

Rationale

“We who ignore the lessons of history are bound to repeat them. Those who do not remember the past, are condemned to relive it.” George Santayana

A review of past accident reports points to management organizational factors implicated in accidents and incidents. Knowledge of the history of aviation gives us clear indications which factors in particular contribute to ‘poor performance’ of aircrew and ‘pilot error’. Poor management throughout an organization can give rise to poor performance at ‘the sharp end’. An *adequate* safety management system puts in place overlapping defences so that these ‘latent failures’ inherent in poor management don’t effect crews.

The disciplines of ‘Human factors’ and ‘Health and Safety’ are intended to improve working conditions so that pilots are not the last resort of the safety system. The verdict of ‘pilot error’ following a crash is an admittance of a poor safety system whereby the final person in the safety system has failed. In fact, the system has failed but it is the pilot who takes the blame.

There is a body of work intended to improve the health and safety of aircrew. This includes:

- ICAO Digests on Human Factors
- ICAO Journal
- Flight Safety Foundation online
- General Health and Safety recommendations

This body of work is, on the whole, being ignored. How up-to-date scientific evidence can be put to one side either for political and financial gain, or by pure ignorance, is the central theme of my argument.

Concerns have been raised by various groups regarding the lack of protections in law within the aviation industry. Such groups include survivors of air crashes, passengers, and workers in the industry indeed the House of Lords Science and Technology Committee has given the industry very clear criticisms about its practices – or neglect thereof. Currently dignity at work and human rights come a poor second to profits.

Why is the health and the safety of aircrew being denied? Some answers emerge when we examine the following;

1. The House of Lords Science and Technology Committee Recommendations
2. A Regulatory Lacuna
3. Who is in charge of aviation; who calls the shots?
4. *CIVIL AVIATION; CIVIL WAR* – an account of flight deck/cabin crew conflict.

5. The Law Commission 1970 – ‘Unsafe’ and ‘Harmful’ Companies

1. HOUSE OF LORDS SCIENCE AND TECHNOLOGY FIFTH REPORT 2002

<http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/121/12101.htm>

AIR TRAVEL AND HEALTH

CHAPTER 1: SUMMARY AND RECOMMENDATIONS

These are excerpts from the Report with Editor’s comment.

1.1 This Report is about the effects on health of travelling by air, a topic which has given rise to much public concern in recent years. Air travel has grown substantially over the last forty years. Every day, millions of people of widely varying ages and states of health travel by air - sometimes for very long distances.

Editor’s Comment: Some of the millions mentioned here are not holiday-makers but business travelers who have little choice in the decision to travel.

1.2 Medical knowledge has also developed substantially, not least in relation to the links between environmental factors and health. Our Inquiry has examined how far the present arrangements for safeguarding the health of the diverse body of passengers and crew members have kept pace with that developing knowledge.

Editor’s Comment: While in agreement that medical knowledge, including that which underpins the notion of ‘Human Factors’, has developed substantially the editor finds that airlines, regulators and unions fail to apply that up-to-date knowledge in a systematic way.

1.8 ... Our concern is not that health is secondary to safety but that it has been woefully neglected. We welcome the belated acceptance by the Department of the Environment, Transport and the Regions (DETR)[1] that it has the lead within the United Kingdom, and **we recommend** the Government to ensure that concern for ... crew health becomes a firm priority. (Paragraph 8.9)

Editor’s Comment: Health – mental and physical health, wellbeing, and job satisfaction are necessary to safety. Woeful neglect demonstrates one of two things: either this is done in total ignorance, or it is a deliberate policy. Both of these, ignorance or policy, are capable of redress. To my mind the tools to redress these problems are available – all it takes is the will to implement them.

How will we know that the Government, and airlines, regulators and unions, will make crew health a firm priority? Aviationwatch will make this a firm priority!

1.9 There is no international regulatory focus for monitoring and developing practices and procedures on ... crew health. **We recommend** the Government actively to pursue the strong UK interest in ... 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)

Editor's Comment: Safety systems should, according to the research, be in place as a proactive strategy. Aviationwatch makes it its business to pursue what action is being taken by the Government to actively pursue the strong UK interest in ... crew health through its international contacts with the Joint Aviation Authorities (JAA), the International Civil Aviation Organisation (ICAO) and other appropriate organizations.

1.10 **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)

Editor's Comment: This was recommended in the year 2000. What has happened so far to reduce the inertia within the international safety-focused regulatory structures? The efforts of aviationwatch to discuss this has met with resistance. Resistance, of course, is what keeps the status quo, inertia, in place.

1.11 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)

Editor's Comment: Lack of attention by regulators, airlines and aircrew trade unions to the health of aircrew demonstrates deficits within the safety system. This criticism by the House of Lords Science and Technology Committee is a serious indictment of these bodies. Since the year 2002 aviationwatch has been attempting to discuss these matters with an airline, with the Regulator and with a pilots union. None of these bodies has attempted to engage in discussion of the problems. The issues are resisted by them. The Regulator has denied that there are problems and refuses to discuss them further. Their own workings are shrouded in secrecy. Is this the democratic process that recommendations by the House of Lords is meant to represent?

1.12 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. (Paragraph 3.48)

Editor's Comment: None of these points, 1.11 and 1.12, address the demands of organizational stressors on pilots, nor their effects on them. This could be addressed if application of the ICAO Human Factors Digests were made mandatory.

DEEP VEIN THROMBOSIS

1.16 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*)

1.18 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*)

1.20 In relation to air travel alone, however, and applying the precautionary principle used in other fields where health risks are considered possible but are not well defined or quantified, there are measures which could be taken to improve information and alleviate concerns about flying and DVT, and to encourage preventive activities. **We recommend** that airlines and their associates reappraise their current practices in relation to not only the provision of information for passengers but also the design of the cabin and cabin service procedures. **We also recommend** the Government, aviation regulators, trade groups and consumer representatives to consider what action they should take in relation to these points. (*Paragraphs 6.31 and 6.32*)

Editor's Comment: These issues pertain to passengers. How much more should they apply to pilots who have prolonged immobility, strapped into their seats for most of the flight?

VENTILATION

1.24 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*)

Editor's Comment: Let us hope that the reconsideration of its requirement for ventilation of the flight deck with only fresh air is based on open transparent scientifically-based evidence, and not on airline profits or political motivations.

AIR QUALITY

1.25 Passengers' perception of general cabin air quality is one of the key factors in their assessment of the flight experience as a whole. **We recommend** that airlines collect, record and use at least some of the basic cabin environment data being continuously monitored, not only to give authoritative substance to their refutation of the common allegations, but also to provide a better basis for public confidence in these matters. Indeed, we are surprised that they do not already do so. (*Paragraph 5.49*)

1.26 **We recommend** airlines to carry out simple and inexpensive cabin atmosphere sampling programmes from time to time, and to make provision for spot-sample collection in the case of unusual circumstances. This would be helpful for passengers and

staff, and also benefit airlines themselves. (*Paragraph 5.50*)

1.27 We welcome the ASHRAE[2] 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*)

1.29 To minimise potential health problems when aircraft fly through ozone plumes, **we recommend** airlines to fit ozone converters to their aircraft used on routes where they may come into contact with such plumes. (*Paragraph 4.47*)

TRANSMISSION OF INFECTION

1.31 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*)

1.32 To reduce cross-infection risks (as well as for general comfort), **we recommend** airlines to ensure that they have suitable policies for occasions when aircraft with passengers on board have to be held on the ground for extended periods without full ventilation. Such events are rare, so it is all the more important to have in place clear guidelines for action. (*Paragraph 7.22*)

Editor's Comment: Crew are exposed to cross-infection so this recommendation is to be applauded. However, if the thread on Professional Pilots Rumour Network is to be believed, the current employment policy in one airline is a 'three strikes and you're out' towards sick crew. www.pprune.org How can this be considered good management? How can it be allowed to continue?

1.34 From time to time, airlines and their representative bodies review the passenger data collected for marketing and other analytical purposes. In doing so, **we recommend** they also consider improving such data (or at least ensuring greater standardisation) to help meet the potential needs of post-flight contact tracing. (*Paragraph 7.41*)

FILTRATION

1.35 Although we do not dispute the design claims for HEPA filters[3], we fail to see how the industry can effectively rebut charges that such filters do not perform as designed when so little attention is given to their performance. **We recommend** the industry as a whole to review and substantially improve overall in-service performance monitoring of filters. (*Paragraph 7.24*)

1.36 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. In the meantime, **we recommend** airlines to upgrade all filtration to the best HEPA standards. (*Paragraph 7.26*)

Editor's Comment: Has this been done?

NOISE

1.38 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*)

Editor's Comment: What other regulations are exempt that should be included in this Human Factors subject? 'Mobile workers' are excluded from many such regulations.

STRESS

1.39 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*)

Editor's Comment: This inter-relationship affects passengers and crew alike. The stress concept is clear that the effects of stress are cumulative. The CAA state that they keep no statistics on crew stress. Crew stress has been implicated in many accidents and incidents.

RESEARCH

1.43 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*)

Editor's Comment: Any research should be scientifically up-to-date, and more importantly, applied. It should be transparent, and appear in peer-reviewed Journals. There is no current access to research and its recommendations. Nor what proportion of recommendations are taken up (or ignored.)

COMPLAINTS PROCEDURES

1.47 **We recommend** airlines to review their systems and procedures for dealing with passenger concerns and complaints so that passengers do not feel that they are being forced to deal with lawyers and insurers from the outset. This review should include considering the case for an independent "ombudsman". (Paragraph 8.60)

Editor's Comment: A similar system for aircrew should exist. It should be scientific, up to date, and evidence-based, and transparent. The research regarding the management of aircrew should in peer-reviewed journals; not based on the 'politics' of the airline quango. Many members of the public will be shocked that such a system isn't already in existence.

2. REGULATORY LACUNA

A Regulatory lacuna, or gap in the legal framework for regulation, pertaining to the Health and Safety of aircrew exists. (Henderson Graeme (2000) Enforcement of Health and Safety on Aircraft. Health and Safety Commission SPDA4) This lacuna in regulatory authority between the CAA and the HSE probably has the effect of leaving aircrew vulnerable to the vagaries of health and safety omissions that flow from that lacuna.

There is a need for a review of aviation. There has been none since de-regulation in the 1970s. As far as the author is concerned aviation is in free-fall. I invite anyone who disagrees with this remark to debate it with me, chris@aviationwatch.co.uk

3. WHO IS IN CHARGE OF AVIATION; WHO CALLS THE SHOTS?

The brief answer to, “who is in charge...” is the global oversight organization, part of the United Nations, called the International Civil Aviation Organization (ICAO). However, Governments do not have to take notice of their advice.

The Regulator, the Civil Aviation Authority, might be thought of as being in charge. But in charge of what? Like its counterpart in the USA, the FAA, this organizational has a dual mandate. It is in the business of promoting aviation, but also of safety. A criticism made by the HSE’s aviation department has made it clear that while the CAA holds responsibility for Health and Safety, it prefers to leave it to others! (Henderson Graeme (2000) Enforcement of Health and Safety on Aircraft. Health and Safety Commission SPDA4) So while they fiddle over administrative niceties pilots are suffering ill health and death. Put this to the test, phone the CAA and ask to talk with someone about health and safety of aircrew. See how far you get. I was told, “I don’t know why you are speaking to us, we are about aircraft safety!”

A British Institute for Comparative Law ((BICL)) seminar discussed the limits of liability in airlines. During the summing up by William Wood QC, the Warsaw and Chicago Conventions were described as tools that “...limit airlines’ liability. The rationale for them was that they were safeguards for a nascent industry.” The industry is no longer nascent yet it still enjoys this privileged position. This, I assert, to the detriment of passengers’ rights. The question was raised whether changes would solve the problem of such immunities and whether anyone was addressing this. It seems not.

Richard Gardner, Senior Lecturer in the Faculty of Laws at University College, London said that the Warsaw Convention was being thwarted; the intention was that it should be a uniform standard internationally. Similarly Professor Anthony Aust questioned whether substantive law limiting liability is too narrow globally. There are different applications of the law by different nationals. The term ‘accident’ is different under the Warsaw Convention from the Montreal. He asked, “Is this ad hoc arbitration?” and drew attention to the need for ICAO protocols. The same accident in one jurisdiction could have a different outcome in a different jurisdiction, and there is no consistent thread. His solution was to provide a simple regime – that carriers should be made liable. Is reform being considered? No.

A QC said that the problem is, “The airlines are calling the shots...”

Editor’s Comment: Are airlines supported in this by the CAA? If the UK experience is similar to that of the USA, the regulator and regulatees have too close a relationship.

Former Inspector General of the US Department of Transportation, Mary Schiavo comments, "...a definition of safety was not important to the FAA because it had a more urgent, more vital objective: to promote commercial aviation. So crucial was this mandate to the formers of the Federal Aviation Act that in the law they spelled out exactly how the new agency should foster the aviation business. Safety, however lofty a goal, was first mentioned almost off-handedly ..." (Flying Blind, Flying Safe. 1997 Avon Books. New York. p206) 'Profits over safety' has been on ongoing criticism of the aviation business by several groups. A discussion of this can be viewed at [hyperlink – 'The Profits over Safety Dilemma' – upcoming] The close relationship between CAA and airlines is described well in Andrew Weir's book, The Tombstone Imperative – The Truth about Air Safety. (1999 Pocket Books. London)

This echoes 1.5, of the House of Lords Science and Technology Committee Fifth Report, "We propose improvements not only in the regulatory arrangements..."

Human Rights legislation in this area did not seem to provide a remedy.

I assert that there is a similar privilege regarding 'mobile workers' that also leads to an absence of safeguards.

So the answer to this question is, the airlines are calling the shots – regulation is feeble; ICAO can be disregarded. Is the travelling public safe in their hands?

4. CIVIL AVIATION; CIVIL WAR – an account of flight deck/cabin crew conflict.

Unsafe practices that put latent errors into the system are outlined in my Report to the CAA – '*Civil Aviation; Civil War* – an account of cabin crew flight deck conflict'. Here a Captain was subjected to an altercation by a cabin crew member. He died of a heart attack shortly after. It will be interesting to see how the regulators deal with the points raised in the report. (This report was completed in accordance with the principles of evidence-based practice.)

When is a death considered to be work-related? The answer is not straightforward. See [Work-Related Deaths](#) (in preparation.)

5. LAW COMMISSION 1970 'UNSAFE' AND 'HARMFUL' COMPANIES

In 1970 the Law Commission published a report acknowledging the need for regulatory agencies to play different roles in relation to ‘unsafe’ companies on the one hand and ‘harmful’ companies on the other. Does this work in practice? Also that, “It is important to distinguish properly between those cases in which the aim of the inspectorate is to induce the firm to take action to improve its standards of compliance and those in which the firm is to be punished for a past failure to comply, normally in circumstances which have given rise to an accident or injury.” David Bergman of the Centre for Corporate Accountability states: “in effect, ...there are no proper procedures to ensure that deaths and injuries resulting from the fault of ship owners or airline companies are subject to criminal investigation.”

The effect of this is that occurrences happen that act to raise concerns among the travelling public and workers within the industry. Such concerns are stifled by the industry. Victims are viewed as adversaries and safety concerns are belittled. Victims of the Kegworth accident were, in their words, “prevented from seeing their loved ones in hospital for too long.” In my conversations with survivors of the Kegworth crash (SKISAFE) I was informed that after fifteen years a victim is still waiting for justice.

RATIONALE CONCLUSION

“When you get it right mighty beasts float up into the sky. When you get it wrong, people die.” Roger Bacon (C1384)

The rationale for this website is to bring together facts about disparate aspects of the airline business, and their impact on the health and the safety of its workers – and ultimately its passengers. Here we see what happens when an industry is not subjected to checks and balances, when its dealings are not transparent,

Much of what is written here relates to the legal framework of aviation. (I am not a lawyer.) What concerns me here is the well-being of staff and passengers. The purpose of this site is to fill in the detail between framework and outcome.

I am open to correction, discussion, encouragement and debate.

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