.22 There is a rich source of information available about the Australian GA sector in the form of a 2003 report by the Australian Bureau of Transport and Regional Economics (BTRE), General Aviation: An industry overview. Report 111, BTRE, Canberra ACT.

Overview

- 9.23 GA plays a more important role in Australia than in the UK, owing to the sheer size of the country, and the remoteness of some of its communities. However, an increase in penetration of commercial air transport has reduced the share of the market that GA enjoys.

- 9.24 What the Australians categorise as “hire and reward” (or “commercial GA”) comprised 65 per cent of general aviation flying hours in 2003, with total hire and reward hours increasing by 3% between 1993 and 2003.

Size of sector and trends

- 9.25 The estimated size of the commercial segment of GA was around A\$1 bn in 2004 (approximately £0.4 bn), and employment in that sector was considered to total around 6,700 people.
- 9.26 GA growth overall was reported as being flat in Australia over the period 1993–2003 (a not dissimilar position to the UK). However, there were two distinct sub-trends in Australian GA: sports aircraft hours increased by 52%, while business and private flying decreased by 20%.

Airspace

- 9.27 There did not appear to be major issues related to the use of airspace for GA in Australia, perhaps because of the relative abundance of airspace and lower levels of aviation activity when compared to the UK.

Airports

- 9.28 GA were found to be facing increased user charges resulting from microeconomic reforms, in particular the privatisation of airports, and the move to “user pays” policies. These changes had led to price increases in tower fees, landing, parking and other infrastructure charges as well as commercial rents at many aerodromes.

Payment for the aviation regulatory system

- 9.29 Some charges are levied on the industry to contribute to costs of the regulatory services supplied by the Australian Civil Aviation Safety Authority.

Security

- 9.30 Following the September 11 terrorist attacks, the Australian Government introduced a range of measures aimed at enhancing security in the aviation industry. These included requirements for small aircraft to have anti-theft measures in place and for pilots to have pilot licenses bearing a photograph.
- 9.31 A lack of consistency in the application of regulation was registered as the issue most commonly raised by GA stakeholders.

FRANCE

- 9.32 A series of questions was posed to our colleagues in the French Direction General de l’Aviation Civile (DGAC). The Review Team is very grateful for their responses.

Overview

- 9.33 GA in France suffers from same public perception problems as in the UK (“a rich man’s sport that causes irritation for those living near airports”). But this perception is regarded by the DGAC as false, and understating of the role that GA plays, particularly in terms of training pilots that go on to work in commercial aviation.

Size of sector and trends

- 9.34 GA is estimated to be a smaller sector in France in terms of economic value than in the UK (the DGAC estimates the value to be around 750million Euros). There is a perception that the more traditional, fixed-wing touring aircraft may be in decline, while other areas of GA such as microlights and VLJs are growing fast. The manufacturing element of small GA aircraft has all but disappeared

Airspace

- 9.35 Airspace is becoming more congested and complex, as the growth of the commercial aviation sector places more demands on the system. If a GA pilot is equipped with a transponder then he can still operate reasonably freely in controlled airspace. However, a GA pilot flying VFR will have difficulty getting clearance to cross controlled airspace, whereas a pilot operating IFR may be more readily able to get clearance. This causes resentment from those flying VFR at a perceived bias in favour of IFR. In France, access to lower levels of airspace is available to VFR transits because the airspace is classified as Class D.

Airports

- 9.36 As in the UK, very few French airports actually ban GA operations. However, landing fees are going up at many, and that can dissuade GA from using them. But this is offset by the fact that France has very many airfields available for GA use and the numbers of airfield closures are offset by new ones opening.

Payment for the aviation regulatory system

- 9.37 This is mainly covered by the French taxpayer, but negotiation is ongoing on some greater level of user fees. GA is exempt from some taxes on fuel.

GA and its effectiveness as a lobby group

- 9.38 France has a large number of representative GA bodies, but they tend to come together when big issues emerge and can present a common voice. When this happens, they tend to get a good hearing from policymakers.

Security

- 9.39 This is a big and growing issue in France. DGAC is in the process of considering how best to deal with security in relation to GA operations, and French GA bodies are expected to be working up some proposals during 2006.

GERMANY

- 9.40 A series of questions was posed to our colleagues in the German Ministry of Transport (BMVBS), and the Review Team is again very grateful for their input.

Overview

- 9.41 GA is defined by the BMVBS as covering the area of sports and recreational activity only (powered flying: fixed and rotary wing, gliders, ballooning, hang and paragliding, microlights etc). Sports and recreational flying traditionally constitutes the largest part of non-airline aviation activity in Germany. This is largely due to the historical developments in post-war Germany, where gliding, for example, was permitted long before powered flight by the Allied military administration. The consequence is that Germany is today by far the largest glider nation in the world, with an estimated 40,000 pilots.

- 9.42 The perception of GA in German society is somewhat ambivalent. On the one hand there is still strong public interest in air sports activities, documented by the attendance at many GA events, from air shows to competitions. On the other hand GA faces challenges from growing environmental concerns, mostly related to noise. It is not a coincidence, that the German Aero Club, for instance (which has over 100,000 members) is the only GA association in Europe that is dedicating full-time staff exclusively to the issue of noise.
- 9.43 GA is also regarded as an activity for the elite, although this is primarily in relation to those engaged in powered flight. This contrasts sharply with the fact that this kind of activity is still relatively affordable in the many not-for-profit clubs throughout Germany. The positive aspects of GA, for example the importance of GA as a source of small and medium-sized enterprises (SMEs) in the aeronautical industry, and the related employment and transport benefits for remote/rural locations, are often overlooked.

Size of the GA sector and trends

- 9.44 The BMVBS did not have data available to offer an estimate of the economic value of GA in Germany, but in general the trends show that the number of pilot licences and of new aircraft being registered in the last five years remains unchanged, but that the numbers of microlights, parachutists, hang and paragliders are growing.

Airspace and airports

- 9.45 Access to congested airspace can still be an issue for GA in Germany, but the pressures are not as acute as in the south-east of England. Even around the busiest areas, German air traffic control still seeks to make airspace available for GA at certain times of the day, when commercial traffic tends to ease off.
- 9.46 There are a large number of airfields in Germany, and the majority are used by microlights, gliders and light aircraft. Several military airfields have been converted into GA sites, while some GA sites may grow into regional airports, potentially attracting low cost carriers.
- 9.47 Fees and charges are regulated through state bodies. Regional and international airport fees are published in the Aeronautical Information Publication and are valid for commercial and non-commercial operation including air sports activities. Price varies in relation to maximum take-off weight, noise certification, etc.
- 9.48 GA aircraft are not denied access to any of the major airports. However, there are few GA operations at some airports, as a result of the approach, landing and parking fees. At major hubs, the need to apply for timed runway slots tends to dissuade recreational or sporting flying.

Payment for the aviation regulatory system

- 9.49 The regulation of GA is carried out by the German Government and is paid for by the German taxpayer. GA contributes through the tax it pays on fuel, something that is levied on GA and not on commercial aviation.
- 9.50 Parts of the aviation industry (those involving light aircraft and microlights) are supported by the German Government on a project basis. This is part of the wider initiatives for SMEs. Government also supports GA indirectly by financing research projects (safety, materials, construction methods).

- 9.51 Government does not directly support flying clubs. But as a not-for-profit sector, sports and recreational GA gets beneficial tax treatment. Additionally clubs may participate in lottery-based support, if they are part of the sports family, and members of the German Sports Association.

GA and its effectiveness as a lobby group

- 9.52 The most relevant GA representative bodies in Germany are the German Aero Club (a member of Europe Air Sports), AOPA Germany, Association of German Glider manufacturers, ALROUND - Association of Aerospace-oriented SMEs in Germany, and BBAL - Federal Association of General Aviation Enterprises. All are recognised by the Government and consulted on rulemaking procedures.

- 9.53 The German Aero Club is self administrating (licensing, airworthiness, maintenance) in the areas of microlight flying, sky-diving, hang and paragliding as well as aero-modelling. The German Aero Club is also a valued partner in airspace matters.

Security

- 9.54 The German authorities have already opted to introduce significant safety requirements for GA. Since January 2005, every pilot flying powered aircraft and/or requiring entry to a regional or international airport must be security checked annually (a background check by police and national security agencies). The GA pilot has to pay for the security check and cannot maintain their licence without it.

Labour supply issues

- 9.55 In Germany, pilots are trained at approved training centres, many of them affiliated to the German Aero Club or operating commercially. The BMVBS report no perception of any potential shortage of pilots or aviation engineers at the moment.

GLOSSARY

ACAS	Airborne Collision Avoidance System
ACO	Air Cadets Association www.raf.mod.uk/aircadets
ADF	Automatic Direction Finding
ADS-B	Automatic Dependent Surveillance-Broadcast
AEF	Airfield Environment Federation www.aef.org.uk
AIP	Aeronautical Information Publication
Air Britain	Aircraft enthusiasts' organisation www.air-britain.com
AME	Aircraft Maintenance Engineer
ANSP	Air Navigation Service Provider
AOA	Airport Operators Association www.aoa.org.uk
AOPA	Aircraft Owners and Pilots Association www.aopa.co.uk
ASD	Aerodrome Standards Department (CAA SRG)
ATC	Air Traffic Control
ATM	Air Traffic Management
ATM	Air Traffic Movement
ATPL	Airline Transport Pilot's Licence
ATS	Air Traffic Services
ATSD	Air Traffic Standards Department (CAA SRG)
ATSOCAS	Air Traffic Services Outside Controlled Airspace
ATSU	Air Traffic Service Unit
AVGAS	Aviation Gasoline, used by piston-engined aircraft
AVTUR	Aviation Turbine fuel, used by turbo-prop and jet aircraft
BABO	British Association of Balloon Operators www.babo.org.uk
BARUK	Board of Airline Representatives in the UK http://www.bar-uk.org
BATA	British Air Transport Association www.bata.uk.com
BAeA	British Aerobatic Association www.aerobatics.org.uk
BBAC	British Balloon and Airship Club www.bbac.org
BBGA	British Business and General Aviation Association www.bbga.aero
BCAR	British Civil Airworthiness Requirements
BCPL	Basic CPL
BGA	British Gliding Association www.gliding.co.uk
BHAB	British Helicopter Advisory Board www.bhab.org
BHPA	British Hang Gliding and Paragliding Association www.bhpa.co.uk
BMAA	British Microlight Aircraft Association www.bmaa.org
BMFA	British Model Flyers Association www.bmfa.org
BMPA	British Medical Pilots Association www.bmpa.org.uk
BMVBS	German Ministry of Transport
BPA	British Parachute Association www.bpa.org.uk
BPPA	British Precision Pilots Association www.bppa.info
BRC	Better Regulation Commission
BTRE	Australian Bureau of Transport and Regional Economics
BRTF	Better Regulation Task Force
BWPA	British Women's Pilots Association www.bwpa.co.uk
CAA	Civil Aviation Authority
CAP	CAA Publication
CAS	Controlled Airspace
CAT	Commercial Air Transport

CofA	Certificate of Airworthiness
CPL	Commercial Pilot's Licence
CPL(A), CPL(H)	CPL(Aeroplanes), CPL(Helicopters)
CTR	Control Zone
DAP	Directorate of Airspace Policy, CAA
DCLG	Department of Communities and Local Government
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DGAC	Direction General de l'Aviation Civile (France)
EAS	Europe Air Sports www.europe-airports.fai.org
EASA	European Airspace Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference. A non-regulatory intergovernmental organisation representing 41 European countries aiming to promote the continued development of a safe, efficient and sustainable European air transport system.
ECOGAS	European Council of General Aviation Support
EEA	Experimental Aircraft Association
EGNOS	European Geostationary Navigation Overlay Service
ELFAA	European Low Fares Airline Association www.elfaa.com
ERCD	Environmental Research and Consultancy Department
ERG	Economic Regulation Group, CAA
FAA	Federal Aviation Administration
FAB	Functional Airspace Block
FAI	Fédération Aéronautique Internationale
FBO	Fixed-Base Operator
FCL	Flight Crew Licensing
FFA	Flying Farmers Association www.ffa.org.uk
FIR	Flight Information Region
Forms of Regulation	Unregulated – No legally enforceable regulation. Voluntary bodies may seek to encourage best practice but have no legal powers.

Devolved – There are legally binding rules and a statutory regulator with legal powers and duties. The CAA, as regulator, may authorise some other body, such as a voluntary body representative of a particular segment of the aviation community, to carry out specific tasks in support of the CAA's function. The CAA approves the bodies to submit reports and recommendations, on the basis of which, the CAA issues the relevant licence or certificate. The CAA remains responsible for the process.

Delegated – There are legally binding rules and a statutory regulator with legal powers and duties. The CAA delegates the entire function to another organisation. The CAA has no involvement in the process and the licence or certificate is issued in the name of the CAA but by the delegate. The CAA remains liable as the named body in the legislation. The CAA has not delegated any functions in this way.

Full Regulation – There are legally binding rules and a statutory regulator with legal powers and duties. The CAA undertakes the oversight of this activity in-house and is fully responsible for its actions.

FIS	Flight Information Service
FL	Flight Level – the nominal altitude of an aircraft referenced to a standard pressure datum, as opposed to the real altitude above mean sea level. It is expressed in hundreds of feet, eg FL270 = 27,000ft
FTO	Flight Training Organisation
GAA	GA Alliance www.gaalliance.org.uk
GAAC	GA Awareness Council www.gaac.org.uk
GACC	GA Consultative Committee
GALILEO	planned EU version of the US GPS
GAMTA	now the British Business & General Aviation Association
GAPAN	Guild of Air Pilots and Air Navigators www.gapan.org
GASCo	General Aviation Safety Council www.gasco.org.uk
GDO	(General Permitted Development) Order
GLS	GNSS Landing System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HAA	Historic Aircraft Association
HCBG	Helicopter Club of Great Britain www.hcgb.co.uk
HUD	Head-Up Display
IAOPA	International Council of Aircraft Owner and Pilot Associations
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
JAA	Joint Aviation Authorities – an associated body of ECAC representing the civil aviation regulatory authorities of a number of European States who have agreed to co-operate in developing and implementing common safety regulatory standards and procedures
JAR	Joint Aviation Requirements – developed by JAA in the fields of aircraft design and manufacture, aircraft operations and maintenance, and the licensing of aviation personnel
LAASG	Light Aviation Airports Study Group
LAE	Licensed Aircraft Engineer
LAAS International	Aircraft enthusiasts' organisation www.laasdata.com
LARS	Lower Airspace Radar Service
LCD	Liquid Crystal Display
LFA	Lawyers Flying Association www.lawyersflyingassociation.com
LPA	Local Planning Authority
MOD	Ministry of Defence
MTWA	Maximum Total Weight Authorised
MTOW	Maximum Take-Off Weight
NAA	National Aviation Authority
NATA	National Air Transportation Association
NATMAC	National Air Traffic Management Advisory Committee
NATS	National Air Traffic Services
NBAA	National Business Aviation Association Inc
NDB	Non-Directional Beacon
NPPL	National Private Pilot's Licence
NSA	National Supervisory Authority
NVQ	National Vocation Qualification
ODPM	Office of the Deputy Prime Minister (now Department of Communities and Local Government)

OLS	Obstacle Limitation Surfaces
ONS	Office of National Statistics
QCA	Qualifications and Curriculum Authority
PFA	Popular Flying Association www.pfa.org.uk
PPG	Planning Policy Guidance
PPL	Private Pilot's Licence
PPS	Planning Policy Statement
R/T	Radiotelephony
RAeC	The Royal Aero Club www.royalaeroclub.org
RAeS	Royal Aeronautical Society www.raes.org.uk
RAS	Radar Advisory Service
RIA	Regulatory Impact Assessment
RIS	Radar Information Service
RNAV	Area Navigation
RPG	Regional Planning Guidance
RSS	Regional Spatial Strategy
RTS	Regional Transport Strategy
S&RA	Sports and recreational aviation
SES	Single European Sky
SESAR	Single European Sky Air Traffic Management Research Programme
SLMG	Self-launching Motor Glider
SMEs	Small and medium-sized enterprises
SRG	Safety Regulation Group, CAA
SSC	Sector Skills Council
SSC	Single Sky Committee
SSR	Secondary Surveillance Radar
ToR	Terms of Reference
TIS	Traffic Information Service
TMA	Terminal Control Area
TRA	Temporary Reserved Areas
TRANSEC	Transport Security, DfT
TSA	Temporary Segregated Airspace
UAV	Unmanned (or Uninhabited) Air Vehicle
UKAB	UK Airprox Board
VFR	Visual Flight Rules
VLJ	Very Light Jet
VMC	Visual Meteorological Conditions
VOR	VHF Omnidirectional Range
VTR	Vocational Training Relief

APPENDICES

- APPENDIX 1 Letter to industry from Sir Roy McNulty, CAA Chairman, 15 June 2005
- APPENDIX 2 Terms of Reference and membership of the Strategic Review of GA
- APPENDIX 3 Details of workstreams
- APPENDIX 4 Data book
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APPENDIX 1 LETTER TO INDUSTRY FROM SIR ROY MCNULTY, CAA CHAIRMAN, 15 JUNE 2005

Chairman's Office

15 June 2005

STRATEGIC REVIEW OF GENERAL AVIATION IN THE UNITED KINGDOM

The purpose of this letter is to seek your views on CAA proposals, as set out below, for carrying out a Strategic Review of General Aviation in the UK.

You will be aware that the CAA initiated last week a consultation on the CAA's proposals for revisions to the Safety Regulation Group's Charging Schemes. That consultation will, no doubt, provide us with the views of the UK aviation industry about the proposed Charging Schemes, and we will give careful consideration to those views in framing our eventual conclusions. However, the CAA considers that there is also now a need for review of a number of broader issues related to General Aviation in particular.

It is many years since a review of this kind was carried out for the General Aviation sector, and there are currently many developments in progress or planned which have important implications for the sector, for example:

- the Single European Sky initiative
- the European Aviation Safety Agency
- changes in airspace classification
- changes in technology e.g., Mode S
- continued rapid growth in commercial air transport
- possible introduction of unmanned air vehicles

Against the above background, the CAA Board believes that a strategic review of the GA sector would be timely, and we are aware that recent discussions with DfT Ministers have shown that there is an appetite in the sector for a review of this nature.

Accordingly, the CAA proposes that a Strategic Review is carried out over the next year to address issues affecting General Aviation (GA), on the basis set out below.

(a) The Milestones of the Review would be:

- to have the Review Team in place by end August 2005;
- to agree Terms of Reference and a Work Programme by end September; and
- to present Conclusions and Recommendations to the CAA Board by June 2006.

(b) We propose that membership of the Team to carry out this Review would include :

- (i) CAA representatives with knowledge of the GA sector – perhaps 6 or 7 people
- (ii) Representatives of organisations involved in General Aviation – perhaps 6 or 7 people
- (iii) A representative from the Ministry of Defence
- (iv) A representative from the Department for Transport

We envisage that the Team Leader would be Alex Plant, who heads the policy and analysis area in the CAA's Economic Regulation Group.

We believe that a Team of 14-16 members is, for reasons of efficiency, as large a group as we should contemplate. We recognise the difficulty of limiting the GA representation to 6 or 7 people. We plan to consult with the General Aviation Consultative Committee to determine who these representatives should be, and on arrangements for liaison with organisations not directly represented on the Review Team.

(c) The Review Team's terms of reference and modus operandi would be for the Team itself to determine. However, for purposes of consideration at this stage, the CAA envisages the Team identifying and recording :

- a description and definition of general aviation in the UK;
- the existing UK policy context for general aviation;
- GA sectoral trends in the UK during the past 10 years;
- UK versus international trends;
- benefits (quantified so far as possible) to UK or European aviation industries from general aviation;
- implications of general aviation activities for other users, and for the community generally (including, so far as practicable, environmental impacts);

- major current developments which are likely to affect UK general aviation: airspace, infrastructure, technology, regulatory, costs, etc;
- issues concerning access to airports;
- future trends affecting GA;
- methods and effectiveness of consultation and dialogue between GA interests and CAA/Government;
- key strategic issues for UK general aviation;
- Conclusions and Recommendations for consideration in policy making for the future i.e. policy making by Government, by the CAA, by GA organisations and by industry.

(d) The Principles under which the Review Team will operate will include :

- The workings of the Review Team shall be based upon available factual information;
- The individual members of the Review Team are responsible for collecting and expressing the view of the sectors they represent and providing feedback from the Review Team;
- Where general consensus has been reached by the Review Team, all members shall be committed to taking the consensus forward; minority positions will be acknowledged, recorded and the sponsor of the position identified;
- Wherever possible, nominated representatives will attend all meetings. Where alternates are used, they must be aware of, and be committed to, understandings already reached;
- Ensuring that adequate liaison is maintained with all general aviation associations represented on the General Aviation Consultative Committee; and
- Trade association members will be expected to fund their own participation in this activity. (Selected members of the team, if involved in overseas benchmarking activities, may recover appropriate travel and subsistence costs from the CAA).

In addition to this review of strategic issues affecting the GA sector, the CAA also plans to carry out within the next 12 months or so a comprehensive review of its regulatory approach to the GA sector, smaller AOC holders, and small aerodromes. This regulatory review will be initiated as soon as the CAA has a clear view of EASA's intended approach to the GA sector in Europe, which we expect to have later this year. We will write to you separately concerning this second review and industry involvement in it, and we intend that the eventual outcomes from the two reviews will be co-ordinated as appropriate.

The purpose of this letter is to seek your views as to :

- the advisability of carrying out a Strategic Review as outlined above;
- the Scope of the Review as outlined above;
- the Milestones for the Review as outlined above;
- Membership of the Review Team and, in particular, representation from the GA sector;
- the proposed Work Streams; and
- the Principles under which the Joint Review Team will operate.

We would appreciate your response not later than 10th July 2005 and, subject to the responses we receive, we envisage seeking to put the Team in place between then and end August.

We look forward to hearing from you.

Yours sincerely,

Sir Roy McNulty CBE
Chairman

APPENDIX 2 TERMS OF REFERENCE AND MEMBERSHIP OF THE STRATEGIC REVIEW OF GENERAL AVIATION

A Objectives and scope

1. A CAA-initiated and -chaired strategic review of General Aviation is to be carried out jointly by representatives from the General Aviation community, UK Government and the CAA.
2. The objectives of the review are to agree and record:
 - (a) A description of General Aviation in the UK
 - (b) Relevant aviation sectoral trends and major future developments, including in General Aviation, in the UK, the EU and overseas
 - (c) The economic, social and other benefits (quantified so far as possible) of General Aviation to the aviation industry, and to the wider UK economy
 - (d) The historical and existing UK policy in the context of General Aviation, making relevant international comparisons, particularly in the EU
 - (e) Key strategic issues for UK General Aviation
 - (f) Conclusions and recommendations that will aim to influence future policy-making in relation to General Aviation by the CAA, Government and the EU
 - (g) Major current developments and issues which are likely to have important implications for UK General Aviation, including but not limited to:
 - i. access to airports
 - ii. access to airspace
 - iii. impact of local authority decisions and planning processes on the availability and retention of existing (and development of new) General Aviation airfields
 - iv. security issues
 - v. application of existing airspace policy including equity issues the Single European Sky initiative including changes in airspace classification
 - vi. Air Traffic Management services including the provision of Lower Airspace Radar Services
 - vii. the strategic impact of the European Aviation Safety Agency (including potential delegation of some functions to industry) requiring close liaison with the Regulatory Review
 - viii. overview of safety performance and relevant international comparisons
 - ix. impact of regulatory and taxation systems
 - x. implications of General Aviation activities for other users, and for the community generally (including, so far as practicable, environmental impacts)
 - xi. use of foreign-registered aircraft based in the UK, including related aspects of pilot licensing, medical standards and instrument ratings
 - xii. reduction in pilot/engineer numbers and the underlying reasons
 - xiii. impact of innovation and new technology, noting impact on

- environmental issues
- xii. Unmanned Aerial Vehicles

- (h) Methods and effectiveness of consultation and dialogue between General Aviation interests and CAA/Government/regional bodies

B Principles

3. In developing recommendations the review must take into account:

- (a) The need to ensure that safety standards currently achieved in the UK are at least maintained and preferably improved and that the risks to civil aviation are properly controlled and managed effectively
- (b) The relevant legal framework, including CAA and Government statutory responsibilities and current and proposed obligations under ICAO, EC and EASA regulations and procedures, although the review may indicate any areas in which those responsibilities or obligations are considered to be an unnecessary or undesirable constraint
- (c) The regulatory cost base facing General Aviation in the UK

and the following underlying principles:

- (d) The workings of the Review Team shall be based upon best available information for which further research may be required
- (e) The individual members of the Review Team are responsible for collecting and expressing the views of the sectors they represent and providing feedback from the Review Team
- (f) Where general consensus has been reached by the Review Team, all members shall be committed to taking the consensus forward; minority positions will be acknowledged, recorded and the sponsor of the position identified in the final report or an annex thereto

Wherever possible, nominated representatives will attend all meetings; where alternates are used, they must be aware of, and be committed to, agreements already reached

C Membership

4. The following will comprise the Review Team:

Chairman:

Alex Plant – CAA Economic Regulation Group, Economic Policy and International Aviation

CAA:

David Chapman – Safety Regulation Group, Operating Standards Division
 John Hills – Safety Regulation Group, General Aviation Department
 Alex Hartland – Safety Regulation Group, Flight Operations Policy
 Graham Forbes – Safety Regulation Group, Personnel Licensing
 Simon Wragg – Directorate of Airspace Policy (also representing MoD)
 Mark Smailes – Directorate of Airspace Policy
 David Beaven – Safety Regulation Group, General Aviation Department

Government:

Ann Godfrey – Department for Transport, Air Traffic Management (Ministry of Defence interests are represented by Gp Cpt Simon Wragg, CAA DAP)

General Aviation:

Roger Dunn – General Aviation Safety Council (GASCo), PPL/IR Europe
 Charles Henry – General Aviation Awareness Council (GAAC)
 Roger Hopkinson – Popular Flying Association (PFA), GA Alliance
 Jeremy James – Helicopter Club of Great Britain (HCGB)
 David Roberts – British Gliding Association (BGA), Royal Aero Club of the UK (RAeC), Europe Air Sports (EAS)
 Martin Robinson – Aircraft Owners and Pilots Association (AOPA)
 Mark Wilson – British Business and General Aviation Association (BBGA)

Secretariat:

Trevor Metson – CAA Economic Regulation Group
 Dave Miller – CAA Economic Regulation Group
 Chris Gadsden – CAA Economic Regulation Group

D Assumptions

5. The Review Team will make all reasonable endeavours to:

- (a) Gather and consider information on matters concerning General Aviation in sufficient detail to inform the Review
- (b) Ensure that adequate liaison will be maintained with all General Aviation associations represented on the General Aviation Consultative Committee

- (c) Ensure that adequate liaison will be maintained with other relevant representative bodies, for example those for airports, airlines and air navigation service providers, as appropriate
- (d) Ensure that adequate liaison is maintained with the CAA's Regulatory Review of General Aviation which is being undertaken in a similar timeframe

E Protocols

- 6. The team's work will, wherever possible, solicit comments from other relevant parties, and be transparent to any interested party; a website will be created allowing any individual to view the results of meetings and the draft report as it develops, and to submit comments.
- 7. Appropriate and reasonable actions will be taken to ensure all General Aviation representative bodies contribute to the deliberations.
- 8. There will be brief minutes recorded at each meeting and an action list.

F Deliverables/Output/Tasks

- 9. Prepare and present to the CAA Board by 30 June 2006 a report, including an Executive Summary, which details the strategic issues relating to, and impacting on, General Aviation, including inter alia:
 - (a) information required by the objectives
 - (b) an assessment of the environment in which General Aviation functions in the UK and how this may change
 - (c) relevant international comparisons
 - (d) the benefits General Aviation brings to the aviation industry and the UK generally (including social and economic factors)
 - (e) options for improving the way General Aviation functions and the benefits it brings
 - (f) how those improvements would impact upon General Aviation, the wider aviation industry, the CAA, Government and the EU, and the wider community
 - (g) conclusions and recommendations that will influence future policy-making by the CAA, Government and the EU

G Budgetary Control

- 10. Members will be expected to fund their own participation in this activity. The Chairman and selected members of the team, if involved in overseas benchmarking activities, may recover appropriate travel and subsistence costs from the CAA. The CAA would consider additional funding only in an exceptional case.

APPENDIX 3 DETAILS OF WORKSTREAMS

“Contextual” papers		Sub-group
A	A clear description of General Aviation	David Chapman (liaising with Regulatory Review team members)
B	Relevant aviation sectoral trends and major future developments, including in General Aviation, in the UK, the EU and overseas	Alex Plant Simon Wragg David Roberts Mark Wilson Martin Robinson (& members of Reg. Review team, to include Tom Hardie)
C	The economic, social and other benefits (quantified so far as possible) of General Aviation to the aviation industry, and to the wider UK economy	Alex Plant John Hills/Alex Hartland Roger Hopkinson Graham Forbes Mark Wilson (group to liaise with Ian Harnett)
D	Historical and existing UK policy in the context of General Aviation, making relevant international comparisons, particularly in the EU	Alex Plant David Chapman Ann Godfrey
E	Implications of General Aviation activities for other users, and for the community generally (including, so far as practicable, environmental impacts)	Simon Wragg Ann Godfrey Charles Henry

Workstream	Sub-group
1	Access to airports (commercial aviation growth, charging, planning decisions etc)
2	Access to airspace (commercial aviation growth, implementation of airspace policy, LARS)
3	Labour supply issues
4	The Single European Sky initiative including changes in airspace classification
5	Strategic impact of EASA

Charles Henry John Hills/Alex Hartland Ann Godfrey Jeremy James
Martin Robinson Mark Wilson Mark Smailes David Roberts
Graham Forbes Martin Robinson Mark Wilson Alex Plant
Ann Godfrey (liaising with CAA/DAP as necessary) Roger Dunn Roger Hopkinson Martin Robinson
David Roberts David Chapman Graham Forbes Mark Wilson (group to liaise with Reg. Review team & DfT/IASD)

6	Impact of UK regulatory and taxation systems, including the use of foreign-registered aircraft	Roger Dunn John Hills/Alex Hartland Graham Forbes Charles Henry Alex Plant
7	Impact of innovation and new technology, including UAVs	Alex Hartland Jeremy James Mark Smailes (group to liaise with CAA/DAP,SRG)
8	Methods and effectiveness of consultation and dialogue between General Aviation interests and CAA/Government/regional bodies	Roger Hopkinson Ann Godfrey Alex Hartland Mark Smailes
9	Security issues	Mark Wilson Ann Godfrey Jeremy James Alex Hartland

APPENDIX 4 DATA BOOK

This appendix collects together the main datasets underpinning the Strategic Review.

Summary list of data

Data	Table numbers
Aircraft data – overview	1.1 – 1.9
Aircraft data – by GA segment	2.1 – 2.10
Pilot's licences	3.1 – 3.2
GA movements	4.1 – 4.7
GA expenditure	5.1 – 5.4
Fleet value	6.1 – 6.4

Part 1: Aircraft data – overview

Table 1.1	Make-up of UK GA
Source	CAA and relevant associations
Date	2005 (except gliders and paragliders, 2004)
Comment	Complete data source, but excludes foreign-registered aircraft

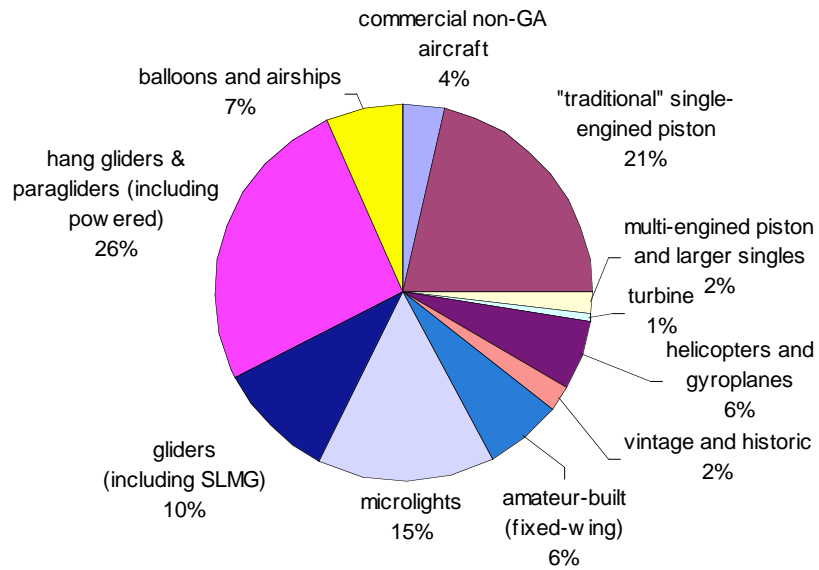


Table 1.2	UK-registered GA aircraft
Source	CAA
Date	1984–2005
Comment	Complete data source. Excludes non-GA commercial aircraft, gliders, hang gliders, paragliders and foreign-registered aircraft based in the UK. Includes inactive aircraft that remain on the UK register.

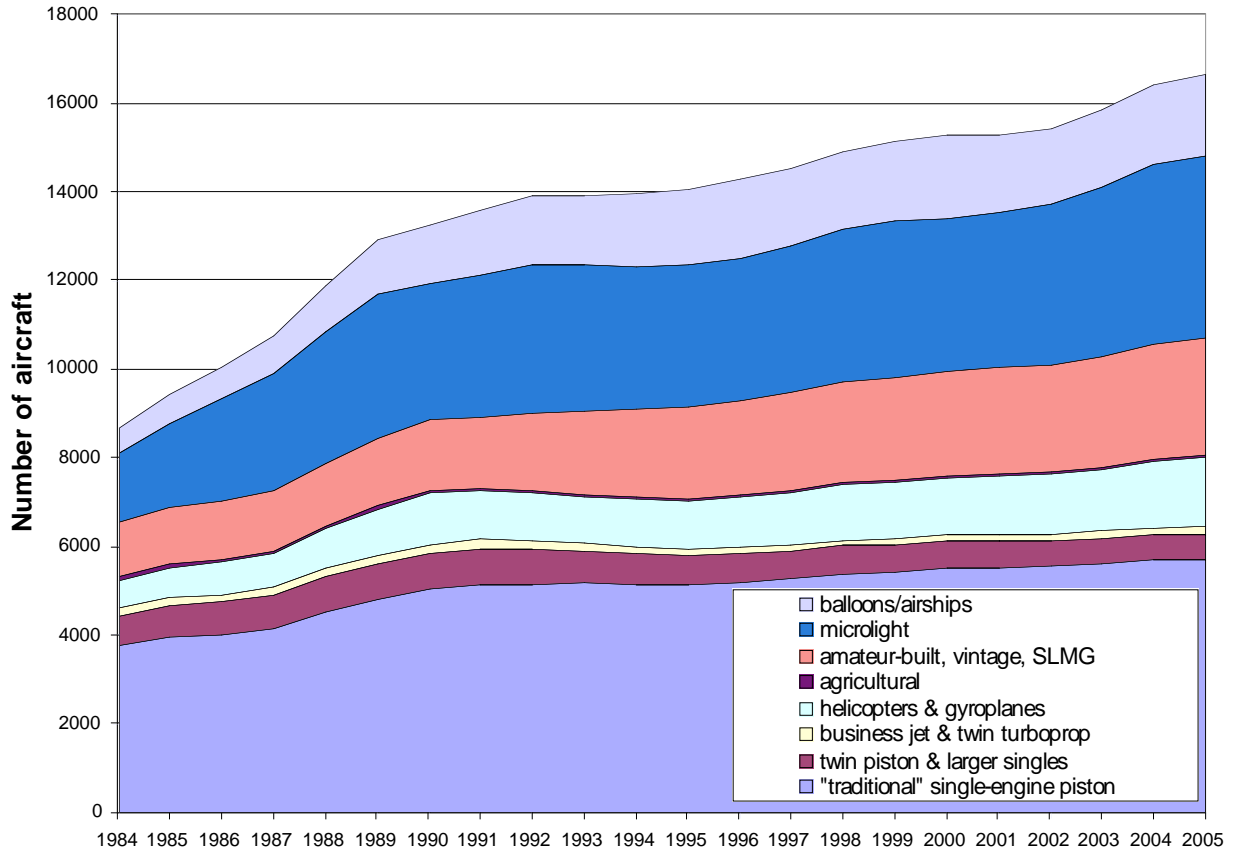


Table 1.3	UK-registered GA aircraft, activity status
Source	CAA data
Date	1985 – 2002
Comment	Complete data source, includes commercial aircraft, excludes foreign-registered aircraft

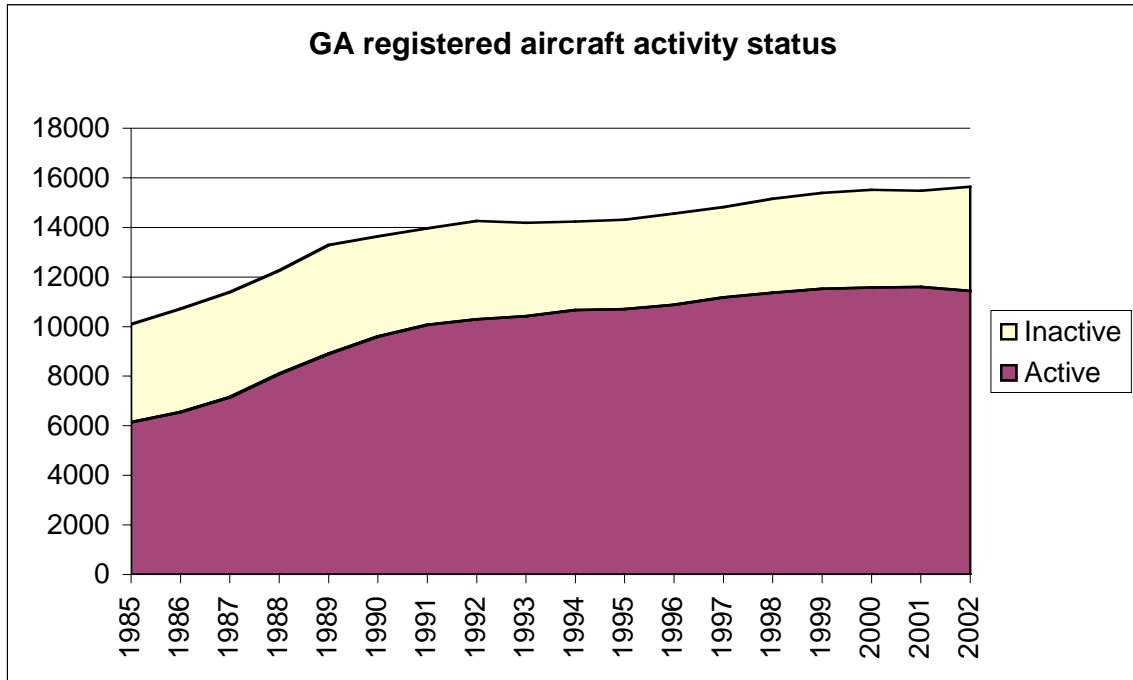


Table 1.4	Total GA flying hours by year
Source	CAA, BGA
Date	1986 – 2002
Comment	CAA data generally accurate but may contain some anomalies. Excludes foreign-registered aircraft. Totals in this chart include a few smaller sub-categories (such as agricultural, gyroplanes etc) which are not detailed further in tables 2.3 onwards.

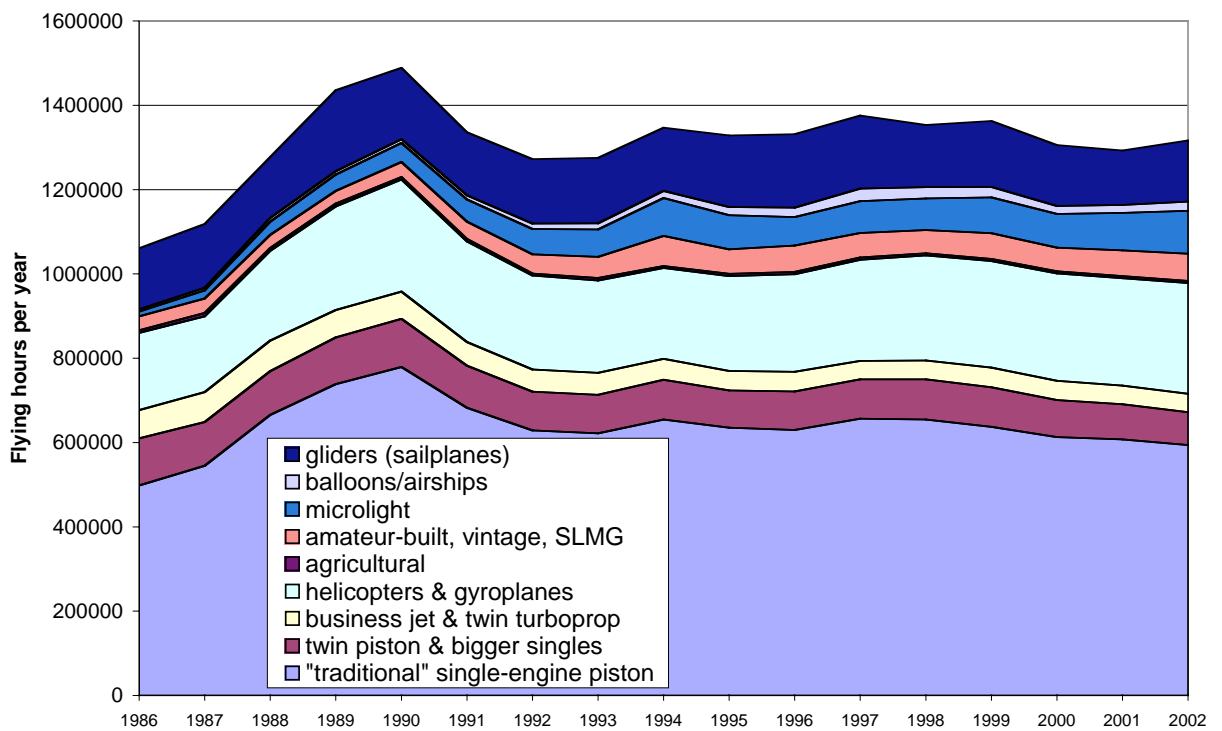


Table 1.5	Estimated hours flown by GA aircraft, by sector
Source	CAA, BGA
Date	2002
Comment	CAA data is estimated. Excludes hang gliders, paragliders and foreign-registered aircraft.

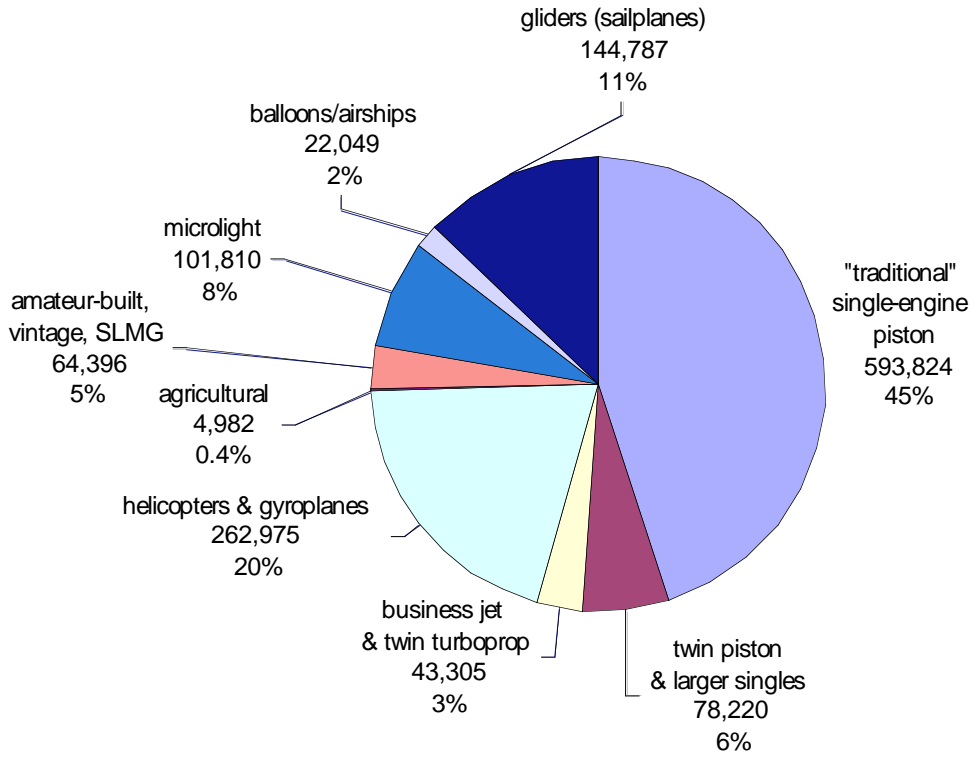


Table 1.6	Annual average hours flown by GA fleet – over time
Source	CAA data
Date	1984 – 2002
Comment	CAA data generally accurate but may contain some anomalies. Excludes foreign-registered aircraft.

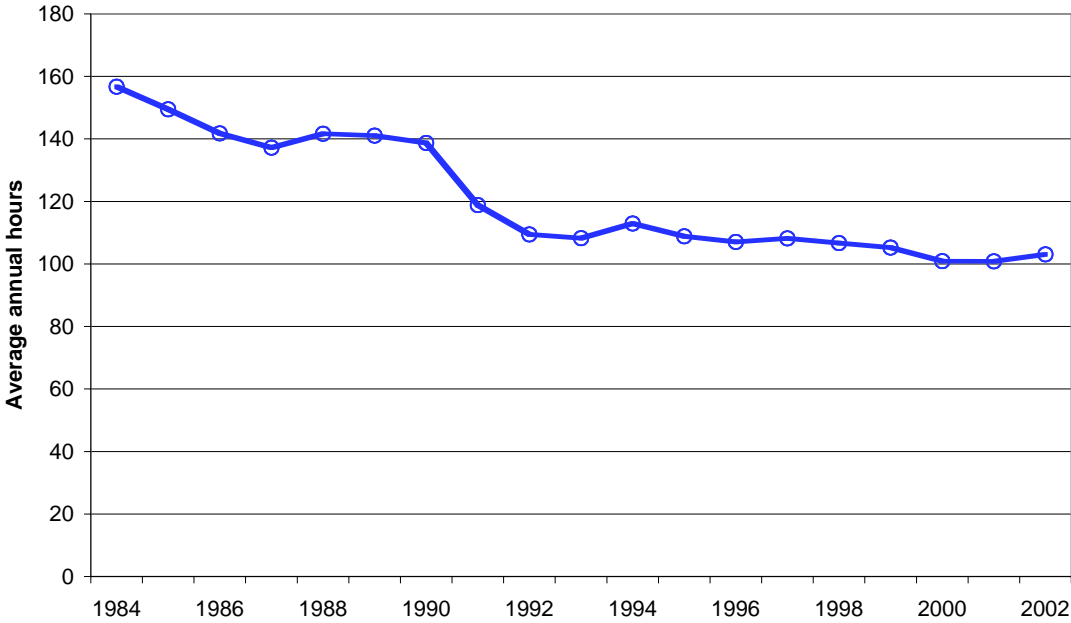


Table 1.7	Annual average hours flown by GA fleet by segment – over time
Source	CAA data
Date	1984 – 2002
Comment	CAA data generally accurate but may contain some anomalies. Excludes foreign-registered aircraft.

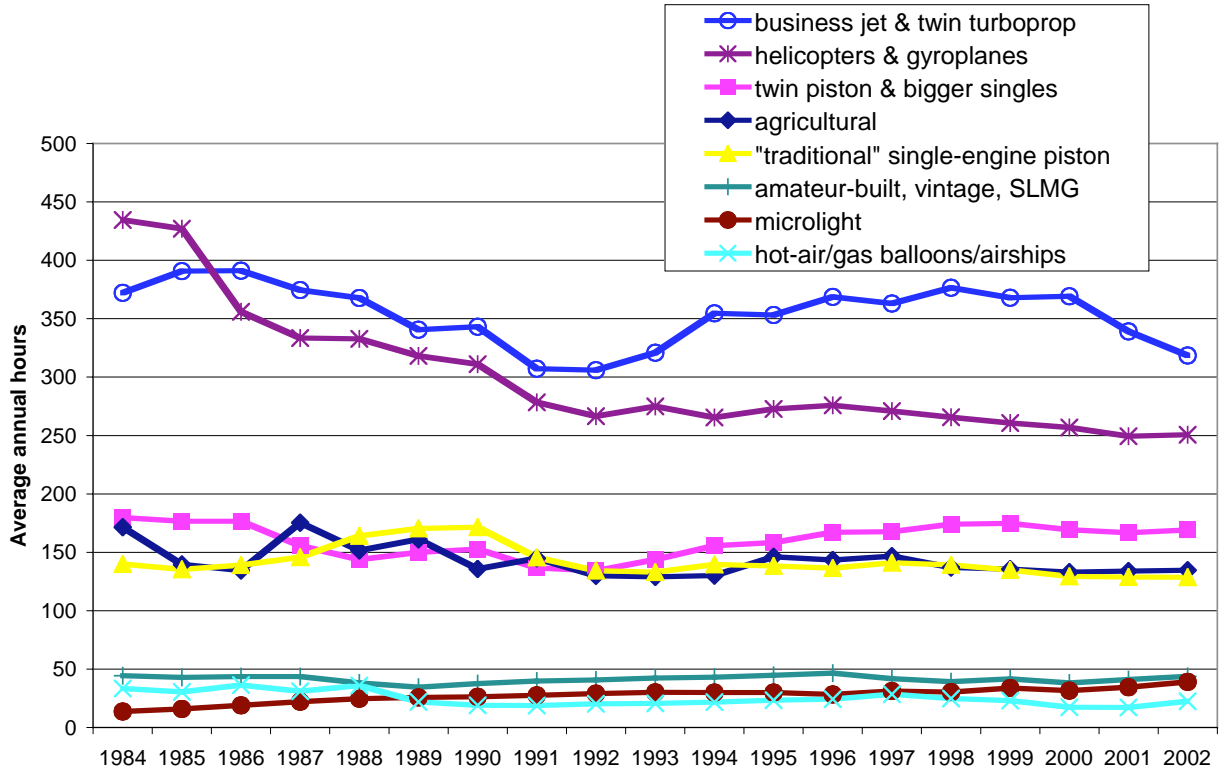


Table 1.8	Average age of different fleet types
Source	Lober using CAA data
Date	2005
Comment	Complete data source, excludes foreign-registered aircraft

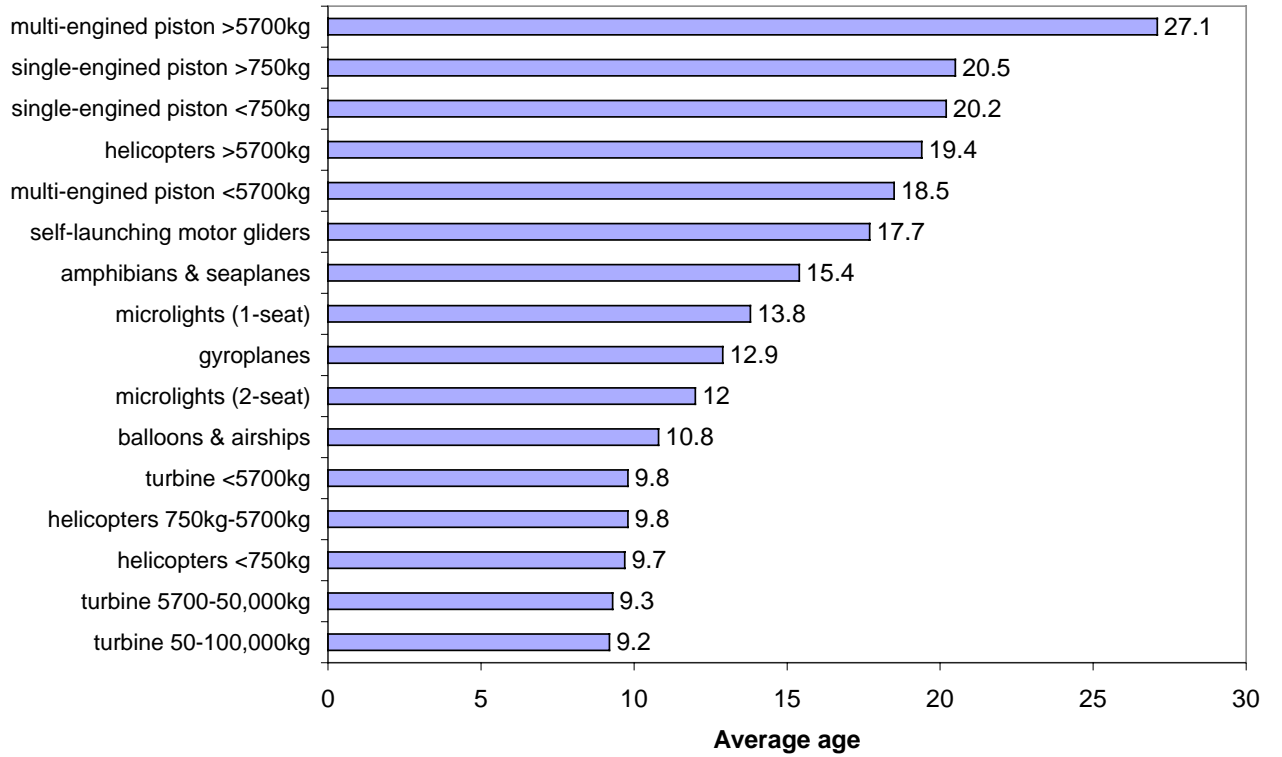


Table 1.9	The usage of aircraft by ownership
Source	Terry Lober
Date	2005
Comment	Estimate, based on CAA data. "Business" includes flight training and refers to all aircraft owned by a company or by a private individual with over five aircraft (assumed to be a sole trader), excludes foreign registered aircraft

GA type	Aircraft ownership	GA flying hours
Private	$\frac{2}{3}$	$\frac{1}{3}$
Business	$\frac{1}{3}$	$\frac{2}{3}$

Part 2: Aircraft data – by GA segment

Table 2.1	Active aircraft and hours flown: traditional single-engined piston aircraft
Source	CAA
Date	1984–2002
Comment	CAA data generally accurate but may contain some anomalies. Number of active aircraft is an estimate and may be overstated. Excludes foreign-registered aircraft.

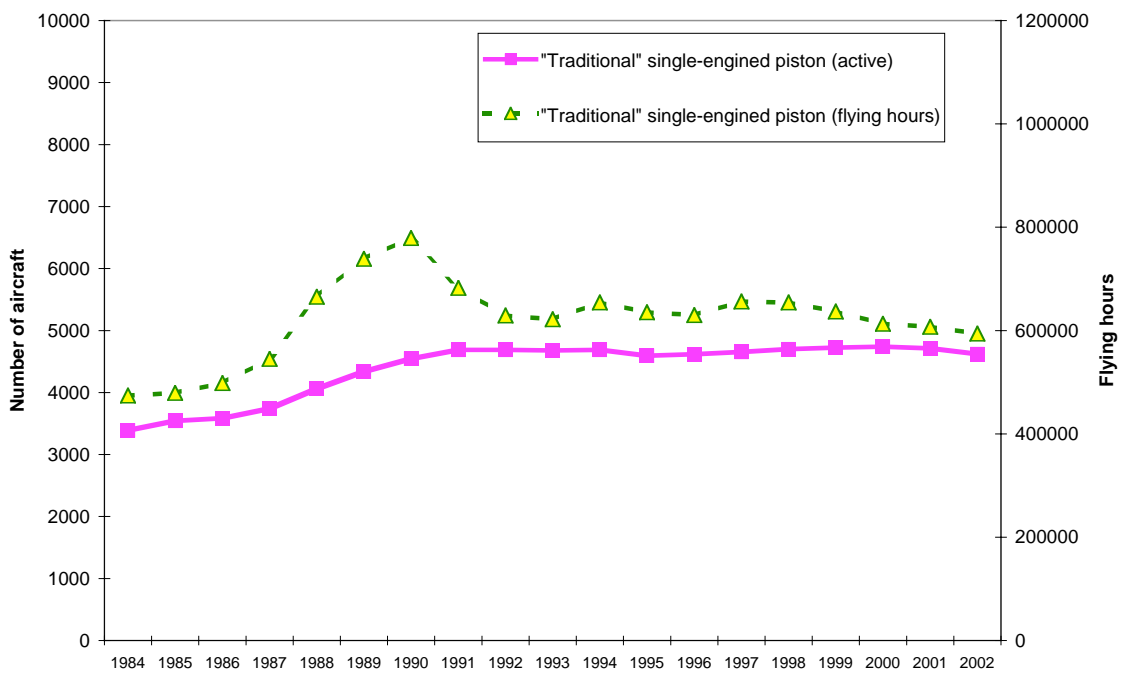


Table 2.2	Active aircraft and hours flown: twin-engined piston
Source	CAA
Date	1984–2002
Comment	CAA data generally accurate but may contain some anomalies. Number of active aircraft is an estimate and may be overstated. Light twins defined broadly as less than 2730kg maximum weight. Excludes foreign-registered aircraft.

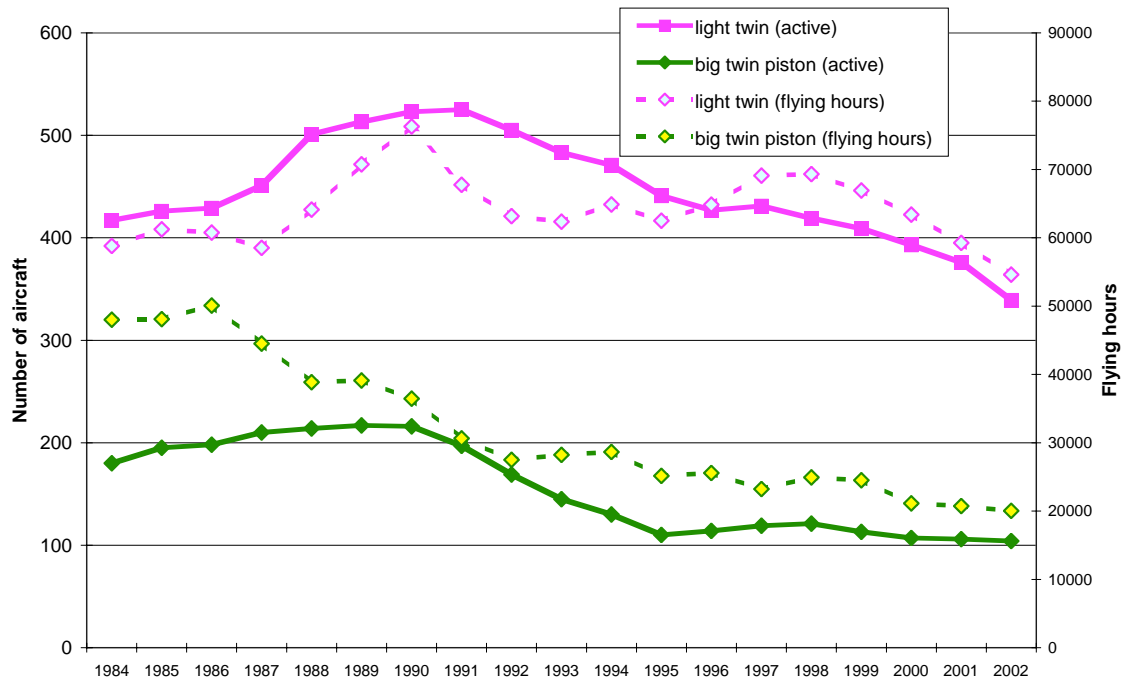


Table 2.3	Active aircraft and hours flown: turbine GA aircraft
Source	CAA
Date	1984–2002
Comment	CAA data generally accurate but may contain some anomalies. Number of active aircraft is an estimate and may be overstated. Excludes foreign-registered aircraft.

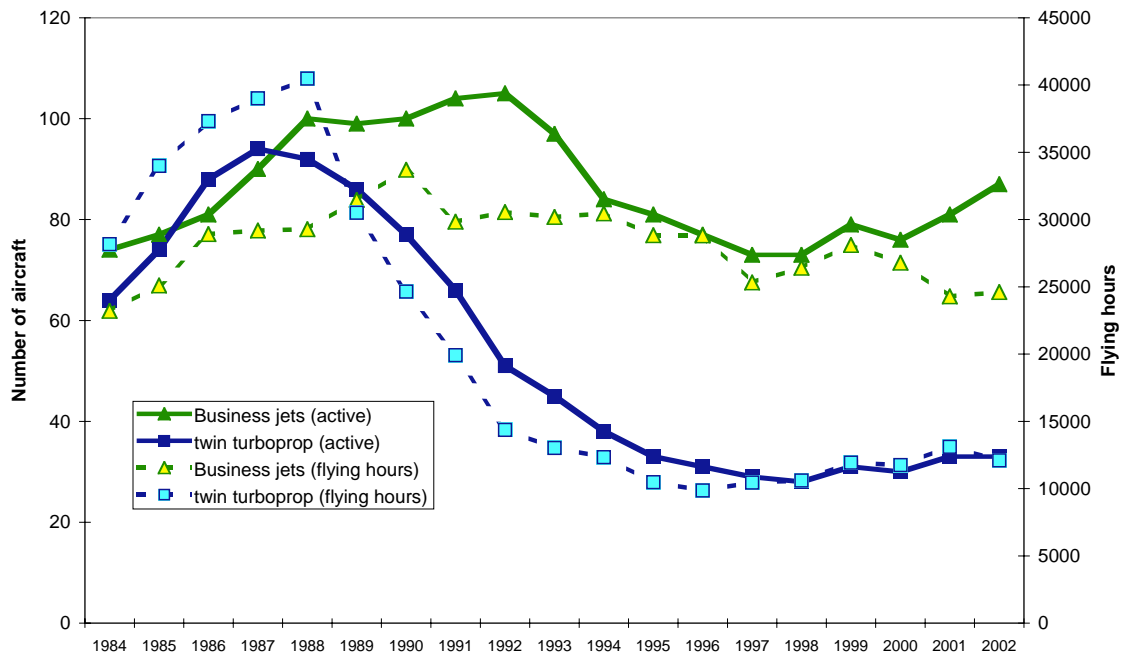


Table 2.4	Active UK and foreign-registered twin-turboprop aircraft
Source	CAA data and Air Britain data
Date	1987 – 2005
Comment	Mixed data source. Foreign-registered aircraft and 2005 figures for active UK aircraft are all estimates.

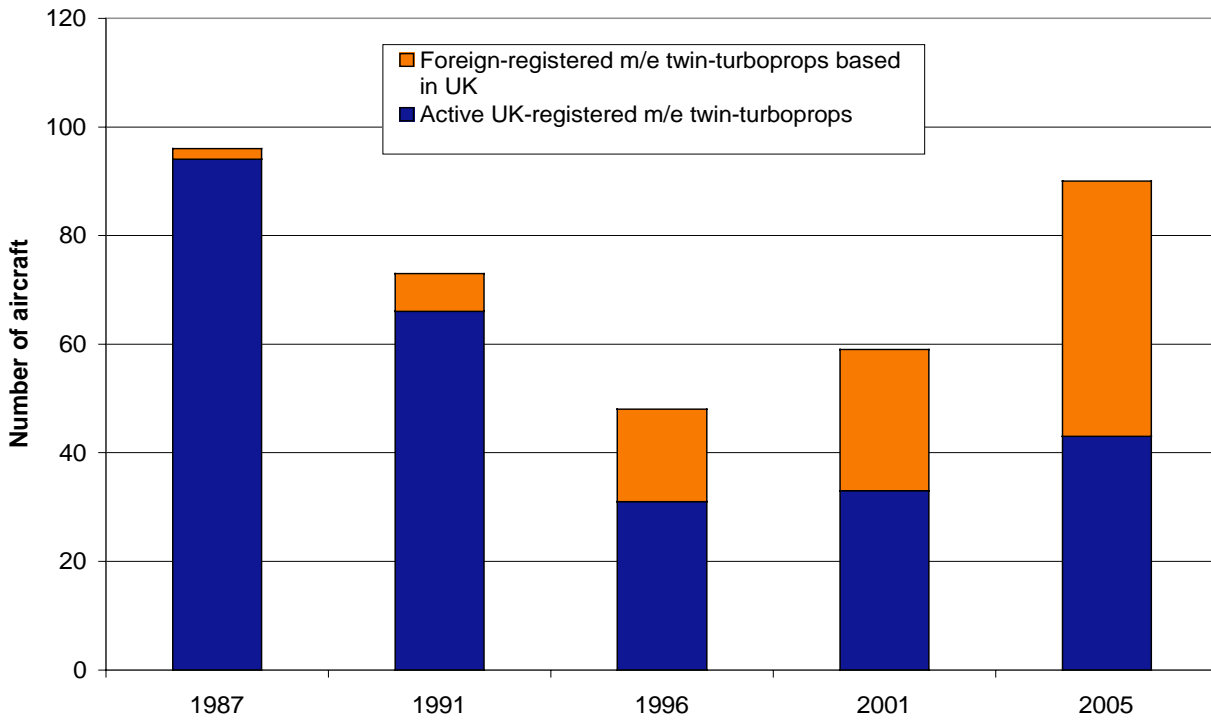


Table 2.5	Active UK and foreign-registered business jets
Source	CAA data and Air Britain data
Date	1987 – 2005
Comment	Mixed data source. Foreign-registered aircraft and 2005 figures for active UK aircraft are all estimates.

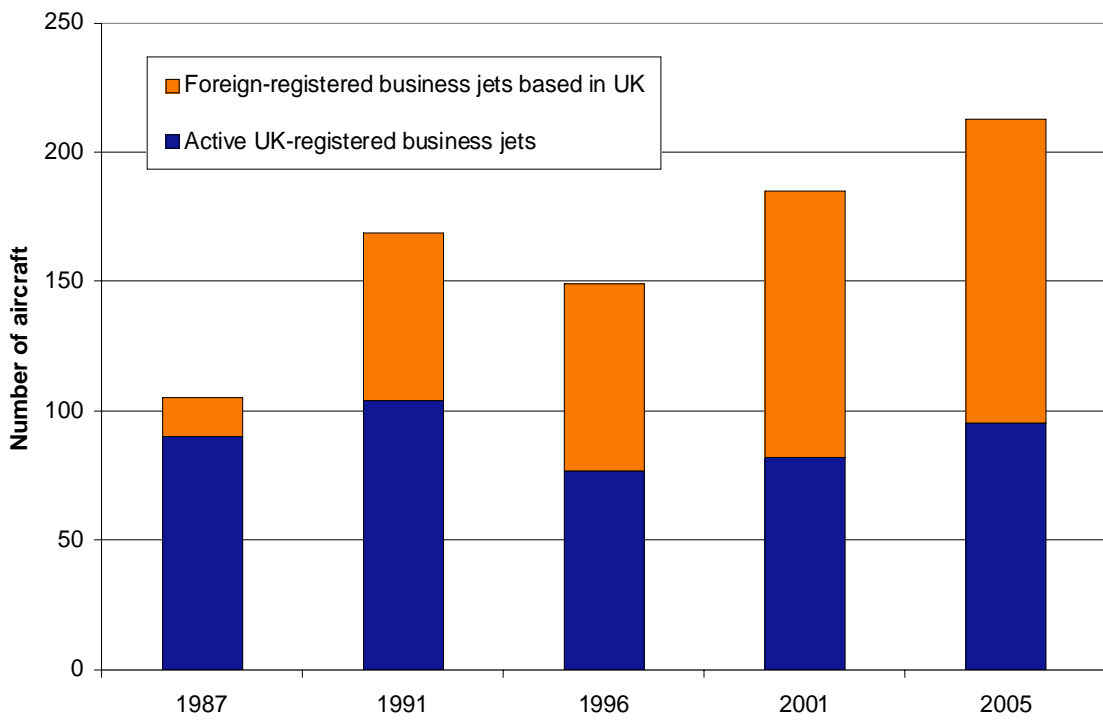


Table 2.6	Active aircraft and hours flown: amateur-built aircraft
Source	CAA
Date	1984–2002
Comment	CAA data generally accurate but may contain some anomalies. Number of active aircraft is an estimate and may be overstated.

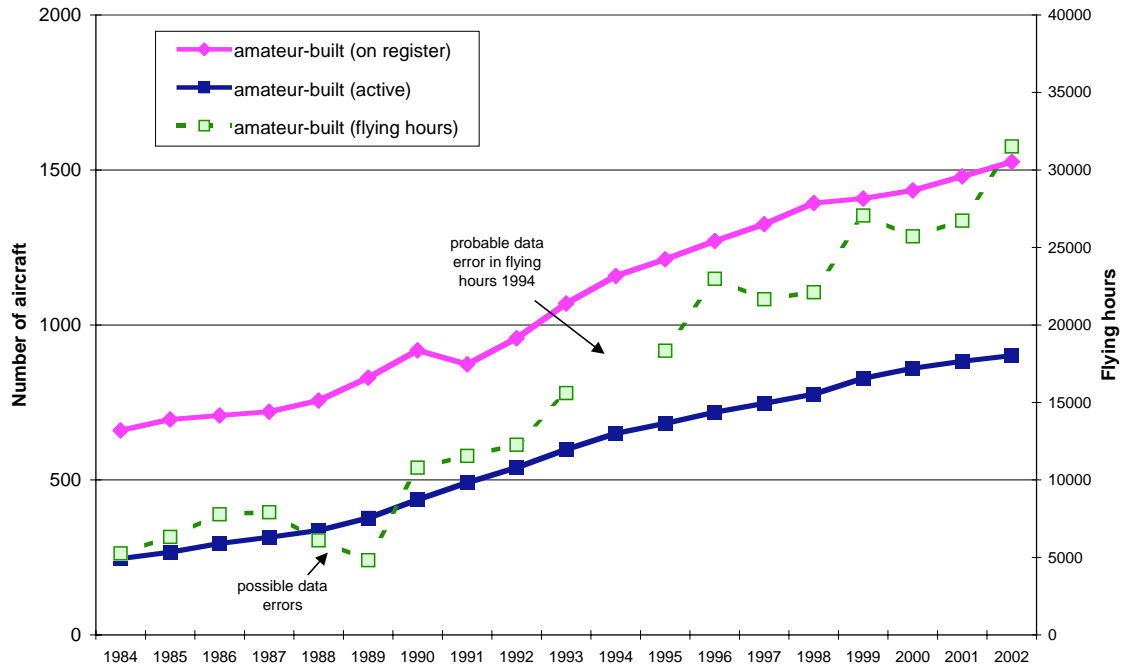


Table 2.7	Registered and active aircraft and hours flown: microlight aircraft
Source	CAA
Date	1984–2002
Comment	CAA register data accurate but hours data may contain some anomalies. Number of active aircraft is an estimate and may be overstated.

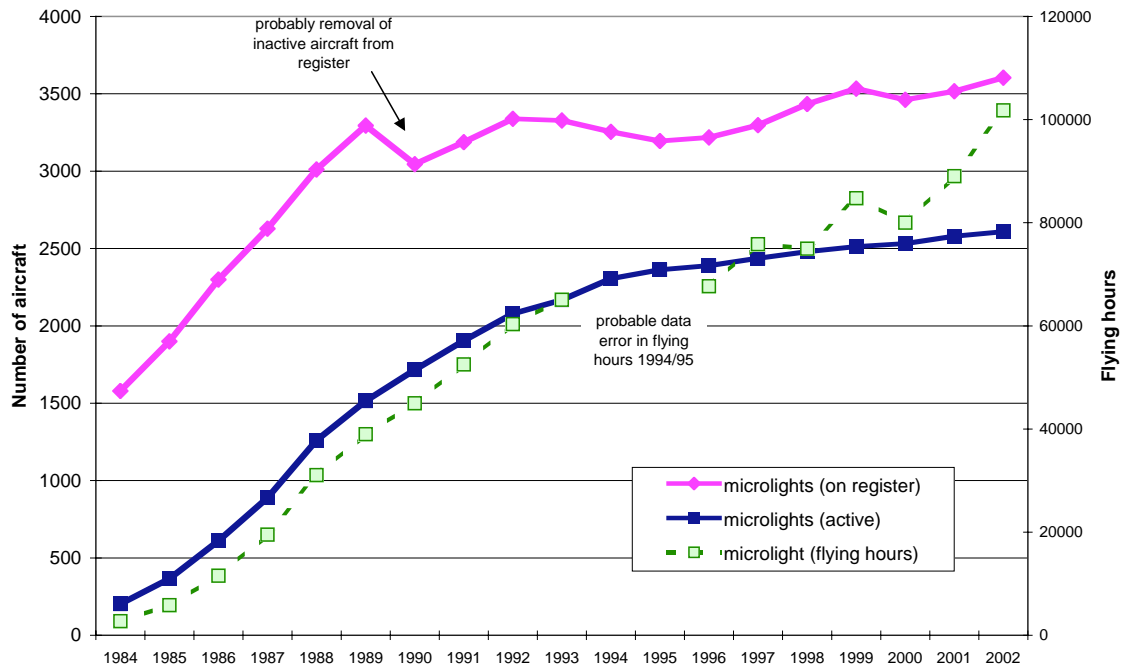


Table 2.8	Active aircraft and hours flown: balloons and airships
Source	CAA
Date	1984–2005
Comment	CAA register data accurate but hours data may contain some anomalies. Number of active aircraft is indicative only and may be inaccurate.

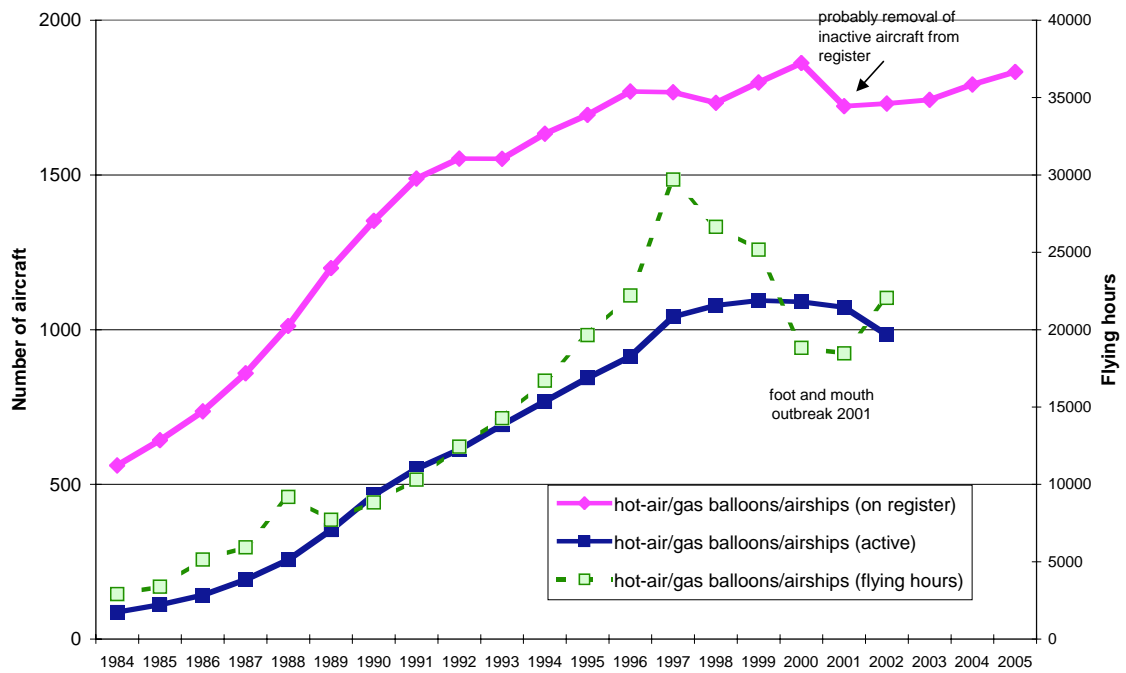


Table 2.9	Hours flown: gliders (sailplanes)
Source	BGA
Date	1984-2002
Comment	

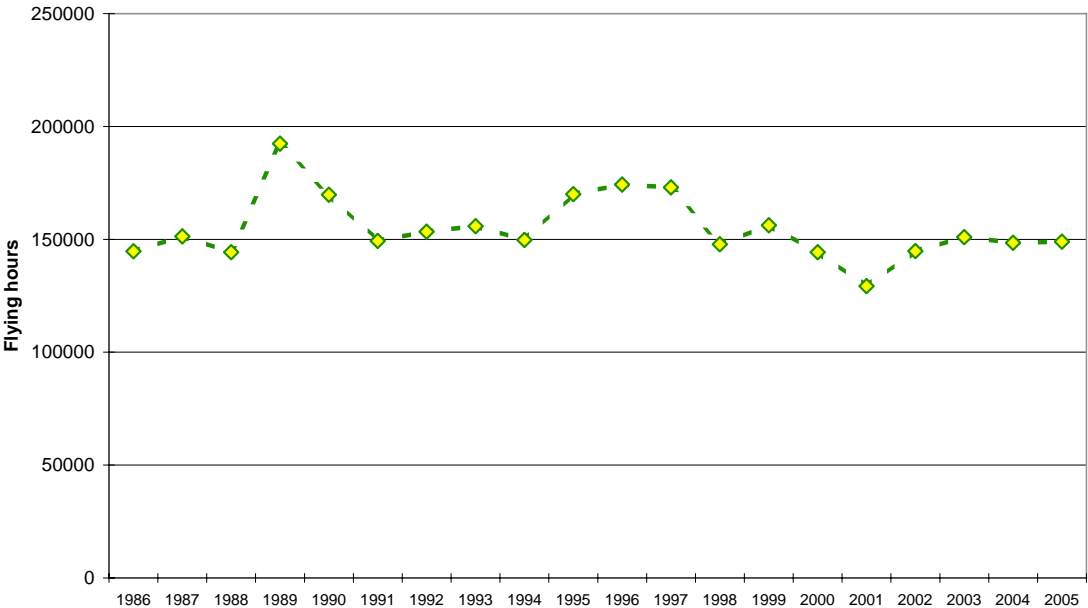
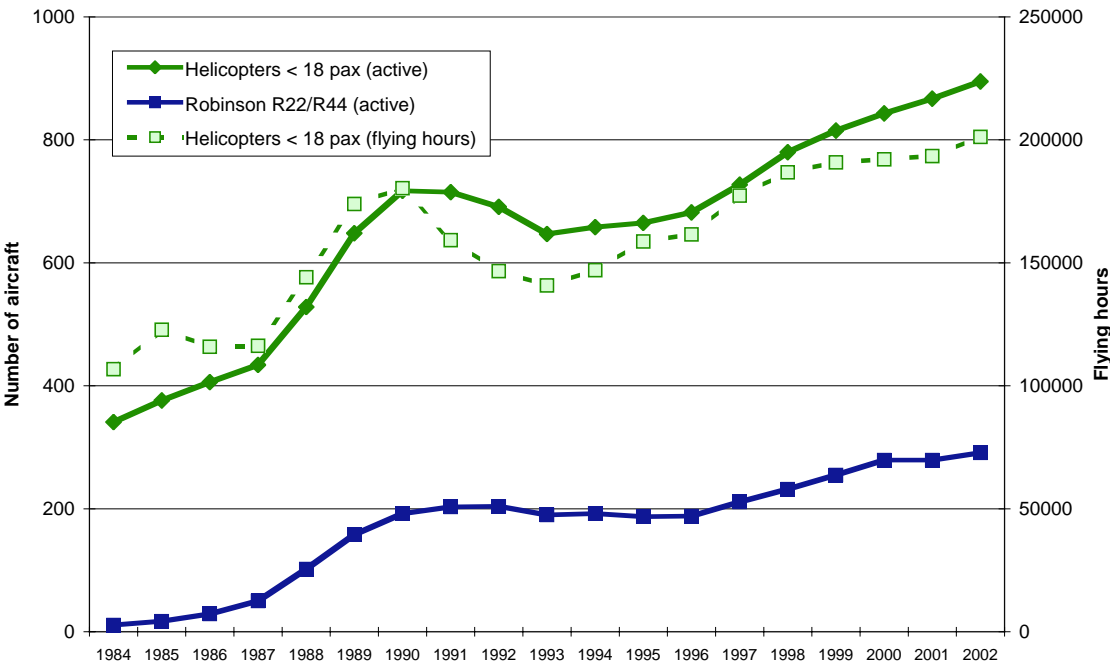


Table 2.10	Active aircraft and hours flown: helicopters (less than 18 seats)
Source	CAA
Date	1984–2002
Comment	CAA data generally accurate but may contain some anomalies. Number of active aircraft is an estimate and may be overstated. Excludes foreign-registered aircraft.



Part 3: Pilot's Licences

Table 3.1	Valid private and professional pilot's licences
Source	CAA data
Date	1994 - 2006
Comment	Total number of valid pilot's licences, where professional licences are ATPLs and CPLs, and private licences are either PPLs or NPPLs. There is a discontinuity in the data for PPLs between 2000 and 2004, likely caused by a database change around that period.

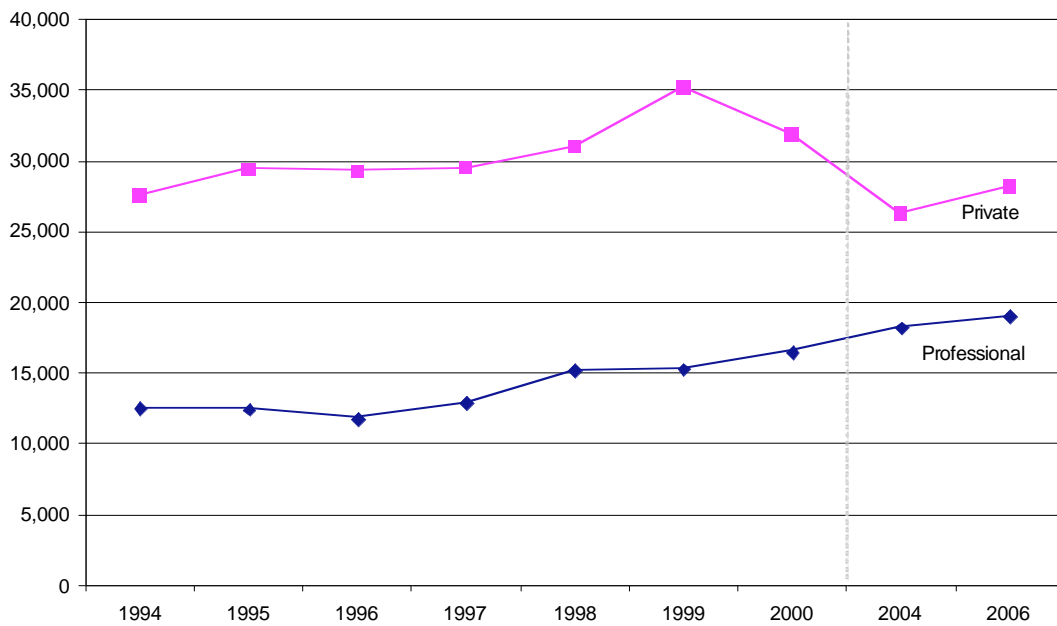
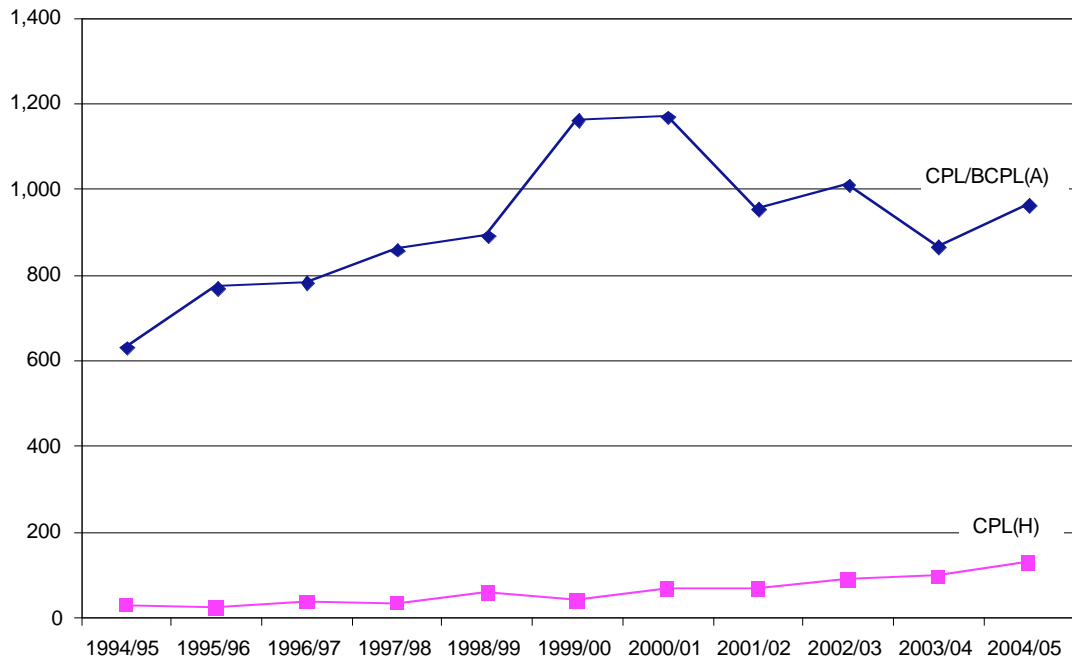


Table 3.2	CPL issues
Source	CAA data
Date	1994 – 2006
Comment	Number of Commercial Pilot's Licences (Aeroplanes) and (Helicopters) issued each year.



Part 4: GA movements

Table 4.1	Total GA movements at all airfields that report movements to the CAA
Source	CAA
Date	1986 – 2005
Comment	Accurate data, for what it covers, although the split between GA and non-GA may not be exact, due to differences in how airfields reported movements. However, there are a large number of movements (probably around three-quarters of all GA movements) that take place from airfields that do not report to the CAA

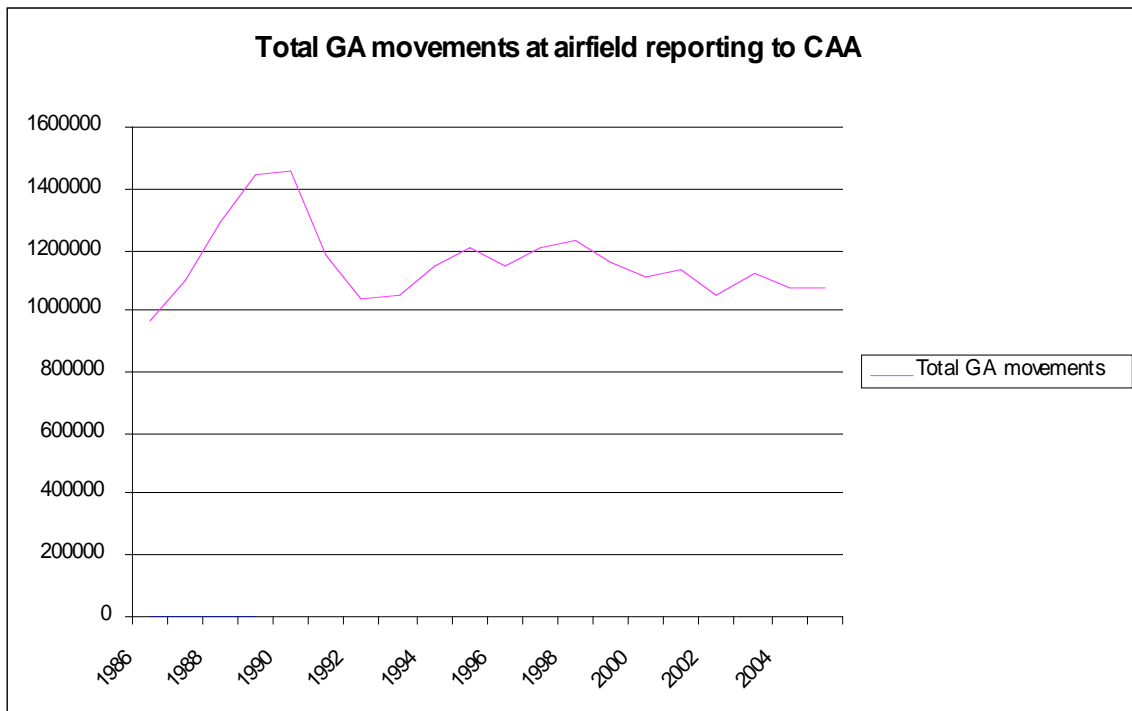


Table 4.2	The proportion of GA movements within all movements at the airfields that report movements to the CAA
Source	CAA
Date	1986 – 2005
Comment	Accurate data, although split between GA and non-GA may not be exact, due to differences in how airfields reported movements

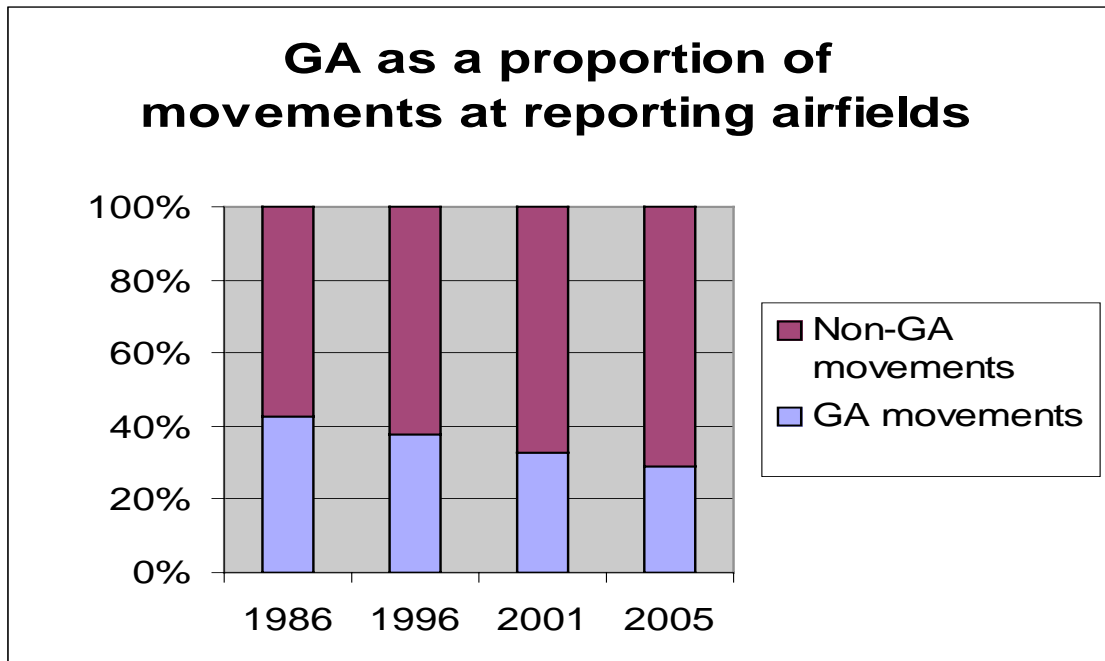


Table 4.3	GA movements at London airports
Source	CAA
Date	1986 – 2005
Comment	Accurate data, although split between GA and non-GA may not be exact, due to differences in how airfields reported movements

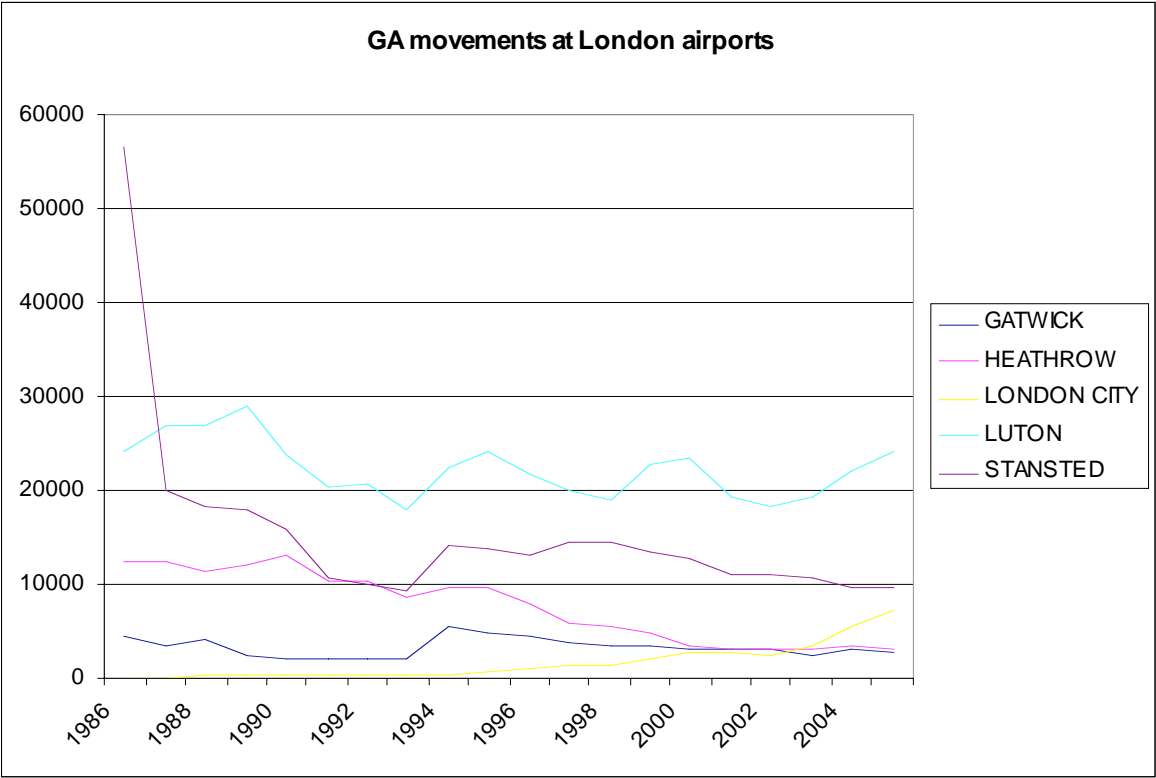


Table 4.4	GA movements at selected regional airports
Source	CAA
Date	1986 – 2005
Comment	Accurate data, although split between GA and non-GA may not be exact, due to differences in how airfields reported movements

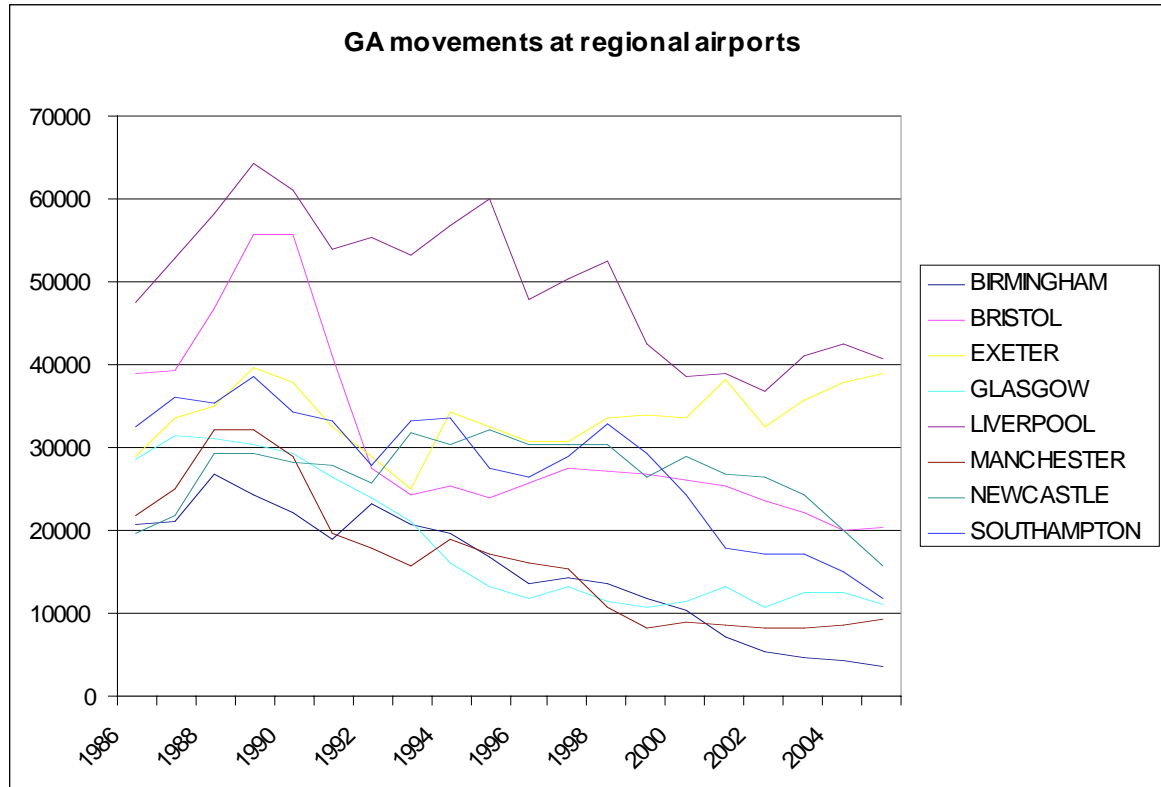


Table 4.5	GA movements at the 10 airfields with the most GA movements in 1995
Source	CAA
Date	1995 – 2005
Comment	Accurate data, although split between GA and non-GA may not be exact, due to differences in how airfields reported movements

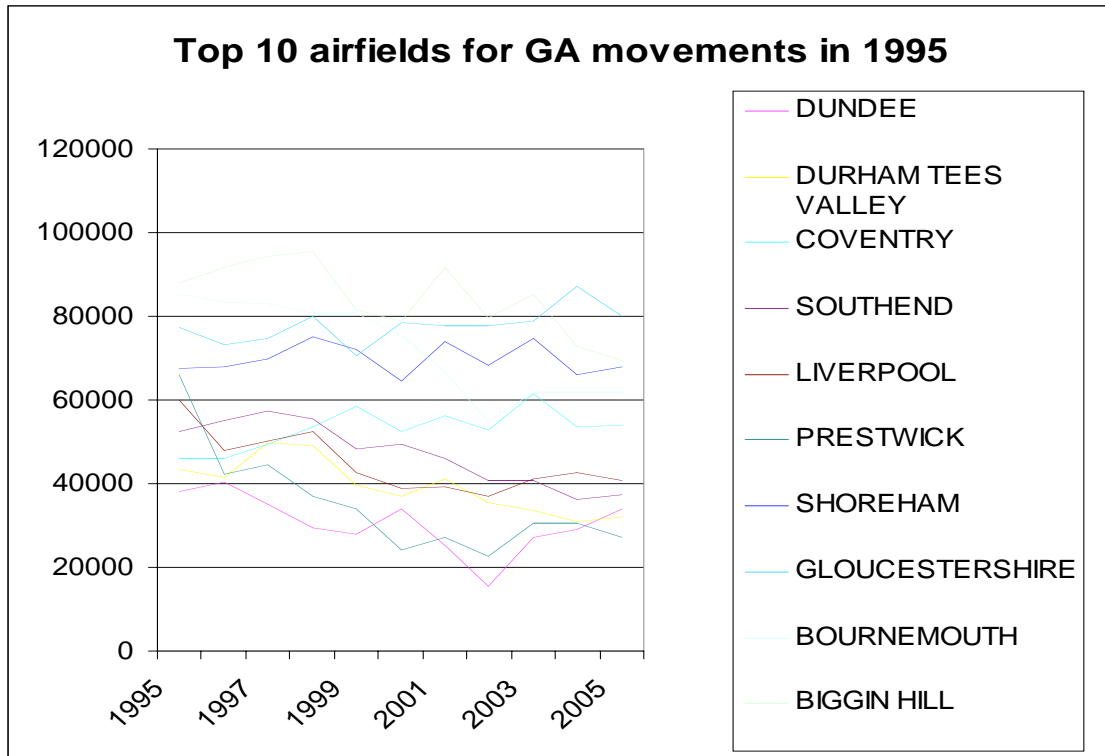


Table 4.6	GA movements at the 10 airfields with the most GA movements in 2005
Source	CAA
Date	1995 – 2005
Comment	Accurate data, although split between GA and non-GA may not be exact, due to differences in how airfields reported movements

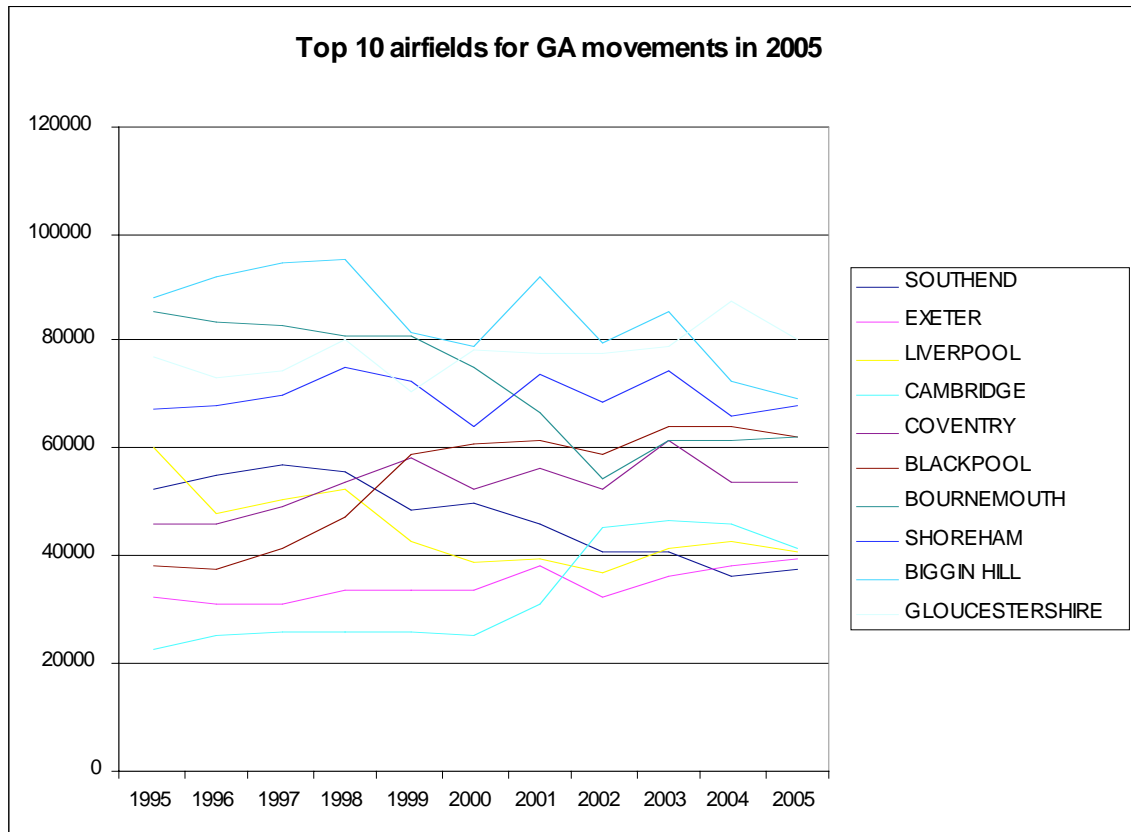
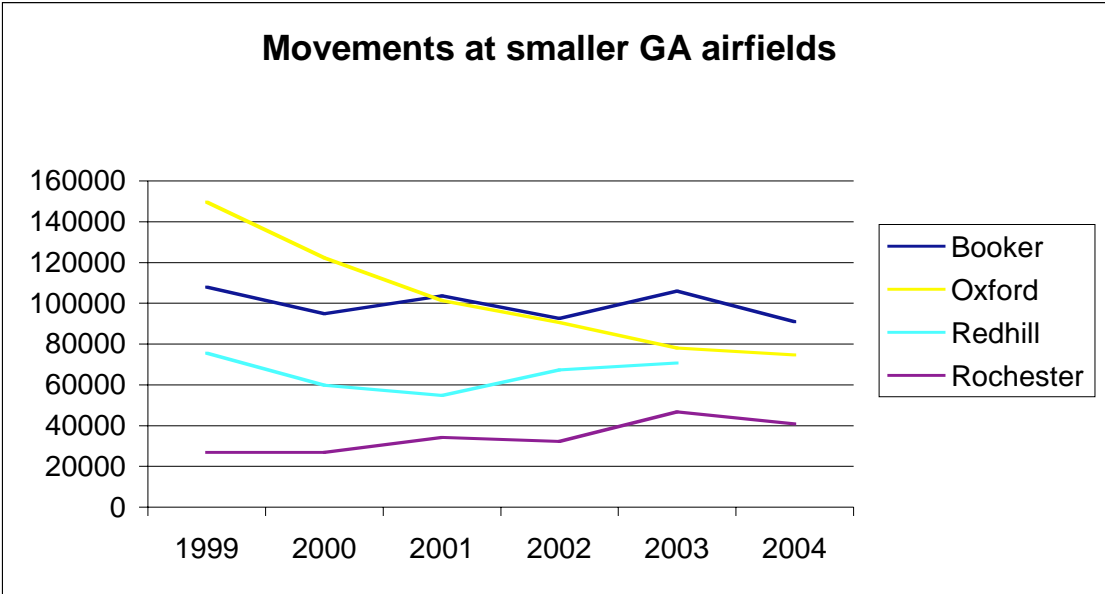


Table 4.7	Movements at other GA airfields
Source	CAA data
Date	1999 - 2004
Comment	These airfields have only recently started reporting movements



Part 5: GA Expenditure

Table 5.1	GA direct economic expenditure by aircraft type and ownership
Source	Terry Lober
Date	2005
Comment	Estimate

Aircraft type	GA business expenditure (£m)	GA private expenditure (£m)	Total expenditure (£m)
Airship/Balloon	4.1	7.3	11.4
Glider	14.3	8.7	23.0
Microlight	1.1	22.5	22.7
Single engine piston	82.0	146.4	228.4
Multi-engine piston	63.0	19.2	82.2
Turbine	666.2	73.1	739.3
Helicopter	249.2	32.0	281.2
Total	1,080.8	311.1	1,391.9

Table 5.2	GA total expenditure share by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft

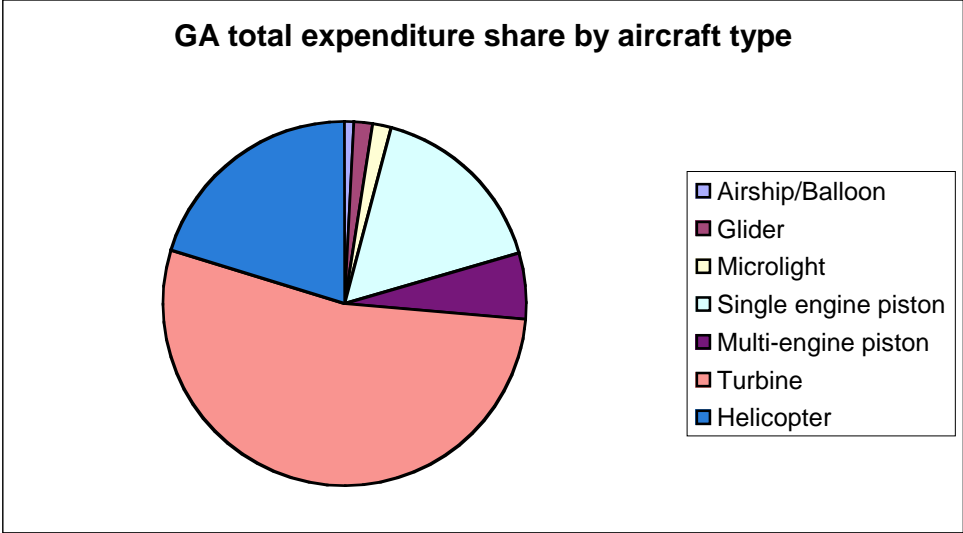


Table 5.3	GA business expenditure share by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft

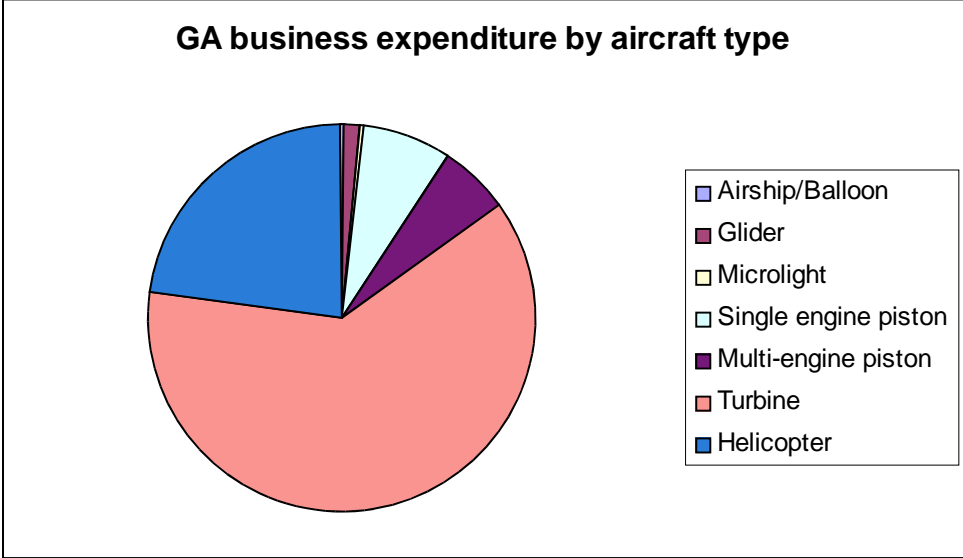
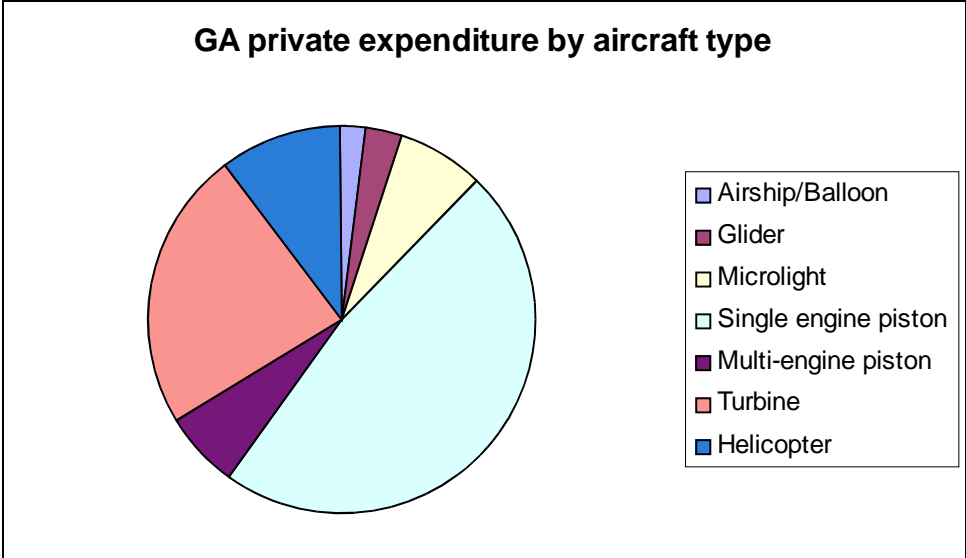


Table 5.4	GA private expenditure share by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft



Part 6: Fleet value

Table 6.1	Estimated value of the GA fleet, by aircraft type and ownership
Source	Terry Lober
Date	2005
Comment	Estimate – for these charts, foreign-registered aircraft are included within the estimated values

Aircraft type	GA business fleet value (£million)	GA private fleet value (£million)	Total fleet value (£million)
Airship/Balloon	8.1	16.8	24.9
Glider	17.5	22.1	39.6
Microlight	2.2	42.3	44.5
Single engine piston	306.3	589.0	895.3
Multi-engine piston	141.6	62.2	203.8
Turbine	1,877.9	304.3	2,182.2
Helicopter	255.4	91.1	346.5
Total	2,611.5	1,143.8	3,755.3

Table 6.2	Estimated value of the GA fleet, by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft

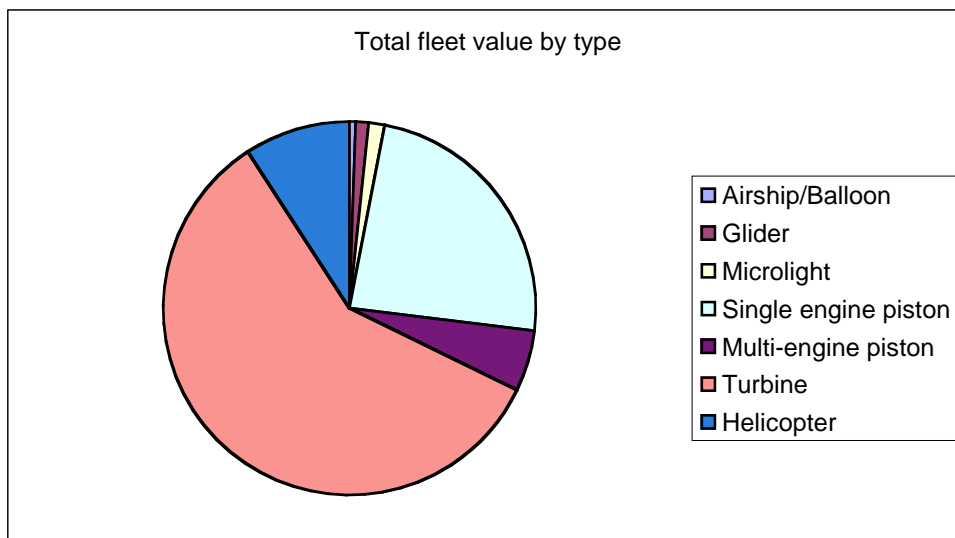


Table 6.3	Estimated value of the business owned GA fleet, by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft

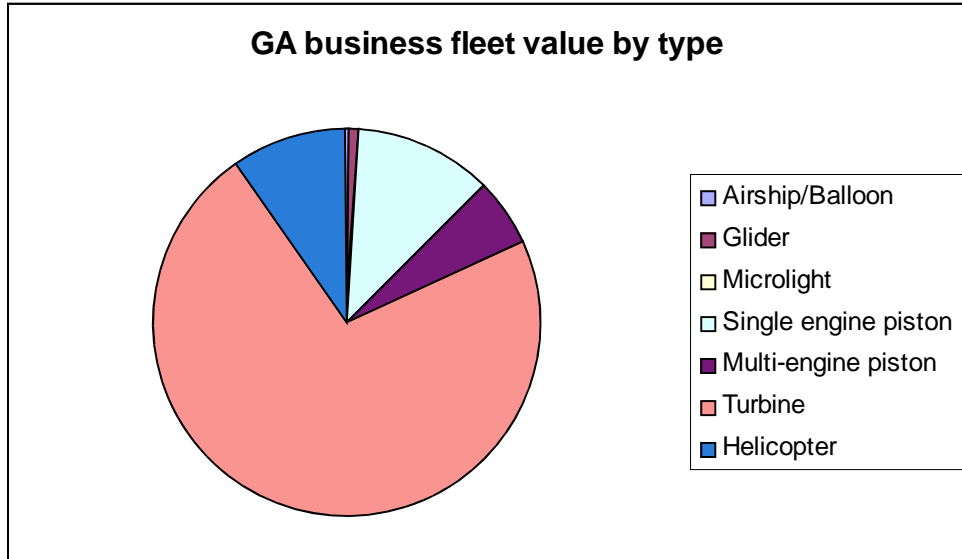
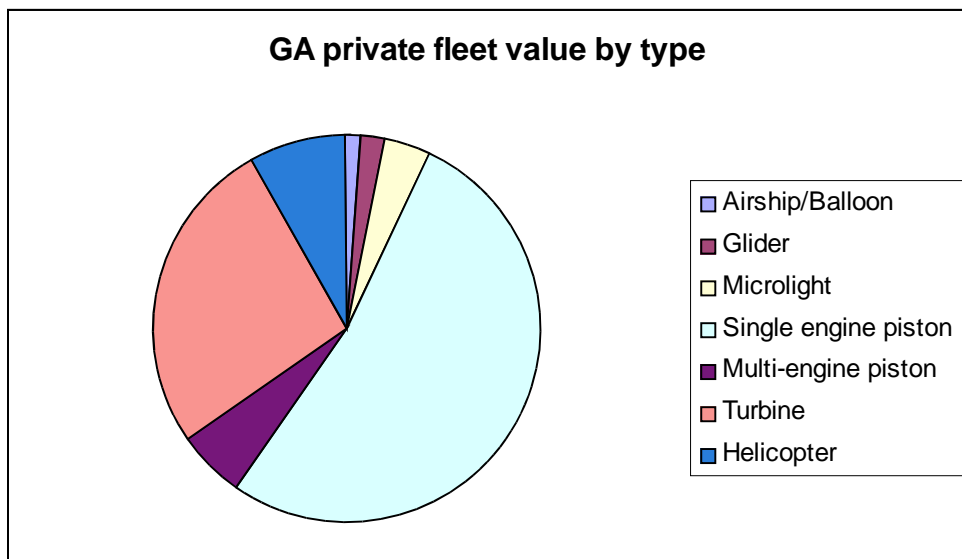


Table 6.4	Estimated value of the privately owned GA fleet, by aircraft type
Source	Terry Lober
Date	2005
Comment	Estimate, includes expenditure on foreign registered aircraft



APPENDIX 5 GA REPRESENTATIVE BODIES

Organisations that represent clubs and associations and/or business groups:

Airport Operators Association (AOA) www.aoa.org.uk

Promotes, protects and furthers the interests of UK airport operators

Aircraft Owners and Pilots Association (AOPA) www.aopa.co.uk

AOPA UK represents pilots and aircraft owners in national and international fora

British Business and General Aviation Association (BBGA) www.bbga.aero

Trade body representing companies trading in the business and GA industry

British Helicopter Advisory Board (BHAB) www.bhab.org

The UK civil helicopter industry's trade association

General Aviation Alliance (GAA) www.gaalliance.org.uk

Group of bodies representing GA and S&RA addressing common concerns

GA Awareness Council (GAAC) www.gaac.org.uk

Representing GA, with particular interest in planning and environmental issues

General Aviation Safety Council (GASCo) www.gasco.org.uk

A charity working to improve flight safety in all forms of GA

The Royal Aero Club (RAeC) www.royalaeroclub.org

The national coordinating body for air sport in the UK

Royal Aeronautical Society (RAeS) www.raes.org.uk

Multidisciplinary professional body dedicated to the whole aerospace community

The Air League www.airleague.co.uk

Promotes youth education and training in aviation, and fostering a healthy GA sector

Associations and Clubs representing individuals within a particular GA sector:

Airfield Environment Federation (AEF) www.aef.org.uk

Campaigns on environmental impacts and promotes a sustainable future for aviation

Air Cadets Association (ACO) www.raf.mod.uk/aircadets

Voluntary youth organisation supported by the RAF

Air Scouts <http://www.scoutbase.org.uk/6to25/scout/airscout/>

Part of the world scouting movement

British Association of Balloon Operators (BABO) www.babo.org.uk

Trade organisation representing holders of UK hot air balloon AOCs

British Aerobatic Association (BAeA) www.aerobatics.org.uk

Responsible for scheduling and running aerobatic competitions in the UK

British Balloon and Airship Club (BBAC) www.bbac.org

Promoting hot air ballooning, gas ballooning and airship flying

British Gliding Association (BGA) www.gliding.co.uk
National governing body of gliding in the UK, administering a largely self-regulated air sport

British Hang Gliding and Paragliding Association (BHPA) www.bhpa.co.uk
Oversees training and airworthiness standards, provides technical support

British Microlight Aircraft Association (BMAA) www.bmaa.org
Oversees microlight owners' interests. Delegated to control training & airworthiness

British Model Flyers Association (BMFA) www.bmfa.org
Promotes model aircraft building and flying

British Medical Pilots Association (BMPA) www.bmpa.org.uk
Body for members of the medical professions who hold or have held flying licences

British Parachute Association (BPA) www.bpa.org.uk
National governing body for sport parachuting

British Precision Pilots Association (BPPA) www.bppa.info
Promotes high standards of airmanship, especially VFR navigation and landing skills

British Womens' Pilots Association (BWPA) www.bwpa.co.uk
Promotes aviation, particularly to women

Flying Farmers Association (FFA) www.ffa.org.uk
Open to those working in agriculture with an interest in aviation

Guild of Air Pilots and Air Navigators (GAPAN) www.gapan.org
Promotes good airmanship among pilots and navigators

Historic Aircraft Association (HAA)
Furthers the restoration, preservation and flying of historic aircraft in the UK

Helicopter Club of Great Britain (HCGB) www.hcgb.co.uk
Association of helicopter private pilots and helicopter owners. Promotes safe and considerate flying and organises British Helicopter Championships. Members own approx 33% of the British helicopter fleet.

Lawyers Flying Association (LFA) www.lawyersflyingassociation.com
National group of those involved with the legal profession

Popular Flying Association (PFA) www.pfa.org.uk
Regulates amateur-builds and a significant number of microlight & classic aircraft

PPL/IR Europe www.pplir.org
Helps private pilots exchange knowledge and experience about instrument flying

APPENDIX 6 PLANNING POLICY

Summary

1. This appendix:

- explains the existing planning situation including discussion of the new England & Wales planning system, now based on regional and local planning;
- considers the implications this new system may have for GA, including the risk that the new system may contribute to a further reduction in the number of available sites to fly from and to;
- notes the absence of GA-specific national planning policy or guidance to assist decision makers and suggests that material might be developed to assist those with an interest in GA in their interaction with the planning authorities;
- considers the technical issues around “safeguarding” of existing airfields; and,
- focusses on the England and Wales planning system as that is of most relevance in relation to the problems of congestion.

Previous planning system in England & Wales

2. Until very recently at a national level, planning guidance has been established in the form of Regional Planning Guidance (RPGs) and Planning Policy Guidance notes (PPGs), with Circulars and Regional Transport Strategies (RTSs) also providing a further layer of advice. Under the new planning regime introduced in the Planning and Compulsory Purchase Act 2004 these are gradually being changed to Regional Spatial Strategies (RSSs) and Planning Policy Statements (PPSs).
3. The main, and very significant, difference between the RPGs and the RSSs is that the latter now has an elevated status as it becomes part of the “development plan”. The importance of this distinction is explained below.

RPGs

4. Each region currently has its own RPG, not all of which recognise GA. Four examples can be given of the current situation:
- RPG1 – North East. This has no reference to smaller GA sites (just Newcastle and Teeside Airports).
 - RPG5 – South Yorkshire. No reference to smaller GA sites.
 - RPG9 – South East (paragraph 9.35). “There is scope for other existing South East airports including some smaller airports to

help meet local demand, and their further development is supported in principle, subject to relevant environmental considerations.”

- RPG10 – South West (paragraph 8.28). Local authorities and other agencies should work together to encourage the sustainable development of the region’s airports and their associated facilities. In particular they should support the existing airports and airfields in the region to develop their respective roles to serve air travel needs

PPGs

5. A number of PPGs have been used in the past in order to determine planning applications. While no two planning cases are the same, the following PPGs and PPSs may be most relevant to GA:

PPS1 – Delivering Sustainable Development

6. This former PPG has already been superseded by a PPS. The PPS sets out the overarching planning policies on the delivery of sustainable development through the planning system. While not of direct relevance to GA, the principles of sustainability underlie the determination of all planning applications and appeals.

PPS3 – Housing

7. While on the face of it, this PPG has no relevance to GA, Annex C defines previously developed land. This issue is the subject of current debate.

PPS7 – Sustainable Development in Rural Areas

8. This PPG has already been superseded by a PPS. The PPS relates to all forms of development in rural areas, but makes no specific reference to GA.

PPG13 – Transport

9. The most specific GA-related Central Government guidance embodied in a PPG is currently found in paragraphs 5, 6 and 9 of Annex B of PPG13 – Transport. This gives some encouragement to Local Planning Authorities (LPAs) to view GA-related proposals in a positive light.

PPG17 – Sport and Recreation

10. There is no specific mention of air sports. However, it does provide some background advice regarding a range of sporting activities.

PPG24 – Planning and Noise

11. This is of limited value in assisting with the assessment of potential noise generated from flying sites that have fewer than 30 movements per day. This remains a grey area and, as a consequence, is the subject of many different interpretations of noise assessment. However, PPG24 does set out clear guidelines regarding the introduction of noise sensitive development in proximity to noise sources.

Circulars

12. There is only one planning Circular that is directly relevant to GA, namely: Circular 1/2003 – Safeguarding Aerodromes. This relates specifically to safeguarding and is a useful (if sometimes misunderstood) tool. The issue of safeguarding is explored more fully below.

The development plan – former system

13. Until recently the PPGs provided guidance to LPAs and enabled County and District/Borough Councils and Unitary Authorities to prepare their own planning policies, which took their lead from RPGs and PPGs. The “development plan” for any given area usually comprised both a Structure and Local Plan, with a two part Unitary Development Plan for a Unitary Authority. The Structure Plan set out county-wide policy with the Local Plan providing more local and site specific policies. Unitary Development Plans set out policies for the entire Unitary Authority.
14. All these documents played a vital role in the determination of planning applications and appeals. It was therefore necessary that balanced GA-related policy guidance was included wherever possible, in order to facilitate determination of any related proposal.
15. Over the past fifteen years, strenuous efforts have been made to incorporate (or retain) “good” GA related policies in the development plan for individual areas. The situation some fifteen years ago was that over 60% of Structure Plans making no reference whatsoever to GA. The Structure Plan had a particular value because it covered many councils, so was the focus of GA policy promotion.
16. The county tier of planning was in the past a particularly useful “vehicle” in which positive GA related policies could be incorporated in Structure Plans. These Plans covered a large enough area for the broader issues to be appreciated as the transport network could be better understood at such a level. It was therefore inevitable that GA-related planning applications in those counties with reasonable and balanced Structure Plan policies in place stood a better chance of achieving a favourable outcome.
17. The Structure Plan policy framework usually “trickled down” into Borough or District Council Local Plans. This meant that a positive, or negative county-level policy had implications for those making policy at the more local level. While representations were regularly made at this level, much depended upon the county approach coupled with an individual LPA’s attitude towards flying activity within its area.
18. The former development plan had many faults, such as being fairly slow and cumbersome and not responsive to ever changing national guidance. However, GA did have a voice and it was heard, often with positive outcomes. On many occasions the worth of GA was recognised and fully acknowledged in being given positive policy support.

The new system

19. The Planning and Compulsory Purchase Act 2004 introduced a new planning system. The development plan now comprises just Regional Spatial Strategies and Local Development Frameworks. As a result the County Structure Plan tier of planning no longer exists.
20. *Regional Spatial Strategies* – while these are similar to the former RPGs, their status has been significantly enhanced and they are now an even more important part of the decision making process. It is therefore vital that the regional importance of GA is recognised. After all, that element of GA that provides a public transport role needs a national network of sites to fly from and to if it is to help the connectivity of any region.

21. The core argument is that in relation to the air transport element of GA (and it must be acknowledged that this is a minority of total GA activity) there is a benefit from having a functioning national network of GA airfields. This air transport role of GA adds value beyond services available from commercial airlines at larger airports as it allows people to access different parts of the country – and can provide a different and more tailored service than is available on commercial airlines – which can be of particular value to businesses. If it is justifiable to argue that a particular airport is an important part of such a network, then the loss of a key node of the network may have a greater effect nationally than could be considered if only assessing the local effect. This could be especially so if the situation were close to a “tipping point” (i.e. if the airfield in question were the only available site in a particular region, it would have greater value than if it were one of many in a region). Recognition of this point could either be included within planning guidance issued by ODPM, or could be set out in submissions made by airfield owners.
22. Local Development Framework – At the local level, it may be too difficult for LPAs to fully appreciate the role played by GA. Without an appreciation of the wider issues, decisions could be made which might make sense when considered in a purely local framework, but if due consideration of the “knock-on” effects on surrounding areas was given, then a different decision might emerge.

The implications of change to the new system – an early assessment

23. Although the new planning system is still in its infancy, experience to date has suggested that the opportunities to promote GA related policies in the context of LDDs may be more limited. This is because most Local Development Frameworks (LDFs) will be either topic based (such as affordable housing, retail, employment etc) or site specific (town centres etc). Assuming that the process will remain in this form, these narrow subject ranges may give little opportunity to explain the arguments in favour of GA. The only opportunity may be in those LPAs that continue to approach the LDF in much the same way as the former Local Plan system or, perhaps, when the general development control policies are reviewed. Even then, it may be difficult to find opportunities to explain GA’s interests through this process.
24. Given this situation there is an argument for those engaged in planning decisions to find effective ways of putting across the arguments in favour of GA (such as the network benefit argument) to the relevant authorities. If persuasive and authoritative evidence can be put together, then GA can be placed in its proper context. It is therefore important that, when GA-related proposals are handled at the local level, decision makers should recognise the worth of having a network of GA aerodromes to facilitate the (admittedly limited) role that GA plays within the national transport system, and the benefits to business and leisure activity that GA can provide.

The development plan and its importance to GA

25. In order to appreciate the potential difficulties with the new system, it is helpful to explain the possible consequences for GA if the arguments in favour of GA interests cannot be properly considered within the new decision-making structures.
26. Owners, operators and users of a wide range of flying sites throughout the UK can become involved with the planning process in several ways, such as:
- Submission of a planning application to establish a flying site.

- Submission of a planning application to vary operating restrictions.
 - Lodging an appeal against a LPA's decision.
 - Facing enforcement action.
27. Some works can be undertaken without recourse to the planning process. The Town and Country Planning (General Permitted Development) Order 1995 (GDO) enables owners and operators to operate under the "28 day rule" (Part 4, Class B), which enables a site to be used for flying purposes for up to 28 days in any year without planning permission. Land forming part of an agricultural unit can also be used for the taking off and landing of an aircraft without planning permission, provided it is used solely or mainly for an agricultural purpose, such as crop spraying. Furthermore, no planning permission is usually required where the take-off or landing of helicopters or aircraft is ancillary to the main use of the land (for example a hotel). (Part 18 of the GDO also gives a range of permitted development rights to larger airport operations but these are not covered in this submission.)
28. Planning applications are usually determined by the LPA. Professional officers make recommendations to elected Members who decide whether or not to accept their officers' recommendation. A particular difficulty arises with GA related proposals, be they for new flying sites or variations of operating procedure. In most cases, the application will be the first (and possibly only) time an officer encounters GA.
29. Many planning applications relate to "unusual" proposals and it is an officer's task to understand the nature of the application. In many cases, such as where particular industrial processes or farming methods are involved, it is a relatively straightforward task to gain sufficient background knowledge to make a fair assessment. In the case of GA it is not so easy as an officer will rarely have the time to undertake careful research into how GA operates. There is a wide range of issues to consider, with the development plan being the most important consideration (see the end of this appendix). Most planning recommendations fall into two categories:
- refusal (perhaps linked to insufficient understanding of the particular facets related to GA), or;
 - permission, subject to conditions.
30. Many GA-related applications are refused¹. Officers and Members may tend to favour the interests of local residents over those of GA, and then allow the Planning Inspectorate to determine any appeal. The appeal process is lengthy and, by implication, costly – not only for the appellant but also for the local ratepayer. Public inquiries are the most expensive of the three appeal options and, in the majority of GA-related cases, are the preferred method of determining the appeal.
31. Public Inquiries are the most expensive of the three appeal options open (the other two being Written Representations and Hearings). They are the usual

¹ The GAAC commissioned a survey of all planning application and appeal decisions relating to GA over a five year period to 31 March 1994. One of the aims was to establish "success rates" of applications and appeals compared with the averages for appeals relating to all subjects. Results showed that GA applications refused amounted to 63% of the total, with 66.5% of appeals dismissed.

method of determining a GA-related appeal. In a sample three-year period, some 87% of GA-related appeals were dealt with by Public Inquiry, 3% by Hearing and 10% by Written Representations. GA related proposals, by their very nature, are almost eleven times more likely than the “average” proposal nationally to be dealt with by way of a Public Inquiry.

32. The costs are not just those of the planning officer's time but also of hiring legal representation. With a clearer policy steer relating to the network benefit arguments, or with better information being available to the planning officer making the initial decision, it is possible that the level of appeals (and related expense) could be reduced.
33. Some applications may be approved but with conditions put in place. Restrictions on movements or operating hours may benefit local residents but simultaneously have an adverse effect on the airfield, and, potentially on the wider economy. Pilot training for example, requires a considerable amount of circuit flying which must be carried out when the wind and weather are suitable. It is therefore essential that officers understand the practical implications of the conditions that they seek to impose.

Aerodrome Safeguarding

Introduction

34. “Safeguarding” is a term in planning law meaning the safeguarding of an established land-use. It only relates to safety insofar as a land-use may be curtailed for safety reasons. The safeguarding of an aerodrome is the management of land-uses in such a way that the use of the land for flying operations may continue. Competing land-uses may curtail an aerodrome's established use by obstructing airspace or increasing the hazard environment.
35. There are many forms of safeguarding, for example physical safeguarding and technical safeguarding, as well as public safety zones. This section addresses physical safeguarding at officially safeguarded aerodromes², as a result of changes to the Town and Country Planning Act in 2003.

Aerodrome Safeguarding Methodology

36. Physical safeguarding is intended to protect the airspace surrounding an aerodrome, thus ensuring internationally recognised safety standards, specified in ICAO Annex 14 and reflected in Civil Aviation Publication CAP168, are met and maintained. As part of the CAA's licensing function, aerodromes have a series of Obstacle Limitation Surfaces (OLS) permeating out from the runway strip and the aerodrome reference point, to a radius of either 10km or about 15km. These complex surfaces are calculated and reflected on ‘safeguarding maps’ that are lodged with relevant local planning authorities. For the purpose of simplification, the safeguarding maps do not depict the actual OLS but within 1 kilometre square gridlines the minimum height of a proposed development about which the aerodrome wishes to be consulted, thus affording an opportunity to comment on any issues that may impact on safety at an aerodrome. The safeguarding map also includes the requirement to notify any proposal within 13 km of the aerodrome that may increase the risk of bird strike. Where an infringement of the OLS by a proposed development is identified, the LPA would

² Those aerodromes notified in ODPM/NAFW Circular 1/2003 and Scottish Executive Circular 2/2003.

be advised to refuse planning permission for the development, unless mitigation for the infringement can be provided.

Background

37. Aeronautical safeguarding in the UK became a statutory obligation in 1949 by a Direction under the Town and Country Planning Act. Initially, the purpose was to safeguard those aerodromes where Treasury funds had been spent on the infrastructure. The majority of “established” aerodromes were thus covered, from Heathrow down to the level of general aviation sites such as Blackbushe, and small “island links”, for example Lands End. All these had benefited from central government funding.
38. When the CAA was set up in the early 1970s the original policy was that it should take no part in safeguarding, as there was no mention of it in the Civil Aviation Act. The suggestion was, however, made at Board level that as many aerodromes had passed into municipal ownership during the 1950s and 1960s there was a potential conflict of interest if local authorities safeguarded their own aerodromes, as they also controlled the planning process. For this reason the CAA undertook safeguarding nationally, although as the owner of several Scottish aerodromes at the time it would have continued safeguarding those as the operator.
39. A condition was applied that all safeguarded aerodromes provide the CAA with a Deed of Indemnity, so that the CAA would not be responsible for the payment of compensation to thwarted developers. After 1986 only those aerodromes not covered by the Airports Act had to provide such Deeds, as indemnity provisions within the Act covered the remainder.
40. The list of aerodromes safeguarded by the CAA was reduced in several reviews, for example Shoreham, Swansea and others were deleted in the early 1980s. The criterion for remaining on the list was the level of aircraft movements; thus Oxford, Carlisle and Perth remained while intensive flying training continued. Eventually a list was produced which represented a basic national transport infrastructure, albeit with some anomalies (for example the retention of Bournemouth and Southampton despite their close proximity). The “infrastructure” concept was a rationalisation of eventual policy rather than the origin of it. The last deletion was Perth in the mid 1990s, on the grounds of low movement levels.
41. From the mid 1970s until the abolition of the British Airports Authority in 1986 there was continuous pressure from certain parts of the industry, including BAA, for the CAA to hand responsibility for safeguarding the major aerodromes to industry. The reasons for this were many but may be summarised as a feeling that the CAA took a “national” view whereas industry simply wanted its commercial interests to be safeguarded. For example, there were some cases in which the CAA refused to oppose new industrial developments because they were needed to provide employment in deprived areas, even though safeguarded airspace would be infringed. Such decisions could have been challenged on the basis that the CAA had no responsibility for social policy, but in the event they were not. The advent of statutory Development Areas made this problem more acute and led to a view that the CAA, as an agency of Government, had divided loyalties.
42. The CAA nevertheless sometimes used safeguarding as a pretext for challenging local Government policies that were seen as discriminating against aviation. As

part of its advice to planning authorities the CAA reviewed Development Plans and where these were considered to be unfair to aviation interests they were challenged at the draft stage, for example the Surrey Structure Plan which sought to curtail all development at Redhill and Fair Oaks. One prominent case involving the South Cambridgeshire Local Plan was taken to debate in the House of Lords and involved the CAA briefing Ministers. It was normal in the 1990s for CAA comments on Development Plan consultations to consider details to the level of the safeguarding of hospital helipads.

43. In the early 1990s the CAA began to take the view that its involvement in safeguarding was inappropriate. The reasons for this were:

- There was no such obligation stated in the Civil Aviation Act.
- The CAA could only give advice on safety grounds, whereas aerodromes had the right under the Town and Country Planning Act to object to development on any grounds.
- The CAA perceived a need for aerodromes to become more involved in the decision making in their local area and to represent their own interests in strategic planning matters. This was especially so after the Planning and Compensation Act 1991.
- Aerodrome licensees are legally responsible for ensuring their aerodrome and its airspace remain safe for aircraft operating in their vicinity, an opportunity to take control of their own safeguarding would alert them to potential developments directly affecting them.
- The CAA could not be expected to make decisions centrally about matters in which local factors were so often crucial. The necessary detail of local knowledge was not attainable.
- The proliferation of telecommunications masts under abbreviated planning procedures meant that it was more important than ever for aerodromes to deal with developers at a local level.
- A new culture of challenge had emerged during the 1980s and 1990s in which the guidance of Government agencies was more likely to be contested than had been the case in the 1950s, 1960s and 1970s. This had led to an increased risk of the CAA being challenged in the courts.
- There was also a business risk to the CAA from litigation connected with compensation issues.
- Industry had aggressively lobbied for the CAA to withdraw from all areas that were not fundamental to its statutory duties.
- The Government, in an announcement about the Public/Private Partnership for NATS, made very clear that service provision would be completely separated from regulation within the CAA. Therefore, in this context

safeguarding was a “service” rather than regulation, and by the Government’s and industry’s own reasoning should be discontinued.

- Staff cuts forced on the CAA by economic measures made the continuation of safeguarding impracticable.

Transfer of Safeguarding

44. In February 2003 the primary responsibility for safeguarding was transferred from the CAA to the licensees of aerodromes, under ODPM/NAFW Circular 1/2003 (Scottish Executive Circular 2/2003). Licensees, as well as Government, originally resisted this proposal and it took 10 years to complete the transfer. However, during this time many aerodromes established safeguarding teams that ‘shadowed’ Aerodrome Standards Department (ASD) procedures in order to develop their own safeguarding expertise. Nevertheless, the CAA provided training to aerodrome staff; provided several publications prepared in collaboration with the Airport Operators Association (AOA); and prepared a full complement of aerodrome safeguarding maps for issue to councils.
45. Following the transfer, the Safeguarding Team in ASD were deployed into other areas within the CAA, although a small team was maintained to cover unresolved safeguarding cases and provide advice about safeguarding and drafting new maps, which was included in the statutory arrangements of the transfer.
46. Such advice, when requested, often led to further help with matters connected with the establishment of safeguarding agreements between aerodromes and councils, and advice to planning authorities and the planning ombudsman. Advice to legal representatives was given in cases where safeguarding matters had led to litigation.

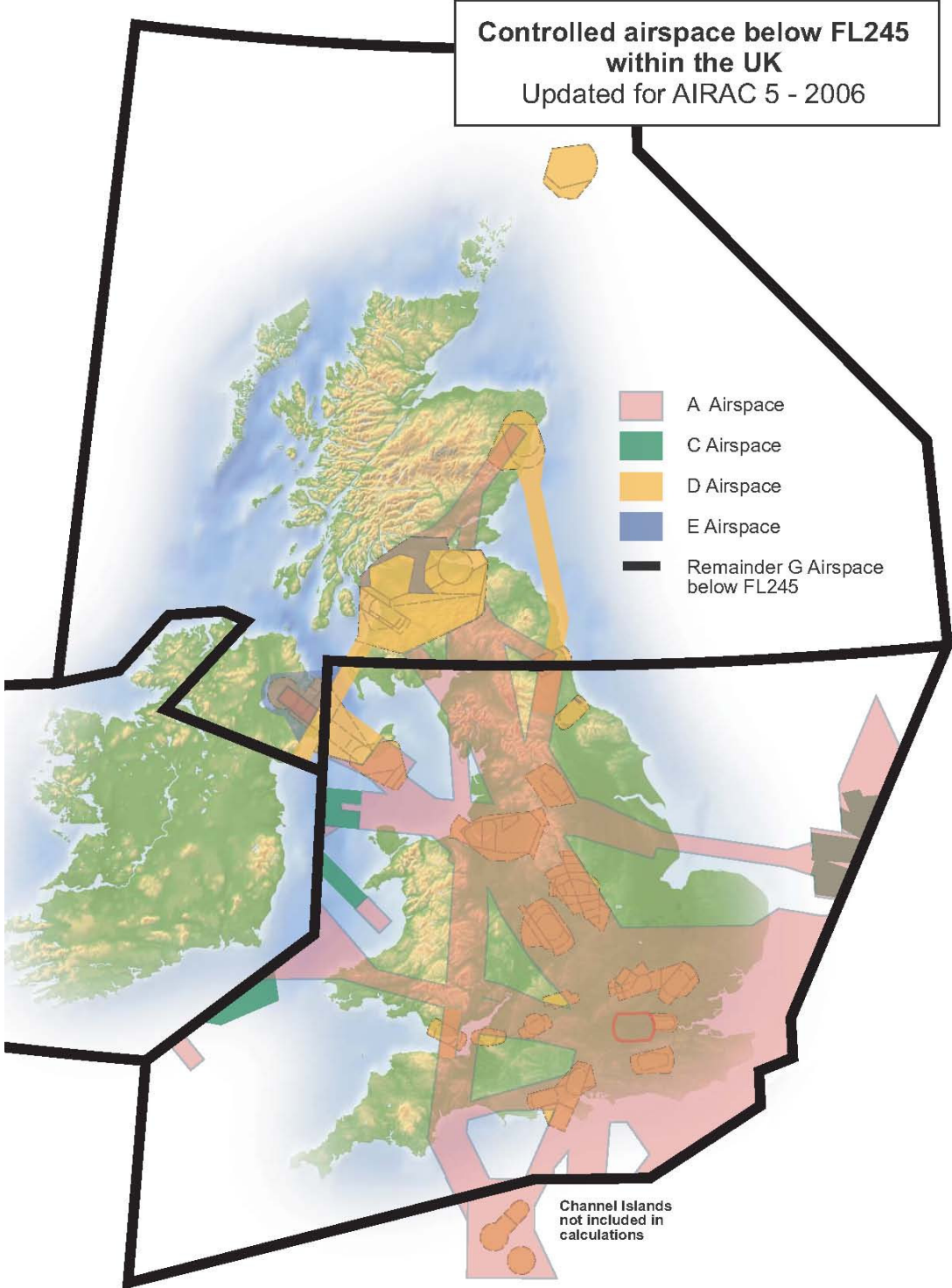
On-going Safeguarding

47. In the post-transfer environment the CAA continues to be involved in cases where planning authorities wish to go against safeguarding advice³. The CAA still gives advice about safeguarding maps and has explained aeronautical technicalities to planning authorities when asked to do so by planning officers. It has also answered questions from the British Gliding Association, the British Parachuting Association and the British Microlight Aircraft Association in connection with safeguarding issues. The CAA is however constrained by section 16(5) of the Civil Aviation Act 1982 to restrict its advice to matters within its sphere of technical expertise.
48. Since the transfer of safeguarding the list of officially safeguarded aerodromes has been increased for the first time since the addition of Plymouth in the early 1990s. Former military airports, Farnborough and Doncaster Sheffield have been added.

³ Where a LPA is minded to grant permission against the objection of an officially safeguarded aerodrome on grounds of aviation safety, the statutory process allows for the CAA and the aerodrome to be notified of their intentions, allowing the CAA (or the Scottish Executive) an opportunity to refer the planning application for examination by the Secretary of State. This referral will only be actioned if the CAA (or the Scottish Executive on the advice of the CAA) considers that mediation will not resolve the issue. This procedure is applicable to officially safeguarded aerodromes only. Licensed aerodromes in Northern Ireland are subject to different planning arrangements and are none are “officially” safeguarded.

49. The CAA continues to be notified of planning related issues, falling into the following categories
- Legal Branch: Notified under the Electricity Act *Purpose:* To inform the CAA of any activity that may impact on aviation safety (normally forwarded to ASD).
 - Air Traffic Standards Department: Notified, where appropriate, via DAP, of any wind turbine proposal.
 - Aerodrome Standards Department: Notified of any telecom installation within 3km of an aerodrome, of intention to award planning permission against aerodrome objection, and of strategic plans involving potential bird attractant developments.
 - DAP: Wind Turbine Consultation, including offshore turbines. Structures of 90m or more.

APPENDIX 7 CONTROLLED AIRSPACE IN THE UK



AC&D M2006/29 17/5/06

Airspace classifications

The UK uses the ICAO airspace classification system. UK airspace is divided into two Flight Information Regions (FIRs). Above each of these FIRs is an Upper Information Region (UIR). These are known collectively as the London and Scottish FIR/UIRs.

Controlled airspace (CAS) is comprised of ICAO airspace classifications A to E. Classes F and G are designated as “uncontrolled” airspace.

Controlled airspace – classes A to E

- **Class A:** Comprises all airways except where they pass through a Terminal Control Area (TMA) or a control zone (CTR) associated with a major airport.
- **Class C⁴:** Planned introduction as part of the SES/ECAC strategy for all Europe’s airspace above Flight Level 195⁵.
- **Class D:** Comprises TMAs and CTRs associated with identified civil airfields and some larger military airfields along with part of the Scottish TMA. A VFR pilot seeking entry requires a clearance.
- **Class E:** Comprises the Scottish TMA at and below 6,000 feet, and the Belfast TMA.

Uncontrolled airspace – classes F & G

- **Class F:** Consists of Advisory Routes (ADRs) along which a civil air traffic advisory service is available to participating aircraft. ADRs in the FIR may pass through, originate from, or terminate in CAS.
- **Class G:** The remainder of UK airspace falls within Class G. This is uncontrolled airspace in which pilots operate to VFR in accordance with the privileges of their licence, e.g. clear of cloud and in sight of the surface.

If the pilot is the holder of an IMC rating (unique in the UK) he/she may fly in cloud and out of sight of the surface so long as he/she remains outside of, or has clearance to enter, CAS.

Class G airspace is the most flexible category for both GA and the military. The majority of GA operators will be using Class G airspace in accordance with the rules of the air, which for many pilots will require them to be clear of cloud and in sight of the surface, although the holder of an IMC rating is able to fly in cloud (but still outside CAS). GA IFR flights are subject to the same rules and procedures as any other IFR operation.

⁴ Class C airspace is defined as controlled airspace in which aircraft are operating under VFR or IFR, but all flights are receiving an ATC service. The controller will separate IFR flights from both IFR and VFR flights, but VFR flights will also receive information in respect of other VFR flights. With airspace above FL195 becoming Class C across the whole of Europe, there is an important caveat, in that VFR flights above FL195 are not permitted unless authorisation has been granted. For some gliding activity it will be possible to gain access above FL195 by prior arrangement.

⁵ A Flight Level is the nominal altitude of an aircraft referenced to a standard pressure datum, as opposed to the real altitude above mean sea level. It is expressed in hundreds of feet, eg FL270 = 27,000ft.