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CH/2012/0082

IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION
PATENTS COURT

Royal Courts of Justice
Rolls Building London EC4A1NL

Date: 27/07/2012

Before :

THE HON MR JUSTICE FLOYD

Between:	VIRGIN ATLANTIC AIRWAYS LIMITED	<u>Claimant</u>
	- and -	
	(1) JET AIRWAYS (INDIA) LIMITED	
	(2) CONTOUR AEROSPACE LIMITED	<u>Defendants</u>
And Between:	VIRGIN ATLANTIC AIRWAYS LIMITED	<u>Claimant</u>
	-and-	
	(1) DELTA AIR LINES, INC	
	(2) CONTOUR AEROSPACE LIMITED	<u>Defendants</u>
And Between:	VIRGIN ATLANTIC AIRWAYS LIMITED	<u>Claimant</u>
	-and-	
	(1) AIR CANADA	
	(2) CONTOUR AEROSPACE LIMITED	<u>Defendants</u>
And Between:	CONTOUR AEROSPACE LIMITED	<u>Claimant</u>
	-and-	
	VIRGIN ATLANTIC AIRWAYS LIMITED	<u>Defendant</u>
And on Appeal:	PREMIUM AIRCRAFT INTERIORS LIMITED	<u>Appellant</u>
	-and-	
	(1) COMPTROLLER GENERAL OF PATENTS	
	(2) VIRGIN ATLANTIC AIRWAYS LIMITED	<u>Respondents</u>

Richard Meade QC, Alan Maclean QC and Henry Ward (instructed by **DLA Piper UK LLP**) for **Virgin Atlantic Airways Limited**

Iain Purvis QC and Brian Nicholson (instructed by **Wragge & Co. LLP**) for **Contour Aerospace Limited and Premium Aircraft Interiors Limited**

Adrian Speck QC and Pushpinder Saini QC (instructed by **Bird & Bird LLP**) for **Air Canada**

Benet Brandreth instructed by **Wragge & Co LLP** for **Delta Air Lines, Inc**

Fiona Clark (instructed by **The Treasury Solicitor**) for **The Comptroller-General of Patents**

Hearing dates: 21-22, 25-29 June and 3-5 July 2012

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

.....

THE HON MR JUSTICE FLOYD

Mr Justice Floyd:

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Introduction and procedural background

1. In these proceedings, Virgin Atlantic Airways Limited (“Virgin”) alleges infringement of three European patents. They are numbers 1 495 908, 2 272 711 and 2 289 734. For convenience I will use the last three numbers 908, 711 and 734.
2. There are three infringement actions, brought against the airlines Delta Air Lines Inc. (“Delta”), Air Canada, and Jet Airways (India) Limited (“Jet”). Contour Aerospace Limited (“Contour”) is joined as a defendant to each of those actions with the relevant airline. Contour is an aircraft seat manufacturer. All three patents are in suit in these actions. By an order I made on 19 October 2011, the issues of alleged joint tortfeasance between these parties have been stayed, to be decided if necessary in any inquiry as to damages or account of profits. Jet has not taken any recent active part in the proceedings, but Delta and Air Canada have. In each action there is a counterclaim for revocation of the patents.
3. There is a fourth action before me, between Contour and Virgin, in which Contour seek a declaration of non-infringement in respect of a modified design of seat.
4. Finally, an appeal by Premium Aircraft Interiors (“Premium”, a company in the Contour Group) from a decision of the United Kingdom Intellectual Property Office (UKIPO) is also before me. The appeal relates to the propriety of the United Kingdom being designated in respect of 908. This point is also raised by way of defence in the infringement actions.
5. The 908 patent was granted in May 2007. It was the subject of an opposition in the European Patent Office (“EPO”) by Premium, as well as Airbus Industrie, the aircraft manufacturer, and Cathay Pacific, the airline. The opposition proceedings ultimately resulted in the patent being amended, so as to restrict its scope from that which was the subject of the original grant. In what follows I will endeavour to refer to “unamended 908” and “908” to indicate the unamended and amended patents respectively.

6. 908 (in either amended or unamended form) relates to a seating system for passenger aircraft in which the seats are arranged in an “inward facing herringbone” configuration. The seats convert into lie-flat beds. The description in the patent shows how the seats can be arranged in a space-saving configuration. In addition it shows how a flip-over mechanism can make use of the back of the seat as part of the lie-flat bed. In this introduction, it will be important to keep in mind these distinct aspects of what is disclosed in 908: space-saving and flip-over.
7. The parties have been engaged in litigation for some years over the sale and supply of Contour’s Solar Eclipse seat which is alleged to infringe 908 both before and after amendment. The procedural history is relevant, somewhat complicated, and as follows.

The Contour Action and the Airline Actions

8. Virgin sued Contour before the opposition proceedings had come to an end for infringement of unamended 908. These earlier proceedings are referred to as “the Contour Action”.
9. Before the Contour Action reached trial, Virgin sued three customers of Contour, the airlines Delta, Air Canada and Jet, in the present three “Airline Actions”, alleging that the airlines were liable for infringement of unamended 908 as joint tortfeasors with Contour. Those actions were stayed by formal or informal agreements pending the outcome of the Contour Action.
10. In the Contour Action at first instance, before Lewison J as he then was, Virgin were unsuccessful. Lewison J held unamended 908 to be valid over the cited prior art (principally BA First, Airbus and common general knowledge alone). He went on to hold that unamended 908 was not infringed by the Solar Eclipse seat. He held that the claims were limited to the flip-over mechanism, a feature not taken by the Solar Eclipse. Both sides appealed the respective adverse findings. Lewison J’s judgment was given on 21st January 2009.
11. On 22nd October 2009 the Court of Appeal gave judgment on the appeal. The Court of Appeal reversed Lewison J’s decision on infringement of unamended 908, holding that the claims were not limited to flip-over seats. Lewison J’s judgment that the unamended patent was valid over the cited prior art and common general knowledge was upheld, notwithstanding the wider construction adopted for the purposes of infringement. In short, the invention with which 908 was concerned was the space-saving invention: and that invention remained novel and inventive having regard to the cited prior art.

The Delta undertaking

12. After judgment in the Court of Appeal in the Contour Action, Contour asked the Court of Appeal to allow certain run-off supplies of Solar Eclipse seats to Delta pursuant to existing contractual arrangements. The Court of Appeal permitted this. Contour was required to procure undertakings from Delta not to use the Solar Eclipse seats on transatlantic routes competitive with Virgin. There is an issue between Virgin and Delta as to whether that undertaking applies after the amendment of the 908 patent.

Inquiry as to damages and the Unilin point

13. Virgin had by now succeeded on both infringement and validity. In consequence, the Court of Appeal ordered an inquiry as to damages. Contour applied for permission to appeal to the Supreme Court in relation to the findings of infringement and validity, as well as in relation to the inquiry as to damages. The latter application for permission to appeal related to the point which arises out of the judgment in *Unilin Beheer v Berry Floor* [2007] EWCA Civ 364 as to recovery of damages at a time when validity is still in issue, as it was here, in opposition proceedings before the European Patent Office (“the *Unilin* point”). Under the law as it stands, this fact alone does not provide a ground for a stay of an inquiry as to damages, because damages are payable even if the patent is subsequently revoked or amended. The Supreme Court refused permission to appeal on the patent points, as well as, at this stage, on the *Unilin* point.

The Technical Board of Appeal decision

14. On 9th September 2010 the Technical Board of Appeal (“TBA”) of the EPO decided that the 908 patent could be maintained with amended claims. The earlier decision of the Opposition Division (“OD”) had introduced an amendment to require that the claims were limited to seats which did not swivel (something which the Court of Appeal considered was already implicit in the claims). The main issue in the present trial is whether the amendments introduced before the TBA have narrowed the claims so as to affect the Court of Appeal’s finding of infringement by the Solar Eclipse seat.
15. For present purposes the relevant amendments introduced before the TBA were (a) the introduction into the claims of a requirement for a generally triangular support element and (b) the deletion of claims directed to individual seats for aircraft seating systems: the only claims in 908 are now to seating systems for aircraft. The additional feature was necessary because the TBA took the view that the unamended claim lacked novelty over BA First. In coming to that conclusion, the TBA took a different view of the construction of the unamended claim from that taken by the Court of Appeal. Once the claim was amended, the TBA rejected the validity attacks based on the cited prior art (which included BA First and Airbus) and a number of added matter attacks.

The consequences of the TBA decision - damages

16. Following the TBA decision, and now that the patent had been amended in a way in which Contour contended meant that the Solar Eclipse did not infringe, Contour sought permission to appeal to the Supreme Court on the *Unilin* point for a second time. In March 2011, the Supreme Court granted Contour permission to appeal on the *Unilin* point. However, if the result of this action is that the Solar Eclipse seats are held still to infringe, the appeal will have no impact on the damages payable, and will therefore be unnecessary. Accordingly the Supreme Court has fixed its hearing for April 2013, when the outcome of this action will be known.

The consequences of the TBA decision - Delta summary judgment

17. In November 2010, Delta applied for summary judgment in its Airline Action based on a number of non-infringement arguments. Delta succeeded before Arnold J on 30th

November 2010. Delta contended that the deletion of the claims to aircraft seats as a result of the TBA decision meant that there could be no infringement. The remaining claims, on Delta's argument, required the seating system to be installed on an aircraft ("the aircraft argument"). This only happened abroad. Virgin had a counter argument, which arose if Delta were right on the aircraft argument, that there was infringement by supplying in the United Kingdom an incomplete kit of parts for assembly abroad ("the incomplete kit of parts argument"). Arnold J held that there was no infringement on the aircraft or incomplete kit of parts arguments. He held that it was arguable that, depending on the correct construction of the claim, there might be infringement by supplying a complete kit of parts, but this point did not arise as the kit of parts, on his view of the claim, required an aircraft.

18. On 23rd February 2011, the Court of Appeal reversed the judgment of Arnold J on the aircraft argument. The Court of Appeal held that the claims did not require a seating system to be *on* an aircraft, merely to be *suitable for* an aircraft. As, on this basis, there had to be a trial, and as the kit of parts involved was now complete, the Court of Appeal did not need to decide the complete kit of parts argument.

The Rule 50 application

19. On 14th March 2011, Premium applied in the UKIPO under Rule 50 of the Patents Rules 2007 for the designation of the United Kingdom to be removed from 908, because of alleged irregularities in procedure in the EPO. On 10th August 2011 the application was dismissed by the Hearing Officer, Mr A.C. Howard. Premium have appealed that decision, and Virgin have intervened in the Appeal. That Rule 50 appeal is before me in the present proceedings as well.

The Divisionals

20. The application for 711 was published on 12th January 2011 and the patent granted on 29th June 2011. The application for 734 was published on 2nd March 2011 and the patent granted on 19 October 2011.
21. The claim based on the Divisionals is made against Contour alone, as Virgin do not believe that the airlines will buy more Solar Eclipse seats from Contour. The claim is made *quia timet*, and only for injunctive relief, because the Divisionals were not published until after the sales of the Solar Eclipse were made.

Representation

22. In all this, Mr Richard Meade QC, Mr Alan Maclean QC and Mr Henry Ward argued the case for Virgin. Mr Iain Purvis QC and Mr Brian Nicholson argued the case for Contour and Premium. Mr Adrian Speck QC and Mr Pushpinder Saini QC argued the case for Air Canada. Mr Benet Brandreth argued the case for Delta. Ms Fiona Clark appeared on behalf of the Comptroller of Patents.

Witnesses of fact

23. Contour called Mr John Higgins to prove the Product Description, in particular on the Solar Eclipse seat. Mr Higgins is the former Business Development Director of Contour. He is now employed as Principal Engineer for Heath Tecna, Inc. in the

United States. Virgin criticise Mr Higgins' evidence because of a discrepancy between the measurement of a gap between the headrest and the console beneath it. It is clear that Mr Higgins had not reviewed the Product Description in the light of the further evidence which has emerged in the course of the case. I will have to resolve the issues of fact which arise in that connection in due course. For present purposes I will record only that Mr Higgins' evidence in relation to the Product Description was, as Virgin point out, given on a very limited basis, namely how the product had been designed to operate.

Expert witnesses

24. The parties called experts in the fields of aircraft seating system design, mechanical testing, and foreign law. In addition both sides called a patent agent in relation to procedure before the EPO.
25. Virgin called Mr Jaime Moreno as its aircraft seating design expert. Mr Moreno was Virgin's expert in the Contour Action. Mr Moreno runs a design studio in Madrid and has worked on a number of aircraft design projects. Although he could not claim as much experience in aircraft design at the priority date as the defendants' aircraft seating system design expert, I did not think that this mattered. His evidence in cross-examination was entirely straightforward and helpful. Mr Purvis pointed to one or two instances where Mr Moreno had retracted statements made in his reports, but did not suggest that I should discount his oral evidence as a result.
26. Contour and Delta called Mr Martin Darbyshire as their aircraft seating system design expert. Mr Darbyshire is managing director of a design company, tangerine. From 1998 to its launch in 2000 he led the team which created BA's Club World business class lie-flat seat called Yin-Yang. From 2003 to 2005 he led the team which created the second BA Yin-Yang seat. He was at the priority date, and remains, a distinguished and successful aircraft seating system designer.
27. Mr Meade submitted that Mr Darbyshire had "limitations and shortcomings as an expert witness". He submitted that Mr Darbyshire was of an inventive and imaginative disposition, that he had used hindsight in his analysis of obviousness, had oversimplified the issues, been selective in his evidence, had relied on instructions and materials supplied to him without discrimination, had allowed his report to be prepared in a sequential fashion calculated to lead to Virgin's invention, and given evidence inconsistent with his previous report. Mr Meade was careful to point out that this was not an attack on Mr Darbyshire's integrity or a suggestion that his evidence was designed to mislead.
28. For my part I found Mr Darbyshire to be a highly knowledgeable and helpful expert witness. It is true that, when I come to resolve the issues of inventive step, I must bear in mind that Mr Darbyshire's level of skill is at the high end of the spectrum, well beyond those of average skill in the art. But that is not a limitation or shortcoming of Mr Darbyshire as an expert witness. It has never been the case that the court asks to hear only from those who personify the unimaginative skilled person, Jacob LJ's "nerd": see *Technip France SA's Patent* [2004] EWCA Civ 381; [2004] RPC 46 at [7] - [12]. In that passage he explained that it was not so much the expert's view on the ultimate issue of obviousness which mattered, but the reasons he or she gives for that view.

29. In analysing the issue of obviousness, the court must of course be wary of hindsight-driven arguments. Mr Meade said that Mr Darbyshire was so encumbered with his knowledge of Virgin's UCS seat, said to be made in accordance with the invention, that he was ill-placed to give evidence about whether it was obvious without knowledge of the invention. If this were a criticism at all, it is one that could be levelled at Virgin's expert as well. In a case where the commercial embodiment of an invention is well known, all the experts will have to attempt to exclude that knowledge from their analysis. Whether Mr Darbyshire in fact used hindsight in his reasoning is something which is best considered in dealing with obviousness, rather than at the stage of evaluating him as an expert witness.
30. Mr Meade made other criticisms but it is sufficient for me to say that I did not consider any of them to be valid criticisms of the manner in which Mr Darbyshire gave his oral evidence.
31. Virgin's expert in relation to the experiments was Mr Mark Harris. Mr Harris is a consultant mechanical engineer specialising in electromechanical and computer-driven products. Contour's expert in relation to experiments was Mr Peter Hansen, also a mechanical engineer. Mr Hansen has extensive experience in mechanical testing of materials and components. No serious criticism could be made of the way in which either gave his evidence.
32. Air Canada called Professor David Newland, who is Emeritus Professor of Engineering at Cambridge University. He is, as Virgin accept, a very eminent and distinguished engineer. He took the task with which he was entrusted extremely seriously, making real efforts to understand the detailed functioning of the reclining mechanism in the Solar Eclipse chair accused of infringement. Professor Newland did not claim any experience in relation to aircraft seat design. However, the issues of mechanical engineering on which he was giving evidence did not, in the main, require such expertise. Virgin complain that Professor Newland had more opportunity to inspect the seats than was afforded to their own expert, that Professor Newland had had a discussion with Contour's engineers, and that he had conducted some preliminary experiments with feeler gauges which did not form part of the Notice of Experiments. I am satisfied that none of this is properly to be regarded as a criticism of Professor Newland.
33. Although the evidence of foreign law received no detailed attention at the trial, I record that both sides adduced evidence from foreign lawyers of the German, Dutch and French law relating to infringement by supplying a kit of parts.
34. Finally Virgin adduced evidence from Mr Christopher Davies of Frank B Dehn and the defendants from Ms Judith Caldwell of Keltie LLP. Both are patent attorneys with experience of EPO practice relevant to the non-designation point, which was largely uncontroversial. Only Mr Davies was cross-examined. Virgin wanted his evidence for the fact that some argument about construction had been put to the Technical Board of Appeal, whilst Contour sought to cross-examine him, until I called a halt, about that and some other irrelevant matters. Neither side emerged with credit from this manoeuvring, but this did not reflect on Mr Davies in any way.

Prior aircraft seating arrangements

35. Before about 1996 narrow and wide bodied long haul passenger aircraft typically adopted a seating system for first and business class consisting of a number of rows of side by side seats, facing forward, on an axis parallel to the centre line of the aircraft. The seats were referred to at trial as “big recliners”, and would typically have a seat pan, back rest and head rest. The backrest would recline into the space to the rear of the seat, but not form a flat bed.
36. In 1996 BA introduced a design of seat which gave first class passengers the option of lying flat. A BA First seat is shown below, taken from Figure 8 of Mr Darbyshire’s report:



37. These seats were arranged, in the commercial embodiment, in an outward- facing herringbone arrangement. In this context “inward-” or “outward-” facing is with reference to the aisle, so these seats faced away from the aisle and towards the window.
38. The BA First seat had a rectangular headrest and was surrounded by a back-shell and privacy screen to shield the occupant from the view of other passengers. Each passenger also had a small ottoman (footstool) opposite their seat, on which a guest could sit to talk to them, and which became part of the bed once the seat had fully reclined. The reclining mechanism operated by means of a ‘trolley’ base which moved forwards along a track as the seat was reclined from a sitting position to a flat bed position.
39. A number of airlines followed BA First with the introduction of lie-flat seats. In 1997 United Airlines introduced a first class seat in an outward facing herringbone. In 2000 American Airlines introduced a seat which could swivel to an outward facing herringbone, but which faced forward for take off and landing.
40. Others did not adopt the herringbone. So Swiss Air and Singapore Airlines adopted a seat with a sufficiently long pitch to allow for reclining into a lie-flat position. Virgin Atlantic adopted an angled lie-flat seat, the J2000, for its Upper Class. The seats were arranged in rows facing forwards and although they reclined significantly to provide a bed, they did not go completely flat. A picture of the J2000 is shown below:



41. When reclining the seat into bed mode, the passenger's feet were moved into the space beneath the seat in front of them (which reduced the pitch required to allow the seat to recline to that extent).
42. In 2000 BA launched its Yin-Yang seat unit, so called because it arranged pairs of seats in a head to toe arrangement:



43. Yin-Yang was the first lie-flat bed for business class. It won significant acclaim but was also the subject of criticism. For example, some passengers did not like facing backwards.

The skilled addressee

44. In the Contour Action, Lewison J identified the skilled addressee of the 908 patent in the following terms. There was no dispute about it in this action, so I set out what he said here:

“191. ... The team is a team of aircraft and transportation designers comprising designers and engineers with a knowledge of aircraft seats in general, and in particular reclining aircraft seats. The team members would include:

- i) Members skilled in designing aircraft layouts and fitting seats and units into such layouts;
- ii) Designers and engineers with at least first degree level and actual experience;

iii) Some members with experience in the regulatory side of aircraft seating layouts and ancillary items such as crash testing and stresses, the transfer of loads from seats to the aircraft structure, and decompression requirements.”

The specification of 908

45. The disclosure of the unamended 908 specification has been summarised both in the judgment of Lewison J [2009] EWHC 26 (Pat) at [201] to [217] and in that of the Court of Appeal [2009] EWCA Civ 1062 at [31] to [43]. Some of this is directed to the flip-over point which is no longer in issue. I summarise the description below, so far as necessary for this action.

46. At paragraph [0004] the patent describes what was referred to at trial as the “big recliner” in the conventional arrangement of aircraft seats. The relevant disadvantage is increased pitch, making it uneconomic for business class. At [0006] the patent refers to the BA First application. It points out that the seating units in BA First are oriented at an acute angle to the longitudinal axis of the aircraft fuselage:

“so as to define a generally triangular or trapezoidal space to the front or rear of each seating unit (according to whether the seating units face outwards or inwards relative to the cabin). The space is used to accommodate a counter-top to one side of an adjacent seating unit and optionally a cupboard or other storage space.”

47. The arrangement in BA First is said to have the advantage that:

“by incorporating an additional, secondary seat in the flat sleeping surface together with back-rest, seating portion and leg-rest of the primary seat, it is possible to form a long sleeping surface which is able to accommodate comfortably passengers having a height of greater than 6 ft (1.83m).”

48. BA First is said to suffer from disadvantages, the relevant ones being that it requires more cabin space than a conventional layout of seats and the seat itself occupies a very large floor area and is therefore unsuitable for use in business class.

49. The specification then goes on to consider Yin-Yang. This seating arrangement is also said to be extravagant in the space available in business class and the bed is too short to accommodate tall passengers comfortably.

50. The patent next sets out the objects of the invention, which can be summarised, so far as relevant as follows:

- To provide improved accommodation in business class incorporating a flat sleeping surface of maximal length and preferably maximal width;
- To provide an improved passenger accommodation unit adapted to provide self-contained individual seating and sleeping accommodation, particularly for use in business class;

- To provide a passenger accommodation unit which can be converted into a bed of maximal length;
- To provide a seating system which optimises use of space within the cabin;
- To provide a seating system which has a substantially uncrowded appearance.

51. At [0017] the patent contains a paragraph which has its origins in the consistory clause of unamended 908. Now the function of the consistory clause is performed by simply stating in the first sentence that the invention is as set forth in the independent claims. The paragraph goes on as follows:

“There is provided a passenger seating system for an aircraft, comprising a plurality of seat units, each seat unit defining a notional longitudinal seat axis and comprising a supporting structure adapted for attaching the seat unit to a floor of an aircraft and means forming or being configurable for forming a seat comprising a seat-pan and a back-rest, said seat units being arranged to form a column defining a notional longitudinal column axis, in which column said seat-units are arranged side-by-side in longitudinally offset relation at an acute angle to the notional column axis, *thereby defining a space to the rear of each seat*, each seat unit further comprising means forming or being configurable for forming a substantially flat bed, so that when the seat unit is formed into a bed a major proportion of the bed is disposed forwardly of the position that was occupied by the seat (Seating system of the type disclosed e.g. in [BA First]). The flat-bed extends rearwardly into said space behind the seat. The invention also provides a seat unit for such a passenger seating system.” (emphasis supplied)

52. Here, as elsewhere in the specification, the patentee makes clear distinctions between the system (i.e. the overall arrangement), the seat unit (i.e. the totality of parts associated with one passenger’s seat) and the seat itself (i.e. the seat pan and the backrest). It is clear that this paragraph does not describe the totality of the invention, not least because at least two limitations of claim 1 (the generally triangular support element and the limitation of the acute angle) are not mentioned. The paragraph conveys the broader notion of a space behind the seat into which the flat bed extends. As yet there is nothing about how the space is defined beyond the fact that it is behind the acutely angled seat. As to the support element, the next paragraph, [0018] states:

“Each seat unit includes a first passenger supporting element in said space to the rear of the seat, which first passenger supporting element forms part of said flat bed when the seat unit is formed as a bed.”

53. I think the skilled person would understand this paragraph, in context, as teaching him that in the space behind the seat, and not forming part of the seat itself, is a further element. When the seat unit is formed as a bed, this extra element, not part of the seat, becomes part of the bed.

54. The specification goes on to say in [0019] that the space to the rear of the seat is “generally triangular or trapezoidal”, and that the acute angle is in the range of 30-60°. It further explains that the seats may be in a “herringbone arrangement”.
55. At [0020] there is the first mention of an “extension surface”:
- “Said seat units may be disposed adjacent a side wall of the vehicle and face inwardly. Preferably, said accommodation cabin comprises two opposing side walls, and a column of seat units may be positioned contiguously or closely adjacent to each wall such that each seat faces into the cabin, *with an extension surface behind the back-rest* of the seat disposed adjacent the wall. The seats may thus have their backs to the vehicle wall giving the cabin as a whole an uncrowded appearance.” (emphasis supplied)
56. It is this arrangement, of seats facing into the cabin with their backs to the aircraft wall, with an extension surface behind the back rest (in the form of the passenger supporting element), which the specification describes in more detail thereafter. This again would convey to the reader that the extension surface/passenger supporting element is something separate from the seat.
57. The paragraph on which attention in the present case focused most intensely is [0025] which states:
- “Each seat unit comprises a first, preferably fixed, passenger-supporting element in said space to the rear of the seat, which first passenger-supporting element is disposed substantially coplanarly with said one or more movable elements when said movable elements are configured in the bed mode and is adapted to form part of said flat bed. Said first passenger-supporting element is generally triangular. *It will be appreciated that the first passenger-supporting element is only used by a passenger when the seat unit is arranged in the bed configuration*, and accordingly the seat unit may be arranged such that the first passenger-supporting element extends into a lateral recess defined by the concave cabin side wall to maximise the use of space in the cabin. The first passenger-supporting element may be fixed in said space to the rear of the seat.” (emphasis supplied)
58. I think the emphasised words confirm the impression that the skilled reader would have obtained from the passages I have referred to earlier in the specification, that the passenger support (or supporting) element, although part of the seat unit, does not form part of the seat.
59. Virgin advance a different interpretation of this paragraph. They start by drawing attention to the fact that the supporting element is only “preferably fixed”. Thus, it is to be inferred that it may be moveable, and does not have to be present in the space behind the seat all the time. The sentence beginning “It will be appreciated...” simply refers back to the fixed alternative.

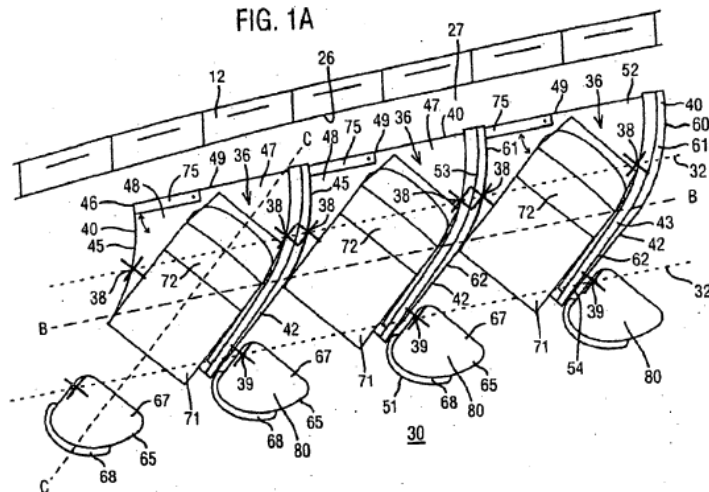
60. I cannot accept Virgin’s case on paragraph [0025]. I think that [0025] teaches very clearly that the passenger supporting element is not used when the seat is in the seat mode. The skilled person would understand that this is because, as he or she has learned from the earlier passages I have quoted, the passenger supporting element is not part of the seat in seat mode. It is something to be found “in the space to the rear of the seat” [0018]; it is an “extension surface behind the backrest of the seat” [0020]. The skilled person would understand the “preferably fixed” language as allowing for the supporting element to be something other than fixed (although quite what is not disclosed), but not as disclosing or allowing its use by the passenger when the seat is in seat mode.

61. Paragraph [0029] reinforces this meaning:

“Advantageously, the seat unit may be oriented at an angle of between 35 and 55°, preferably 40 to 50°, relative to the longitudinal axis of an aircraft cabin such that an extension surface behind the back-rest element extends into a recess defined by a typical concave aircraft cabin interior wall. Whilst the area of the cabin juxtaposed the concave cabin wall is not suitable, and has insufficient headroom, to accommodate the back-rest element in the upright position, it can be used in accordance with the present invention to accommodate the rear extension surface which forms part of the bed surface in the bed configuration.”

62. Again, the only candidate for the “rear extension surface” is the passenger support element. This is “behind the back-rest element” and must therefore be separate from it.

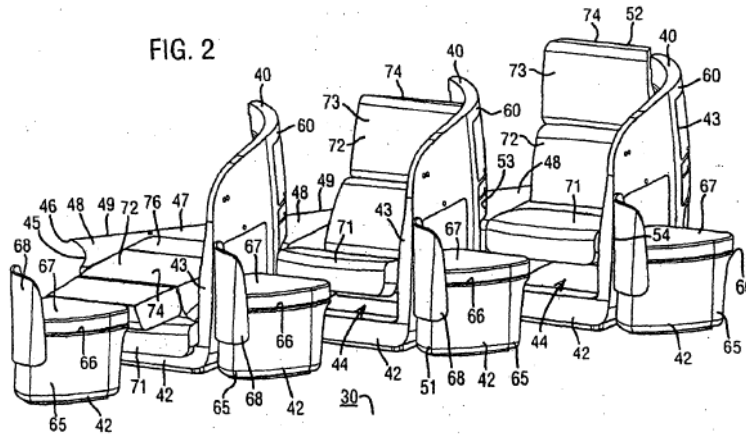
63. The remainder of the specification is taken up with a description of the specific embodiment. The layout of the seating units is shown most clearly in figure 1A:



64. The figure shows three adjacent seat units forming part of a column. Each seat unit has a front end (51), and rear end (52) and two opposing sides (53) and (54). At the front end there is an ottoman (65). Along one side of each seat unit is an upstanding

arcuate privacy screen (60). The space to the rear of the seat is designated generally as (36). The specification identifies two flat, generally triangular surfaces (47) and (48). (47) is to the rear of the seat, and (48) is to the side of the next seat. They are separated from one another by the privacy screen, and together make up the total space (36) behind the seat. Each surface is said to be sufficiently strong to support at least part of the weight of the passenger. Each seat is made up of two moveable elements, a seat-pan (71) and a back-rest (72).

65. Figure 2 shows a perspective view of the system, with one seat in bed mode and two seats in seat mode:



66. (76) denotes a removable infill element which is inserted between the rear surface (47) and the back rest (72) when the seat is in bed mode.

67. The specification explains that:

“As best seen in FIG. 1A, the space 36 to the rear of the seat 71, 72 of each seat unit 40 is thus occupied by the first surface 47 of one seat and the second surface 48 of the other adjacent seat, said first and second surfaces 47, 48 of the one and other seat units 40 respectively being divided from one another by the privacy screen 60 of the one seat unit 40. The space 36 behind each seat 71, 72 is thus used to extend the length of the bed surface 47, 48, 67, 74, 76 provided by the seat unit 40 in the bed configuration rearwardly of the seat 71, 72 into said space 36.”

68. When the seat is in the upright position the space behind the seat is concealed by the back rest and can, as the specification points out at [0050], be used for storage, supported by the surface (47).
69. Overall the specification points out at [0049] that the bed surface provided can be at least 80 inches (2.032 metres) with a pitch between adjacent seats of 50 to 60 inches (1.27 to 1.52 metres).

The claims

70. Claim 1 is directed to the column of seats adjacent the sidewall of the aircraft, whereas claim 2 is directed to back to back columns which may go into the centre of the cabin. It is enough to set out claim 1, with added reference numbers, but without the feature reference numerals in the claims:

1. **A passenger seating system for an aircraft,**
2. comprising a plurality of seat units,
3. each seat unit defining only one notional longitudinal seat axis (C-C)
4. and comprising a supporting structure
5. adapted for attaching the seat unit to a floor of an aircraft
6. and means for forming or being configurable for forming a seat
7. comprising a seat-pan
8. and a back-rest,
9. wherein each seat unit further comprises a foot-rest positioned forwardly of the seat,
10. said seat units being arranged to form a column defining a notional longitudinal column axis (B-B),
11. in which column said seat-units are arranged side-by-side in longitudinally offset relation at an acute angle to the notional column axis (B-B),
12. wherein at least some of the seat units are arranged to be disposed adjacent a sidewall of the aircraft
13. and face inwardly thereby
14. to define between the rear of each seat and the sidewall a space when the seat unit is configured as a seat,
15. each seat unit further comprising means for forming or being configurable for forming a substantially flat bed,
16. so that when the seat unit is formed into a bed a major proportion of the bed is disposed forwardly of the position that was occupied by the seat,
17. wherein said seat forming means and said bed forming means comprise one or more movable passenger-bearing elements which are selectively configurable to form, in a seat mode, at least part of the seat for a passenger or, in a bed mode, at least part of said flat bed,
18. and wherein the flat bed in the bed mode is disposed at substantially the same level above an aircraft floor as the seat-pan in the seat mode,

19. and **characterised in that** the flat-bed extends into said rearward space behind the seat,
20. in that said acute angle is in the range 30 to 60°,
21. and in that a generally triangular passenger support element is disposed in said rearward space substantially coplanarly with said one or more movable elements when said movable elements are configured in the bed mode
22. and is adapted to form part of said bed.

Issues of construction

71. In *Kirin Amgen v TKT* [2005] RPC 9 the House of Lords explained that the determination of the extent of protection only involves asking what a person skilled in the art would have understood the patentee to have used the language of the claim to mean. Guidelines to assist the court in construing the patent are summarised by the Court of Appeal in *Virgin Atlantic v Premium Aircraft* [2009] EWCA Civ 1062; [2010] FSR 10 at paragraph 5. The approach is termed “purposive construction” because it has regard to the inventor’s purpose. The guidelines in *Virgin* point out that “*purpose is not the be all and end all. One is still at the end of the day concerned with the meaning of the language used.*”

Feature 21

72. The first issue of construction concerns feature 21: “a generally triangular passenger support element is disposed in said rearward space substantially coplanarly with said one or more movable elements when said movable elements are configured in the bed mode”. A surprising number of issues need to be considered in relation to this phrase. These are:
 1. whether the requirement for a passenger support element can be met by, or by part of, the moveable passenger bearing elements;
 2. whether the passenger support element has to be in the rearward space all the time, or only when the seat is configured as a bed;
 3. what is meant by the “substantially coplanarly” requirement;
 4. whether the triangular passenger support element must be something which directly supports the passenger, or whether indirect support is enough.
73. On the first of these issues, the defendants submit that:
 - a. Feature 17 requires moveable passenger bearing elements which are selectively configurable to form at least part of the seat in seat mode and at least part of the bed in bed mode. The passenger support element 21 is something different.
 - b. That this is so is emphasised by [0025], which explains, as part of the general description of the invention, that the passenger support element is

only used by a passenger when the seat unit is arranged in the bed configuration.

- c. Moreover the passenger support element is described as an extension surface behind the back rest, as in [0020]. The passenger support element is therefore an extension to the bed surface provided by the moveable passenger bearing elements. It would make no sense to describe part of the passenger bearing elements as an extension to themselves.
- d. The requirement for the passenger support element to be disposed substantially coplanarly with the moveable elements when they are in bed mode also makes no sense if the passenger support element is part of one of the moveable elements: it would require an element to be coplanar with itself.

74. Virgin submit that:

- a. The claim only requires one or more moveable passenger bearing elements selectively configurable to be part of the seat *or* part of the bed, not both. There is accordingly nothing in the claim to prevent the passenger support element counting as one of the moveable elements.
- b. The language relied on in [0025] is only referring to the fixed passenger support element, and would not be understood by the skilled person as amounting to a rule that the passenger support element was never used when in seat mode.
- c. The “extension” obtained is about utilising the space to the rear of the seat, not extending the physical components of the bed.
- d. The coplanarity requirement merely requires all the elements of the bed to be coplanar.

75. On this issue I prefer the defendants’ construction. Both the specification and claims make it clear that the passenger support element is something different from the moveable passenger bearing elements.

76. As to Virgin’s argument in (a) above, I accept that the moveable passenger bearing elements do not have to form part of both the seat and the bed: the seat pan (71) is a moveable passenger bearing element, but is lowered beneath the bed when the seat unit is in bed mode. But it does not follow that the passenger support element and the moveable passenger bearing element can be the same physical thing. As to (b), and as I have indicated, I think the skilled person would understand from [0025], and the passages which precede it, that the passenger support element was something not used in seat mode, and that that applied whether the passenger support element was fixed or moveable. I appreciate that it is the claim which I have to interpret and that I should not elevate [0025] to the status of claim language: but [0025] provides very strong support for the proposition that the ordinary meaning of the claim, which specifies different elements using different language, is the correct one. As to (c), I bear in mind again that the claim does not include the words “extension surface”, but those words reinforce the view that the passenger support element is something separate

from the moveable elements, in that it extends the surface provided in bed mode by the moveable passenger bearing elements. I regard Virgin's suggested interpretation of "extension" as contrived. The skilled person would not understand the patentee to be speaking about anything which "extends" into the rearward space - Mr Speck put his finger on this sense in the phrase "Kent extends to the English channel". The extension is of the surface provided by the moveable passenger bearing elements. Finally, Virgin's argument on point (d) involves re-writing the claim, which requires coplanarity between elements. This feature of the claim operates on the footing, made express by the other features of the claim, that the passenger support element is an element distinct from the moveable passenger bearing elements, and specifies their physical inter-relation.

77. I turn therefore to the second aspect of the meaning of this feature, namely whether the passenger support element needs to be in the rearward space all the time, and in particular when the seat is in seat mode. Virgin's submissions are:

- a. the words "when said one or more moveable elements are configured in the bed mode" (which I call "the temporal requirement") qualify not only the requirement for coplanarity with the moveable elements but also the requirement for their disposition in the rearward space. Thus the claim is wholly indifferent as to the location of the passenger support element at other times.
- b. Given that the passenger support element is "preferably fixed" it may also be moveable. The skilled person would appreciate that, if the element is moveable, it need not be disposed in the rearward space at other times. Thus, it could be folded away when the seat is in seat mode, and moved manually or mechanically into position when in bed mode.
- c. The skilled person would see no purpose in a requirement that the passenger support element be present in the rearward space when the seat is in seat mode.

78. The defendants' case is:

- a. [0018] and [0025], which are parts of the general teaching of the patent, both describe the passenger support element as being in the space to the rear of the seat.
- b. The temporal requirement qualifies only the coplanarity requirement. This is supported by [0025] of the specification where it is clear that the temporal requirement applies only to coplanarity: "Each seat unit comprises a first, preferably fixed, passenger-supporting element in said space to the rear of the seat, *which passenger-supporting element is disposed substantially coplanarly* with said one or more moveable elements when said moveable elements are configured in the bed mode"
- c. There is purpose in requiring the passenger supporting element to be in the space behind the seat in seat mode. Thus [0050] says that bedding materials may be stored behind the seat, supported by the surface 47.

- d. There is no explanation of how to use the headrest as the supporting surface.
 - e. If the claim is construed as Virgin contend, there is added matter.
79. I prefer the defendants' construction. Taking first the teaching of the specification, Virgin are seeking to build far too much on the fact that the specification says at one point that the passenger support element is "preferably fixed". These words do not give the reader any idea of what the less preferred or "unfixed" embodiment would be like. They may simply be emphasising that the element is fixed to the aircraft floor. It is certainly not the case that the skilled reader is presented with a fixed and a moveable option. There is no specific teaching that the element is moveable, far less any teaching that it could be moved outside the space behind the seat.
80. The final sentence of [0025] might in my judgment suggest that the passenger support element might be fixed outside the rearward space: but Virgin do not rely on that sentence as conveying any additional teaching, (no doubt because it was added in the course of prosecution). Accordingly the skilled person approaches the claims with the very clear idea that the separate passenger support element is a part of the seat unit which is to be found in the space behind the seat, and is preferably fixed. He or she would understand the temporal requirement in the claim as relating to the requirement for coplanarity, in accordance with the teaching at [0025].
81. The arguments about purpose are, to my mind, not very compelling in either direction. It is, however, incorrect to say that the defendants' construction would strike the skilled person as devoid of purpose. Of course, had the other pointers been more favourable to Virgin, one might have concluded that the storage advantage was only applicable to the fixed, and not the moveable, option. The defendants' argument about the absence of teaching of how to make the headrest work as the passenger support element does not form part of my reasoning.
82. I consider separately the consequences for added matter if I am wrong about construction.
83. Next I consider the "substantially coplanarly" requirement. The defendants submit:
- a. The requirement is for the top surfaces of the passenger support element on the one hand and the moveable passenger bearing element on the other hand to be coplanar.
 - b. The purpose of substantial coplanarity is to provide the surface of a substantially flat bed.
 - c. The passenger support element is referred to in the specification as the "rear extension surface", hence it is the surfaces which must be coplanar.
 - d. The word "substantially" does not allow for a component which is underneath the moveable elements.
84. Virgin submit as follows:

- a. The claim is not concerned with perfect Euclidean planes. Both the passenger support element and the moveable elements are three-dimensional items with real thickness. They need not be the same thickness.
 - b. The skilled reader would understand that the surface of a “flat” bed such as BA would be undulating to a significant degree because the same surface would form both seat and bed, and seats had to be sculpted.
 - c. Purposively, the reason for the substantial coplanarity is to allow the passenger support element to play its part in constituting the bed. So it cannot be at floor level, for example.
 - d. The claim feature merely requires the passenger support element to be “substantially” coplanar, which positively indicates a degree of variation is allowed.
 - e. If one looks at Figure 2A one sees a seat housing with no cushioning. Yet this is said to be substantially coplanar with the moveable elements.
85. In my judgment, a passenger support element which is underneath the moveable passenger bearing elements cannot be described as substantially coplanar with them. The purpose of the requirement for coplanarity is to allow for a substantially flat bed. Hence it is the surfaces of the elements which must be substantially coplanar. Figure 2A is too diagrammatic for any conclusion to be drawn. In any event it is consistent with the defendants’ construction that it is the surfaces which must be coplanar.
86. Finally I turn to the nature of the support element. The defendants submit that the element must provide direct support, in that the passenger must rest on the element itself. In my judgment, given my conclusion that the passenger support element is separate from the moveable passenger bearing elements, and coplanar in the sense I have described, it is obvious that it provides direct support to the passenger. It may, of course, include cushioning, in which case the cushioning will form part of the passenger support element.

Feature 22

87. The passenger support element must be adapted to form part of the bed. Virgin submit that this feature is satisfied by anything which forms part of the bed. The patent uses the term “bed surface” when it means the surface. The defendants submit, to the contrary, that the passenger support element is adapted to form part of the bed surface.
88. Both sides accept that this point is related to the coplanarity requirement. In my judgment the passenger support element is required to form part of the bed surface, not merely some part of its supporting structure or mechanism.

“A passenger seating system for an aircraft”

89. I deal with a number of points under this heading:
- i) Do the claims require assembly of the system on board an aircraft?

- ii) If not, what is required to be done off the aircraft to amount to “a passenger seating system for an aircraft”?
- iii) Do the claims extend to a kit of parts for assembly into a passenger seating system out of the jurisdiction?
90. The first of these points was decided by the Court of Appeal in its judgment on the Delta summary judgment application in relation to 908.
91. As I have indicated, Arnold J had held that, on its true construction, claim 1 of 908 was limited to a “*plurality of seat units assembled and arranged on an aircraft*”. There was accordingly no infringement unless there was infringement under section 60(1)(a) or by virtue of a kit of parts doctrine: see [2010] EWHC 3094 (Pat) at [84].
92. In the Court of Appeal, Jacob LJ [2011] EWCA Civ 162 described the first (and in the event the only) issue which they had to decide in the following terms at [8]:
- “Do Contour's acts within the UK fall within the scope of the amended Patent, and more specifically does the Patent claim cover a ship-set before it is installed on the aircraft?”
93. The Court of Appeal went on to answer that question in the affirmative. Contour accept that, in the absence of a relevant amendment to the claim from that which was considered by the Court of Appeal, I should not adopt a different construction for the purposes of this case. They submit, however, that Virgin must amend the claim from that considered by the Court of Appeal, because part of the language which was relied upon by the Court of Appeal constitutes added matter. It is therefore necessary, as a preliminary matter, to decide whether there is any substance in the added matter attack.
94. The attack focuses on feature 12: “wherein at least some of the seat units are *arranged to be* disposed adjacent a sidewall of the aircraft”. These italicised words were not present in the corresponding claim in the application, claim 47, which simply says that the seat units are disposed adjacent a side wall.
95. In the Court of Appeal these italicised words were the focus of one of Virgin’s arguments. This argument is recorded in the judgment of Jacob LJ in the following terms at [29]:
- “As for [this feature], Mr Meade submitted it supported Virgin's construction, not Delta's. This was by reason of the words *arranged to be disposed adjacent a sidewall*. If the claim required that the units were in fact so disposed, you would merely say that. *Arranged to* would be completely redundant words on Delta's construction. But they must have been intended to add something: that in context could only be a capability of being so disposed.”
96. Accordingly, it is argued before me that the words did in fact add the notion that the units were not actually disposed adjacent the sidewall.

97. Virgin submit that there is in fact no added matter. The skilled person reading claims 44 and 47 in the application would see that it was “for an aircraft”. Accordingly this already brings to mind the notion that the system may not be on an aircraft. The use of the word “disposed” as opposed to “arranged to be disposed” in claim 47 would not detract from that disclosure.
98. I prefer Virgin’s submissions on this question. I do not think that the addition of the words “arranged to be” has altered the technical disclosure. Virgin offered to amend the claim in various ways if I held there was added matter. There is no need for me to consider those amendments.
99. Accordingly, there is also no need for me to accept Contour’s invitation to revisit the judgment of the Court of Appeal on this “for/on an aircraft” point.
100. I turn therefore to the second point: what is required for an off-aircraft system?
101. Contour submit that the word “system” conveys no more than the word “apparatus”. That is what Arnold J held at first instance in the Delta summary judgment application at [58]. It must convey more than the expression “seat unit” which is also used in the claims. They submit that the critical features of a seating system according to claim 1 are that it comprises:
- i) a plurality of seat units (feature 2)
 - ii) said seat units being arranged to form a column defining a notional longitudinal column axis (feature 10)
 - iii) in which column said seat-units are arranged side-by-side in longitudinally offset relation at an acute angle to the notional column axis (feature 11)
102. Contour also rely on what the Court of Appeal said at [34] about what amounted to a system:
- “...The claim is for a system for an aircraft. The skilled reader would expect the language to be confined to a realistic complete system for an aircraft.”
103. Accordingly Contour submit that there is no infringement unless the seat units are actually arranged so that they form a realistic complete column, defining a notional longitudinal column axis and that the seat units are arranged side-by-side in longitudinally offset relation at an acute angle. This must be done in the UK, otherwise there is no relevant act of infringement.
104. I reject Contour’s submissions. The skilled reader would understand that a system of the kind described in the 908 patent will only need to be fully assembled on board an aircraft. Given that I have agreed with the Court of Appeal that the patent envisages a system for, rather than on, an aircraft, I do not see why the patent would be read as requiring any particular degree of assembly or arrangement of a set of seat units off the aircraft. The columns of seats are not going to be placed on board the aircraft in their assembled state: it would in most cases be physically impossible to do so.

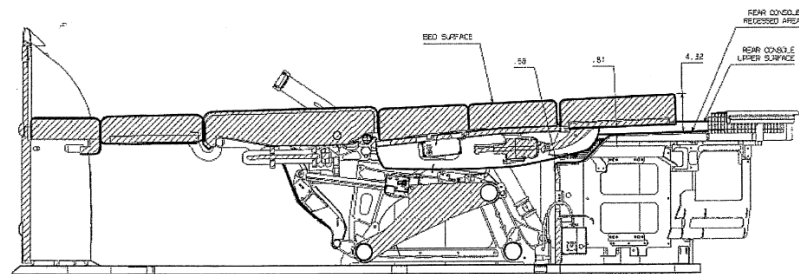
105. I do not think that the observations in the Court of Appeal’s judgment at [34] assist Contour. They do not deal with the question of whether the realistic complete system needs to be assembled off the aircraft. There is no issue in the present case that Contour made purpose-built complete systems, accompanied by detailed instructions, albeit not completely assembled.
106. I have come to this conclusion by a process of purposive construction of claim 1 of 908, against the background of the particular product to which it extends. It will not be in many cases where a claim will be construed to cover anything less than the entire assembled product.
107. It follows that I do not have to consider the further submissions based on a free-standing kit of parts doctrine. I would prefer to leave the issue of whether there is any general doctrine of kit of parts for a case where it arises directly. Just as the English courts have eschewed a free-standing doctrine of equivalents, expanding the claims outside the scope afforded by their true purposive construction, I would be reluctant to take the first step towards any other free standing doctrine of infringement. It is, after all, perfectly possible to formulate a claim expressly as a kit of parts.

Feature 12

108. There is a further issue about the construction of this feature, which it is more logical to consider in the context of obviousness over BA First.

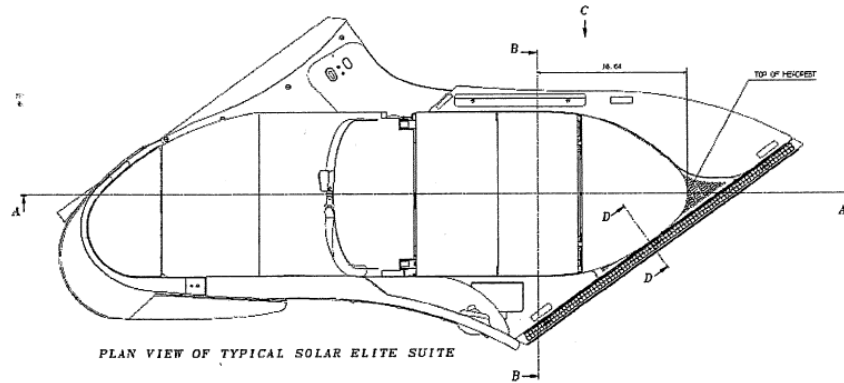
Infringement of 908

109. The Solar Eclipse seat is described in a Product Description served by Contour and supported by the other defendants. It includes a side view of the Solar Eclipse seat in the lie-flat position.



SECTION A-A

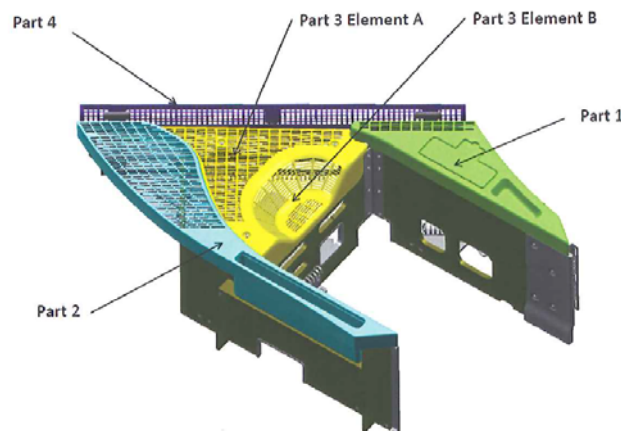
110. In plan view, but not to scale, also in lie-flat position, it looks like this:



111. The headrest is to the right in both drawings. There is no dispute that it is generally triangular:



112. The seat is at a slight angle (3°) to the floor of the aircraft to compensate for the inclination of the aircraft when at cruising altitude.
113. Beneath the headrest is the rear console. Unlike the bed this is parallel to the floor of the aircraft, and therefore at a small angle to the bed surface. This has a complex three dimensional shape, illustrated thus:



114. The rear console houses cabling and power for the actuators and lighting equipment in some seat units and also houses the power for the in-flight entertainment. The part marked Part 1 is forward of the passenger when seated and houses the life vest or is used for stowage. Part 2 is aft of the passenger when seated. Part 3 comprises elements A and B. Element B is a recessed portion. Part 4 is a decompression grille.

Virgin's primary case - headrest

115. Virgin submit that the requirement for a triangular passenger support element is met by the headrest. In my judgment the headrest does not meet the requirement of the claim. Firstly, it is one of the moveable passenger bearing elements. Secondly, it is not disposed in the rearward space when the seat is in seat mode. These conclusions follow from the construction of the claims which I have adopted.

Virgin's secondary case - rear console

116. In the alternative Virgin submit that the requirement for a triangular passenger support element is met by the rear console. They identify the part of the rear console relied on as that marked in yellow in the figure which I have reproduced above.
117. In my judgment the argument fails at the first hurdle, as the rear console surface is not substantially coplanar with the passenger support elements. The surface of the rear console is beneath the moveable passenger bearing elements.
118. Both sides adduced experimental evidence in relation to the extent of contact between the headrest and backrest and the rear console. I will deal with these very shortly having regard to my earlier finding. Virgin's experiments were withdrawn at the beginning of the trial when it emerged that the pressure transducers used for their measurements had not been calibrated properly or at all, and that they were not prepared to call the experimenter. That leaves the Product Description and the defendants' experiments.
119. The defendants' experiments were conducted on two Air Berlin seats which I had the opportunity of inspecting. Virgin had many criticisms over the way in which information about the construction of the seats and their testing had been supplied to them. I have to do the best with the evidence which has been adduced, whilst making no assumptions in Contour's favour. In the end a fairly clear picture of the relationship between the underside of the headrest/backrest and the top of the rear console emerged. My findings are these:
- i) The seat is self supporting, in that it can be stopped and locked at any angle of recline and it will have adequate strength and rigidity to support itself in that position.
 - ii) The seat is not completely rigid. Pressing down with about half one's body weight could cause the seat to deflect substantially.
 - iii) The reclining mechanism, when caused to recline the seat to the flat bed position, did not always arrive at the same position. This meant that the gap, shown on the drawing as around 0.8", could sometimes be considerably greater.

- iv) In some cases the backrest and headrest will come into contact with the forward portion of the yellow region of the upper surface of the rear console. This portion was referred to as “the wall”. It is not in every case that there is contact.
 - v) I am not persuaded that there is anything but transient contact in other places. Such transient contact is of no mechanical significance.
120. Although the evidence on the point is weak, I conclude that the wall does satisfy the requirement of the claim for support. However, there is in my judgment no *triangular* support element. Nothing other than the wall can provide any meaningful support. The fact that the wall adjoins a generally triangular area which plays no support role does not turn the wall into a triangular support element. The console argument therefore fails.

The abuse of process argument

121. The abuse of process argument arises in the following way. Claim 3 of unamended 908 (the B1 specification as it was called) calls for:

“A seating system as claimed in claim 1 or claim 2 wherein each seat unit includes a first passenger supporting element in said space to the rear of the seat, which first passenger supporting element forms part of said flat bed when the seat unit is formed as a bed”

122. In the Contour Action this claim was originally alleged to be infringed. However, pursuant to permission granted by Kitchin J, as he then was, in July 2008 Virgin re-amended its particulars of claim to abandon its allegation of infringement of this claim. A similar argument is based on the fact that Virgin acknowledged non-infringement of claim 1 of GB 2 296 103 (“GB 103”) which includes claim 1 which concludes with the words

“including a first passenger supporting element in said space to the rear of the seat, which first passenger supporting element forms part of said flat bed.”

123. The abuse of process argument is only run by Contour and Delta, not by Air Canada. It follows that even if I decided the point in favour of Contour and Delta I would have to come to an independent view in the case of Air Canada. Accordingly I have had to decide the point on the merits without reference to Virgin’s previous conduct. As I have come to the conclusion that the Solar Eclipse does not infringe the amended claims, there is no purpose in extending this already long judgment by a consideration of the principles of *Henderson v Henderson* abuse of process and their application to the facts of this case.

Variant Solar Eclipse headrest

124. Figure 12 of the Product Description illustrates a variant Solar Eclipse headrest which it says has been offered for sale since April 2011:



125. Virgin no longer assert this variant headrest infringes claim 1 on the “headrest” basis because it is not generally triangular, but did maintain that it would infringe on the “rear console” basis. It follows from my findings in relation to the original headrest, that an arrangement with this variant headrest does not infringe.

Infringement of 711

126. Infringement of 711 is alleged on a *quia timet* basis against Contour only. Claim 1 of 711 differs from claim 1 of 908 in that it is a claim to a seat unit, not a seating system for an aircraft. There are other differences as well but they do not matter.
127. The issues of infringement surrounding the passenger support system are the same as for 908. There is thus no infringement of 711.

Infringement of 734

128. Infringement of 734 is again alleged on a *quia timet* basis against Contour only. The significance of the claims of 734 is that they do not have the passenger support element. Claim 1 is to a seating system for an aircraft. Claim 10 is to a seat unit.
129. It follows from my earlier findings that claims 1 and 10 of 734 would be infringed by the sale of the Solar Eclipse seat.

Modified Solar Eclipse

130. I mentioned that there is a fourth action concerning a modified Solar Eclipse (not to be confused with the variant headrest). It includes a back shell, similar to BA First. Virgin accept that it does not infringe any valid claim of any of the patents in suit. Contour is entitled to a declaration to that effect.

Validity

131. Contour attack the validity of 908 on the grounds of added matter and obviousness. Air Canada and Delta also run added matter attacks, but largely as squeezes on infringement.

Added Matter

132. In *Vector Corp v Glatt Air Techniques Ltd* [2007] EWCA Civ 805, [2008] RPC 10, Jacob LJ approved his own earlier statement (as Jacob J) in *Richardson-Vicks' Patent* [1995] RPC 568 at 576 where he summarised the rule against added matter in a single sentence:

"I think the test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification."

133. I would add that it is clear that added subject matter may exist by express addition of words, or by implication from a change of wording: see per Kitchin J (as he then was) in *European Central Bank v Document Security Systems* [2007] EWHC 600 at [100].

"at least some"

134. Contour say that the addition of the words "at least some" in feature 12 of claim 1 (and the corresponding feature of claim 2) teaches that some only of the seats *of a column* need to be adjacent the side wall. Virgin suggest that "at least some" takes account of the seats in the centre of the aircraft which are back to back and not adjacent the sidewall. The point is a pretty trivial one, but I think in context Contour are right. Virgin do not suggest that there is any corresponding teaching in the application. It follows that there is added matter. Virgin have offered to delete the words if I came to that conclusion. They should do so.
135. It is convenient to mention that a similar point arises on 734, which falls to be dealt with in the same way.

Feature 21

136. The defendants submit that, on Virgin's construction of this feature, there would be added matter. That is because the temporal requirement would now for the first time qualify the disposition of the passenger support element and not merely the coplanarity. On this construction the claim would require that "a ... passenger support element is disposed in said rearward space ... when said moveable elements are configured in the bed mode." There was never any temporal element attached to the disposition of the passenger support element in the application.
137. Virgin submit that this objection is only about what the claim covers, not what subject matter is disclosed. They submit that there is no teaching that the passenger support element need not be in the rearward space at other times, such as when the seat is in seat mode. The claim, on this construction, covers such an arrangement, but does not teach it.
138. I think there is a subtle addition of subject matter if Virgin are right on construction. Virgin are correct in principle that there is no addition of subject matter merely because something is now *covered* by the claim which was not *covered* before. However, by attaching the temporal requirement to the disposition of the passenger support element, the specification is now teaching by implication that that disposition is not required at other times. On Virgin's construction the disposition requirement is to be regarded as packaged together with the coplanarity requirement. The skilled person would understand that the coplanarity requirement is only achievable when the seat is in bed mode, and will definitely not be there when the seat is in seat mode. Accordingly there is an inference by association that the disposition need only be as specified at those times as well.

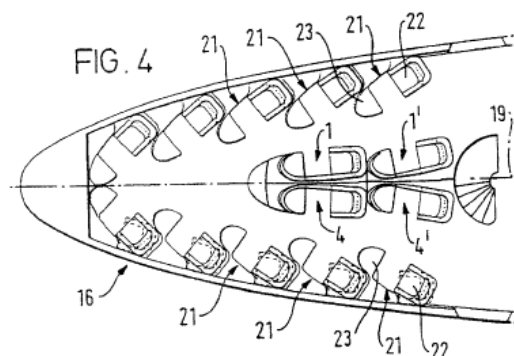
139. Virgin do not suggest there is any teaching in the application that the passenger support element need not be in the space when the seat is in bed mode. Accordingly if I had acceded to Virgin’s construction, the patent would be bad for added matter.
140. A similar but unpersuasive point was run on the meaning of coplanar. It was said that if I adopted (which I have not) Virgin’s meaning of coplanar so as to include the possibility that the passenger support element could be coplanar with the moveable elements above it, this would be to add matter. However there was no material change in wording here between the application and the granted patent. There is therefore nothing in this point. Other less significant points were taken, for example on linguistic changes from “supporting” to “support” and “flat bed” to “bed”, but I was not persuaded by them.

Obviousness

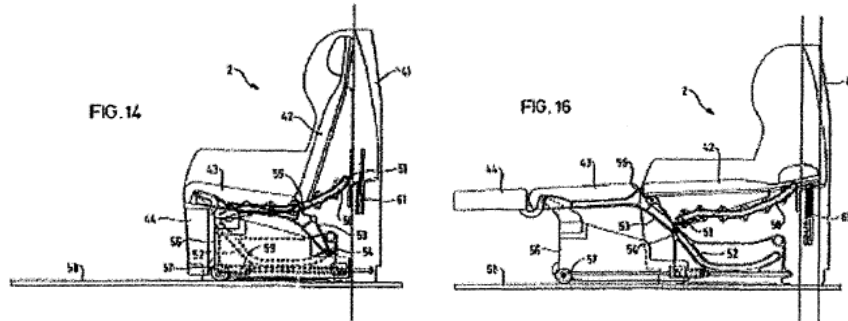
141. Contour do not attack the inventiveness of 908 if they succeed, as they have, on the issue of infringement. They recognise that an additional passenger support element, positioned in the rearward space, was an inventive improvement over the common general knowledge or any of the cited prior art. I therefore have to consider the issue of validity only on the basis that I am wrong on the issues of construction which led me to hold that the Solar Eclipse did not infringe. On this basis the patent extends to seats where there is no separate passenger support element, and the requirement for a passenger support element may be met, as Virgin contended, by a headrest.
142. Contour advanced two distinct arguments of obviousness. The first is based on the decision of the Technical Board of Appeal in the EPO in *Agrevo*. The second is a more conventional obviousness attack. Both are largely founded upon the disclosure of BA First which I now describe.

BA First disclosure

143. BA First is UK Patent Application No. 2 326 824A, published January 6th 1999. It discloses both inward and outward facing herringbone arrangements. The layout of seats in the inward facing arrangement can be seen in Figure 4:



144. The generally triangular space behind the seat back is designated by the numeral (21). Figures 14 and 16 in BA First show the seat from a side view, in seat and bed mode respectively. I reproduce these figures below, in the annotated form used by Lewison J in his judgment in the Contour Action.



145. As Lewison J explained:

“The vertical line [in Figure 14] is an addition to show where the rear of the seat back is when the seat is in seat mode. Rear of that line is space within the shell that surrounds the seat. Figure 16 in BA First illustrates the seat when reclined into bed mode. It will be seen that approximately half the head rest is now disposed rearward of the vertical line which marked the rear of the seat back when in seat mode.”

Issue of construction

146. It is convenient to deal here with an issue of construction of the 908 patent relevant to the case based on BA First. The relevant claim features are 12 to 14:

“wherein at least some of the seat units are arranged to be disposed adjacent a sidewall of the aircraft and face inwardly thereby to define between the rear of each seat and the sidewall a space when the seat unit is configured as a seat”

147. Lewison J dealt with this issue of construction at [241] of his judgment by accepting Virgin’s construction as follows:

“Virgin Atlantic argue that the space to which this integer refers is not a space inside the seat; but is limited to a space that is formed as a result of the arrangement of seats in an inward facing herringbone. In effect, therefore the space in question is the equivalent space to that designated by reference numeral (21) in the BA First patent. Virgin Atlantic’s interpretation is, in my judgment, supported by the following considerations:

- i) The use of the word "thereby" indicates that the space in question is defined as a result of the arrangement of seats in an inward facing herringbone. The space between the rear of the seat back and the shell in BA First exists however the seat is placed within the aircraft;
- ii) The space in question is identified by the reference numeral (36) which identifies the triangular or trapezoidal space between the back of the seat and the side wall of the aircraft;

iii) The description of the BA First patent in paragraph [0006] of the specification identifies the same space in BA First as being used for a counter top or a cupboard; and it is that space that reappears in the consistory paragraph [0017] in the description of the BA First patent.”

148. In the Court of Appeal (Jacob and Patten LJJ, Kitchin J) Contour challenged this construction. They dealt with the issue in this way:

[96] [Counsel for Contour] argues thus:

i) The BA Application shows, and BA First had, a seat in which the seat moves back as one changes it to bed mode - see [25] above.

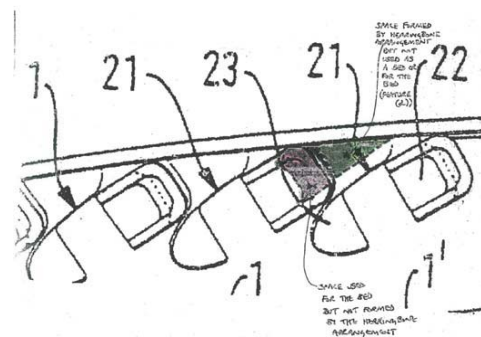
ii) The space behind the seat in seat mode is defined by the rear of the seat and the sidewall.

iii) So feature (f) of the claim is satisfied.

iv) Thus the BA Application (and BA First) anticipates the claim.

[97] The argument depends therefore on construing the "space" as meaning any area behind the actual seat when in seat mode.

[98] Mr Meade contends that is wrong. He produced a convenient diagram to illustrate the difference between his contention and that of Mr Vanhegan. It is a coloured enlarged portion of fig. 4 of the BA Application:



[99] This shows two "spaces"- the pink is the space, rear of the actual seat, into which the bed extends. It is all in the pod. The green is the space behind that. Mr Meade submits that the bed of the Patent claim must extend into the green. Since that does not happen in BA, there is no anticipation. So it all depends on what the "space" of the claim means.

[100] We have no doubt that the skilled man would read this part of the claim as confined to the "green" space. He would

know that the patentee was specifically acknowledging BA as old - so he can hardly have been intending to claim it by the words he used. Only if no other possible construction is possible would the skilled man be forced to conclude that the patentee had claimed that which he knew was old.

[101] Secondly such a construction would miss the whole point of the space-saving idea of the patent. The point is that by using a herringbone you have "lost" some space. You get some of it back by extending the bed into the space lost because you have a herringbone. The pink space of BA is not space lost because you have a herringbone - it is space which is occupied by the bed in its pod - nothing to do with the herringbone.

[102] So when the skilled reader asks himself "What is the defined space?" he takes into account that it is the herringbone which *thereby* defines the space.

[103] Now it is true that in various passages (we set out those particularly relied upon by Mr Vanhegan above at [40]) the patentee talks about the space rear of the seat. But the context is always where in bed mode the bed extends into the space caused because there is a herringbone. All the space behind the seat is such a space- green space. So that does not tell the skilled man that the patentee intended to include other space - the pink space of the BA Application for instance.

104. The judge reached the same conclusion at [235]-[241]. We agree. The BA Application is not novelty destroying."

149. Mr Purvis boldly invites me to take a different view from Lewison J, a patent judge of very considerable experience, and all three of the distinguished patent judges in the Court of Appeal. He says that the claim has been amended since their judgments, and the matter needs to be approached afresh. Virgin acknowledge that the patent has been amended, but point out that it has been narrowed by the amendment, leaving the relevant feature in place. So the amendments can hardly have removed a distinction between BA and the patent.
150. It is trite law that a patent should not be construed by reference to the prior art, unless it is prior art which the patent acknowledges. In *Beloit Technologies Inc. v Valmet Paper Machinery Inc.* [1995] RPC 705 at 720 line 25, Jacob J, as he then was, said this:

"I believe Article 69 of the EPC does not legitimately allow our courts to construe claims using the prior art either to widen them or to narrow them. There is normally no reason to suppose the patentee when he set the limits of his monopoly knew of a particular piece of prior art which is therefore irrelevant in deciding what those limits are. Of course the position is different if the prior art is specifically acknowledged in the patent. The purposive construction would lead to a

construction of a claim which did not cover that acknowledged prior art: it can hardly have been the inventor's purpose to cover that which he expressly recognises was old."

151. One can see that this principle is firmly in play in the judgment of the Court of Appeal. The feature in question was the only thing which stood in the way of a finding of anticipation. The fact that the skilled person is faced with a conundrum, that the patentee cannot have intended to cover BA First, means that "*only if no other possible construction is possible would the skilled man be forced to conclude that the patentee had claimed that which he knew was old.*"
152. Mr Purvis submits that it is no longer necessary to go to any particular lengths to construe this feature of the claim, as the skilled person would now see, even on Virgin's construction, that the claim includes a requirement for a triangular headrest not present in BA First. The task for me is therefore to re-evaluate this issue of construction without reliance on the *Beloit* exception to the general rule that the prior art is irrelevant.
153. Whilst paying tribute to the attractive and sustained way in which the argument was presented by Mr Purvis both in oral argument and in writing, I am not prepared to depart from the construction arrived at by Lewison J and the Court of Appeal. Whilst the *Beloit* principle was part of their reasoning, it was not the totality of it. I consider that what remains of the reasoning in the judgments of Lewison J and the Court of Appeal adequately supports the conclusion they came to. This feature remains a distinction over BA First.
154. I appreciate that in coming to this conclusion I must, by implication be differing from the view of the Technical Board of Appeal, who acceded to the argument that unamended 908 was anticipated by BA First. However, it is not the practice of the Boards of Appeal to give reasons for arriving at their interpretation of claims. I am not therefore able to analyse their reasoning in order to see whether I am persuaded by it. I also appreciate that the consequence of respecting the Court of Appeal's construction is that Virgin did not need to amend to avoid the effect of BA First. This has caused me to ponder long and hard before reaching the conclusion that the amendments which Virgin made have the effect of excluding the Solar Eclipse. In the end I have not felt able to follow their construction, applying conventional principles. It would be wrong to adopt a different approach to construction simply because of the history of the way in which the feature entered the claim.

Agrevo obviousness

155. Contour argue as follows. First, they remind me that in *Dr Reddy's Laboratories v Eli Lilly* [2009] EWCA Civ 1362, Jacob LJ, having reviewed the EPO jurisprudence on obviousness including *Agrevo* T 0939/92 said at [50]:

"The EPO jurisprudence is founded firmly around a fundamental question: has a patentee made a novel non-obvious technical advance and provided sufficient justification for it to be credible?"

156. Secondly, they point out two other propositions which can be extracted from the *Agrevo* case, and were not in dispute:
- i) An arbitrary distinction from the prior art is not a technical advance;
 - ii) The non-obvious technical advance must apply across the breadth of the claim.
157. Next Contour say that the only distinction between BA First and the patent in suit is the triangular shape of the headrest. This, they say, is the result of accepting Virgin's construction which would enable it to win on infringement, and Contour's construction of the rearward space. The triangular shape, say Contour, is entirely arbitrary.
158. I cannot accept these submissions. Firstly, it does not get past first base, as I have rejected Contour's construction of the rearward space. Secondly I cannot accept that a triangular headrest is an arbitrary feature. In the context of the rest of the claim, the generally triangular headrest allows advantage to be taken of the triangular rearward space. This remains true, despite the fact that it is possible to devise arrangements where full advantage is not taken of the triangular shape, such as where the seat is spaced from the aircraft wall.

Obvious modification of BA

159. This aspect of Contour's case accepts the construction adopted by the Court of Appeal of the rearward space. It involves abandoning the rearward shell of the BA seat, moving the position of the privacy screen to give more space to recline into and reshaping the headrest.
160. In *Conor v Angiotech* [2008] UKHL 49; [2008] RPC 28 at [42] Lord Hoffmann approved the following statement by Kitchin J in *Generics (UK) Ltd v H Lundbeck A/S* [2007] RPC 32 at [72]:
- “The question of obviousness must be considered on the facts of each case. The court must consider the weight to be attached to any particular factor in the light of all the relevant circumstances. These may include such matters as the motive to find a solution to the problem the patent addresses, the number and extent of the possible avenues of research, the effort involved in pursuing them and the expectation of success.”
161. It is convenient to address the question of obviousness by using the structured approach explained by the Court of Appeal in *Pozzoli v BDMO* [2007] EWCA Civ 588; [2007] FSR 37. This involves the following steps:
- (1)(a) Identify the notional "person skilled in the art"
 - (b) Identify the relevant common general knowledge of that person;
 - (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

162. I have identified the person skilled in the art above. The common general knowledge would include the prior art commercial seating arrangements which I have described. The skilled person would have known of the possibility of inward facing herringbones, although would not be particularly motivated to adopt them. He or she would also have known that it was possible to arrange seats in an aircraft at an angle of greater than 18°, but that was not something which had yet been done on a commercial passenger aircraft, even in the commercial embodiment of BA First. It would be known that this would require compliance with requirements for airbags and harnesses, and a more extensive testing programme. In the Contour Action the Court of Appeal identifies the inventive concept as the "space packing idea". In the present case, on the hypothesis on which I have to adopt for this part of the case, it involves space packing with a triangular headrest.

163. In order to arrive at the inventive concept from the disclosure of BA First, the skilled person would have to adopt an angle of greater than 18° and an inward facing herringbone. These are not differences from the disclosure of BA First, although, so far as the angle is concerned, it involves taking literally the angle shown in the figures. There is no doubt that BA First does not show a triangular headrest, and on the construction adopted by the Court of Appeal (and by me) the seat does not move into the relevant space. The Court of Appeal said this about obviousness in the Contour Action:

[117] The real issue about obviousness is whether the skilled addressee, when faced with the prior art, would have considered it obvious to extend the seat in bed mode into the triangular space between the back of the BA seat unit and the cabin wall which, in BA First, remained unused except for storage as part of the adjacent seat unit.

[118] The case for invalidity based on obviousness can be expressed very simply. Contour say that a patent which merely teaches the better use of cabin space (even if technically innovative when compared to previously known configurations of a business class cabin) cannot have given the skilled addressee any ideas which he would not have had in mind based on the progressive designs contained in the prior art. The inclusion in the team comprising the skilled addressee of designers and engineers experienced in the design of aircraft seats and with knowledge of the technical and regulatory requirements for the cabin layouts of Boeing and Airbus aircraft including BA First make it, they say, highly improbable that the "lost space" delineated by the layout in BA First would

not have been regarded as obvious to use for bed space as part of a design brief which combined seat maximisation with passenger comfort.

[119] But, as the judge recognised, the court's assessment of obviousness at step 4 has to be made on an historical basis as at the priority date without taking into account its knowledge of the invention. Since expert witnesses are as much in danger of being affected by hindsight as the court itself, the fact that the invention was new and untried is likely to provide strong prima facie evidence that the inventive concept was not obvious to those skilled in the art absent some other explanation for their failure to adopt it.

[120] This was the basis of the judge's rejection of Contour's case on obviousness both in relation to cgk and to BA First. He said this:

[283] It may well be that increasing the angle of installation of the seat means that inherently a larger potential usable space behind the seat. But that still does not answer the question: was it obvious to use that space for extending the bed? The fact that no airline had done it before Virgin Atlantic is not a promising start to an attack of obviousness over common general knowledge. Nor do I consider that [Contour's expert] went as far as saying that it was obvious and uninventive to allocate the triangular area behind the seat in an inward facing herringbone to that seat rather than to the seat behind. The closest he came was to say that it was a question of judgment. But a judgment can be inventive. And I think that Mr Meade was right to say that in cross-examination he came close to accepting (if he did not actually accept) that it was not obvious to do that.

[121] We would reinforce that a little. BA First hit the airline world in 1996. It was self evident that if you could also do seat/beds for business class without losing any or much space it would be well worth it. For that you needed to pack more in than could be done with BA First. It was not until this Patent, in 2002 (if you ignore priority), that the idea of using the lost space came about. That is a long time in such a competitive industry. Moreover the intermediate ideas (Yin Yang and J2000) did not save space. Time can indeed show that a simple idea was nonetheless non-obvious.

[122] The judge held that the inventive concept in claim 1 of the Patent was not obvious over BA First for much the same reasons. In addition, he placed some reliance on the fact that BA First did not favour the use of an inward facing herringbone; suggested the optional use of swivel seats; and did

not teach that the lost space could be used for anything but storage.

164. I have to resolve the issue of obviousness in the present action based on the evidence which I heard, not that which Lewison J heard.
165. Mr Moreno frankly accepted that the precise choice of shape of headrest was a matter of design. Although in BA he said he would have preferred a rectangular headrest because it was bigger and could be adjusted, he said you could have circular headrests as well. In some situations, such as in Concorde, an upright seat might have to be curved into a rough semicircle or triangular shape.
166. Mr Moreno also gave evidence to the effect that, if an inward facing herringbone was adopted, one would only need that part of the shell or privacy screen which separated the seat in bed mode from the adjacent seat. The back part of the shell was not strictly required. However this was not Mr Higgins' view, from his knowledge of the BA seat, as he believed that the back shell formed a part of the reclining mechanism, by forming an interference fit, and could not therefore be so easily dispensed with.
167. Mr Moreno also accepted that one could "play around" with the privacy screen between the two seats. He did not accept that if one's herringbone was at less than 18° you would have enough space for a dining table or accessories. It would not really be useful to do that unless one went to an angle of greater than 18°, although one would gain a little space. He described what was involved as experimenting.
168. This stepwise analysis does not really undermine Mr Moreno's overall view that the invention was not obvious. Moreover Virgin attacked the reasoning at every stage:
- i) an inward facing herringbone arrangement was less preferred for privacy reasons;
 - ii) exceeding the 18° angle involved certification requirements. Although the regulations indicated what was required to have a >18° angle for take off and landing (a harness and airbag), no ordinary passenger airline, including BA, had ever done it. Moreover BA had declined to do it on at least two occasions, giving specific instructions to their designers in this regard. There was other contemporaneous evidence that exceeding 18° was regarded as involving more than simply checking whether the rules as to harnesses and airbags were complied with. American Airlines used a swivel to avoid having an angle of greater than 18° at take off and landing.
 - iii) Mr Darbyshire accepted that the positioning of privacy screens was a delicate balance of privacy and claustrophobia.
169. In the end, like Lewison J and the Court of Appeal in the Contour Action, I was unpersuaded by the evidence in this action that the invention was an obvious step to take in the light of BA First. It is a case where it is legitimate to ask why such a simple step, if obvious, was not taken by anyone else before the priority date. The obviousness attack therefore fails on this wider construction as well.

Validity of 711

170. I did not detect any suggestion that Contour could succeed on 711 if they did not succeed on 908.

Validity of 734

Obviousness

171. The claims of 734 are significantly wider than 908. Contour submit that all that is necessary to go from BA First to claim 1 of 734 is to remove the rear shell and adjust the privacy screen. This was the case that was put to Mr Moreno.

172. I did not think that the evidence overall showed that it was obvious to proceed as Contour contends. As I have said, Mr Higgins' evidence was that the shell performed a functional as well as a privacy role. Even if that did not discourage the skilled person from removing the shell, the consequences for the arrangement of space if that step was taken were not fully explored with Mr Moreno. I reject this obviousness attack on 734.

Added matter

173. Contour contend that there is no basis in the application for a claim which relates only to the space behind the seat, defined by an aircraft side wall, without the passenger support element. Contour submit that, by claiming the space without reference to the passenger support element, Virgin are guilty of intermediate generalisation: see *Palmaz* [1999] RPC 47 at [71] per Pumfrey J.

174. Virgin submit that the passenger support element was an optional feature in the application. They submit that the space defined between the back of the seat and the aircraft wall is clearly disclosed.

175. I agree with Virgin that there is no added matter in 734. The space packing idea is clearly disclosed in the application independently of the need for a passenger support element.

The Delta undertaking

176. Following the decision in the Contour Action in the Court of Appeal, Virgin sought an injunction. Although there was debate about the approach which the court should adopt in a case where there was potential for an appeal to the Supreme Court as well as co-pending proceedings in the Technical Board of Appeal, the Court of Appeal proceeded on the basis of a concession made by Virgin that, until the result in the Board of Appeal was known, "balance of convenience" principles applied. The court recorded that the concession was sensible on the facts of that case, but made it clear that it did not accept that the concession necessarily represented the law. In the end the court granted an injunction subject to certain exclusions in respect of unfulfilled orders from Delta which Contour wished to be free to complete ("the Delta carve out").

177. The Delta carve out required Contour, amongst other things, to procure an undertaking from Delta to Virgin ("the Delta undertaking") that aircraft to which the

seats were fitted would not be used on transatlantic routes (and thus in competition with Virgin).

178. The Delta undertaking is set out at paragraph 8 of a letter from Delta to Virgin in the following terms :

“In consideration of agreeing that Contour may take such steps as are reasonably practicable to fulfil its existing contractual obligations to us under the said Purchase Orders and in consideration of the payment of the sum of £1 (ONE POUND STERLING) by Virgin to us (the receipt whereof we hereby acknowledge), WE HEREBY UNDERTAKE that we will not (whether acting by ourselves, our officers, directors, servants or agents or affiliates or other Delta Air Lines, Inc group companies or third party operators of the Aircraft (or of other aircraft upon which the Seats may be installed from time to time) or otherwise howsoever) use any of the Seats (or permit the use thereof) on any aircraft being operated on a trans-Atlantic route (or the trans-Atlantic leg of part of a route) between the USA and the UK which is competitive with you, Virgin, including (but without prejudice to the generality of the foregoing) flights between London Heathrow and New York JFK airports, *for so long as European Patent (UK) No. 1 495 908 shall be in force.*” (emphasis supplied).

179. Delta and Virgin disagree as to the proper construction of the emphasised words in the Delta undertaking. Virgin contend that the words mean that the undertaking remains in force until the expiry of the 908 patent or its revocation. Delta contend that the words have the effect that the undertaking ceases to apply if the patent is amended.
180. Delta’s contention involves reading the contested words in the context of paragraphs 4 and 5 of the undertaking. Those paragraphs are included in a section headed "Background" and read as follows:

“4. In a judgment delivered on 21 October 2009, Contour’s Solar Eclipse seats were held to have infringed a valid patent of Virgin, European Patent (UK) No. 1, 495, 908 ("the Patent"), and the Court of Appeal by order dated 21 December 2009 granted an injunction against Contour restraining acts of infringement of the Patent.

5. The said order permitted Contour to take such steps that are reasonably practicable to fulfil its existing contractual obligations to Delta under the said Purchase Orders to deliver the Seats upon, inter alia, Contour undertaking to not make any delivery of any Solar Eclipse seats under the Agreement before procuring a contractual undertaking from Delta enforceable by Virgin that Delta will not use any of the products the subject of the said Purchase Orders on any trans-Atlantic flight between the USA and the UK which are directly competitive with Virgin including in particular flights between London

Heathrow and New York JFK airports whilst the Patent remains in force.”

181. Delta submit, as a matter of construction, that the reference to the 908 patent in paragraph 8 should be read as a reference to the patent in the form in which it was held valid and infringed by the Court of Appeal. The patent in that form, say Delta, was held invalid by the Technical Board of Appeal and now only exists in a different, amended form. It follows that the undertaking is now no longer in force.
182. Neither side submits that amendment of the patent requires a fresh determination of whether the Solar Eclipse seat remains an infringement of the patent as amended. Thus, both sides contend for a clear rule. The effect of Virgin’s construction is that the undertaking remains in force even if the patent is amended to exclude the Solar Eclipse seat. The effect of Delta’s construction is that it is discharged even if the patent is amended in a way which results in the seat remaining an infringement.
183. I have no doubt that Virgin’s construction is the correct one. A patent is either in force or it is not in force. It does not cease to be in force when it is amended. So when paragraph 8 speaks of the patent being in force, it means just that, irrespective of any amendments to the specification.
184. Paragraph 4 of the undertaking does not affect that conclusion: it merely defines 908 as “the Patent”, and states that it has been held that it is valid, that the Solar Eclipse seat infringed it and that an injunction had been granted. It does not define the 908 patent as that patent with its specification and claims in exactly the form in which they existed when the Court of Appeal gave judgment.
185. Delta had two alternative arguments, one based on an implied term and the second on frustration. The former was not pressed by Mr Brandreth for Delta with any real vigour, the latter was expressly abandoned in his skeleton argument. The effect of the suggested implied term was to tie the life of the undertaking to the life of the injunction referred to in paragraph 4. I cannot accept that an implied term is necessary to give the contract business efficacy, or that the term suggested by Delta is the term that an officious bystander would have suggested.
186. As to the former point, there is nothing commercially unrealistic about Virgin’s construction. They were being asked to forego injunctive relief which would result in the seats being taken out of the jurisdiction. The price they demanded for this concession (no competition on the trans-Atlantic route while the 908 patent is in force in some form or other) cannot be said to be uncommercially high. So the agreement works perfectly well without implication of any term. Moreover, if the officious bystander were asked “What happens if the patent is amended?” or “What happens if the injunction is discharged?”, he or she would have no ready answer. These questions would merely raise further issues about the nature of the amendment, or the reasons for the discharge of the injunction. In each case the officious bystander would be unlikely to say: obviously the undertaking must be discharged. I reject the alternative argument based on the implied term.

The non-designation point

Facts - events up to grant of 908

187. On 9th August 2002 Virgin filed Application No. 2004181715.3 (“the parent application”). All available PCT contracting states were designated at the time of filing, including a GB national application and an EP (UK) designation through the EPO. The parent application entered the European regional phase before the EPO on 1st March 2004. I will pick up the progress of the GB national designation below.
188. On 23rd April 2004 Virgin filed a divisional application at the EPO (“the 908 application”) which ultimately became the 908 patent. It was divided out of the parent application. To do so it used electronic form 1001E. On that form there is a box which is checked corresponding to the statement “*All states which are contracting states to the EPC at the time of filing of this application are hereby designated.*” The box is pre-checked, and applicants cannot uncheck it. Against box 6-1 which says “*The applicant currently intends to pay designation fees for the following states*” Virgin entered a list covering more than 20 member states of the EPC. GB was not included. The form also contained a note to the effect that “*Re item 6-1: GB is expressly NOT designated in this application. Apart from GB, all other EPC contracting states which were designated in [the parent application] are designated in this application*”. The desire not to designate GB at all, or to countermand immediately the mandatory designation, could scarcely have been clearer.
189. In November 2004 the EPO issued a search report on the 908 application. It included a reference to an intervening GB national application (i.e. one published between priority date and filing date). Such a reference would not have been necessary unless the EPO was proceeding on the basis that GB was designated.
190. On 12th January 2005 the 908 application was published. The front page of the published application stated that all Contracting states were designated. This was not in conformity with the information in Field 6-1 and the note on Form 1001E.
191. On 11th July 2005 designation fees were paid to the EPO at the level appropriate for 7 designations. Designation fees are capped at 7 designations. 24 states were reported as designated on the published application. The accompanying letter stated that the applicant was paying the fee “*for each of the designated states*”.
192. Meanwhile, on 13th August 2004, in the course of prosecution of a UK national application before the UKIPO (application number GB 0403260.3, published as GB 103), the examiner raised the issue of double patenting in respect of the parent. GB 103 was the result of the parent application entering the GB national phase on 13th February 2004. The UKIPO wrote again in connection with this issue on 22nd July 2005, this time in relation to both the parent application and 908. The issue of double patenting would not have arisen in respect of 908 unless the 908 application designated the UK.
193. On 19th October 2005 Virgin wrote to the EPO to withdraw the UK designation from the parent application.
194. On 22nd November 2005 Virgin informed the UKIPO by letter that it had withdrawn the UK designation of the parent application and that it would withdraw the UK designation of 908 prior to grant. However, Virgin took no further step to do so. Of

course, on the defendants' case, there was no designation to withdraw: it had either already been withdrawn, or never made.

195. On 15th March 2006 GB 103 was granted.
196. On 8th August 2006 Virgin submitted in the EPO a request for accelerated prosecution of 908 and two sets of claims, one for all designated states and one for the UK as a result of an intervening national publication.
197. On 7th February 2007 the EPO issued a communication under Rule 51(4) EPC informing Virgin that it intended to grant the patent which became 908. The communication of the decision to grant followed on 7th May 2007, with the grant indicated to take place on 30th May 2007. It included GB amongst the list of designated states.
198. On 30th May 2007, the UKIPO placed 908 on the Register.

Facts - events in the EPO post grant

199. On 5th November 2008, whilst the opposition to 908 was continuing, Premium's German attorneys wrote to the EPO to request correction of the designation of GB as "an obvious mistake" under Rule 140 EPC. They set out relevant aspects of the history of the prosecution of 908 and concluded that the application was not, from the date of filing, ever an application for grant of a European patent (UK). On 23rd February 2009 the Opposition Division informed Premium that the request for correction had been forwarded to the Examining Division, which would "*consider of its own motion, instigated by a letter from a third party, whether the decision should be corrected*".
200. It is clear that the Examining Division did consider whether the decision to designate GB should be corrected. On an unspecified date, the Examining Division produced a document expressing their conclusions, and presumably sent it to the Opposition Division at some time thereafter ("the ED document"). The ED document was communicated to Premium by the Opposition Division on 17th April 2009, some five months after Premium's request. The text of the ED document was as follows:

"The examining division has noted that after examination of the designation of GB on the basis of the documents on file and their treatment in the course of examination proceedings it has come to the conclusion, that it is not necessary to correct the decision with regard to GB for the following reasons:

- The ambiguity in form 1001 with regard to GB should have been clarified with the applicant. As such there is no explicit, unambiguous withdrawal.

- Designation is by payment, NOT by indication on 1001. The designation fee for GB was paid and afterwards the designation of GB has never been questioned by the applicant. To the contrary: a separate set of claims for GB was filed after the R. 71 (3) communication.

- Even if the withdrawal had been explicit but had been overlooked by the EPO, the Office would have been bound by the principle of good faith, having accepted the designation of GB throughout examination proceedings.

- The division is bound by its decision and cannot correct it to the disadvantage of the patentee.”

201. The ED document was signed by three patent examiners. It is common ground that this was an administrative, rather than a legal, utterance.
202. Premium launched an appeal to the TBA from the utterance of the Examining Division communicated to them by the letter of 17th April 2009. On 10th September 2010 in decision T1259/09-3201, the TBA held that Premium’s appeal was inadmissible. Only parties involved in the first instance proceedings were entitled to appeal. As Premium was not a party to the examination proceedings under Article 106 EPC, they were not entitled to file an appeal in accordance with Article 107. Although the Examining Division had the competence to correct its own decision, it could only do so of its own motion. The Board left open the question of whether the utterance of the Examining Division of 17th April 2009 was a decision at all.
203. Premium also raised the designation point in the context of the Opposition proceedings in respect of 908, to which they were a party. After the operative part of its decision of 18th June 2009, the OD stated that it “certainly regrets any adverse effect that might result for [Premium] or, more generally, for the public from the administrative mistake occurred (*sic*) during the examination proceedings leading to grant”. However it pointed out that only the Examining Division was empowered to “take an appealable decision on this request”. It went on to make some observations on which the defendants rely about the oddity of the situation, but which do not advance matters much further.
204. Thus, in the Examining Division, which was the competent department, Premium was not a party, and in the OD, in which Premium was a party, the department was not competent.

Proceedings before the Comptroller

205. Having failed before the EPO, Premium applied on 14th March 2011 to the Comptroller in the UKIPO for correction of the register under Rule 50 of the Patents Rules 2007. The hearing officer, Mr A.C. Howard, dismissed the application. The hearing officer identified the question he had to decide as “whether or not the European patent (UK) exists”. He held that, in order to reach a conclusion on that matter, he would have to conduct the equivalent of a judicial review of the EPO’s determination, which would be wrong in principle.

The defendants’ case and Virgin’s answer

206. Air Canada submit, supported by the other defendants, that the purported grant of the 908 patent so far as it designates the UK was a nullity, since Virgin either never designated or unequivocally elected to withdraw the designation of the United Kingdom in its application for that patent. Accordingly they submit that Virgin

cannot show the existence of any enforceable property right, because no right was capable of being granted by the EPO without a valid designation or following such an unequivocal withdrawal.

207. The defendants submit that decisions of the EPO are justiciable in the English courts under modern principles of private international law. This is because the EPO purports to grant domestic private law rights. Moreover the nullity of the EPO's decision to grant flows through to the registration by the UKIPO of the 908 patent, which is also of no effect. The court is being asked to do no more than ensure that the formalities for a valid grant were observed.
208. Virgin's main answer to this case is that the propriety of the designation of the United Kingdom is not a matter to be investigated in the English courts. The defence advanced amounts to a collateral attack on the decision of the EPO which the English court will not entertain.

Relevant provisions of the EPC

209. The most important provisions of the EPC for present purposes are Articles 1, 2(2) and 64. I set them out in the form in force at the time::

Article 1

A system of law, common to the Contracting states, for the grant of patents for invention is hereby established.

Article 2

... (2) The European patent shall, in each of the Contracting States for which it is granted, have the effect of and be subject to the same conditions as a national patent granted by that State, unless this Convention provides otherwise.

Article 64

(1) A European patent shall, subject to the provisions of paragraph 2, confer on its proprietor from the date of publication of the mention of its grant, in each Contracting State in respect of which it is granted, the same rights as would be conferred by a national patent granted in that State....

(3) Any infringement of a European patent shall be dealt with by national law.

210. At the material time the Convention contained Article 79 in the following form:

Article 79

Designation of Contracting States

(1) The request for the grant of a European patent shall contain the designation of the Contracting State or States in which protection for the invention is desired.

(2) The designation of a contracting state shall be subject to the payment of the designation fee. The designation fees shall be paid within six months of the date on which the European Patent Bulletin mentions the publication of the European search report.

(3) The designation of a Contracting State may be withdrawn at any time up to the grant of the European patent. Withdrawal of the designation of all the Contracting States shall be deemed to be a withdrawal of the European patent application. Designation fees shall not be refunded.

211. It is clear that this form of Article 79 gave rise to problems. Parties were failing to designate states in the request for grant and being unable subsequently to correct the position. Accordingly the provision was amended with effect from 13th December 2007, so that all member states were automatically deemed to be designated from the outset. Article 79(3) was also amended to delete the second sentence.

212. The requirement under the unamended form of Article 79(1) to designate states on the application form is, on its face, mandatory. Although there is an express power to withdraw a designation at any time, there is no express power to designate a contracting state subsequently. However, Rule 88 of the Implementing Regulations (now renumbered as 139) provided:

“Linguistic errors, errors of transcription and mistakes in any document filed with the European Patent Office may be corrected on request. ...”

213. In *Decision J 10/87*, the Legal Board of Appeal of the European Patent Office held, pursuant to Rule 88, that an applicant could reinstate a designation after a withdrawal if (a) the withdrawal has not been notified officially to the public by the EPO, (b) the erroneous withdrawal was due to an excusable oversight, (c) there was no undue delay and (d) there is adequate protection for third persons if withdrawal is allowed. *Virgin* of course, have understandably not suggested at any stage that Rule 88 would have any application here.

Relevant UK legal provisions

214. Section 77 of the Patents Act 1977 provides:

77(1) Subject to the provisions of this Act, a European patent (UK) shall, as from the publication of the mention of its grant in the European Patent Bulletin, be treated for the purposes of Parts I and III of this Act as if it were a patent under this Act granted in pursuance of an application made under this Act and

as if notice of the grant of the patent had, on the date of that publication, been published under section 24 above in the journal; and -

(a) the proprietor of a European patent (UK) shall accordingly as respects the United Kingdom have the same rights and remedies, subject to the same conditions, as the proprietor of a patent under this Act;

215. Section 130(1) contains definitions of the following terms:

“European Patent Convention”	the Convention on the Grant of European Patents
“European patent”	a patent granted under that convention
“European patent (UK)”	a European patent designating the United Kingdom
“designate (in relation to an application or patent)”	designate the country or countries (in pursuance of the European Patent Convention or the Patent Co-operation Treaty) in which protection is sought for the invention which is the subject of the application or patent and includes a reference to a country being treated as designated in pursuance of the convention or treaty

216. Section 60(1) provides

60.-(1) Subject to the provisions of this section, a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say - ...

The English common law approach to decisions of public authorities affecting individuals

217. There is, of course, a longstanding principle of English common law that any individual affected by an act of a public authority should have the opportunity to challenge that act through the courts. The principle is, as Mr Saini recognises, not an absolute one. There is, however, a very strong presumption that an individual affected by the act of a domestic public authority can ask the court, as the ultimate

guardian of the rule of law, to enquire into the legality of the public authority's acts: see for example *Boddington v British Transport Police* [1999] 2 AC 143 at 161-2 per Lord Irvine of Lairg. In that case, the principle is stated as a principle of statutory construction, namely that Parliament will not legislate to prevent an individual from having a fair opportunity to challenge the legality of legal measures which affect him. In that case it was recognised that it was at least a possible construction of domestic legislation that Parliament intended to exclude the right to challenge a statutory scheme, but that cases in which that conclusion had been reached had involved “*a clear and ample opportunity provided by the scheme of the relevant legislation to challenge the legality*” of the relevant acts: see 161G.

218. The principle of construction is undoubtedly a very powerful one. In *Anisminic v Foreign Compensation Commission* [1969] 2 AC 147, Parliament had provided, by primary legislation, that determinations of the Foreign Compensation Commission “*could not be called in question in any court of law*”. The House of Lords held that these words were not wide enough to prevent the court from enquiring into whether the determination was a nullity. In doing so, the court was not calling into question the determination because, if it was a nullity, there was no determination to call in question: see per Lord Reid at 169-70, and Lord Pearce at 199-200.

Article 6

219. Article 6(1) of the European Convention on Human Rights provides that “*in the determination of his civil rights and obligations ... everyone is entitled to a fair and public hearing ... before an independent and impartial tribunal established by law*”. The right to institute proceedings before a civil court is one aspect of this right, which is a qualified right, not an absolute one.
220. In *Tinnely & Sons Ltd and McElduff and others v United Kingdom* (62/1997/846/1052-3) the applicants suspected that they had been the subject of discrimination in the withdrawal of the offer of a contract. In consequence they made an application to the Fair Employment Agency in Northern Ireland for their complaint to be investigated. The Secretary of State purported to block that investigation by issuing a certificate to the effect that the reason the applicants did not obtain the contract was for reasons of national security, public safety and public order. As the ECtHR pointed out at [72]:

“However, this right is not absolute, but may be subject to limitations; these are permitted by implication since the right of access by its very nature calls for regulation by the State. In this respect, the Contracting States enjoy a certain margin of appreciation, although the final decision as to the observance of the Convention's requirements rests with the Court. It must be satisfied that the limitations applied do not restrict or reduce the access left to the individual in such a way or to such an extent that the very essence of the right is impaired. Furthermore, a limitation will not be compatible with Article 6§1 if it does not pursue a legitimate aim and if there is not a reasonable relationship of proportionality between the means employed and the aim sought to be achieved (see, among other authorities, the *Stubbings and Others v. the United Kingdom*

judgment of 22 October 1996, Reports 1996-IV, p. 1502, § 50).”

221. The Court observed at [77] that a complaint could be properly submitted for judicial determination even if national security considerations were present and, as to the certificates:

“The right guaranteed to an applicant under Article 6§1 of the Convention to submit a dispute to a court or tribunal in order to have a determination of questions of both fact and law cannot be displaced by the *ipse dixit* of the executive”

222. One can add, although not as relevant here, that EU law also recognises a right to an effective judicial remedy: in *Johnston v Chief Constable for the Royal Ulster Constabulary* Case 222/84 [1987] 1 QB 129 the Court of Justice said that this was a principle “*which underlies the constitutional traditions common to the member states*” and which “*must be taken into consideration in Community [now Union] law*”.

Treaties do not confer directly enforceable rights

223. In English law, unincorporated treaties do not have the effect of creating rights in favour of, or impose duties on, individuals. Treaties, as agreements between states, exist on the plane of international law. When domestic legislation is passed to give effect to a treaty which deals with the rights and duties of individuals, it is the domestic legislation and not the treaty which creates those rights and duties: see e.g. per Lord Hoffmann in *R v Lyons* [2002] UKHL 447; [2003] 1 AC 976 at [27].
224. It is important to bear in mind that this is a principle of English law (and, no doubt, the law of many other countries). The principle has no relevance where the applicable law of a claim is international law.

The principle of non-justiciability

225. These principles of the English common law, Convention law and EU law are of course beyond dispute. The difference in the present case is that the acts of the authority which it is sought to attack in our courts are the acts of an international organisation set up by international treaty. In order to decide the legality of the acts of the international organisation it would be necessary to construe the treaty and adjudicate on the legality of the acts performed by the international organisation in purported pursuance of it. There is, therefore, an equally strong principle in play, which is that the English courts have a self-denying ordinance: they do not regard themselves as competent to adjudicate upon the legality of acts performed by international organisations pursuant to an international treaty. In the *Tin Council* case, *J.H. Rayner (Mincing Lane) Ltd v Department of Trade and Industry* [1990] AC 418, Lord Oliver, at 499 F said:

“It is axiomatic that municipal courts have not and cannot have the competence to adjudicate upon or enforce the rights arising out of transactions entered into by independent sovereign states on the plane of international law.”

226. Which principle should prevail? In *Lenzing AG's European Patent (UK)* [1997] RPC 245, Jacob J had to consider the application of these rival principles in a case, as the present one, which involved the European Patent Convention. Lenzing had been unsuccessful in proceedings before the TBA of the European Patent Office in resisting the post grant revocation of their European patent in opposition proceedings. The result of the Board of Appeal's decision was that an entry was made on the register maintained by the Comptroller recording the fact that the EP(UK) had been revoked. In proceedings in England, Lenzing sought judicial review of the Comptroller's action in making that entry on the register and sought rectification of the register under section 34(1) to remove it. Jacob J dismissed both applications.
227. The judgment of Jacob J includes at pages 254 to 260 a compendious review of the EPC and the way in which some of its provisions are implemented into the law of the United Kingdom. The focus of attention in the latter case was section 77(4A) which provided that "*Where a European patent (UK) is revoked in accordance with the European Patent Convention, the patent shall be treated for the purposes of Parts I and III of this Act as having been revoked under this Act.*" Lenzing argued that the use of the words "in accordance with the [EPC]" in that provision invited and required the English court to inquire into whether the purported revocation was, in fact, in accord with the provisions of that treaty: see page 261 lines 24-33.
228. The consequences, if Lenzing were right in their submission that the decision of the Board of Appeal revoking the patent was a nullity, were described by Jacob J as "an awful muddle". The register of European patents would continue to record the revocation of the patent, in contrast to the rectified position on the UK register. Moreover parties to the appeal proceedings, including a party not present before the English court, would be deprived of the fruits of their victory before the EPO, insofar as they related to the UK (see page 261 lines 35-51).
229. Jacob J held that the EPO was an international organisation, no different in this respect from the Tin Council. The United Kingdom had agreed that the EPO should be the final arbiter of revocation. The general words identified in section 77(4A) did not enable our courts to look into the propriety of the actions of the Boards of Appeal. This would be, using the words of Bingham LJ in *Arab Monetary Fund v Hashim (No. 3)* [1990] 3 WLR 139 at 164; [1990] 2 All ER 769 at 782 to:
- "hijack an organisation to which [one sovereign state] and other states had given birth and subject it (contrary to the treaty terms) to its own domestic jurisdiction"
230. *Lenzing* is heavily relied upon by Virgin as determining the present case against the defendants. They submit that the reasoning of Jacob J, although necessarily dealing only with revocation by a Board of Appeal, is equally applicable to the present issue of grant or designation. Mr Saini recognises this, and submits that Jacob J's decision, whilst understandable in the context of a case where the EPO had its own system of judicial review in the shape of the Boards of Appeal, states the general principles of non-justiciability too widely. In particular, if the effect of the decision is to prohibit the defendants from challenging decisions of the EPO which are not open to judicial review, then it goes too far, and is wrong.

231. In support of these submissions, Mr Saini placed reliance on two principal strands of authority. The first was that described as the “domestic foothold principle”. The second was the decision of the European Commission of Human Rights in a follow up to the *Lenzing* case.

The domestic foothold principle

232. The domestic foothold principle was recognised by Simon Brown LJ in *Campaign for Nuclear Disarmament v The Prime Minister* [2002] EWHC 2759 (QB). In that case, the campaigning organisation, CND, was seeking a declaration about the legality of any decision of the government to use force against Iraq without a fresh United Nations Security Council resolution authorising military intervention. The case would have involved the English court pronouncing on the interpretation of the existing Security Council resolution, an instrument which existed purely on the plane of international law. Simon Brown LJ said at [36]:

“All of the cases relied upon by the applicants in which the court has pronounced upon some issue of international law are cases where it has been necessary to do so in order to determine rights and obligations under domestic law.”

233. Later, in [36] Simon Brown LJ said that:

“there is in the present case no point of reference in domestic law to which the international law issue can be said to go” and

“the domestic courts are the surety for the lawful exercise of public power only with regard to domestic law; they are not charged with policing the United Kingdom’s conduct on the international plane.”

234. He concluded at [40]:

“Here there is simply no foothold in domestic law for any ruling to be given on international law.”

235. The domestic foothold principle has been recognised in further cases: a decision of Sir Andrew Morritt (Ch) in *re AY Bank Limited (in administration, AY Bank Ltd (in liquidation) v Bosnia and Herzegovnia*) [2006] EWHC 830 (Ch); [2006] 2 All ER (Comm) 463 at [42] to [44] and the decision of Briggs J in *Republic of Croatia v Republic of Serbia* [2009] EWHC 1559 (Ch) at [27] to [32].

236. Mr Saini fastens on the recognition of the domestic foothold exception in cases where it is necessary to pronounce on international law in order to determine rights or obligations existing under domestic law. He says that in the present case it is necessary to review the legality of the steps taken by the EPO in creating the EP(UK), because they affect rights and obligations under domestic law. In the present case the court has to determine under section 60(2) whether there is a European patent designating the UK and whether it is in force. These are essential domestic law requirements for the actions against the defendants to succeed, and are what makes

this a case in which it is necessary to pronounce on the validity of the acts of an international organisation.

237. In *Republic of Ecuador v Occidental Exploration and Production Company* [2005] Lloyd's LR 240; [2005] EWHC 774 (Aikens J); and [2006] QB 432; [2005] EWCA (Civ) 1116 (CA), the court was faced with an issue arising out of a bilateral investment treaty ("BIT") concluded between the United States and Ecuador. Such treaties are concluded between states to encourage investment between states, including investment by non-governmental investing organisations, such as Occidental. BITs achieve this objective by ensuring minimum standards of treatment of investors. The BIT in question, by its terms, gave standing to investors to pursue dispute resolution by arbitration in a state party to the New York Convention on the Recognition and Enforcement of Foreign Arbitration Awards 1958 and in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL). Such a dispute arose between Occidental and Ecuador about repayments of VAT. At a preliminary hearing it was agreed that the arbitration should be held in London. Ecuador challenged the jurisdiction of the arbitrators over the subject matter of the dispute. The arbitrators determined that they did have jurisdiction and determined most of the dispute in favour of Occidental. Ecuador applied to the court to challenge the award under the terms of the Arbitration Act 1996.

238. Aikens J held that the rights which Ecuador wished the court to consider were the rights contained in the arbitration agreement contained within the BIT. These rights were to be interpreted and defined applying principles of public international law. However, these rights were intended to be exercised by municipal law entities in a tribunal which was subject to municipal laws - i.e. the arbitrators (see [66] and [73]). Applying the dictum of Simon Brown LJ in *CND*, Aikens J said at [76]:

“In my view, in this case there is a foothold in domestic law for a ruling to be given on international law. That foothold is the right given by section 67 of the 1996 Act to a party to an arbitration, whose seat is in England, Wales and Northern Ireland, to challenge the jurisdictional ruling of the arbitral tribunal. That is a Municipal, private or domestic law right. There is nothing in the 1996 Act to say that it is not available in certain circumstances. Even if the 1996 Act is subject to the principles of "non – justiciability" in general, the effect of the analysis of Simon Brown LJ in the *CND* case must be that the court is entitled to consider an unincorporated treaty if it has to do so in order to determine rights that exist under domestic law.”

239. In the Court of Appeal in the judgment of Mance LJ, giving the judgment of the court at [31], the question for the court was said to be whether there was a sufficient foothold of the nature contemplated by Simon Brown LJ in the *CND* case. Mance LJ explained at [32] that the answer to that question depended on taking into account both the special character of the BIT, and the agreement to arbitrate which it was intended to facilitate. He said:

“The Treaty involves, on any view, a deliberate attempt to ensure for private investors the benefits and protection of consensual arbitration; and this is an aim to which national courts should, in an internationalist spirit and *because* it has been agreed between States at an international level, aspire to give effect.”

240. Later, at [36] Mance LJ referred back to the two reasons he had given at [32]:

“... we consider that [counsel for Ecuador’s] submissions fail to recognise the combined force of the two factors mentioned in the first two sentences of paragraph 32 above. The case is not concerned with an attempt to invoke at a national legal level a Treaty which operates only at the international level. It concerns a Treaty intended by its signatories to give rise to rights in favour of private investors capable of enforcement, to an extent specified by the Treaty wording, in consensual arbitration against one or other of its signatory States. For the English Court to treat the extent of such rights as non-justiciable would appear to us to involve an extension, rather than an application, of existing doctrines developed in different contexts.”

241. Accordingly, the Court of Appeal held at [46] that:

“The present jurisdictional issues arise under an agreement to arbitrate which both parties to the arbitration accept to have been validly made and implemented. The English Courts, which under the relevant English law principles of private international law recognise the agreement, are being asked to interpret its scope in order to give effect to the rights and duties contained in the agreement to arbitrate. That in our view satisfies both the essential elements of the *Philipson* case, and the criterion for jurisdiction identified in the *CND* case.”

242. I think these passages make the distinction with the present case very clear. The special character of the BIT meant that it expressly contemplated arbitrations where domestic law might apply. By contrast in the present case, the member states of the EPC have expressly delegated the grant procedure for European Patents to the EPO. Here, the internationalist spirit, to which Mance LJ referred in *Ecuador* at [32], operates in precisely the opposite direction.

243. It is true that before the patent can be sued on in this country it must be an EP designating the UK and “in force”. It is also true that the designation must be “in accordance with the European Patent Convention”. These provisions do not, in my judgment, justify an enquiry of the kind sought here, into the validity of the designation. The requirement that the patent be in force is no more than a requirement that it has not lapsed, expired or been revoked. The requirement for designation does not require the court to look further than the mention of grant in the Bulletin. It is noteworthy that in *Lenzing* it was exactly those words, although in section 77(4), which Jacob J said:

“no more have the effect of enabling our courts to look into the propriety of the actions of the [Boards of Appeal] than the general words of the Companies Act had in [the International Tin Council case].”

244. Although it involves taking the argument a step further, one might equally point to the fact that a European patent must be a patent granted “under” the European Patent Convention. If the definition of “designation” establishes a sufficient domestic foothold, then I see no reason why the definition of “European patent” should not. This would open the door to all kinds of challenges to the validity of the grant procedure in domestic courts, undermining the whole notion of the system of a “common system of law ... for the grant of patents”.
245. Such an open season on the procedure leading to grant of the European patent is also contraindicated, in my judgment, by the structure of the Convention itself. The EPC allows post grant challenges to the validity of the grant on specified grounds: see Articles 100 and 138. A similar but not identical selection of grounds is available in section 72 of the Patents Act 1977. It cannot have been envisaged that contracting states could superimpose on this scheme their own notions of what amounts to an invalid exercise of the power to grant. To do so would indeed hijack the system of law provided for by the Convention and subject it to our own municipal scheme.
246. Thus, I do not think the domestic foothold principle assists the defendants in the present case. Like Jacob J in *Lenzing*, I consider that the provisions of the EPC concerned with grant operate only at the international level. It is not necessary to interpret the provisions of the EPC concerned with grant in order to determine infringement or validity proceedings in a domestic context.

The follow up to Lenzing

247. The *Lenzing* case was the subject of a decision of the European Commission for Human Rights on 9th September 1998. *Lenzing* complained that its rights of peaceful enjoyment of its possession (the patent) under Article 1, and of access to a court under Article 6, had been violated. The Commission considered that the relevant question for consideration was whether the United Kingdom’s refusal to consider the merits of the case was compatible with Article 6. It would only be compatible if “*the limitation pursues a legitimate aim and there is a reasonable relationship of proportionality between the means employed and the aim sought to be achieved.*”
248. The Commission noted that where a state entered into treaty obligations incompatible with the Convention, it was answerable for any breach of its obligations under the earlier treaty. However, the transfer of powers to an international organisation is compatible with the Convention provided that within the organisation fundamental rights receive an “equivalent protection”. Having reviewed the main provisions of the EPC, the Commission concluded that the aim of the limitation on access to the courts to ensure the effectiveness of a centralised patent applications office was legitimate. As to the proportionality of the means employed in pursuing this aim, the Board considered that detailed provisions of the EPC, including the procedure of appeal to the Boards of Appeal, provided equivalent protection within the Convention case law. The Commission concluded that given the procedural guarantees available before the EPO, it could not be said that the restriction on *Lenzing*’s access to the court was

disproportionate in relation to the legitimate aim of an effective European system of patents. On this basis they found Lenzing's complaint to be manifestly ill-founded.

249. Mr Saini submits that the existence of the internal appeal procedure within the EPO was a vital factor in rejecting Lenzing's complaint. By contrast, he submits that in the present case those affected by the designation have no opportunity whatsoever to challenge the validity of the designation of the UK.
250. Mr Maclean submits that it does not follow from the Commission's reasoning in the *Lenzing* case that to interpret the Patents Act as prohibiting a challenge to the designation of the UK in the present case would breach the defendants' Article 6 rights.
251. I think Virgin are right about this. The restriction on the right to challenge the designation of the UK pursues the same legitimate aim as was in play in the *Lenzing* case. Not every decision in the grant procedure which may adversely affect the rights of an individual is capable of challenge: a line has to be drawn between those decisions which are to be capable of a full challenge and those which are not, or which are simply to be subject to a review. The EPC as a whole has decided where those lines are to be drawn. The extent to which the designation of the UK may be challenged in proceedings before the EPO, namely by asking the appropriate division to review its decision, represents the agreement of the contracting states on where the line is to be drawn in that respect. I do not think that the inability to challenge the designation of the UK in the national court violates the defendants' Article 6 rights.

The Rule 50 appeal

252. In the light of my conclusions about the non-designation point generally, it is plain that the appeal from the decision of the hearing officer under Rule 50 cannot succeed. Virgin and the Comptroller argued that it was bound to fail for an additional procedural reason, based on the language of Rule 50.
253. Rule 50 is in the following terms
- (1) Subject to rule 49, any person may request the correction of an error in the register or in any document filed at the Patent Office in connection with registration.
 - (2) The request must be—
 - (a) made in writing; and
 - (b) accompanied by sufficient information to identify the nature of the error and the correction requested.
 - (3) If the comptroller has reasonable doubts about whether there is an error—
 - (a) he shall inform the person making the request of the reason for his doubts; and
 - (b) he may require that person to furnish a written explanation of the nature of the error or evidence in support of the request.

(4) If the comptroller has no doubts (or no longer has doubts) about whether an error has been made he shall make such correction as he may agree with the proprietor of the patent (or, as the case may be, the applicant).

254. Sub-rule (4) restricts the power of the Comptroller under the rule to make corrections. The corrections he may make have to be agreed with the proprietor of, or the applicant, *for the patent*. This restriction makes it clear that the procedure under the rule is only suitable for corrections of the kind which are likely to be agreed with the proprietor of (or applicant for) the patent. The Act provides an alternative mechanism for rectification of the Register by the Court under section 34. It must always have been clear to Premium that the correction which they sought would not be agreed by Virgin. Rule 50 was therefore an incorrect procedural choice for seeking correction of the Register.

Conclusions

255. My overall conclusions are
- (a) 908 is not infringed by the Solar Eclipse seating system either in its original form or with the variant form of headrest;
 - (b) 711 would not be infringed by Solar Eclipse seat units, either in their original form or with the variant form of headrest;
 - (c) 734 would be infringed by the Solar Eclipse seating system and Solar Eclipse seat units both in their original form and with the variant form of headrest;
 - (d) the modified Solar Eclipse does not infringe any of the patents;
 - (d) subject to deletion of the words “at least some” in claim 1 of 908 and 734, and on the construction of the claims of 908 which I have held to be correct, none of the patents is invalid for added matter;
 - (e) none of the three patents is invalid for obviousness;
 - (f) the Delta undertaking continues to apply;
 - (g) the non-designation point fails;
 - (h) the Rule 50 appeal will be dismissed.
256. At a more general level, the defendants succeed in relation to 908 and Contour succeeds in relation to 711, but Virgin succeed against Contour in relation to 734.