

IN THE COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE CHANCERY DIVISION
(PATENTS COURT)
The Hon Mr Justice Lewison
HC07 C1905

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 22/10/2009

Before :

THE RT HON LORD JUSTICE JACOB
THE RT HON LORD JUSTICE PATTEN

and

THE HON MR JUSTICE KITCHIN

Between :

Virgin Atlantic Airways Limited
- and -
Premium Aircraft Interiors UK Limited

Appellant

Respondent

Richard Meade QC and Henry Ward (instructed by DLA Piper UK LLP)
for the Appellant
Mark Vanhegan QC and Miss Kathryn Pickard (instructed by Wragge & Co LLP)
for the Respondent

Hearing dates: 5/6/7 October 2009

Judgment

Lord Justice Jacob:

Setting the Scene

1. This is the judgment of the court to which all members have contributed.
2. Virgin (whose case was argued by Mr Richard Meade QC) appeals that part of the judgment of Lewison J ([2009] EWHC 26 (Pat)) whereby he held that Contour's (as the respondent is known) aircraft seating system does not infringe its EP (UK) 1,495,908 patent ("the Patent"). Contour (whose case was argued by Mr Vanhegan QC) cross-appeals for revocation of the Patent, but only contingently so. It says that if the Patent is wide enough to cover its system then, and only then, it is invalid. Lewison J held that if the Patent had been wide enough to cover the Contour system it would have been invalid for added matter. He rejected all other attacks on the Patent, even on that contingent basis.
3. Contour's denial of infringement and its contingent cross-appeal are based on more limited grounds than those advanced before the judge. Moreover what was a major issue before the judge – whether Contour had infringed design right, is not raised on appeal.
4. The upshot is that the issues we have to decide are much more limited than those before the judge. What is left in play are the following:
 - i) Is the scope of claim 1 of the Patent limited to systems which employ "flip-over" seats (see below for what this means)?

If it is not so limited:

- ii) Is the Patent invalid for adding matter not disclosed in the original application ("the Parent")?
- iii) Does claim 1 include within it what is disclosed in British Airways ("BA") patent application GB 2,326,824A ("the BA Application")? If so it is invalid for want of novelty.
- iv) Does claim 1 cover systems which use rotatable seat/beds? If so, it will be invalid for want of novelty over a prior art patent application called Airbus (EP 1,211,176).
- v) If not, is claim 1 nonetheless obvious over Airbus or the BA Application or common general knowledge ("cgk")?
- vi) If Claim 1 is obvious, is claim 9 also obvious?

Principles of claim construction

5. One might have thought there was nothing more to say on this topic after *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9. The judge accurately set out the position, save that he used the old language of Art 69 EPC rather than that of the EPC 2000, a Convention now in force. The new language omits *the terms of* from Art. 69.

No one suggested the amendment changes the meaning. We set out what the judge said, but using the language of the EPC 2000:

[182] The task for the court is to determine what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean. The principles were summarised by Jacob LJ in *Mayne Pharma v Pharmacia Italia* [2005] EWCA Civ 137 and refined by Pumfrey J in *Halliburton v Smith International* [2005] EWHC 1623 (Pat) following their general approval by the House of Lords in *Kirin-Amgen v Hoechst Marion Roussel* [2005] RPC 9. An abbreviated version of them is as follows:

(i) The first overarching principle is that contained in Article 69 of the European Patent Convention;

(ii) Article 69 says that the extent of protection is determined by the claims. It goes on to say that the description and drawings shall be used to interpret the claims. In short the claims are to be construed in context.

(iii) It follows that the claims are to be construed purposively—the inventor’s purpose being ascertained from the description and drawings.

(iv) It further follows that the claims must not be construed as if they stood alone—the drawings and description only being used to resolve any ambiguity. Purpose is vital to the construction of claims.

(v) When ascertaining the inventor’s purpose, it must be remembered that he may have several purposes depending on the level of generality of his invention. Typically, for instance, an inventor may have one, generally more than one, specific embodiment as well as a generalised concept. But there is no presumption that the patentee necessarily intended the widest possible meaning consistent with his purpose be given to the words that he used: purpose and meaning are different.

(vi) Thus 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. Hence the other extreme of the Protocol—a mere guideline—is also ruled out by Article 69 itself. It is the terms of the claims which delineate the patentee’s territory.

(vii) It follows that if the patentee has included what is obviously a deliberate limitation in his claims, it must have a meaning. One cannot disregard obviously intentional elements.

(viii) It also follows that where a patentee has used a word or phrase which, acontextually, might have a particular

meaning (narrow or wide) it does not necessarily have that meaning in context.

(vii) It further follows that there is no general “doctrine of equivalents.”

(viii) On the other hand purposive construction can lead to the conclusion that a technically trivial or minor difference between an element of a claim and the corresponding element of the alleged infringement nonetheless falls within the meaning of the element when read purposively. This is not because there is a doctrine of equivalents: it is because that is the fair way to read the claim in context.

(ix) Finally purposive construction leads one to eschew the kind of meticulous verbal analysis which lawyers are too often tempted by their training to indulge.

6. So far so good. Those are the general principles. But as stated they do not explicitly cover three matters with which we are concerned. They are related and involve this question: how much of the law and practice of the patent system is the skilled reader supposed to know and thus take into account when he is trying to work out what, by the words of his claim, the patentee was intending to mean?

7. The first matter relates to the use of numerals in a patent claim. Rule 29 (7) of the Implementing Regulations to the EPC provides that if the application contains drawings:

“... the technical features mentioned in the claim shall preferably, if the intelligibility of the claim can thereby be increased, be followed by reference signs relating to these features and placed between parentheses. These reference signs shall not be construed as limiting the claim.”

8. So the question is this: does the skilled reader take into account that the patentee, when putting numerals into his claim, knew that they would not be used by the skilled reader to limit his claim? Must he be taken to know this rule?

9. The next matter follows from the use of a two-part claim, the so-called “pre-characterising” and “characterising” parts. Again the question arises because of a rule of the Implementing Regulations. Rule 29(1) says:

“The claims shall define the matter for which protection is sought in terms of the technical features of the invention. Wherever appropriate, claims shall contain:

(a) a statement indicating the designation of the subject-matter of the invention and those technical features which are necessary for the definition of the claimed subject-matter but which, in combination, are part of the prior art;

(b) a characterising portion – preceded by the expression “characterised in that” or “characterised by” – stating the technical features which, in combination with the features stated in sub-paragraph (a), it is desired to protect.”

Does the skilled reader when he sees such a two-part claim take this rule into account so that he at least expects the pre-characterising portion to describe matter which is part of the prior art?

10. Finally there is a somewhat more general question (because there is no express rule about drafting or construction involved) of whether the skilled reader will know about the practice of divisional applications. It arises because the Patent is a divisional and says so. If the skilled reader does know about the divisional system (provided for by Art. 76 of the EPC, implemented by Art 25 of the Implementing Regulations) that may affect his understanding of a claim because he will know that there are, or may be, aspects of what is described in the patent which are actually claimed in some other patent or patents divided out from the original application.
11. We think the answers to these questions follow from *Kirin-Amgen* itself. The notional skilled reader is to be taken as knowing these matters and bringing them to bear when he considers the scope of the claim. We say that for the following reasons:
12. First in *Kirin-Amgen* itself Lord Hoffmann said that the skilled reader:

[33] ... reads the specification on the assumption that its purpose is to both describe and demarcate an invention – a practical idea which the patentee has had for a new product or process.

And:

[34] ... it must be recognised that the patentee is trying to describe something which, at any rate in his opinion, is new ..
13. So the skilled reader is taken to suppose that the patentee knew some patent law – that his claim is for the purpose of defining the monopoly and that it should be for something new. Knowledge of that may well affect how the claim is read – for instance one would not expect the patentee to have used language which covered what he expressly acknowledged was old.
14. Moreover as Lord Hoffmann said at [34]:

[34] ... The words will usually have been chosen on skilled advice. The specification is not a document *inter rusticos* for which broad allowances must be made.
15. We think it would unrealistic – indeed perverse – for the law to say that the notional skilled reader, probably with the benefit of skilled advice, would not know and take into account the explicit drafting conventions by which the patent and its claims were framed. Likewise when there is a reference to the patent being a divisional application, it would be perverse to work on the basis that the skilled man would not

know what that means. A real skilled man reading a patent which, as in the case of the Patent, refers to “the parent application” would surely say “what’s a parent application?” – and he would go on to ask a man who knows, probably a patent agent.

16. It follows that we need to address what the skilled man would actually make of the two explicit drafting rules. As regards rule 29(7), Laddie J in *Telsonic AG's Patent* [2004] R.P.C. 38 § 26 said that:

“Reference numerals ... are designed to be, and can be, useful tools to elucidate the inventor's intention. As such they may, depending on the circumstances, help to illustrate that the inventor intended a wide or narrow scope for his claim. On the other hand they cannot be used to import into the claim restrictions which are not foreshadowed by the language of the claim itself.”

17. We think that is not quite right. In particular we do not think that numerals should influence the construction of the claim at all – they do not illustrate whether the inventor intended a wide or narrow meaning. The patentee is told by the rule that if he puts numerals into his claim they will not be used to limit it. If the court subsequently pays attention to the numbers to limit the claim that is simply not fair. And patentees would wisely refrain from inserting numbers in case they were used against them. That is not to say that numbers are pointless. They help a real reader orient himself at the stage when he is trying to get the general notion of what the patent is about. He can see where in the specific embodiment a particular claim element is, but no more. Once one comes to construe the claim, it must be construed as if the numbers were not part of it. To give an analogy, the numbers help you get the map the right way up, they do not help you to read it to find out exactly where you are.

18. Next the two-part claim structure. The EPO Boards of Appeal have had a little to say about this. In *Siemens/Electrode slide* (T06/81) the applicant had put into his original pre-characterising clause material which was not in fact part of the prior art. He was allowed to amend so as to put that material into the characterising part. The Board said:

2.2. Under Rule 29(1)(a) of the Implementing Regulations to the EPC, the preamble of a two-part (independent) claim must contain the technical features of the subject-matter of the claim which, in combination, are part of the prior art. In principle, therefore, it may be assumed that the features included by the applicant in the preamble to the claim as filed, in combination with one another, are no longer new. On the other hand, the claim as originally worded must not be regarded as a binding statement as to the novelty of those features, but simply as an attempt to summarise the essential features of the invention. In the view of the Board, the question of which features are known and hence to be included in the preamble in the event of the application being successful must be decided purely in the light of the objective facts of the case.

19. In *Boehringer/Diagnostic Agent* (T99/85) a feature of the invention which in fact conferred novelty had been put into the pre-characterising clause. The Board held this did not matter and it did not have to be moved into the characterising clause. The official headnote puts it this way:

3. In the opposition proceedings there is no reason officially to insist on a change in the wording of the claim simply because one feature in the preamble to a two-part claim does not belong to the state of the art (Rule 29(1)(a) EPC).

The Board itself said:

[4] In establishing the novelty of the subject-matter of the disputed patent it was indeed shown that the feature stated in the opening part of Claim 1 ... does not, as the appellants claim, belong to the state of the art in conjunction with the other features in the preamble. Nevertheless, the Board sees no reason for it solely on this account, to insist, that the wording of a patent claim already granted should be amended. The Board takes Rule 29(1) EPC for what it is - an implementing regulation, primarily relevant to the patent grant procedure and therefore no more constituting a ground for opposition than for example Article 84 EPC (reference to T 23/86 of 25 August 1986, OJ EPO 1987, 316). Claim 1 can therefore be maintained in the text as granted.

20. From this Mr Vanhegan invited us to conclude that the skilled reader would have no, or at the very least only a slight presumption, that the pre-characterising portion of a claim was describing what the patentee considered to be old. He particularly emphasised the Board's statement that it is "primarily relevant to the patent grant procedure." Mr Meade on the other hand submitted that when the skilled man sees a pre-characterising clause he will strongly incline to the view that the skilled man saw that as being old. And that inclination will be reinforced (perhaps steepened is a better word) where the clause concerned is clearly said by the patentee to be based on prior art which he specifically acknowledges.
21. We accept Mr Meade's contention. Even without a two-part claim structure, because the skilled reader knows that the patentee is trying to claim something which he, the patentee, considers to be new, he will be strongly averse to ascribe to the claim a meaning which covers that which the patentee acknowledges is old. And if the patentee not only acknowledges that a particular piece of prior art is old but then has a pre-characterising clause which is fairly obviously based on it, the skilled reader will be even more strongly inclined to read that clause as intended to describe that old art.
22. The judge was not referred to either of these two cases. He was referred to a passage from case T13/84:

Neither the Article nor the Rule makes any reference to the necessity or desirability that "the characterising portion of the claim should fairly set out the inventive step. The contention by the Appellant seems to be based on the false conception that

the inventive step resides in the characterising portion of the claims. It is, however, the subject-matter of the claim as a whole which embodies the invention and the inventive step involved.

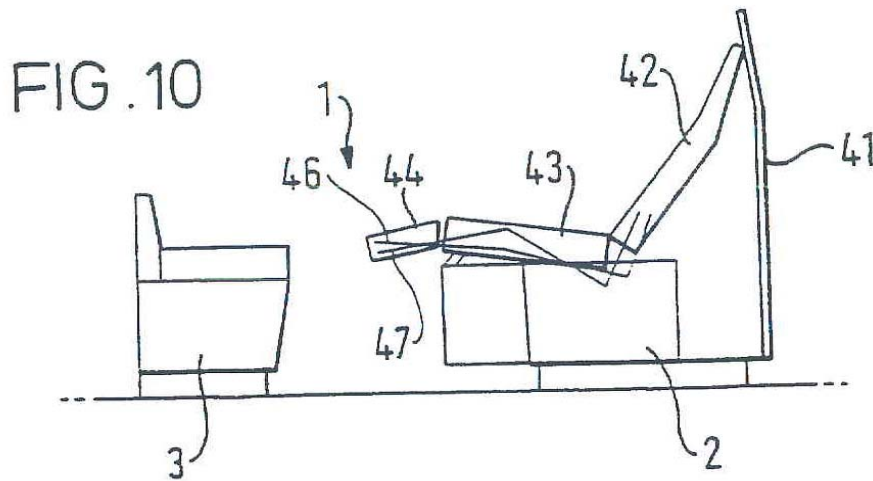
That passage is nothing to do with claim construction. It is about obviousness and is saying, as must be so, that when considering obviousness you must look at the claim as a whole.

The cgk

23. There was no significant controversy about this. The judge sets it out at [193] and we do not need to set it all out here. We will focus just on the bits that matter for present purposes. The skilled man would know about the important developments in aircraft seats and seating systems. In particular he would know about what were called BA First (disclosed in the BA Application), BA Yin Yang and other commercially used seat/bed systems. We borrow with gratitude and some modification part of the judge's descriptions of these.

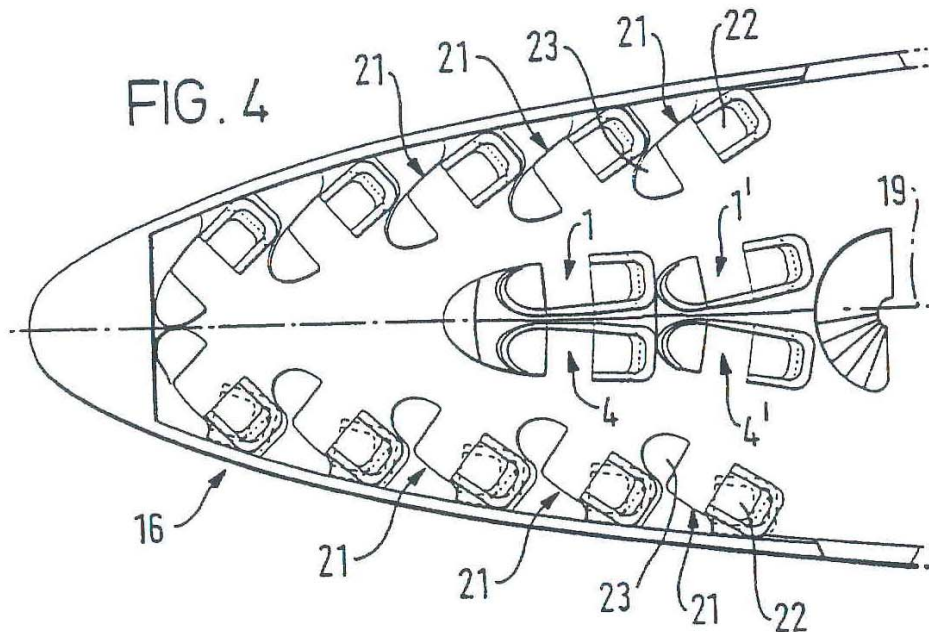
BA First

24. For the first class passenger, all this [i.e. simple seats which reclined but not as far as the horizontal] changed in 1996. In that year BA introduced a new seating system for its first class cabin called BA First, which allowed for a completely flat bed. It provided seats in individual "pods" or compartments formed by privacy screens. Each compartment consisted of both a seat and an ottoman (or footstool) which could be used both as part of the bed when the seat was laid flat and also as occasional seating by a guest passenger (hence it is sometimes called a "buddy seat"); and each seat was at a slight angle to the longitudinal axis of the plane, facing towards the cabin wall. This angled arrangement of seats is called a "herringbone". Where the seats face towards the aisle the herringbone is called an "inward facing herringbone"; otherwise it is called an "outward facing herringbone". The BA First seating arrangement was an outward facing herringbone, which BA had adopted in preference to an inward facing herringbone because it gave passengers more privacy.
25. The individual seat/bed pod of BA First was like this (the drawing is from the BA Application):



A mechanism was provided so that the passenger could cause the seat to slide forward to meet the “ottoman”. Note that the head portion moved slightly backwards within the pod – about 4 to 5 inches in practice.

26. An example of an inward herringbone was in fig. 4 of the BA Application:



Although not in practice used by BA or any of the other airlines that followed the possibility of an inward facing herringbone was known to all.

27. The judge thought (see [194] – [197]) that an inward herringbone - because it was not seen “as a basis for further action” – did not count for the purposes of common general knowledge. However, at least for the purposes of considering the scope of a claim, if the reader knows of an idea and rightly assumes that the writer knew it too, then the reader will surely bear it in mind when trying to work out what the writer meant by the words he used. In other contexts, for instance obviousness, a well-known but unused idea may have less significance compared with one that was well

in use. In this appeal the point does not really matter because neither side's case really depended on whether inward facing herring-bones were c/gk.

28. BA First was a giant success. Other airlines followed (details are in the judgment at [5]). Initially it was all for first class, all with outward herringbones. American Airlines in 2000 used a variant with a swivelling seat.

BA Yin Yang

29. Business class full length bed/seats came next. There is less room for these. BA came out with what was called the Yin Yang seat. It had interlocking seats in a head-to-toe formation; one passenger sitting and sleeping next to the aisle and the other sitting and sleeping next to the window. One of the two passengers faced forwards; and the other faced backwards. This arrangement of seats provided good density of accommodation. However, it had its drawbacks. The passenger in the seat further from the aisle had to climb over the other passenger to get in and out of his seat; and many passengers did not like the feeling of travelling backwards.

Virgin J2000

30. This too was business class. The seats were arranged in conventional rows and columns. Although the J2000 provided a bed, it did so at a slight tilt; and was in the nature of a reclining seat. The foot of the bed had to be partially accommodated under the seat of the passenger in front. The J2000 was a moderate commercial success.

The Patent

31. The title of the Patent is “a novel seating system for a passenger vehicle, particularly an aircraft, and a seating unit for a passenger system.”
32. So at this early stage the skilled man thinks he is going to be told about both a novel system and a novel unit. The Patent then goes on to acknowledge various items of prior art and their problems. It says, at [3] that the old, pre-BA First, partial recliners were not all that comfortable because they were not truly flat. It says at [4] that the possibility of using what might be called a “full recliner” has been disclosed but that the pitch between adjacent rows of seats has to be increased. It also points out that if you use the seat also as part of a bed “the surface is not ideal, because the foam or other padding on the seat is generally sculptured for use as a seat, whereas for a bed it is desirable to have a substantially flat surface.”
33. In [5] the Patent deals with the fact that there was a co-pending unpublished UK application of earlier priority. Under the EPC as it was in force then, such a document counted as against novelty, but only for the UK designation of the Patent. The upshot is that there are special claims for the UK. They are confined to an inward herringbone. The claims for all the corresponding European patents cover inward and outbound herringbones. We were told that the possibility for this sort of nonsense was abolished when the EPC 2000 came into force and a good thing too.
34. [6] is a most important paragraph and central to the second issue of construction of claim 1 (issue (iii)). It is an acknowledgement of the BA Application and a statement

of what the inventors of the Patent say are its disadvantages. It begins by describing briefly the seat unit of the BA Application. It says that in bed mode it forms “a continuous, *flat* sleeping mode.” Mr Meade emphasises *flat* – saying it shows that the inventors do regard the bed of the BA application (with its sculpted seat) as “flat.”

35. Having first referred to the BA Application bed units, [6] goes on to describe how they are arranged – broadly this is, as we have already described, as an inward or outward herringbone. But it is important to see how the inventors describe it because it throws considerable light on the meaning of claim 1. So we set it out in full:

The seating unit defines a notional, longitudinal seat axis, and a plurality of such seating units may be arranged with the cabin side-by-side in a longitudinally offset relation with respect to the longitudinal axis of each seat, with each seating unit being 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.

We emphasise the words about the space defined. One can see it in fig. 4 of the BA Application (see [26] above). The arrow 21 runs through it.

36. [6] continues, saying that the seating unit of the BA Application:

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

37. It then sets out three disadvantages of the BA Application. The judge summarises these accurately:

- i) It requires more cabin space than a conventional layout of seats;
- ii) The seat cushioning is designed principally for use as a seat and not as a bed (the same disadvantage that it had referred to in paragraph [0004]);
- iii) The seat itself occupies a very large floor area and is therefore unsuitable for use in business class.

38. After an acknowledgement of Yin Yang and a statement of its disadvantages (extravagant use of space, too short for tall passengers and the use of cushioning not specifically designed for a bed) and of two other pieces of prior art we need not refer to), the Patent comes to set out the objects of the invention at [11]-[16]. The judge accurately summarises them:

- i) To provide improved accommodation in business class incorporating a flat sleeping surface of maximal length and preferably maximal width;
 - ii) To provide an improved passenger accommodation unit adapted to provide self-contained individual seating and sleeping accommodation, particularly for use in business class;
 - iii) To provide a passenger accommodation unit which can be converted into a bed of maximal length;
 - iv) To provide a seating system which optimises use of space within the cabin;
 - v) To provide a seating system which has a substantially uncrowded appearance.
39. The Patent then begins with its description of the invention, starting, as is conventional, with what is often called the “consistory clause”. Unusually (we do not suggest the skilled man would know that) it is not exactly the same as claim 1. This is what is said:

According to the present invention, 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 off set 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 [the BA Application]*), and characterised in that the flat-bed extends rearwardly into said space behind the seat. The invention also provides seat unit for such a passenger seating system.

The difference between claim 1 and the consistory clause lies in the fact that the latter includes the italicised passage – one upon which Mr Meade relies and one which Mr Vanhegan fairly accepts causes him difficulty as we shall explain below. Immediately following the italicised passage is a description of the “space-packing” idea – using the space behind the seat formed by the inward herringbone to increase the size of the bed.

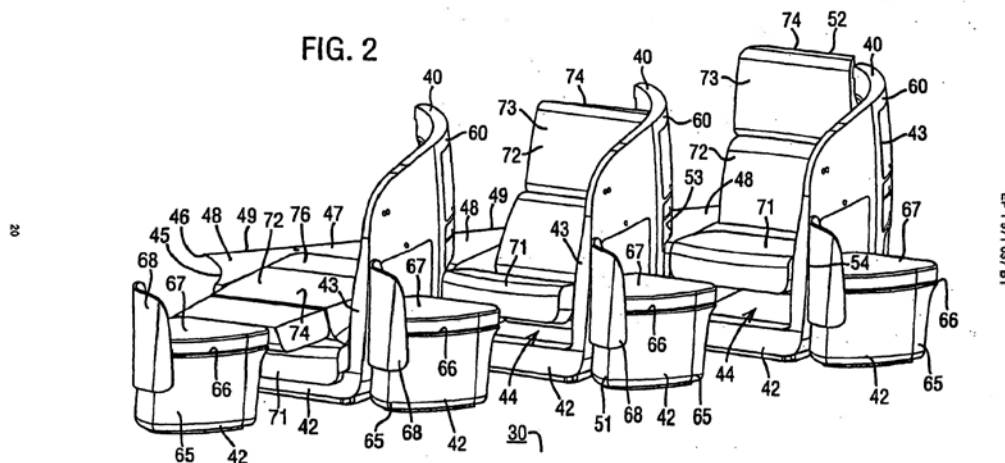
40. Moving on, the Patent goes on to describe various “preferred” forms of the invention. It is not necessary to recite most of these. Mr Vanhegan particularly relies on passages in [26], [45] and [47] of the Patent. So we set them out:

[26] ... Said first and second elements may [misprinted as “my”] occupy all of the space to the rear of the *seat*.

[45] [part of the description of the specific embodiment] ... 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.

[47] [again speaking of the specific embodiment] ... the seat units 40 ... are arranged such that to the rear of each seat 71,72 the seat unit defines a generally triangular or trapezoidal space 36 which is occupied by the first surface 40 and the second surface 48 of another seat unit 40.

41. The Patent has only one specific embodiment. The individual seat/bed unit described and pictured is, it is accepted, at least for present purposes, novel and inventive. It is shown in fig. 2:



42. The picture shows three units. On the right is normal seat mode, in the middle in recline mode and on the left, bed mode. Instead of getting to bed mode by just reclining more, the seat is turned over so as to use the seat back as part of the bed. This was called “flip-over” in argument and we shall use that term to describe both this particular arrangement and other arrangements which allow the passenger to sit and sleep on different surfaces.
43. Flip-over has the advantage that you no longer have the problems you have with a flat bed recliner - those caused because you are using the seat pan and back also for the bed. With flip-over you can get an entirely smooth flat surface save for the join with the ottoman – which is not that important because it is where your legs will be.

Claim 1 of the Patent

44. We set this out in the rearranged manner agreed by the parties as helpful and as used by the judge (with a minor error – the word “unit” was missing in the last line of feature (d)):

- (a) A passenger seating system for an aircraft, comprising a plurality of seat units (40);
 - (b) each seat unit;
 - i. defining a [single, fixed] notional longitudinal seat axis (C-C); and
 - ii. comprising a supporting structure (42) adapted for attaching the seat unit to a floor (30) of an aircraft (12); and
 - iii. means forming or being configurable for forming a seat comprising;
 - a) A seat pan (71); and
 - b) A back-rest (72);
 - iv. further comprising means forming or being configurable for forming a substantially flat bed (47, 48, 67, 74, 76);
 - (c) said seat units being arranged to form a column (29) defining a notional longitudinal column axis (B-B), 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);
 - (d) wherein at least some of the said seat units are arranged to be disposed adjacent a sidewall (26, 28) of the aircraft and face inwardly thereby to define between the rear of each seat and the sidewall a space (36) when the seat is configured as a seat;
 - (e) 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,
- and characterised in that;
- (f) the flat-bed extends into said rearward space (36) behind the seat.

The rearrangement consists in putting feature (b)(iv) in the place shown rather than later in the claim. It makes the claim more intelligible because items (i)-(iv) are all features of the seat. However it has perhaps a danger: the “further comprising” is a little more likely to be read as something entirely different from the seat-pan and back rest. Obviously when one construes the claim one must go by the way it is in the patent, not the re-arrangement.

45. One other point about the claim: as set out feature (b)(i) includes a bit in square brackets. This is offered by way of amendment if there is anticipation by Airbus.

Construction Issue (i): Is the claim limited to systems which use flip-over seats?

46. Mr Meade submits that the judge was mistaken about this when he held that the claim was so limited. We agree for the following reasons.
47. The problem of lost space caused by the herringbone configuration is clearly identified in [6] in connection with the BA Application. Thus:
- a) One of the objects of the invention is to optimise space ([14]);
 - b) Fig. 1 shows the space which would be lost if the bed did not extend rearwardly; and
 - c) [27] says:

Each seat unit is provided with a self-contained means for forming a substantially flat bed and the use of space within the cabin is optimised by positioning the flat bed to extend rearwardly behind the seat into a space defined by the arrangement of the seats.
48. The “lost space” and the space-packing idea of using the bed to extend into it is self-evidently wholly unrelated to whether the bed flips over or not. So the skilled reader would have no reason to suppose that the patentee intended to limit his claim to flip-over bed/seats.
49. Now it is of course true that the only specific embodiment is a flip-over bed/seat. And, because that would strike the notional skilled reader as a good idea he would expect it to be patented somewhere. But because he knows (see above) that the patentee has divided out what is in this patent from a parent application he would not necessarily expect that to be done in this patent.
50. As for the objects of the invention, the first stated object is accommodation “which incorporates a flat sleeping surface of maximal length and preferably of maximal width”. The judge thought this was important. He considered that the reference to “flat” was to the better flatness you can get with flip-over than that obtained by using the seat pan also as part of the bed. But, as Mr Meade submitted, the focus in this sentence is on “maximal length” – the very thing that is achieved by using the lost space whether the bed is flip-over or not. And it would be attaching far too much to the word “flat” to say that the patentee clearly meant and only meant the better flatness of a flip-over. After all, he also uses “flat” to describe the BA Application (see [6]).
51. Most significantly, the skilled reader would surely expect, if the claimed system is limited to flip-over seat/beds, to find something about that in the claim. It simply is not there. The judge inferred that it was impliedly there from the use of “further comprising” in feature (b)(iv) and use of “was occupied” in feature (e). But that is a very meagre basis indeed for reading in the whole of the flip-over feature.
52. In particular we can see no reason why the skilled man would read “further comprising” as meaning anything other than “also having the feature.” “Further comprising means” is not the same as “Comprising further means.”

53. And “was occupied by the seat” covers both seats that move forward as in a full recliner and flip-over. It is neutral.
54. So we think the notional skilled reader would go by the claim and not look for or expect any hidden limitations in it.
55. Moreover we think he would be influenced in his consideration by the fact that the claim is drafted in accordance with the drafting convention of rule 29(1) of the Implementing Regulations. He would expect the pre-characterising portion to be about something the patentee considered old. Flip-over seats were not old. So he would not expect the language used to be limited to flip-over seats.
56. That consideration is fiercely reinforced by the fact that the consistory clause includes the sentence which we have emphasised above. That can only really be read as saying that the pre-characterising portion is about BA First (or the BA Application – they come to the same thing). And the seats there were not flip-overs. So the pre-characterising portion cannot be read as limited to flip-overs.
57. The judge played the omission of the sentence down, saying it was missing from the claim. But that overlooks the fact that it would not be appropriate to put it in the claim. And it does mean giving the consistory clause a different meaning from the claim, which is wholly improbable.
58. Mr Vanhegan manfully suggested that the sentence meant no more than a loose reference to the use of herringbone. Or perhaps would be read as simply a mistake and thus ignored altogether. We cannot accept either of these suggestions. You would not use this sentence if you merely wanted to refer to the fact that herringbones were known. You could not put it in by mistake. Moreover its presence makes sense so why read it as a mistake?
59. Mr Vanhegan suggested that the numerals in the claim support the narrow interpretation. As one can see from fig. 2, (74) points to the back of the seat (which will form the bed surface when the seat is flipped). And (74) follows the reference to *substantially flat bed* in feature (b)(iv). So he says, that is an indication that the feature is limited to a seat which flips.
60. We cannot accept this. It would be using the numeral to construe the claim as having a limitation. The skilled reader would know that the patentee could not have intended his use of the numeral to be used against him in that way – see above. Besides, since the only specific embodiment is a flip-over. So the patentee had to use that (74) to point to what would be part of the bed. There was nothing else to point to.
61. One final matter before we move on to the next point. At [228] the judge said he was “comforted” in his interpretation of the claim because his interpretation coincided with that of Mr Chapman, Contour’s expert. But claim construction is a matter for the judge once he has the understanding of the skilled man. It is beside the point what the experts or lawyers think the claim means. If one allows this sort of evidence to play a part – even if only one of “comfort” - one is on the slippery road to evidence and hence cross-examination about the meaning of the claim and a general lengthening of proceedings. People would start leading evidence that they thought

that their allegedly infringing product did not infringe – that they had deliberately designed round - and so on.

62. To be fair the judge placed little weight on this point and Mr Vanhegan did not press it much. We think it had no place at all on the issue of construction.
63. On the conclusion we reach, namely that the claim is not limited to flip-over, it is now accepted (there was another non-infringement argument, rejected by the judge at [230]-[234] and not resuscitated here) that the Contour bed falls within claim 1. So there is infringement unless the Patent is invalid for one of the reasons advanced before us.

Issue (ii) Added Matter

64. The first of these is added matter. It makes sense to do this first because Contour raises it as a direct consequence of any conclusion that claim 1 covers non-flip-over seats. Contour submits that if claim 1 of the Patent extends to non flip-over seats the Parent does not disclose matter which supports or is capable of supporting such a claim and that the Patent is therefore invalid for added matter.
65. Although it was not strictly necessary for him to do so, the judge addressed this allegation on the assumption he was wrong about infringement and he accepted Contour's submission. Virgin contends he erred on this point.

General principles

66. The prohibition against added matter is derived from Art.123(2) EPC, which reads:

"The European patent application or European patent may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed."

67. The principles to be adopted in considering an allegation of added matter have been explained in a number of cases, most notably by Aldous J in *Bonzel v Intervention* [1991] RPC 553 at 574 and by this Court in *European Central Bank v Document Systems* [2008] EWCA Civ 192 at [12]-[13], which the judge set out in full. For the purposes of the present appeal it is enough to re-iterate that the essential task for the court is to consider the disclosure of the Parent and the Patent and to ask whether any subject matter relevant to the invention has been added whether by deletion or addition. The comparison is a strict one. Subject matter will be added unless it is clearly and unambiguously disclosed in the Parent.
68. But it also important to have in mind that where an application discloses two or more different inventions it is not added matter later to claim them separately. Indeed that is precisely what the divisional application system is designed to permit.

The heart of the objection

69. The heart of the dispute between the parties is this. Contour contends that the Parent only discloses seat units and arrangements of seats which flip-over and, moreover, that the flip-over feature is an essential part of the invention. So, it continues, if claim

1 of the Patent is sufficiently broad to encompass seats which do not flip-over, then it discloses additional matter relevant to the invention.

70. Virgin counters that the disclosures of the Parent and the Patent are for all practical purposes the same. Indeed, the Parent even includes an independent claim 44 with almost identical wording to that of claim 1 of the Patent. Accordingly it is impossible to identify any relevant matter which has been added or deleted. Moreover, it is perfectly clear from the Parent that it contains a number of different ideas, including space packing and flip-over and that so far as these two ideas are concerned, they are separate and discrete inventions.
71. In order to resolve this dispute it is obviously necessary to consider the disclosure of the Parent with some care. But before we do so we would add one observation. It is necessary to keep the distinction between disclosure and scope of claim firmly in mind. A claim may include far more than a specification expressly discloses. So merely because claim 1 of the Patent *includes* seats which do not flip-over does not mean that an express description of such seats must be found in the Parent in order to defeat the added matter objection.

The Parent application

72. The Parent was made via the Patent Co-operation Treaty. It is 03/013903. The parties provided a helpful version of this, enabling a ready comparison with the Parent to be made. It shows what parts had been deleted and what added to the Parent to arrive at the Patent.
73. The parties helpfully supplemented their skeleton arguments with additional written observations, including in the case of Contour some observations submitted after the close of the hearing.
74. The Parent begins with a description of the prior art which corresponds closely to that contained in paragraphs [001] to [0010] of the Patent.
75. The objects of the invention are set out from 4₃₂-5₃₃. Four of them (the first three and the sixth) concern the efficient use of space and the provision of larger or more beds. Others include the provision of an accommodation unit in which the seating surface is specially adapted for seating and the sleeping surface specially adapted for sleeping.
76. There then follows a long description of various aspects of the invention from 5₃₃ – 21₂₇. It begins with an exposition of various elements of the flip-over seat and accommodation unit, all of which has been deleted from the Patent, and says, from 8₂₇, that such accommodation units may be arranged in a space saving herringbone:

It has been found surprisingly that a plurality of passenger accommodation units according to the present invention may be arranged within a business-class section of an aircraft cabin without significantly reducing the number of seats. Each seat defines a notional longitudinal axis that extends fore-and-aft relative to the normal manner of using the seat. It has been found that a maximal number of the passenger accommodation units according to the present invention may be accommodated

within an aircraft cabin if each unit is arranged with its notional axis to subtend an angle in the range of 35 to 55⁰ with the longitudinal axis of the aircraft.”

77. On p.9₁₋₁₂, in a passage largely carried into the Patent, the Parent explains the space packing concept whereby use may be made of the space formed by the herringbone:

“Thus according to another aspect of the invention, there is provided a seating system for a passenger vehicle, particularly 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 a vehicle and means forming or being configurable for forming a seat comprising a seat-pan and back-rest; characterised in that said seat units are 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 to the rear of each seat [sic], each seat unit further comprising means forming or being configurable for forming a substantially flat bed, a major proportion of which bed is disposed forwardly of the position of the seat, which bed extends rearwardly into said space to extend the flat-bed.”

78. Importantly there is nothing in this passage to suggest that space packing requires a flip-over seat. To the contrary, it only requires “means forming or configurable for forming a substantially flat bed, a major portion of which bed is disposed forwardly of the position of the seat”.

79. After an elaboration of various aspects of the seat unit and extended substantially flat bed, the Parent then describes the provision of a seating system from p.10₂₉₋₁₁₆:

“The present invention thus provides a seating system which is particularly suited for a business-class cabin of a passenger aircraft. The seating system of the present invention provides individual seat units having back-rests and seat-pans and optional foot-rests to allow passengers to rest their legs in an elevated position during a flight. Each seat unit is provided with self-contained means for forming a substantially flat bed, and the use of space within the cabin is optimised by positioning the flat bed to extend rearwardly behind the seat into a space defined by the arrangement of the seat units. Surprisingly, it has been found that in accordance with the present invention it is possible to provide flat beds within a business-class section of a passenger aircraft having a length of up to 7ft (2.13 metres) without substantially sacrificing head-count. Furthermore, the applicants have found that the seat units of the present invention can be positioned to give the cabin a substantially uncrowded appearance.”

80. The Parent continues with a description of various mechanisms for the flip-over seat, for a recliner seat assembly and also for the attachment of a seat module to seat tracks with a three point fixing, the module comprising the seat of one unit and the footrest of the adjacent unit, virtually all of which has been deleted from the Patent.
81. Pages 21 to 65 contain a detailed description of various embodiments of the invention, all of which comprise flip-over seat units.
82. Against this background the reader comes to the claims. Claim 1 is to a passenger accommodation unit and plainly calls for a flip-over seat:

“1. A passenger accommodation unit for a vehicle, particularly an aircraft, which is adapted to provide self-contained, individual seating and sleeping accommodation for a passenger, said seat assembly comprising: supporting structure for supporting said unit off the floor of a vehicle; one or more movable passenger-bearing, structural components; and means for connecting said movable, structural components to said structure such that said components can be selectively moved between a seat configuration, in which a plurality of passenger-bearing surfaces on said one or more structural, movable components or said supporting structure form a seat for the passenger, and a bed configuration, in which a plurality of said bearing surfaces are disposed substantially coplanarly and substantially contiguously to form a bed for the passenger; characterised in that a least one of said movable components is double-sided, comprising first and second opposite sides, one of said sides having a first seat surface that forms part of the seat in said seat configuration, and the other side having a second bed surface that forms part of the said bed in said bed configuration.”

83. Claim 44 is an independent claim directed to a seating system with space packing:

“44 A seating system for a passenger vehicle, particularly 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 a vehicle and means forming or being configurable for forming a seat comprising a seat-pan and a back-rest; characterised in that said seat units are 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 a 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, a major proportion of which bed is disposed forwardly of the position of the seat, which bed extends rearwardly into the said space to extend the flat-bed.”

Has matter been added?

84. We have come to the conclusion that it has not, for all of the following reasons.
85. First, the teaching of the Parent which we have summarised would leave the skilled person in no doubt that it identifies different objects and describes various ideas for fulfilling them including most notably, flip-over seats; more efficient use of the space formed by arranging the seat units in a forward facing herringbone; various mechanisms for converting a seat into a bed and the use of a particular three point fixing for attaching the seat module to the seat tracks.
86. Second, the body of the Parent contains a clear description of the flip-over concept and, in the passages we have recited, a separate and clear description of the space-packing concept.
87. Third, there is nothing in the parent application to suggest that the concept of space packing can only be used with flip-over seats and the skilled person would know from his common general knowledge that there is no technical reason why it should be. Moreover it is clear even to the layman that the flip-over concept does not itself make use of the space behind the seat.
88. Fourth, the Parent contains independent claims directed to the flip-over and space-packing concepts. Claim 1 is directed to a passenger accommodation unit and requires a double sided component, one side having a seat surface and the other side having a bed surface. Claim 44 is to a seating system in which seat units are arranged in a herringbone which defines a space to the rear of each seat and in which each seat unit, when configured as a bed, extends into that space. Importantly, claim 44 does not, however, refer to a double sided component or make any other reference to a flip-over seat.
89. Fifth, claim 44 of the parent application and claim 1 of the Patent are, in all material respects, identical. We were supplied with a clear comparison of the two. Mr Vanhegan did not rely on any textual difference between them.
90. Both are independent claims to the invention they describe. It is not possible to identify in claim 1 of the Patent any addition or deletion of subject matter relevant to that invention. Of course, that is not necessarily the end of the matter because it is possible that the skilled person would understand the two claims to be directed to different inventions when each is read with the rest of the document of which it forms part and in the light of the common general knowledge. Nevertheless, and for all the reasons we have given, we reject this possibility. In our judgment the teaching of the Parent which we have summarised would leave the skilled person in no doubt that it identifies comfort and space saving as different problems and it describes different and distinct ideas for solving them.

The judgment

91. The judge addressed the issue of added matter at [300] to [314] and [331] to [342]. Virgin accepts that he identified the right legal principles but submits he failed to apply them correctly. The heart of the judge's reasoning appears in paragraphs [337] to [341]. Essentially he accepted Contour's submission that the parent application

only discloses one invention comprising a seat system and unit in which the seat surface and the bed surfaces are different, that is to say the flip-over concept. This, he considered, was supported by the fact that each of the specific embodiments described and depicted in the Parent embodies flip-over seat units. Hence, he reasoned, the skilled person would understand the passages of the Parent upon which Virgin rely as referring to seat units in which different surfaces are used in seat mode compared to those used in bed mode.

92. In our judgment the judge fell into error in this process of analysis. At the outset he had insufficient regard to the fact that the Parent discloses a number of different ideas and that the skilled person would appreciate the idea of space packing is not dependent upon the use of a flip-over seat. Second, he was unduly influenced in his approach to claim 44 by the fact that all the specific embodiments described in the Parent embody flip-over seats. As we mentioned at the outset of this section of our judgment, there may be a significant difference between what a claim covers and what it discloses. Moreover the specific embodiments are provided to illustrate rather than circumscribe the scope of the monopoly. For the reasons we have given, we believe the skilled person would understand claim 44 of the Parent to have the same scope as claim 1 of the Patent and the wording of the two claims is essentially the same. The skilled man is not taught anything in the Patent relevant to the invention which is not to be found in the Parent.

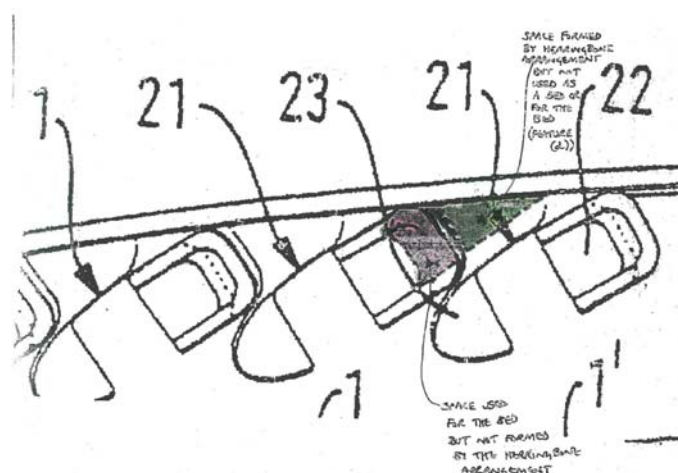
Added matter - conclusion

93. It follows that the matter disclosed in the specification of the Patent does not extend beyond that disclosed in the Parent and the added matter objection therefore fails.

Issue (iii) Does claim 1 cover what is disclosed in the BA Application?

94. The judge was against Contour on this point at [235]-[241]. Mr Vanhegan submits he was in error.
95. The issue turns on the construction of integer (d). What is meant by *thereby to define between the rear of each seat and the sidewall a space (36) when the seat is configured as a seat?* What is the space referred to? For it is into that space that feature (f) requires the flat-bed to extend.
96. Mr Vanhegan 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.

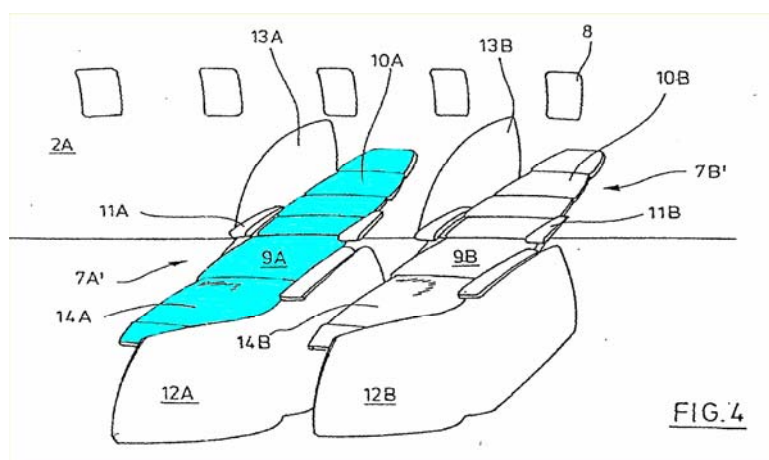
98. Mr Meade contends that is wrong. He produced a convenient diagram to illustrate the difference between his contention and that of Mr Vanhegan. It is a coloured enlarged portion of fig. 4 of the BA Application:



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]-[24]. We agree. The BA Application is not novelty destroying.

Issue (iv) Does claim 1 include rotatable seat/beds?

105. This issue arises because of an alleged anticipation by Airbus. This has a rotatable seat/bed shown thus:



106. If you rotate the seat so that it is an angle to the sidewalls and then put it into bed mode, the seat will go into the “green” triangle. Thus, it is said, if the claim covers rotatable seat/beds, there is anticipation.

107. Mr Meade has two answers. First, that the claim does not cover rotatable seat/beds (the judge agreed) but that if it does, the problem can be cured by the simple amendment we have referred to above.

108. First then, does the claim cover rotatable seat/beds? There is nothing in the claim or body saying so expressly. Nor is there anything expressly excluding them. The judge dealt with this issue at [218]-[221]. Mr Meade supports him. We agree for the following reasons:

(a) If the seats could rotate the whole the whole point of space-saving would be lost. That is an unlikely construction for a skilled man reading the claim purposively.

(b) Feature (c) calls for the seats to be in a column axis in which the seat units are arranged *at an acute angle* to it. *An acute angle* is not the sort of language one would use to describe a variable angle.

(c) For the reasons we have already given, the words used would be understood as part of a reference to the BA Application – and that has non-rotatable seats.

(d) The specification itself only contemplates a fixed angle – see e.g. [42] 10₃₉₋₄₄. “As perceived by a passenger .. the seat unit defines a notional longitudinal seat axis. ...”

109. Accordingly we hold that there is no anticipation by Airbus.

110. We are conscious that on this point (and on this point alone) we have reached a different conclusion from that reached by the Opposition Division of the EPO in a carefully reasoned decision. The OD has also held that problem can be cured by the amendment adding *single, fixed* which we have referred to above. That seems to be

clear, though Contour suggest otherwise. The only reason Virgin have cross-appealed the OD's construction to the Board of Appeal is because of a suggestion that the proposed amendment might add matter, a suggestion rejected by the OD. Virgin do not want a claim covering swivelling chairs and of course their construction (which we have accepted) means that it does not. Contour abandoned an added matter argument before trial – but other parties in the EPO appeal might try to run it. For that reason only, Virgin maintain their fall-back position. We only add that this seems an essentially trivial dispute, miles away from what really matters.

Issues (v) and (vi) Is claim 1 or claim 9 obvious over Airbus or the BA Application or cgk?

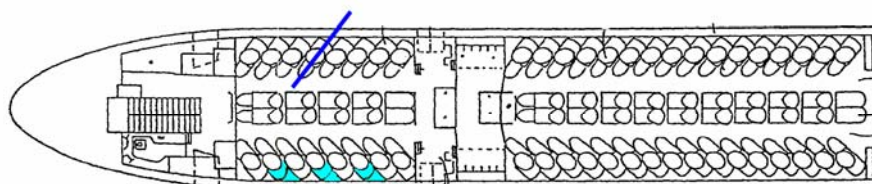
111. Before the judge Contour relied on obviousness over cgk as well as over four pieces of prior art: BA First; Airbus; Boeing and American Airlines. The judge rejected each of these attacks. His judgment is challenged only in respect of cgk; BA First and Airbus.
112. Virgin originally opposed Contour's reliance on Airbus as an obviousness citation by reference to the priority date. That point has now gone, at least for the purposes of this appeal.
113. The scope of Contour's appeal on this issue has also narrowed during the hearing. Without formally abandoning the case on obviousness over cgk and BA First, Mr Vanhegan has limited his oral argument to obviousness over Airbus on the basis that this is his best point. But Virgin has, to some extent, relied on the differences between the teaching in BA First and that in Airbus in support of the judge's conclusion that the Patent's inventive concept was not obvious over that piece of prior art.
114. Neither side criticises the judge's treatment of the law of obviousness. Lewison J directed himself by reference to the decision of this court in *Pozzoli v BDMO SA* [2007] FSR 37 (the adapted *Windsurfing* approach). This requires the court to:
 - (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?

115. The first three steps merely orientate the tribunal properly. The step 4 is the key, statutory step. Obvious for the purposes of step 4 means technically rather than commercially obvious.
116. One can begin with step 3. The inventive concept of claim 1 is the space packing idea described earlier. The Patent teaches the more-efficient use of cabin space over BA First. There was an issue before the judge as to whether the inward facing herringbone was part of the c/gk. As we have said, nothing turns on this for the purposes of this appeal because an inward facing herringbone cabin arrangement is a feature of the teaching in Airbus and is referred to in BA First as a possible but less desirable configuration for a premium class cabin on grounds of passenger preference.
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 c/gk 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 Mr Chapman 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. As mentioned earlier, Mr Vanhegan accepts that cgk and BA First are not his best case on obviousness. The judge is criticised in Mr Vanhegan's skeleton argument for not attaching sufficient weight to the fact that there was no need to wrap a shell around the back of the seat as in BA First and that, by removing it, a more advantageous use of the space behind could be made. But neither expert was prepared to commit himself to saying that the use of the lost space for bed space was an obvious next step to take in the light of cgk and BA First and the historical evidence suggests the contrary. It is therefore understandable that Mr Vanhegan has not chosen to press this part of his appeal in argument. On any view, there was material on which the judge was fully entitled to come to the conclusion which he did.
123. Airbus is dated 5th June 2002, so just before the application for the Patent. We have discussed the fact that it uses rotating seats in relation to the anticipation argument. We need to say a little more about it now. In Airbus the seats when upright are locked in a forward facing position for take off and landing. In this mode they are not aligned precisely parallel to the aircraft's longitudinal axis but are rotated slightly inwards in a range up to the 18° permitted under the regulations if no more than an ordinary lap belt is to be used. There is, however, a reduced pitch between the seats thereby minimising loss of cabin seat space. To compensate for this, the seats, after take off, can be rotated to a range of between 50° and 60° so as to form an inward facing herringbone and in this position recline to form a bed. This is shown on Figure 1 of Airbus as follows:



124. As illustrated in Figure 4 (see [105] above) below, there is no ottoman (unlike in BA First) but the upper part of the seat reclines into the space between its base and the cabin wall. No dimensions are indicated. There is, however, no specific teaching directed to the use of this space or to the shape or size of the area involved.
125. Virgin's response to Airbus is that it teaches nothing relevant to the Patent over BA First and has two materially different features: the swivel seat and the absence of an ottoman, both of which are essential design features for the layout used. It would not therefore, they say, be obvious from Airbus to remove both the swivel mechanism and to replace the ottoman which would be what is required to reach claims 1 and 9 of the Patent.
126. The judge agreed with this. At [292] he said:
- To remove the swivel seat would have run directly counter to the teaching of both citations; as would the reinstatement of the ottomans. Mr Chapman said in cross-examination that there would be no reason to develop a seat that swivelled and then turn round and lock that out to make it fixed. The only reason that he gave for removing the swivelling mechanism from an existing swivelling seat was that it would be worth saving the product if the swivel mechanism proved unreliable. This evidence leads to the conclusion, in my judgment, that in the case of all the prior art citations where swivelling seats were used, it would not have been obvious to take out the swivel.
127. Contour makes two main criticisms of the judge's reasoning. He failed, they say, to take into account the disadvantages of the swivel seat (which is heavier, more complex and more expensive than a fixed seat) when assessing the likelihood of the skilled person deciding that Airbus should be simplified by the removal of the swivel and he was wrong not to treat the addition of an ottoman as an obvious design step for the skilled addressee to take in order to extend the bed.
128. The reinstatement of the ottoman is relevant to claim 9 for which Virgin claims independent validity. If one concentrates for the moment on claim 1 then the most obvious distinguishing feature between Airbus and the Patent is the swivel. Mr Chapman, says in his second report that the more complex mechanics of the swivel seat meant that there was a greater opportunity for mechanical failure. This is the evidence referred to by the judge at [292]. Mr Meade suggested to Mr Chapman in cross-examination that the clear message of Airbus was that, in order to save space in business class, the addressee should use a swivel and dispose of the ottoman. The business class passenger could not be expected to spend a long flight sitting in the take off position which was too cramped. Given the pitch of only 36" (which Mr Chapman accepted was tighter than normal), a swivel was essential. Mr Chapman accepted that this is what the skilled person would understand from reading Airbus. The swivel was, he said, fundamental to the approach being used.
129. Mr Moreno also accepted in his cross-examination that the swivel system was more complex than fixed seats and might therefore be more expensive. But we do not read his evidence as involving the acceptance that Airbus teaches or encourages the skilled person to remove the swivel feature and neither did the judge. Mr Moreno expressed

the view that Airbus was not a realistic product for a commercial airline based, as it was, on swivel seats and relatively narrow seat pitches.

130. The judge therefore had, in our view, ample material on which to find that Airbus did not make it obvious to fix the problems inherent in swivel seats by moving back to a fixed seat arrangement. Our task on an appeal is not to re-try the case on obviousness and there is no basis for us interfering with his conclusions on Airbus. It also seems to us that any inclination which the skilled addressee might have had to substitute a fixed seat for the swivel taught by Airbus is likely to have come from his c/gk applied critically to the Airbus design. If the Patent is not obvious over c/gk or BA First it is difficult to see how it could be said to be obvious over Airbus.
131. Much the same point can be made about the ottoman. Airbus teaches the removal of the ottoman as an advance over the concept of BA First when applied to a business class cabin. Mr Vanhegan argued that it would have been obvious as a matter of design to add the footrest as part of an extension of the length of the bed, were sufficient space available, without unduly encroaching into the aisle. Mr Moreno was asked about this and accepted that the use of an ottoman or footrest was well known. But its inclusion required a certain amount of careful planning and was the very opposite of the space-saving measure which led to Airbus recommending its removal. It was not, in our view, an obvious step suggested by the prior art.
132. The judge was therefore right to reject the challenge to validity based on obviousness.

Conclusion

133. The Patent is valid and infringed. Contour seeks a stay of any consequential order pending the decision of the Board of Appeal in the EPO. Written submissions about that (and all other matters relating to the order) should be served within 14 days of this judgment being handed down in open court.