



Air travel and health - Government response to Select Committee report

Table of contents

- [Introduction](#)
 - [Response to the Committee's Recommendations](#)
 - [A Higher Profile for Health](#)
 - [Fitness to Fly](#)
 - [Deep Vein Thrombosis](#)
 - [Seating](#)
 - [Ventilation](#)
 - [Air Quality](#)
 - [Transmission of Infection](#)
 - [Filtration](#)
 - [Noise](#)
 - [Stress](#)
 - [In-Flight Medical Emergencies](#)
 - [Research](#)
 - [Information for Passengers](#)
-

Introduction

This paper sets out the Government's response to the Report by the House of Lords Select Committee on Science and Technology on Air Travel and Health, dated 15 November 2000. We welcome the initiative of the Committee in deciding to make this Inquiry and the detailed consideration that it gave to the subject matter.

The Government's response incorporates material provided by the Department of the Environment, Transport and the Regions (DETR), the Department of Health (DH), the Civil Aviation Authority (CAA) and the Health and Safety Executive (HSE). The response deals directly only with those recommendations (*1) which the report addresses to the Government or the CAA. However, we note that further recommendations are addressed to other parties, and this response also comments on some of those recommendations. We will monitor how the air transport industry and other interested parties respond to

the report, and will keep under review whether further action by Government is appropriate.

Until a few months before the Committee initiated its inquiry, concerns about aviation health issues expressed to the Government were sporadic rather than sustained, tending to focus on individual incidents or issues. The state of knowledge reflected this patchy situation. On some issues, for example cosmic radiation and disinfection, there was a sound body of research, underpinning a consensus on the level of risk. On other issues, such as air quality and possible transmission of diseases, a certain amount of research had been carried out but it had not been convincingly substantiated. On other matters, notably deep vein thrombosis, it quickly emerged that there is a gap between the level of legitimate public concern and the existing state of knowledge. The Government congratulates the Committee for bringing together the full range of health issues being articulated by different parties and considering them in the round, an exercise which to the Government's knowledge has not been previously attempted elsewhere.

In 1999, following a meeting with interested parties in Parliament and outside, DETR Ministers took the view that the Air Transport Users Council should expand the information it provides on health issues to prospective passengers, and it was agreed that this would be done when the Council next re-issued its booklet "Flight Plan". More recently the Government has commissioned its own research, and health issues form part of a series of challenges on passenger rights laid down by Lord Macdonald to the industry when he launched the Department's consultation paper "The Future of Aviation" in late 2000. These challenges will be discussed at a special summit with industry representatives in February 2001. The European Commission outlined its intention to initiate research on aviation health issues in its Communication on Air Passenger Rights issued in June 2000, and is showing a close interest in the work under way in the UK.

The Government shares the view of the Committee that air travel does not pose significant health risks for the great majority of passengers. But, like the Committee, it also accepts that there are issues affecting a minority of passengers which need to be addressed, including the provision of accurate and timely information, and that more work needs to be done. The Government will work closely with passenger organisations, medical experts and the industry to ensure that the range of issues the Committee has identified receive the attention they merit.

(*1) The Committee's recommendations are addressed in the order they appear in the opening chapter of the report.

Response to the Committee's Recommendations

A Higher Profile for Health

1. We recommend the Government to ensure that concern for passenger and crew health becomes a firm priority (paragraph 8.9).

The Government agrees that concern for passenger and crew health should be given enhanced priority within Government, by regulators (within the framework of their prevailing statutory duties), and by the industry. In particular there is a need to obtain, and communicate to passengers, as much detailed information as possible on air travel and health. The study into 'Possible Effects on Health of Aircraft Cabin Environments' that consultants are currently undertaking on behalf of the Government is designed to reveal the main areas of concern, and to identify where there are significant gaps in the existing

knowledge base, with a view to promoting or facilitating further, well-targeted research. To ensure a coherent approach is taken with regard to aviation health issues by the relevant organisations in the public sector, the Government proposes to establish a standing inter-departmental Aviation Health Working Group, chaired by DETR, which will meet on a regular basis. By overseeing all aspects of the Government's work on aviation health matters (including follow-up to the consultants' study) and by monitoring future developments, the Group will act as a focal point for examination of relevant issues and be able to provide soundly-based advice to Ministers. Whilst permanent membership of the Group will be confined to representatives of Government departments and the appropriate regulators, it is envisaged that industry representatives and other interested parties will be frequently invited to attend meetings of the Group, and the Group will be able to monitor progress on those recommendations the Committee has addressed to parties outside Government.

2. We recommend the Government actively to pursue the strong UK interest in passenger and crew health through its international contacts with the Joint Aviation Authorities (JAA), the International Civil Aviation Organisation (ICAO) and other appropriate organisations, and we urge them all actively to promote health. This will both benefit air travellers in other countries and also help to minimise the possible impact of greater attention to health on competition within the international airline industry (paragraph 8.10).

The Government will convey the importance of passenger and crew health issues in any forum that is appropriate. Whilst it is questionable whether the active promotion of health issues falls within the existing remit of either ICAO or the JAA, there is some room for manoeuvre insofar as health issues impinge on aviation safety, the main concern of both organisations. With the interests of air travellers around the world in mind, and bearing in mind the importance of maintaining the competitiveness of the UK aviation industry, we shall continue to work with like-minded countries to try to ensure that health issues are on the international aviation agenda. DETR has proposed that the European Civil Aviation Conference (ECAC) consider submitting a paper on air travel and health to the next ICAO Assembly in autumn 2001. The CAA's Medical Division discusses issues of aircrew health with the safety regulators of other countries in both ICAO and the JAA. Whilst these discussions focus on maintaining aircrew health in order to ensure flight safety, the CAA recognises that fuller information on the long-term health of aircrew could, in addition to improving medical regulation, also suggest suitable preventative health measures, which might be applicable to passengers as well as aircrew. The Authority has therefore initiated a research project to cross-reference medical records held by the Division on aircrew to the types of flying undertaken during the pilot's lifetime. These will then be compared to the subject's subsequent medical history obtained from death certificates and other sources. This should provide information about possible links between the aircraft cabin environment and subsequent disease. Air Traffic Controllers who have undergone the same medical scrutiny but who have remained on the ground will be used as a control group.

3. We recommend the United Kingdom and other governments to do everything they can to reduce inertia within the international safety-focused regulatory structures (paragraph 8.7).

In paragraph 8.7 the report comments that "a full range of safety rules and regulations is in place under ICAO, but changing them seems remarkably difficult ... JAA is in a similar position".

The Government is not complacent about levels of performance in ICAO or JAA, and over recent years has been in the forefront of moves in both organisations to improve administrative efficiency and combat inertia. But negotiations establishing international regulations are by their very nature complex, requiring flexibility and willingness to unite often disparate views, which can mean that progress is not as rapid as might be achieved within a national administration. It is worth emphasising that within their respective spheres of competence these organisations have been highly successful in developing and maintaining standards of aviation safety over a long period. The world-wide civil aviation industry has grown quickly and continuously since the end of the second World War, and this growth - founded on increasing trade and prosperity, and facilitated by rapid technological advance - would not have been possible without effective regulation at an international level.

4. We were surprised at the lack of attention - by regulators, airlines and aircrew trade unions - to the health of aircrew. We are aware that there are serious issues of medical confidentiality and job security involved. Nevertheless, we recommend that the present rules, agreements and attitudes regarding the monitoring and recording of the general health of aircrew, over and above their fitness to operate, should be reconsidered urgently (paragraph 3.48).

5. In the case of pilots, we recommend that, if the authorised medical examiner (AME) finds evidence of significant ill-health not necessarily affecting a pilot's fitness certification, this should be recorded and reported both to the Civil Aviation Authority (CAA) and to the affected person's general practitioner.

The CAA is of the view that the regulatory health examinations required of flight crew contribute significantly to good health. The link between a pilot and his/her AME is little different from any other doctor/patient relationship. The routine measurement of, for example, blood pressure is a classic example of regulatory medicine merging into preventative medicine. It is accepted, in order to prevent future heart problems and strokes, that everybody should have their blood pressure monitored periodically and treated appropriately if it is high. This often does not happen. However, in the regulatory environment, aircrew with high blood pressure are grounded. They then have a major vested interest in obtaining appropriate treatment so that they can return to flying. This is preventative medicine at its most efficient.

In the CAA's view it is unlikely that an AME would find significant ill-health in a pilot which would not affect their medical certification. If a pilot needs treatment or advice about a condition they are invariably referred back to their own general practitioner who can, if necessary, have them seen by a specialist. If a pilot is unfit to fly then he or she has a legal duty to inform the CAA's Medical Division.

As regards aircrew more generally, Council Directive 2000/79/EC, which provides for a European Agreement on the Organisation of Working Time of Mobile Workers in Civil Aviation, has recently been adopted following agreement between the European social partners. The Government is currently considering the implementation of this Directive, which should bring about improvements in the monitoring and recording of the general health of aircrew.

Fitness to Fly

6. The booklets from the Department of Health (DH), Health Advice for Travellers, and from the Air Transport Users Council (AUC), Flight Plan, should be important sources of health information and advice for intending passengers. As their publishers accept, the current editions fall well short

of what is required, and we were pleased to note the plans for appropriate revision. We recommend that priority be given to refining the advice in Flight Plan: "If you have any concerns about your fitness to fly, talk to your doctor before you book your flight", which needs to be made much more specific (paragraph 8.48).

The Government agrees that provision of information is the key element in alerting passengers to the potential health risks of travelling by air, and in allowing passengers to make informed choices before flying. Information covering a number of health issues is available both pre-flight and during flight - for instance the latest version of Health Advice for Travellers (October 2000) contains advice on deep vein thrombosis and what actions travellers should consider taking before and during long journeys in order to reduce risk. The Air Transport Users Council has informed the Government of its intention to publish an up-dated version of Flight Plan incorporating, inter alia, an expanded section on health issues. In order to ensure that the various sources of information deal with health issues in a consistent way the Government proposes to produce a standard form of words giving advice on the major health risks associated with air travel. This advice, tailored as appropriate, will be included in both Health Advice for Travellers and Flight Plan and will be referred to in Travelling Safely, a booklet issued by the CAA. It will also be made available to airlines and other parties wishing to give information on air travel and health, including representative bodies of tour operators, who have indicated that their members would welcome a consistent source of health information on which to draw for inclusion in tour brochures.

7. We recommend CAA to revise its Travelling Safely leaflet, at least to cross-refer to the revised Health Advice for Travellers and Flight Plan (paragraph 8.49).

The CAA agrees that the inclusion of references to Health Advice for Travellers and Flight Plan (as revised) within the Authority's Travelling Safely leaflet would be a helpful step. The change will be incorporated in the next production run of the leaflet during 2001.

8. We also recommend DoH, CAA and AUC to consider whether the combination of their three publications as currently conceived best serves the travelling public's information needs (paragraph 8.49)

The Government accepts that the provision of clear, unequivocal information on health issues is essential if the travelling public is to be informed of the level of risk involved with air travel. In the light of the study which the Government has commissioned into cabin health, and of the new arrangements proposed in response to recommendations 6 and 7, the Aviation Health Working Group referred to in the response to Recommendation 1 will examine the current range of publications and will consider the possibility of commissioning a further study to advise on how effective information on air travel and health can be best conveyed. The Government will keep in close contact with airlines in this area of work, as they have an important role to play in making information available to their passengers.

9 We were surprised to learn that the current edition of the DoH book Health Information for Overseas Travel aimed at health professionals did not contain information on medical considerations for travel and on the significance of pre-existing medical conditions, and we were pleased to find that this was being remedied in a revised edition already in preparation. We recommend that DoH monitor the use of the revised Health Information for Overseas Travel to ensure that, with further additions and amendments as necessary, the publication provides the user-friendly authoritative information source that is needed by health professionals (paragraph 8.41)

The Health Information for Overseas Travel book was initially intended to cover disease risk - mainly related to infection - in destinations abroad. It has since been expanded to cover 'the traveller' as well as 'the destination' in more detail. The book, which is issued to all General Practitioners and practice nurses, is in the process of being revised by the Department of Health. The revised book will be published early in 2001 and will include a section on fitness to fly. This new edition will be available on the internet for easy access, which will aid the timely addition of new information.

Deep Vein Thrombosis

10. It is imperative that the current paucity of data on deep vein thrombosis (DVT) be remedied and we recommend that an epidemiological research programme of the case-control type be commissioned by DoH as soon as practicable (paragraph 6.25).

The Government shares the view given in the evidence to the Inquiry that of the three major options of study methodology for looking further at the issue of DVT, the proposed case-control study is likely to be the only one that is feasible. However, even a study of this type is likely to be large and expensive. Before embarking on a study on such a scale we consider that a systematic review of the literature is required, to determine fully the work that has already been carried out, and to identify the gaps for further research. An initial search on Medline, the US National Library's main bibliographical database, has found 44 references that deal with air travel and DVT, and there will be numerous others dealing with other forms of transport and/or analysing particular risk factors. A clear recommendation from the first stage study carried out by consultants on behalf of the Government is that such a systematic review should be a priority in the second stage of this study, and this forms a part of the tender specification for Stage II, issued earlier this year. (See also the Government response to recommendation 29 for more information on the research to be carried out).

11. As an interim measure pending the development of more authoritative guidance, we recommend airlines, their agents and others with consumer interests to repackage the summary indicative and precautionary advice on DVT in Box 4, together with the summary information on predisposing and risk factors in Boxes 2 and 3, and make it widely available to the general public. This will enable those who have no access to other advice to make preliminary decisions about their travel and the risk of DVT (paragraph 6.29).

Although it is for others to respond to this recommendation, the Government accepts all the boxes contained in the Report as useful interim guidance, pending further evidence. The Government endorses the guidance in Boxes 2 and 3 (pages 46 and 48 of the Report), subject to some rearrangement to give an indication of relative priorities. Medical advice from the Department of Health recommends that the order of priority given to the predisposing factors listed in Box 2 (page 46) should be:

- Immobilisation for a day or more
- Increased clotting tendency
- Pregnancy
- Recent major surgery or injury, especially to lower limbs or abdomen
- Inherited or acquired impairment of blood clotting mechanism
- Oestrogen hormone therapy, including oral contraceptives
- Former or current malignant disease
- Some types of cardiovascular disease or insufficiency

- Depletion of body fluids causing increased blood viscosity
- Personal or family history of DVT
- Increasing age above 40 years

The Department of Health also recommends that the relative priority for the postulated risk factors for travel by air, road and rail should be:

- Immobility, elected or enforced
- Increasing duration of travel
- Increasing frequency of long distance travel
- Seating constraints, particularly leg-room
- Seating posture, including when asleep
- Wearing tight undergarments or movement restricted clothing.

The interim precautionary and preventative advice concerning air travel and DVT, as presented in Box 4, is helpful. However, for those considered as "substantial risk", DH recommends that medical advice should be obtained.

12. We can understand the airlines' reluctance to accept suggestions that there might be factors specific to the aircraft cabin environment that lead to an increase in the overall risk of DVT. Although any additional risk is likely to be small, it is not in doubt that the risk factors of prolonged immobility and cramped seating are present in aircraft. However, these circumstances are not limited to aircraft and we recommend the Government to consider tackling DVT on a wider travel-related front or, indeed, as a general public health matter (paragraph 6.30).

The research programme referred to in response to Recommendation 10 should make a significant contribution towards clarifying the prevalence of DVT, both in the population at large and in relation to additional risk factors such as prolonged immobility and cramped seating and, possibly, the aircraft cabin environment. Should the outcome of this research reveal an increased likelihood of DVT from a wide range of transport modes, or that the condition is so widespread that it requires action as a general health matter, then such action will be considered.

The Government notes that currently there are no standards for minimum seat pitch in other transport modes. Some work on bus and coach seating is being developed at European Union level, but this is not complete.

13. The term "economy-class syndrome", widely used to refer to flight-related DVT, is misconceived in suggesting that the possibility of DVT need not concern business and first class air travellers - or those using other forms of long-distance transport. We recommend that health professionals and others stop using the seriously misleading term "economy-class syndrome". "Flight-related DVT" or "traveller's thrombosis" would be more appropriate (paragraph 6.23).

Although this recommendation is not addressed to the Government, we fully agree that this misleading term should not be used in relation to flight-related DVT. DH is currently discussing how best to circulate this message to health professionals.

14. We also recommend the Government, aviation regulators, trade groups and consumer representatives to consider what action they should take in relation to these points (paragraph 6.32, referring back to recommendations to airlines in paragraph 6.31 regarding the design of the cabin and cabin service procedures).

The Government agrees that encouraging passengers to avoid prolonged immobility is a key factor in any strategy to reduce the risks of DVT. But the Government is conscious of the need to word any new instructions carefully, so that passengers who spend more time out of their seats as a result of the instructions are not exposed to unnecessary risk from injuries associated with unexpected movement of the aircraft.

Seating

15. We were pleased to hear about new CAA research into people's size and the reduction in mobility after long flights to ensure that the emergency evacuation requirements are in line with modern circumstances. Given changes over the years in the length of flights and in the sizes, ages and health states of people undertaking them, we recommend that this research be completed urgently (paragraph 3.51).

The CAA-funded research study, on behalf of the JAA, is considering the relationship between aircraft seat dimensions and passenger sizes. The work looks at the changing size of the European population but also includes a review of recent DVT research. The draft report was completed in January 2001 and indicates additional areas where further work may be necessary. This should be ready for publication in March 2001.

16. To facilitate passengers' choice of seating, we recommend CAA to use its current research to develop an unambiguous set of definitions for seat dimensions. The key issues are: the minimum size of seat taking account of health considerations; accommodation of passengers above average size; and proper allowance for seat-space reductions from the seat in front being reclined, material in seat-back pockets and fold-down tables (paragraph 6.49)

The current CAA-funded research study (and any subsequent follow-on study) will provide Government with the information necessary to review current regulations on seat spacing. In the light of the study DETR and the CAA will also consider the scope for developing unambiguous definitions for seat dimensions for use in informing passengers of the seat size and space available on a flight.

Ventilation

17. For the main purpose of airworthiness certification, JAA currently has no specific cabin air supply requirements for passengers, and the US Federal Aviation Administration (FAA) requirement is seen by manufacturers as, in some cases, impossible or impracticable. Because of the intrinsic importance of the matter and also to clarify matters which cause great public concern, we recommend the Government, CAA and JAA to find a practicable way forward as soon as possible (paragraph 3.36).

The Government accepts this recommendation. The CAA will write to the JAA requesting a review of airworthiness requirements and guidance material relating to cabin air supply requirements for passengers.

18. JAA's requirement for only fresh air to be supplied to the flight deck reinforces the perception that there is something intrinsically "bad" about re-circulated air. We recommend the Government to urge JAA to reconsider its requirement for ventilation of the flight deck with only fresh air (paragraph 5.17).

This recommendation appears to be based on a misunderstanding over the JAA's requirement for ventilation of the flight deck, which states:

"each passenger and crew compartment must be ventilated and each crew compartment must have enough fresh air (but not less than 10 cubic feet per minute per crew member) to enable crew members to perform their duties without undue discomfort or fatigue."

The Government notes that this requirement does not specify the exclusive use of fresh air on the flight deck.

Air Quality

19. We welcome the ASHRAE work on cabin air quality standards and recommend the industry to support and encourage its timely completion and promulgation. We recommend that, in the light of the outcome, regulators consider extending cabin air quality standards beyond those for carbon dioxide, carbon monoxide and ozone for which they already provide (paragraph 5.51).

The Government accepts this recommendation. Depending upon the results of the ASHRAE work, the CAA will consider whether cabin air quality standards should be extended beyond those for carbon dioxide, carbon monoxide and ozone.

20. We recommend the Government to urge ICAO to upgrade the smoking ban recommendation to a formal requirement on its Member States in relation to all flights (paragraph 4.31).

The Government takes the view that, provided safety requirements are met, airlines are best placed to ascertain whether their customers are in favour of smoking on board aircraft or not. As the report states (paragraph 4.30), consumer demand has ensured that smoking is now extremely rare on flights to or from the UK. Indeed, virtually all passengers flying to or from the UK now do so on a flight on which smoking is banned.

The Government is therefore of the view that the current status of the ICAO recommendation is appropriate in that it allows those countries who wish to ban smoking to do so, while allowing those countries which prefer to leave such choices to the airlines to do so. We would be reluctant to press for a world-wide ban in ICAO when the practical impact on passengers travelling to and from the UK would be so limited.

21. Where in-flight smoking may still be permitted, we recommend that airlines and their agents should actively make this clear to intending passengers prior to ticket purchase (paragraph 4.31)

This recommendation is for airlines to consider, but the Government notes that a similar proposal is currently on the table in discussions between airline representative organisations and passenger groups on a possible voluntary charter on passenger rights in Europe, following the European Commission's Communication on Air Passenger Rights of July 2000.

Transmission of Infection

22. As part of improved health information for intending passengers, we recommend the Government and airlines to do more to dissuade intending passengers from flying while they are likely to infect others. This could be further reinforced by a reminder that boarding may be denied to those who are obviously infectious (paragraph 7.33)

The Department of Health will be considering how to broaden the dissemination of health information for intending airline passengers, stressing the importance of individual responsibilities (see response to recommendation 30).

23. We recommend the Government to consider requiring UK airlines and their agents to retain all aircraft passenger information which could be useful in tracing contacts for a minimum of three months after all flights, and that the Government should seek to extend this requirement internationally (paragraph 7.40).

The Government considers that, even though the number of people at risk is very small, it would be desirable if aircraft passenger information which could be useful in tracing contacts were to be retained for a suitable period. The International Air Transport Association (IATA), which comprises a large number of international airlines, has published a recommended practice on the carriage of passengers with infectious diseases. The World Health Organisation (WHO) has also published recommendations on the subject, most of which are addressed to airlines. The work programme of ICAO includes consideration of how responsibility for the public health follow-up of passengers exposed to tuberculosis should be allocated between airlines and public authorities.

The Government would be reluctant to impose obligations on UK carriers unilaterally because of the impact such action could have on their international competitiveness. But it notes that British Airways now retains passenger data for three months and that it co-operates with requests from the UK health authorities to trace contacts. In addition the British Air Transport Association has re-established a health group, through which work on issues such as the tracing of contacts can be taken forward. Meanwhile the Government is considering the scope for streamlining the arrangements by which the UK health authorities make their requests to airlines.

The Government hopes that ICAO will be able to agree on recommendations for Member States to follow up with their respective airlines and public authorities, and that IATA will consider refining its recommended practice on the carriage of passengers with infectious diseases. In the longer term another possible means of international action may be for the WHO International Health Regulations to be amended to include tuberculosis.

Filtration

24. HEPA filtration is not yet standard. To minimise the risk of cross-infection, we are clear that it should be, and we recommend the Government and regulators to make filtration to best HEPA standards mandatory in re-circulatory systems (paragraph 7.26)

Because the use of HEPA filters in aircraft is not mandatory, the selection of minimum performance standards is an option for each individual airline that chooses to fit them. Likewise, it is up to the airlines to select an appropriate maintenance regime that would ensure their in-house performance standards are met. However, the Government accepts that the standard of filtration is a key contributor to minimising the potential for cross-infection in aircraft using re-circulatory ventilation. The vast majority of passengers flying on UK aircraft will experience HEPA standard filtration, but the Aviation Health Working Group will continue to promote the use of HEPA standard filtration on those aircraft where such standards are not achieved.

Noise

25. The British Airline Pilots Association (BALPA) made the point on behalf of pilots that, although cockpit background noise is within acceptable limits, the addition of radio communication noise can cause the noise at the ear to exceed levels at which hearing protection would be required by law if flight-decks were not exempt from the Noise at Work Regulations. As this may have both health and wider safety implications, we recommend CAA and the Health and Safety Executive (HSE) to investigate the matter further (paragraph 6.57).

The CAA recognises that cockpit noise could cause damage to hearing, although it is very unusual to ground a pilot permanently because hearing is sufficiently impaired to preclude safe flying. We understand that British Airways have investigated noise in the cockpit, and as a result they and other airlines have introduced noise attenuating headsets. This is an example of the "duty of care" of an employer, and the CAA takes the view that that is where the primary responsibility for change rests. However, the Aviation Health Working Group will investigate this matter further and, if necessary, consider research into noise levels in the cockpit.

Stress

26. Noting the inter-relationship between comfort and stress and health, together with the scope for combined adverse effect with other environmental factors, we recommend that, when investigations are conducted into the impact of any particular environmental factor on health or wellbeing, the possibility of combined effects be given appropriate attention (paragraph 6.63).

The Government will ensure that in any work that it carries out on the health effects of the cabin environment the inter-relationships between health, comfort and stress are given due attention. The scoping study which is currently being undertaken will assess any existing research on combined effects and, if there is a need, recommend the commissioning of further work.

In-Flight Medical Emergencies

27. Bearing in mind the greater numbers and range of people travelling by air, we recommend the Government to upgrade the required minimum provision by UK carriers for medical emergencies to current "best practice" levels in relation to both crew training and medical emergency kits. The latter should include automatic external defibrillators (AEDs) on at least long-haul aircraft (paragraph 7.77).

28. Furthermore, we recommend CAA to work through JAA to secure similar improvements across Europe (paragraph 7.77).

Requirements governing the treatment of in-flight medical emergencies are laid down in Joint Aviation Requirements. Any proposal to enhance the minimum level in respect of medical kits and equipment, including any associated increase in medical training for crew/cabin staff, would require re-negotiation with JAA Member States. There is currently a wide divergence of views between States and agreement would probably be difficult to obtain. However, there is growing evidence that airlines see marketing and operating benefits in being equipped to deal with a wider range of in-flight medical emergencies, for example through the carriage of items such as external automatic defibrillators, and the development of ground to air advice services. UK airlines are at the forefront of ensuring high standards for dealing with medical emergencies - for instance, most UK long-haul carriers now ensure in-flight defibrillators are carried as standard. The Government recognise the importance of spreading good practice, and this will be taken forward in the Aviation Health Working Group.

Research

29. Our Inquiry has already shown where the major gaps in knowledge are and we recommend the Government to commission research into the following matters as the highest priority:

- (a) the epidemiology of DVT, by a case-control type study;
- (b) the demography of air travellers and the types and frequency of travel undertaken;
- (c) real time monitoring of air quality and other aspects of the cabin environment, with a view to establishing new and clear regulatory minima for passenger cabin ventilation;
- (d) testing, with the latest non-invasive technology, blood oxygen levels across the whole spectrum of air travellers, to validate conclusions derived from data on young healthy adults;
- (e) exploration of the ways different aspects of the aircraft cabin environment may interact, particularly on those in less than average health; and
- (f) extracting maximum value from available and improved medical records of aircrew concerning any long-term effects from exposure to the aircraft cabin environment (paragraph 9.3)

The Government shares the view that there are gaps in current knowledge of health issues related to air travel. Stage II of the Government's current study will assess the existing knowledge base across a range of issues and recommend where further research would be best targeted.

As regards the specific areas identified by the Committee:

- (a) as outlined in response to recommendation 10, the Government envisages initiating a case-control type study once Stage II of its current study is complete;
- (b) a case-control type study of DVT should go some way to providing detailed demographic information on air travel which may also be of use in assessing levels of risk in a number of health areas. The Aviation Health Working Group will consider the findings of research into DVT insofar as they provide information on demographic differences in levels of risk and consider whether this information is relevant to other health issues. In the light of this, consideration will also be given to whether further research is necessary.
- (c) air quality is one of the issues which has emerged from Stage I of the Government's current study as an area of concern. Stage II of the study will now assess the existing research on air quality, and recommend what further research is needed. The Government is aware that there is a major piece of research being funded under the EU 5th Framework Programme which involves monitoring air quality and suggesting performance specifications which might lead to EU legislative proposals on air quality. This research is due to be completed during 2003.
- (d) the research which is envisaged on air quality (see response to recommendation 29(c) above) will give consideration to the need to test the effect of varying blood oxygen levels across the whole spectrum of air travellers. Also, the work on deep vein thrombosis which is described in response to recommendation No 10 will give consideration to aspects which are specific to the aircraft cabin environment, such as reduced oxygen levels, if the scoping study which we have commissioned reveals that such work has not been carried out.
- (e) the Government recognises that different aspects of the cabin environment may have cumulative effects on certain passengers and will consider this recommendation in the light of results emerging from Stage II of its current study; and
- (f) as outlined in response to recommendation 2, the CAA has initiated a research project to cross-reference aircrew medical records to the types of flying undertaken and the subject's subsequent medical history.

Information for Passengers

30. In the market place in which air travel is sold, it is vital that intending passengers are provided with sufficient information to make informed choices. We recommend the Government to require airlines and their agents to provide more information for passengers at the time of booking on:

- (a) the size of seat that is on offer, using unambiguous standardised definitions;
- (b) options for pre-booking seats, particularly those with extra leg-room;
- (c) whether smoking will be permitted on the flight in question;
- (d) the need for sub-aqua divers to ensure that the effects of any recent diving will not create an additional hazard when they fly;
- (e) the need for intending passengers to satisfy themselves that they are generally fit to fly - not only for their own health (particularly in relation to DVT) but also for that of others; and
- (f) in the case of long-haul passengers, measures to deal with the effects of jet-lag (paragraph 9.5)

The Government agrees that providing information to air passengers on the potential health impacts of air travel is essential to allow passengers to make informed choices, though it takes the view that regulation in this area should be considered only as a last resort. The Aviation Health Working Group will look at the provision of information and consider whether specific research is required in order to establish the most effective way to ensure health information reaches passengers. The Working Group will also monitor the

information given by airlines and other parties to ensure that this meets the needs of passengers. As regards the recommendations for the provision of specific information:

- (a) the Government notes that a proposal that airlines should provide pre-booking information about seat pitch is on the table in discussions on a possible voluntary charter on passenger rights in Europe. Refinement of definitions of seat pitch must await the conclusion of the CAA-funded research described in response to Recommendation 16;
- (b) whilst most airlines allow passengers to pre-book seats, including those with extra leg-room, the Government accepts that information about this facility could be more widely disseminated and, through the Aviation Health Working Group, will encourage airlines to offer this information more effectively.
- (c) as outlined in response to Recommendation 21, this proposal is currently under active consideration in discussions in Europe;
- (d) whilst not underplaying the risks to sub-aqua divers, it would appear disproportionate to require all airlines to provide this information to all passengers. The Government will consider this issue in the Aviation Health Working Group with a view to pursuing the matter with the relevant representative organisations;
- (e) and (f) the information contained in the booklet 'Health Advice for Travellers' is available via the DH internet web site (www.doh.gov.uk/traveladvice), and is also available and constantly updated on CEEFAX and PRESTEL. DH Communications Division are currently exploring ways in which wider health-related travel advice might be provided through the DH web site, and also how links might be developed with NHS Direct and NHS Direct on-line.

31. The importance of fitness to fly needs to be given suitable prominence. We recommend that, at every ticket sale point and in every doctor's surgery, there should be a small display card asking intending passengers, "Are you fit to fly?" To help them find the answer, this could offer a short and user-friendly note of guidance (paragraph 9.6).

Although doctors are unlikely to see it as a high priority to display general information on air travel and health, other than in travel clinics, it may be that such information could be provided in a leaflet, or as part of a questionnaire issued to patients while their travel needs are being assessed. DH will consider this further and report to the Aviation Health Working Group.

32. Passengers need to be reminded on boarding and in-flight about the simple measures that minimise any risk of flight-related DVT, and of the simple measures to alleviate head pain from pressure changes on take-off and landing. We recommend the Government to require airlines to provide, immediately before take-off, a health briefing comparable to the already required safety briefing, backed up by a standardised card in seat-back pockets. We were pleased that the Minister acknowledged the merits of this (paragraph 9.8).

The Government agrees that in-flight briefing on health issues can play an important role in ensuring that passengers receive essential information, though passengers should also receive information before flying so that they may make informed choices when booking their flight. In deciding when any health briefing should be given it is important to ensure that it is not likely to compete for attention and retention in the mind of passengers with the standard safety briefing. This would be likely to happen if a health briefing were given before take-off. An appropriate time for the first such briefing to be given could be soon after take-off when the risk of emergency evacuation has diminished but passenger alertness is probably still high. There need be no constraints on when follow-up health briefings are given. The contents of oral

briefings should be appropriate to the expected duration of the flight and to the facilities for recreation available. The provision of health advice by means of documents also needs consideration: again, any competition for passenger attention between safety and health topics needs to be addressed with some care.

The Government is aware that UK airlines are actively considering, and in several cases have already introduced, means of passing on relevant health information to on-board passengers, and is not of the view that regulation is necessary at this stage. But through the Aviation Health Working Group it will monitor the effectiveness of the health briefing offered to passengers, and take whatever further steps may be necessary.