Economy Class Syndrome

Dr Lilienthal: Good evening, ladies and gentlemen. Welcome to this scientific meeting of the New South Wales Medico-Legal Society.

The topic under discussion tonight is deep vein thrombosis as a complication of air travel, and of course the official name of tonight's presentation is "Economy Class Syndrome".

A few months ago one of my patients came in to see me and sought some advice on immunisation and vaccination for a holiday in Thailand. After having given her that advice, I steered the conversation around to deep venous thrombosis. I did this particularly because I knew that this lady had been on HRT longterm and that her mother had actually died from deep vein thrombosis and pulmonary embolism, though not related to travel.

I provided her with the advice. I handed her a flyer which said "Air travel risks of deep vein thrombosis" and we went through it together. She raised the issue of medication and I said that as far as I was aware there was no evidence-based medicine yet available to justify any prophylactic medication unless the patient was at risk, and as I understood it that risk meant having had a past risk of DVT, having recently had surgery or been involved in some sort of trauma. Nevertheless, she decided, and I agreed, that she would take a small dose of aspirin before she travelled.

On her return from her holiday she presented to me with a vague sort of illness for which I could find no cause. I asked her to return a day or two later. I still couldn't determine what was wrong with her, but I consulted one of my colleagues and we referred her to a physician. She was admitted to hospital and after some investigation it was discovered she did in fact have a pulmonary illness, and she was successfully treated.

I visited her in hospital, and as I went into the room and said hello, the first thing she said to me was, "My last visitor asked me who I was going to sue".

We have two speakers tonight Professor John Harris and Mark Mackrell. Professor Harris is going to start. He is Professor of Vascular Surgery, Head of the Department of Surgery, University of Sydney and Chairman of the Division of Surgery at Royal Prince Alfred Hospital. He is the immediate past President of the Australian and New Zealand Society for Vascular Surgery. He is a Senior Examiner and Councillor for the Royal Australasian College of Surgeons. Please welcome Professor Harris.

Professor John Harris:

NIXON'S History

Afforded little privacy in regard to personal medical problems, American Presidents can often find their various health misfortunes in the public domain. So it was with Richard Nixon whose troubles began in 1965 when then aged 52, his left leg became painful and swollen after a long air trip.[1] He then traveled to the Middle East and a few weeks later to Russia. On each occasion the same pain and swelling occurred, shown to be due to thrombosis of the major veins in his left leg and culminating in surgery from which he suffered serious complications.

His experience engendered little of the public response that followed the tragic death in September 2000 of bride to be, Emma Christoffersen only 28 years old, returning from a three week holiday in Australia. She travelled economy class and felt unwell during the last leg of the 17,000km journey, collapsing at Heathrow minutes after arrival and dying before reaching hospital.

This dramatic event heralded a rush of similar case reports, generating great concern, disproportionately distorting the public perception of risk associated with air travel. A sample of newspaper headlines from the time includes "Long Haul Hell", "Clotting factor: the hidden danger of flying" or "Health hazards in economy class". A British Parliamentary inquiry was prompted in part by the 75 year old Lord Graham of Edmonton who was hospitalised with a venous thrombosis after a flight from New Zealand.[2]

The response of the airlines to the intense publicity was defensive and that by some in the legal profession one of joyful anticipation. The medical profession was a little cautious even though the first cases, reported by Homans in 1954 included a 54 year old doctor who developed thrombosis after a 14 hour flight.[3] Even last year an editorial in the Medical Journal of Australia carried the banner "Economy Class Syndrome: A misnomer for a syndrome for which the evidence is, as yet, missing",[4] a position supported by others.[5] So where do things now stand?

VENOUS THROMBOEMBOLISM

Venous thromboembolism encompasses a condition in which blood clots form, usually in the legs, termed deep venous thrombosis (DVT). This can pose a risk of sudden death if these clots break away and lodge in the heart or lungs – an event called pulmonary embolism. Abnormalities of the vein wall, blood coaguabilty and reduced flow are the three key determinants of DVT formation. All three are affected by the complex physiological changes that are inherent in modern jet travel, particularly in susceptible passengers.

Passenger-related factors that have been implicated include obesity, chronic illness, particularly heart disease, hormonal therapy, cancer, previous DVT, recent surgery or injury, age over 40 years, pregnancy, and those with inherited disorders of coagulation. Cabin-related risk factors include immobilisation, cramped sitting position, low air pressure, relative hypoxia, low humidity, and dehydration. The relative immobility is probably greater in the economy sections of aircraft where the seats are closer together, referred to by the technical term "pitch", the distance between seats. However DVT has been reported in the business and first class sections, not to mention in the cockpit.

Venous thromboembolism encompasses both aspects of abnormal thrombosis, that is DVT and pulmonary embolism, and is a commonly made diagnosis in every day clinical practice, occurring more often in older people and in certain high risk groups. These groups are also at higher risk of venous thrombosis associated with travel. Venous thrombosis is often clinically silent so the diagnosis can be easily missed. The diagnosis is usually made by an ultrasound scan which is sufficiently accurate for most clinical purposes. In the context of travel, the thrombosis may not be apparent on arrival or may be mimicked by the ankle swelling commonly experienced with long flights. It is therefore not easy to determine the true incidence of thrombosis in relation to travel without a study in which passengers are scanned before and after travel. Few such studies have been completed but others are now underway.

TERMINOLOGY

The term "Economy Class Syndrome" was coined in 1977[6] but has fallen into disfavour because of its limitations in encompassing the full spectrum of thrombotic events related to travel. Thrombosis has been reported after long rail and car trips and not just economy class air travel. I doubt that Richard Nixon ever travelled economy class. Traveller's thrombosis seems a preferable term.

WHAT IS THE EVIDENCE FOR TRAVEL RELATED THROMBOSIS?

In a softish science like clinical medicine, there are various levels of evidence, the strongest being a meta-analysis of multiple controlled clinical trials supporting the same conclusion. This level of evidence does not yet exist in supporting a causal relationship between travel and venous thrombosis.

Eklof has recently reviewed the evidence to date.[7] Based on an 86-month period at Charles de Gaulle airport, 56 out of 135.5 million passengers arrived with severe pulmonary embolism. The incidence was 150 times higher for those who traveled more than 5,000km. More significant studies are those based on ultrasound scans of passengers, as this provides an objective diagnostic end-point. The LONFLIT research series showed none of 355 low-risk subjects developed DVT compared to 13 (3.3%) of 389 high risk subjects who did. In LONFLIT II the incidence of DVT in 833 low-risk subjects was 0.24% in those who wore stockings compared to 4.5% who did not.

A better trial, published in the Lancet, sought to determine the frequency of DVT in the lower limb during long-haul economy-class air travel and the efficacy of graduated elastic compression stockings in its prevention. All passengers made journeys lasting more than 8 h per flight. The incidence of DVT, diagnosed by ultrasound scanning, was a surprising high 10%; (95% CI 4.8-16.0%). None of the passengers who wore elastic compression stockings developed DVT (95% CI 0-3.2%).[8] All these studies have been subject to significant criticism.[7]

In March 2001, the World Health Organisation (WHO) convened an international meeting on air travel and venous thrombosis.[9] It was concluded that a link probably exists between air travel and venous thrombosis and that similar associations possibly exist with other forms of travel. The risk of thrombosis was not quantifiable because of a lack of data, but was likely to be small and to mainly affect passengers with additional risk factors for venous thromboembolism. It was also concluded that there were insufficient scientific data on which to make specific recommendations for prevention, except that leg exercise should be taken during travel. Measures currently recommended by most airlines include drinking plenty of non-alcoholic fluid, avoiding sedation, exercising the legs and wearing compression stocking support. However, these are essentially based on "common sense" with little hard supportive evidence.

Research priorities were recommended to be undertaken as soon as possible under the auspices of WHO and the International Civil Aviation Organisation (ICAO), supported by an independent scientific committee, in collaboration with International Air Transport Association (IATA) and airline companies. These research priorities included:

- Multi-centre international studies, using hard clinical end-points, to determine whether there is a link between air travel and venous thrombosis, the scale of the problem and the absolute risk if such a link is confirmed.
- Smaller scale interventional studies to assess objective diagnostic and preventative methods.[7]

CONCLUSION

Venous thrombosis is a potential hazard for travellers. Although recognised for many years it was not subjected to the intense investigation that has now followed the publicity started by Emma Christoffersen's tragic death. It is likely that the scientific issues should be resolved in the next few years. Whatever the final determinate of risk, I expect that most passengers faced with the prospect of cancelling their trip or risking a DVT will do as Richard Nixon did and continue their journey, perhaps better informed and wearing stockings!

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President: Thank you. The second speaker is Mr Mark Mackrell. Mark is a partner in a leading transport law firm. He advises and represents airlines, aviation operators and insurers and regularly acts in major aviation litigation in Australia and the South Pacific, as well as handling civil aviation and regulatory matters. Please welcome Mr Mark Mackrell.

Mr Mark Mackrell:

Introduction

The liability of an airline for injury during international carriage on board an aircraft falls to be determined by reference to the *Warsaw Convention.*

Not surprisingly, the DVT cases which have emerged to date have involved international carriage and are therefore subject to the *Warsaw Convention.* But the situation would not be different in the case of domestic carriage in Australia in light of the domestic regime based upon the *Warsaw Convention.*

Warsaw Convention

The Convention for Unification of Certain Rules relating to International Carriage by Air made at Warsaw on 12 October 1929 *(The Warsaw Convention)* is the first in a series of conventions and protocols designed to regulate the liability of air carriers for death of or injury to passengers and for loss of and damage to cargo.[1]

The Convention was intended, first, to formulate uniform rules which would overcome conflicts of law problems arising from accidents involving international carriage.

Secondly, the Convention was intended to provide a system of compensation which freed passengers from the burden of proving negligence but also imposed limits to protect the infant aviation industry from the consequences of unlimited liability in the event of an accident.

The Convention has produced different reactions. In 1934, the US Secretary of State, Cordell Hull, wrote:

> *"It is believed that the principle of limitation of liability will not only be beneficial to passengers and shippers as affording a more definite basis of recovery and tending to lessen litigation but that it will prove to be an aid in the development of international air transportation..."*

Less enthusiastically, the noted American plaintiffs' lawyer, Mr Lee Kreindler, has said:

> *"It is the worst source of law ever foisted on the American legal system. It made no sense then and it makes no sense now. It has been an abomination which we should have gotten rid of years ago."*

Notwithstanding his not inconsiderable success in actions against airlines, Mr Kreindler has also observed:

> *"The Warsaw Convention was promulgated in 1929 and I was five years old but I must tell you that I understood the Convention just as well then as I do now."*

Work on the revision of the Warsaw Convention began as early as 1938 and resumed under the auspices of the newly formed International Civil Aviation Organisation (ICAO) after the war. Proposals for amendment were finally submitted to a conference at the Hague in 1955 and the adopted proposals became the *Hague Protocol* which when read with the original Convention as a single instrument is known as the *Warsaw Convention as Amended at The Hague 1955* (or the Amended Convention).

One of the major changes to the Convention effected by the *Hague Protocol* was to double the limit of damages for death and injury to 250,000 French francs, defined in the Convention by reference to the content of gold in the 1929 Poincaré franc.[2] Leaving aside the restless dispute on the method of conversion of the Poincaré franc for the purposes of the Convention, in the United States the increase effected at the Hague brought the limit of damages to about US$16,600.00[3] which in large part may explain Mr Kreindler's comments.[4]

Between Australia and those countries which are signatories to the *Warsaw Convention* and which have not adopted the Amended Convention, carriage continues to be governed by the original Convention. Between Australia and those countries which have adopted the *Hague Protocol,* the Amended Convention applies.

The Conventions are given force of law in Australia by the *Civil Aviation (Carriers' Liability) Act 1959 (Cth)* and the Convention and Amended Convention are Schedules 1 & 2 respectively.[5]

Part IV of the Act imposes a domestic regime based upon the Convention, supplemented by corresponding State legislation in respect of intrastate travel. Whilst there are some differences between the international and domestic regimes, the same principles will determine the success or otherwise of an action for damages for DVT arising from domestic carriage.

A Cause of Action under the Convention

In the case of international carriage between countries which are party to the Convention, or Amended Convention, the airline will be liable for death of or injury to a passenger caused by an accident on board or during embarkation or disembarkation. Article 17 provides:

> *"The carrier is liable for damage sustained in the event of the death or wounding of a passenger or any bodily injury suffered by a passenger, if the accident which caused the damage so sustained took place on board the aircraft or in the course of any of the operations of embarking or disembarking."*

Article 24 of the Convention provides:

> *1. In the cases covered by Articles 18 and 19 [destruction or loss of, or damage to baggage or cargo and delay in carriage respectively] any action for damages, however*

founded, can only be brought subject to the conditions and limits set out in this Convention.

2. In the cases covered by Article 17 the provisions of the preceding paragraph also apply, without prejudice to the questions as to who are the persons who have the right to bring suit and what are their respective rights.

It has now been conclusively determined by both the House of Lords[6] and the US Supreme Court[7] that the remedy conferred by Article 17 is an *"exclusive"* remedy in the sense that it is in substitution for any other cause of action arising in respect of death or injury to passengers.

Thus the purpose is to ensure that, in all questions relating to the carrier's liability, it is the provisions of the Convention which apply and that the passenger does not have access to any other remedies, whether under the common law or otherwise, which may be available within the particular country where he chooses to raise his action.[8]

In Australia, the situation has never been in doubt as the Act[9] expressly provides that the liability under the Convention is in substitution for any civil liability of the carrier under any other law in respect of the death of or the personal injury to the passenger.

Obviously, the effect is that the liability of an airline for a DVT illness suffered by a passenger will be under Article 17 of the Convention or there will be no liability at all.

It will also be apparent that the existence of a cause of action under Article 17 will depend on whether or not the injury was caused by an accident on board the aircraft. In other words, unless the development of DVT on board an aircraft is held to be an accident, the passenger who has suffered from the illness as a result of a long haul flight will have no cause of action.

That plaintiffs must succeed under the Convention or fail utterly has been recognised in the proceedings which have been commenced to date, principally in Australia and the UK, which have sought to establish a case under the Convention.

"Accident"

Critical to the plaintiffs' success will be satisfying the Courts that the development of a serious blood clot formed during a flight is the result of an "accident" within the meaning of the Convention.

It must be remembered that there can be no confusion between the cause and the effect[10] in cases under the Convention as the framers, by the wording chosen in Article 17, have demonstrated *"...that it is the cause of the injury that must satisfy the definition rather than the occurrence of the injury alone"*.[11]

The accepted definition of an accident for the purposes of the Convention is that to be found in the decision of the United States Supreme Court in *Air France v Saks*[12] where the Court concluded:

"...that liability under Article 17 of the Warsaw Convention arises only if a passenger's injury is caused by an unexpected or unusual event or happening that is external to the passenger...[and]...when the injury indisputably results from the passenger's own internal reaction to the usual, normal, and expected operation of the aircraft, it has not been caused by an accident...".

Whilst the description of the meaning of "accident" is relatively straightforward its application has not been without difficulty and there are many decisions which are difficult to reconcile. Passengers' falling over onboard aircraft has been a fruitful source of decisions. In *Chaudhari v British Airways plc*[13] the Court of Appeal held that a plaintiff who got out of his seat and fell on his hipbone because of a preexisting medical condition must fail in his action as there had been no accident.[14]

Falling or tripping on an aircraft has recently been considered by the Chief Judge of the District Court in *Parkinson v Qantas Airways Limited*[15] where the plaintiff tripped on part of a seat when trying to move from one aisle to another and it was held that this was not an accident as it involved the passenger's own reaction to the usual, normal and expected operation of the aircraft.

Turbulence, although not uncommon, may be sufficiently severe to amount to an unusual and unexpected event and thus amount to an accident causing damage.[16]

A vexed area has concerned assaults upon passengers by other passengers, sometimes of a sexual nature. The response of the Courts has not always been consistent but as a very general observation one can say that in recent cases where Courts have sought to widen the scope of liability by finding that an assault has amounted to an accident it has been mostly on the basis that the assault has been associated with or contributed to by the conduct of the carrier in its operations. For example, the conduct by an airline in allowing an unaccompanied minor to sit next to an adult male stranger was held by the UK Court of Appeal to amount to an unusual event or happening external to the passenger which led to a sexual assault.[17]

Similarly death from a medical condition, without more, would not ordinarily be held to the result of an accident.[18] In *Saks* itself the plaintiff lost the hearing in one ear allegedly as a result of the pressurisation system in the aircraft which was held not to be an accident.

However, there are cases where the Courts have held that the conduct of the airline has amounted to an accident leading to the death of a passenger from a medical condition. In *Fulop v Malev Hungarian Airlines*[19] the Court denied the airline's motion for summary judgment in a case brought as a result of a heart attack on board a flight on the ground that the flight crew's failure to divert the aircraft could amount to a deviation from normal procedures and thus could be held to be an accident.

DVT Cases

Most of the litigation alleging DVT illness has been commenced in Australia and the United Kingdom. In the United Kingdom a group litigation proceeding was fixed for hearing on 4 November 2002 of preliminary issues including the question of whether or not the plaintiffs could sustain a cause of action under the Convention. It was adjourned after the trial judge realised that he held shares in British Airways.

In Australia the plaintiffs have been unable to commence a single class action because their cases are against different

airlines but a large number of cases have been grouped together in the Supreme Court of Victoria where applications to dismiss the proceedings in three test cases were heard by Mr Justice Bongiorno who has reserved his decision.

In the meantime, a number of decisions have been handed down in other jurisdictions which have so far gone against the passengers.

In Germany a regional court in Frankfurt am Main[20] dismissed a DVT claim because the alleged damage was not caused by an accident. The decision is on appeal and the determination of the appellate court is expected shortly.

In the United States the Supreme Court of New York has held in *Scherer v Pan Am and TWA*[21] that the thrombophlebitis suffered by a passenger on a long-haul flight was not an accident. In California in *Rodriguez v Ansett Australia Limited*[22] a claim for DVT suffered on a round trip Los Angeles/Auckland/Melbourne/Los Angeles was dismissed, although the case is presently on appeal.

In the Ontario Superior Court, Hermiston J[23] rejected an argument that the failure of the defendant to warn and educate passengers on lengthy flights that they may be exposed to DVT represents an unusual and unexpected operation of the aircraft and was an accident within the meaning of Article 17. Accordingly, the passenger's claims were not sustainable in law and the Statement of Claim was struck out.

Finally, in *Van Luin v KLM Airlines*[24] the District Court of New South Wales held that the failure to advise the plaintiff to move around the cabin did not constitute an unexpected or unusual event and further, that the plaintiff's deep venous thrombosis and chronic venous hypertension resulted not from an unusual event or happening but *"...from the plaintiff's own internal reaction to the usual, normal and expected operation of the aircraft and thus was not caused by an accident within the meaning of Article 17 set forth in Air France v Saks."*

At this point, there is no authoritative decision at an appellate level but, as a matter of principle, it is difficult to see how the development of a clot from sitting on a aircraft during a long-haul flight could, consistent with authority, be held to be the result of an accident.

1. A new convention adopted at a conference in May 1999 at Montreal is likely to replace the Warsaw regime but would not alter the situation in respect of DVT cases
2. A French franc defined by Article 22 as having 651/2 milligrams of gold of millesimal fineness 900.
3. In the UK the current conversion rate, by Order in Council, is 125,000 francs (Warsaw) equals £7,038.97 and 250,000 francs (Hague) equals £14,077.95.
4. For completeness it should be observed that the maximum liability has been increased by various agreements culminating in the IATA Agreement on Passenger Liability (21 October 1995) and the IATA agreement on measures to Implement the IATA InterCarrier Agreement (May 1996) which have effectively waived the maximum limit on damages for death of or injury to passengers.
5. The Act also gives effect to other protocols which are not presently relevant.
6. *Sidhu v. British Airways plc* [1997] AC 430
7. *El Al Israel Airlines Limited v. Tseng* 525 US155 (1999)
8. *Sidhu,* per Lord Hope at page
9. Sections 12 and 13 in respect of the Amended Convention and Section 24 in respect of the *Warsaw Convention.*
10. See *Fenton v J Thorley & Co* [1903] AC 443 at 453
11. See *Air France v Saks* below
12. 470 US 392 (1985)
13. Court of Appeal (UK) Unreported 16 April 1997
14. See also *Craig v Compangnie Nationale Air France* 1994 US APP Lexis 37038 (Plaintiff's falling when attempting to get past her neighbour to the middle seat); *Potter v Delta Airlines Inc* 98 F.3d 881 (1996) (Plaintiff's falling when attempting to manoeuvre into her seat around reclining seat); *Sethy v MalevHungarian Airlines Inc* (2000) US District Court Lexis 12606 (Plaintiff's tripping over a bag left in the aisle)
15. 17 October 2002 Unreported
16. For examples of cases where it has been held that injury caused by turbulence is not the result of an accident, see *Quinn v Canadian Airlines International Limited* (1994) 18 OR (3d) 326; *Koo v Air Canada* (2001) 106 ACWS (3d) 6; *Magan v Lufthansa German Airlines* 2002 US Dist Lexis 899 and for a case taking a contrary view see *Brunk v British Airways plc* 195 F Supp 2d 130
17. *KLM Royal Dutch Airlines v Morris* [2002] QB 100 (Overturned by the House of Lords at [2002] 2 All ER 565 on a different point). See also *Lahey v Singapore Airlines Ltd* 115 F Supp. 2d 464
18. Death from an asthma attack during an international flight was not the result of an accident - *Hipolito v North West Airlines Inc* 2001 WL 861984
19. 2001 WL 1328288
20. The German Court referred to statistics that the incidence of thrombosis is only 1000 per 42 million passengers or a percentage of 0.000023809 (Aerospace Risk, May 2002, page 6)
21. 54 AD 2d 636 (1976) that thrombophlebitis suffered by the passenger during a flight from Tokyo to New York via California was not an accident within the meaning of the Convention.
22. (Unreported) US District Court for Central District of California, 8 August 2002
23. *McDonald v Korean Air* 17 September 2002
24. (Unreported) October 2002, Knight DCJ

President: Thank you, Mark. I will just add one headline Mark, that didn't appear on your slides. I was attending an aviation medical conference in Werribee Victoria, two years ago when one of the speakers spoke about deep venous thrombosis and he had a similar lot of slides to you. He recast the name of his presentation in light of the media. He called it "The Media Clot".

Ladies and gentlemen, please ask our panel some questions and introduce yourself, and particularly the profession to which you belong.

Mr John Maconachie (Barrister): May I ask two questions, one in two parts. First, why drink nonalcoholic liquids? And the second part of that question, if I could direct it to Mark is: If contributory negligence is a defence, as I think you ought to be able to show, would the ingestion of alcohol, knowing that it was likely to increase the risk, be an element in the liability issue?

The second question, to you Mark if I may, is: The representational causes of action, whether under the Fair Trading Act or the Trade Practices Act or the common law representational counts, have they been attempted to be used to get around the Convention providing a sole remedy type of situation? For example, if there is some advertisement or information that is given in advance of the person getting on the aircraft, relied on and the person is lulled into a false sense of security, a representation by science for example, can that be used to sustain a cause of action and has it been used to sustain a cause of action?

Professor Harris: I will handle the alcohol first! I made the comment that a lot of the advice that is given by airlines is essentially empiric and a key recommendation is avoiding sedation. People who take sleeping tablets and basically bomb themselves out were a recipe for venous thrombosis to form. I guess it was the sedative effect of alcohol intake that related to the advice to take non-alcoholic fluids.

The interesting thing about dehydration is there is an assumption that people do get dehydrated during flights, but when they set up experimental studies to see what happens with people during simulated flight, in fact they put on weight, and it was thought that there was a degree of fluid accumulation in flight.

So there is a lot of ambiguity in the information that is available, and I fall back on the observation that it is essentially common sense not to bomb yourself out with alcohol, but I am sure in moderation one or two would keep you, as Rumpole would say, astonishingly regular for the duration of your flight to wherever.

Mr Mackrell: I am going to volunteer to answer the question on alcohol, because I have always been a firm believer that, without knocking yourself out, those long flights are much more comfortable after one or two glasses of something.

The answer to your last question is that the only case of which I am aware where an attempt has been made to use section 52 to avoid the consequences, in that case of Part 4 the domestic regime, of the *Carriers Liability Act*, was a case arising out of a crash landing, the emergency landing of a DC3 in Botany Bay. There it was said that there were express representations that the aircraft would operate safely and after the accident it was considered that it failed to do so.

It was a class action. To the extent that the class action was brought on behalf of the passengers, it was dismissed, and that included the case brought under section 52. But I have to say that although Mr Justice Wilcox accepted the submission on that score, it was not a matter which was hotly contested.

My own view is that although the Trade Practices Act is a later piece of legislation and it is remedial legislation, (and for the nonlawyers, section 52 prohibits a company from engaging in misleading or deceptive conduct, and if one advertises that one runs a safe airline and one doesn't, then arguably you have engaged in misleading and deceptive conduct) the Carriers Liability Act is so specific and gives effect to an international convention, one cannot get around or avoid the consequences of the Carriers Liability Act by recourse to the Trade Practices Act.

The reason that airlines are giving warnings now is probably out of concern for their potential liability. By giving warnings, if passengers then do not heed those warnings, then they have a much harder task in establishing that there was an accident. The way in which the plaintiffs have to frame their action is to allege that something the airline did amounted to an accident. You cannot say that just contracting DVT is an accident. Article 17 is not framed that way. And if the airlines have actually given the warnings, then the failure to give the warnings cannot be an accident. So it is generally thought that the warnings, including the warning about alcohol, will dispose of the problem, both by eliminating the accident argument and by providing a conclusive case for contributory negligence.

Professor Harris: Could I ask Mark a question? In my reading I understood that the Warsaw Convention did not apply to domestic travel in the United States. I wanted your comment on whether that is a factor in US based litigation.

Mr Mackrell: You are correct. It does not apply to domestic carriage in the United States. The domestic Acts in the US are always determined by reference to the law of negligence. One would have expected because of that that there would be more litigation in the States over DVT arising out of domestic carriage. Admittedly, it would really have to be long haul flights across the continent, but it just hasn't emerged.

President: Can I also ask Mark a question then? Do I take it from what you have just presented that my patient could not litigate against me on the basis that I failed to warn, even if I didn't warn, because of the Warsaw Convention?

Mr Mackrell: Sadly, as you are neither an airline nor the agent of an airline, you cannot attract the protection of the Convention, and that is why in accidents arising out of international carriage, particularly when the limitation amounts were severe, the plaintiffs' lawyers would always try to join Boeing or MacDonnell Douglas to get a defendant who could not shield behind the Convention.

Dr Julian Lee (Medical): Craig, you were doubly vulnerable, because not only are you obviously, as you have just heard, liable on your warning, but if you were familiar with the literature you probably wouldn't have recommended aspirin for a patient, because there is no evidence to support that, but if your patient had gastric haemorrhaging as a result of your advice, you would be in real trouble.

The point I guess I am coming to is that I don't believe for a minute that Slater Gordon or Cashman & Partners are going to be discouraged by the sorts of discussions we have had tonight. I think the real issue is not so much necessarily in the airlines, if that is in fact what you see as the intention, but let's go to hospitals where many of us work.

Tell me what is the incidence or prevalence of DVT and major thromboemboli in Australian hospitals and what sort of litigation has arisen or is likely to arise when that information becomes just as widely published?

Professor Harris: I can't give you the figures for the incidence of venous thrombosis and pulmonary embolism in Australasian hospitals. Not that it is not available; I just don't happen to know it. But I am aware that in relation to travel most of the hospitals like St Vincents or Prince Alfred, those that draw on a catchment in relation to major airports, would see up to 10-12 cases of venous thrombosis a year reasonably associated with travel, but the difficulty is establishing how causal that is in relation to travel per se versus everything else.

Where I can see trouble occurring is if the figures by John Scurr are in fact correct and the incidence is really 10 percent, then it is an enormous problem, and we have only seen the tip of the iceberg in terms of what is happening.

It would also imply that the natural history of traveler's thrombosis is probably far more benign than people have realised.

As far as those aspects where I think that doctors will be involved, include failure to identify or warn potential travellers about their potential risk factors, as I mentioned that a lot of the evidence would suggest that it is just not enough to have travelled but there is usually something else that has underpinned a thrombotic event. There may be a case that the doctor failed to detect whatever the something else was that underpinned the thrombotic event.

I think there are potential problems with insurance and such risk factors, where the insurance carrier may argue that a passenger had a preexisting condition or whatever and that they will not accept responsibility if a passenger does get pulmonary embolism and requires hospitalisation.

I have the sense here that the airlines are pretty robust in their defence of the problem, but the medical profession probably less so.

Professor John Ham (Medical): I wonder if I could ask whether there has been any successful litigation in other forms of travel, where the carriers are not protected by something like the Warsaw Convention?

Mr Mackrell: I am not aware of any litigation arising out of other forms of travel, but I have to say that there may have been cases that have escaped my attention. I think I probably would have come across them if there had been.

One of the things that occurs in these cases is that now the legal profession is no longer a service industry, it is now a productive industry in its own right, and when this publicity commences, then the industry moves into operation, and there are people who see it as a legitimate commercial exploitation of the situation to promote litigation.

Class actions are a boon to people who want to do that, and there were class actions threatened as a result of DVT, but they finally realised, of course, that it wouldn't work unless you divided everyone up by airline and you would have to bring one class action against each airline. This gets very messy, and so they settled for filing hundreds of cases. They had to move because there is a limitation period under the Convention. Then they selected cases to run as test cases.

The publicity having been directed at airlines, the focus of those who saw the litigation as an opportunity to generate some business was focussed towards air travel. I just don't think that they really directed their attention to other forms of transportation.

Professor John Hilton (Medical): We unfortunately had some 40 cases of people with pulmonary embolism following air travel which we studied over a three year period. Something like 25 percent of those people were people who had preexisting conditions. These people got on the aircraft, they got the pulmonary embolism at the point of termination and died. So despite what the media and despite what some legal firms try to claim, it is not a one size fits all.

Professor Harris: There is interesting stuff on the internet in relation to this where it is argued that the mortality rate of travel-related thrombosis exceeds all accidents in cumulative history. The difficulty of course is this condition occurs in the normal population.

I am sure there is a handful of folk in this room who have had venous thrombosis independent of travel as well. If you look at the scale of international travel, it stands to reason that people who might have a thrombotic event and happen to be travelling as part of their daytoday activity can then get caught up in this loop without the primary initiator of the thrombotic event having had anything to do with travel. So your point is well taken.

President: John, are there predisposing naturally occurring factors like coagulation deficiencies that are always found in patients with DVT.

Professor Harris: No, not in all patients, but in younger patients, particularly those who have spontaneous thrombotic events with no apparent alternative explanation, then the incidence of underlying coagulation abnormality is far higher. These include, for example, protein C, protein S deficiency, but there are many others, underlying why some people are at higher risk of venous thrombosis doing exactly the same activity as other folk.

Mrs Jill Fearnside: I am a traveller. One thing I haven't heard any of you remark on at all is what sort of clothing people are wearing when they travel. Being a woman, I wear pantyhose. If pantyhose are too tight you restrict the circulation from your groin right down your leg, so you are a sitting duck with something like that, plus alcohol, plus just sitting the whole time. Is it ever brought up in court about what people wear? Tight jeans for instance, men wear tight jeans, we always try and squeeze into that pair of trousers that you perhaps shouldn't wear on a plane. I am sure that could contribute. Does that come up at all?

Professor Harris: It may well. I am not aware of any direct evidence about risk, body size and clothing. I was thinking of the sumo wrestlers brought down on a flight from Japan who were too big to fit into the toilet facilities on the plane.

I think people's habitus and their clothing are certainly relevant, but there is a tradeoff. There is evidence that elastic compression can in fact help and some of the sheer relief garments and may in fact be beneficial rather than detrimental.

Mrs Jill Fearnside: But around the groin it would be impossible, wouldn't it? It is only around that area.

Professor Harris: Potentially, but to have groin compression to the point where it is seriously impeding blood flow from the leg is just plain physically uncomfortable. I doubt that most people would tolerate it without wriggling around and adjusting their pantyhose.

Mr Stephen Barnes (Legal): I would like to address my question to Professor Harris. It seems to me you are talking about common sense that one of the distinguishing factors of long distance air travel is that people are basically sitting around immobile for lengthy periods of time.

Have any studies been done on other groups in the community who are in that situation of their incidence of DVT, such as public servants or the unemployed or others, to see if they have a wider incidence of DVT?

Professor Harris: I am getting on shaky ground here. The first reports of this sort of "economy class" thrombosis related to cramped seating came out of the Second World War with people living in air raid shelters during the Blitz resulting in the first autopsy reports of thrombosis associated with cramped and prolonged sitting. How that translates into the public sector I have no idea, but I am sure you are right. I was going to make a pun about clots but I won't.

Mrs Maconachie (Legal): I am also a traveller. I have got a similar question to Jill. I was a bit concerned about this last time we went on a long trip and I saw some very expensive long socks at the airport, so I bought them and put them on, and about the only part of me that is not too big are my knees. These socks were a large size and they were so tight, I had a really deep mark all around the knee and they hurt so much I took them off. Surely they would be detrimental rather than of any assistance?

Professor Harris: I think you are right. Poorly fitted stockings are worse than none at all. There was a plethora of preventative devices that hit the market in association with the headlines. If you look at the internet there is any number of these marketed. "Flight socks" I think was one and there are others.

There was one on the Australian Inventors of the Year some years ago, which I thought was really quite practical, a thing called the "Push Cush". This is not a plug, but it was a simple device you could exercise pumping air from one side to the other, keeping your legs moving during flight.

Trying to be practical, you can't walk about the cabin willy nilly to exercise in any realistic way, because then you run the risk of turbulence injury. But this device was something simple, something you could use in your own seat without the problems of poorly fitted stockings or other devices.

Dr Julian Lee (Medical): I have a question which has to do with the origin of pulmonary emboli. It is my understanding that the emboli originate more often in the pelvic bones than in the lower limbs. Is it different in an aircraft or after a long period of inertia for the otherwise healthy or is there some data on this, and if it is true that the pelvis is at risk, what on earth are you going to benefit from wearing a stocking?

Professor Harris: It is quite interesting that when you look at those studies that are suggesting there is a 10 percent incidence of thrombosis, it is calf-vein thrombosis. There is a very dynamic process of clots forming and dissolving, and this occurs in hospitals, as you know, and any number of studies have shown that 10-15 percent of folk in hospital may have calf-vein thromboses and they are really too small to cause much problem. It is only when the clots get larger or propagate to involve the more significant veins in the pelvis that they do become life threatening.

Most of the data I have seen that has been done by ultrasound scanning really relates to the minor forms of thrombosis and not to the more significant pelvic ones. So this is a bit of an unknown, hopefully one of the things that will come out of the studies now under way.

Of course, one of the problems is that you may have a minor calf-vein thrombosis and then that slowly propagates through to the larger veins several days after your travel, and so there are problems establishing a temporal relationship between travel and other reasons that thrombosis happens. Reducing calf-vein thrombosis is therefore important but you are quite right in terms of the implications of that for preventative measures.

President: If I could put the last question to Mark. As a representative of the aviation operators, there seems to be a reluctance of any of the airlines to participate in clinical trials of any description to validate various aspects of this problem. What is going through the minds of the operators, Mark?

Mr Mackrell: I can't speak with any authority because it is not a subject I have really taken up with them. I know that Cathay has certainly spent some time looking into the issue because one of the doctors at Cathay presented a paper at a conference in Singapore earlier this year which indicated that they had been looking very closely at the issue. I had the impression that the Qantas medical department have been involved in some studies as well. Understandably in my view, airlines may be reluctant to participate at this point. Many would not be subject to any legal professional privilege and would be liable for production in any litigation that followed.

President: If there are no more questions, I will wind the evening up. Before I ask you to thank our speakers, I have two housekeeping matters to address. Members would have received a letter from the executive officer inviting members to suggest to the committee topics for discussion and also the names of speakers that you feel would be appropriate speakers for this venue. Please bear that in mind and we look forward to hearing from you.

The second item regards our next meeting which will not take place now until 12 March 2003, and the topic for discussion is "Reasonable Prospect of Success". That comes from the bill that I believe is currently before State Parliament which says that lawyers will be personally responsible for all legal costs incurred if they bring a negligence action without mentioning the prospect of success. Julian Lee has been able to secure Mr Brett Walker as our speaker for that meeting. So we will look forward to a fascinating evening in March.

Ladies and gentlemen, please join me in thanking our two speakers.