Neutral Citation Number: [2026] EWCA Civ 964

Case Nos: CA-2025-001347, CA-2025-001354, CA-2025-001377, CA-2025-001404

IN THE COURT OF APPEAL (CIVIL DIVISION)
ON APPEAL FROM THE HIGH COURT OF JUSTICE, BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES, INTELLECTUAL PROPERTY LIST (ChD), PATENTS COURT
Mr Justice Leech
[2025] EWHC 375 (Pat), [2025] EWHC 1034 (Pat)

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 27 July 2026

Before :

LORD JUSTICE LEWISON
LORD JUSTICE ARNOLD
and
LORD JUSTICE NUGEE

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Between :

LUFTHANSA TECHNIK AG	**Claimant**
- and -	
(1) ASTRONICS ADVANCED ELECTRONIC SYSTEMS	**Defendants**
(2) SAFRAN SEATS GB LIMITED	

And Between :

LUFTHANSA TECHNIK AG	**Claimant**
- and -	
PANASONIC AVIONICS CORPORATION	**Defendant**

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Hugo Cuddigan KC, James Walmsley and Christopher Hall (instructed by **Jones Day**) for the **Claimant**
Iain Purvis KC, Piers Acland KC and Miles Copeland (instructed by **Hogan Lovells International LLP** and **Pinsent Masons LLP**) for the **Defendants**

Hearing dates : 7-10 July 2026

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Approved Judgment

This judgment was handed down remotely at 16.00 on 27 July 2026 by circulation to the parties or their representatives by e-mail and by release to the National Archives.

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Lord Justice Arnold:

Introduction

1. These appeals concern the remedy of an account of profits for patent infringement. The principal issue concerns the correct approach to legal causation in this context. There are also issues as to whether an agreement constitutes an exclusive licence, and the relevance of that if it does; as to whether there is a risk of double recovery in foreign proceedings which the English courts can and should attempt to avoid; and as to interest.

2. The Claimant ("Lufthansa") was the proprietor of European Patent (UK) No. 0 881 145 ("the Patent"), which expired on 22 May 2018. The Patent relates to an apparatus that supplies electrical power to a socket that can be used by aircraft passengers for equipment such as laptops, mobile phone chargers and the like. The invention comprises a safety feature which detects whether a plug has been properly inserted before supplying power from a remote unit to the socket. The invention is useful where it is desired to supply passengers with high-voltage AC power rather than low-voltage DC power.

3. On 22 July 2020 Morgan J held that the Defendants ("Astronics", "Safran" and "Panasonic" respectively) had infringed the Patent ([2020] EWHC 1968 (Pat)), and ordered an inquiry as to damages or an account of profits at Lufthansa's election. On 14 January 2022 this Court dismissed the Defendants' appeal against Morgan J's order ([2022] EWCA Civ 20). On 22 September 2022 Lufthansa elected for an account of profits. As a consequence of the differing dates on which Lufthansa brought the claims against them, Astronics and Safran are liable to account in respect of the period from 29 December 2011 to 22 May 2018, while Panasonic is liable to account in respect of the period from 13 May 2013 to 22 May 2018 (in either case, "the Relevant Period").

4. Morgan J left certain issues unresolved in his judgment. On 12 May 2023 Recorder Douglas Campbell KC sitting as a Judge of the High Court held that Lufthansa was entitled to argue those unresolved issues, but not other issues which had been adjourned at an earlier stage of the proceedings ([2023] EWHC 1136 (Pat)). On 9 November 2023 this Court dismissed Lufthansa's appeal against the latter part of his order ([2023] EWCA Civ 1306). On 1 December 2023 Bacon J ordered that the unresolved issues be determined at the trial of the account of profits on the basis of the evidence that was before Morgan J.

5. The infringing acts concern the supply of EmPower Fusion systems incorporating the patented safety feature. That feature is implemented by an outlet unit or socket, an in-seat power supply unit ("ISPS", plural "ISPSS", more sophisticated versions of which are referred to as a Seat Power Box ("SPB") or Seat Power Module ("SPM"))) and a cable that connects the two together ("the Primary Components"). The Primary Components can be used in conjunction with a number of additional components ("the Secondary Components"), the most important of which is the master control unit ("MCU", more sophisticated versions of which are referred to as Advanced Master Control Units ("AMCUs") or Enhanced Master Control Units ("EMCUs")). This is usually located within the electronics bay of the aircraft and controls the distribution of power to a variety of downstream systems.

6. Astronics manufactured the Primary and Secondary Components. It sold them to In-Flight Entertainment ("IFE") providers such as Panasonic, which in turn sold integrated IFE systems incorporating the Primary and Secondary Components to airlines. Where an IFE system was not required (for example, in short-haul aircraft), Astronics also sold the Primary Components direct to the airlines ("power-only" sales). The Primary Components were incorporated into seats by companies such as Safran. In both cases ancillary goods and/or services would typically be supplied ("Ancillary Goods and Services").

7. The account was taken before Leech J over three weeks in October 2024. In an extremely thorough judgment running to 693 paragraphs handed down on 21 February 2025 ([2025] EWHC 375 (Pat), "the Main Judgment") the judge held that Astronics was liable for US$4.42 million, Panasonic for US$7.384 million and Safran provisionally for US$81,800. The last figure was subsequently revised to US$567,800 for the reasons he gave in a second judgment delivered during a hearing on 20 March 2025 ([2025] EWHC 940 (Pat), "the Second Judgment").

8. After further argument on 20 March 2025, the judge held in a third judgment handed down on 30 April 2025 ([2025] EWHC 1034 (Pat), "the Third Judgment") that the Defendants should pay Lufthansa interest on the sums awarded at the US Prime Rate (in the case of Astronics and Panasonic) or UK base rate plus 2% (in the case of Safran). He also declined to make an order requested by the Defendants with a view to preventing double recovery by Lufthansa in proceedings in France and Germany. On 16 May 2025 the judge made a final order and granted all parties permission to appeal.

9. There are four appeals before the Court. The first is an appeal by Lufthansa against the judge's quantification of the profits for which Astronics and Panasonic are liable to account in the Main Judgment. The judge held that Astronics and Panasonic should account for 13% of the profits generated by their sales of EmPower Fusion Systems, whereas Lufthansa contends that he should have ordered them to account for 100% of those profits. There is no challenge by Lufthansa to the judge's order in respect of Safran. The second and third appeals are appeals by all three Defendants which concern the two issues considered by the judge in the Third Judgment: interest and double recovery. The fourth appeal is an appeal by Astronics and Panasonic concerning an issue considered by the judge in the Main Judgment referred to as "KID apportionment". The main question on the fourth appeal is whether a licence of the Patent granted by Lufthansa was an exclusive licence. In this judgment I will consider the first appeal and then the fourth appeal before turning to the second and third appeals.

10. We had the benefit of excellent arguments presented by all six counsel over four full days in court, for which we are grateful.

The core facts

11. The core facts found by the judge may be briefly summarised as follows.

Power supplies

12. Electrical power supplies are typically characterised by their voltage, whether they are alternating current ("AC") or direct current ("DC") and their frequency in Hertz if AC. The main power supply of an aircraft is typically 120V/400Hz AC.

The EM Power DC

13. In 1994 Astronics' predecessor Olin Aerospace ("Olin", then a division of Olin Corporation) began work on a new project to develop an ISPS. Its purpose was to provide 15V DC power to aircraft passengers at their seats to enable them to charge and use a personal electronic device ("PED").

14. In late 1994 Olin attended a meeting with Boeing, which liked the product but raised concerns over the drain which the ISPS could impose on an aircraft's power supply. This led Olin to develop a power management system which introduced a power distribution circuit that became known as an MCU. Olin protected its power management system by a series of patents ("the GD AES Patents").

15. In February 1996 Olin launched its power management system commercially ("the EmPower DC"). It consisted of an MCU connected by power cables to an ISPS fitted under aircraft seats which converted the main aircraft power supply of 115V/400Hz AC to 15V DC that it supplied to the outlet.

16. In October 1996 Olin was spun off as Primex Technologies Inc ("Primex").

17. All equipment installed and operated on civil aircraft must be certified by the relevant national or regional regulatory certification authorities. Prior to 2003 these were: the Federal Aviation Administration ("the FAA") in the US; the Civil Aviation Authority ("the CAA") in the UK; and the Luftfahrt-Bundesamt ("the LBA") in Germany. The CAA and the LBA were members of the Joint Aviation Authorities ("the JAA"), an organisation formed by civil aviation regulatory authorities from various European countries. After 2003 the JAA was replaced by the European Union Aviation Safety Agency ("the EASA").

18. In July 1997 the EmPower DC was certified by the FAA.

19. Boeing and Airbus (then called Daimler-Benz Aerospace Airbus GmbH, later DaimlerChrysler Aerospace Airbus GmbH) were the two principal aircraft manufacturers (referred to as "airframers" or "OEMs") during the Relevant Period. Boeing and Airbus had separate approval processes which overlapped at the time with approval by the regulators. Equipment could be installed either on an entirely new aircraft ("linefit") or to upgrade or modernise an existing aircraft ("retrofit").

Lufthansa and the Patent

20. Lufthansa is part of the Lufthansa Group, but it is run by its own management team and conducts business as an independent entity. Lufthansa's core business is providing maintenance, repair and overhaul services to the global airline market. Deutsche Lufthansa AG ("DLH"), which operates the Lufthansa airline, is Lufthansa's ultimate parent company.

21. Lufthansa conceived the invention described and claimed in the Patent in May 1997 to address the need for a 110V AC ISPS which had a high level of safety. This was of particular relevance to business and first class passengers who wanted to charge their PEDs using AC power rather than having to use a special adapter and cable, and to IFE

suppliers. The priority document was filed on 31 May 1997, and the application on 22 May 1998. The Patent was granted on 26 November 2003.

Lufthansa's 1998 agreements with KID

22. Lufthansa needed a partner to build an ISPS incorporating the invention. It selected a division of Airbus called KID Systeme, which was incorporated as KID-Systeme GmbH in 1999 ("KID"). KID had commenced development of an ISPS which supplied 15V DC power in 1997, and it agreed to manufacture an ISPS which supplied 110V AC power ("the SkyPower System").

23. On 3 December 1998 Lufthansa and KID entered into an agreement headed "Teaming Agreement" which was in English but governed by German law ("the 1998 Teaming Agreement"). It is common ground that the 1998 Teaming Agreement constitutes a licence under the Patent. The Defendants contend that it is an exclusive licence under the Patent, whereas Lufthansa contends that it is merely a sole licence.

24. Also on 3 December 1998 Lufthansa and KID entered into a parallel contract ("the 1998 Purchase Agreement") under which Lufthansa agreed to purchase the SkyPower System from KID.

25. When they entered into the 1998 Teaming Agreement, KID and Lufthansa contemplated that either Lufthansa or a seat manufacturer would assemble and install the SkyPower System.

26. The 1998 Purchase Agreement contemplated that KID would supply the components of the SkyPower System either to Lufthansa or to seat manufacturers.

The 1999 Memorandum

27. In October 1999 the FAA agreed to adopt an earlier JAA draft policy for the approval of ISPS installations. This agreement was set out in a memorandum ("the 1999 Memorandum") which listed a series of conditions that ISPSS had to comply with.

Certification and launch of the SkyPower System

28. The SkyPower System was certified by the JAA in October 1999. It was launched commercially in April 2000.

The EmPower Classic

29. In November 2000 Primex was acquired by General Dynamics Corporation ("GD") and became Airborne Electronic Systems ("AES").

30. By 2002 AES had begun to develop an AC version of the EmPower DC. The new system ("the EmPower Classic") involved three components: the ISPS, the MCU and the outlet unit (part number 1171, referred to by the judge as "the 1171 Twist Lock"). The EmPower Classic was certified by the FAA in 2002.

The 2003 Settlement Agreement

31. In 1999 Primex notified KID of the existence of the GD AES Patents. By a letter dated 23 April 2002 GD asserted that KID had infringed the GD AES Patents by offering for sale power management systems relating to IFE devices for commercial aircraft.

32. By a letter dated 15 May 2002 KID and Airbus Deutschland GmbH asserted that GD was infringing the US equivalent of the Patent and requested that GD cease and desist from doing so. This letter referred to infringement of "KID's right of exclusive use" under Article 6 of the 1998 Teaming Agreement, and asserted that the 1998 Teaming Agreement "grants KID-System GmbH an independent right to raise any claim of infringement towards General Dynamics." Although the letter suggested that Lufthansa was aware of KID's claim, in fact Lufthansa was not aware of this letter.

33. By a settlement agreement dated 27 October 2003 ("the 2003 Settlement Agreement") KID, Airbus and GD (at that stage known as "General Dynamics OTS (Aerospace), Inc") settled their dispute on the basis of covenants not to sue under the respective patents. By clause 3(e) Airbus and KID covenanted not to sue GD (or its customers) under the US equivalent of the Patent or "any foreign counterparts thereto". By clause 3(g) KID represented and warranted that Article 6 of the 1998 Teaming Agreement granted KID an exclusive user's right in return for the payment of royalties, and that it had an independent right to claim for infringement against GD. Lufthansa did not authorise KID to enter into, or consent to the terms of, the 2003 Settlement Agreement.

The EmPower Fusion

34. In 2004 AES launched the EmPower Fusion system. One of the key aims of the EmPower Fusion was that it could be used with cables, outlets and other line replaceable units from the previous platforms of systems. The components of the EmPower Fusion were the ISPS (part number 1191), the outlet unit and a cable connecting the two together (i.e. the Primary Components).

The 2005 Asset Purchase Agreement

35. On 3 February 2005 GD sold the assets of AES to Astronics (then called Astronics Acquisition Corporation) pursuant to an asset purchase agreement ("the 2005 Asset Purchase Agreement"). Astronics and Panasonic have the benefit of the covenant not to sue in the 2003 Settlement Agreement by virtue of the 2005 Asset Purchase Agreement.

Market share

36. It is common ground that Astronics outsold KID in the AC power system market during the Relevant Period. In 2018 it was reported that Astronics had 87.9% of the market and KID 9.8%.

Litigation in Germany

37. On 29 December 2010 Lufthansa commenced proceedings ("Mannheim I") against Astronics for infringement of the German designation of the Patent in the Mannheim Landgericht (Regional Court). Astronics and Panasonic brought nullity proceedings before the Bundespatentgericht (Federal Patent Court). On 18 December 2013 the Federal Patent Court held that claim 1 was invalid, but that claim 2 was valid. On 6

February 2015 the Regional Court held in Mannheim I that Astronics had infringed claim 2 of the German designation of the Patent. On 10 November 2015 the Karlsruhe Oberlandesgericht (Higher Regional Court) dismissed Astronics' appeal ("Appeal I"). On 18 December 2018 the Bundesgerichtshof (Federal Court of Justice) dismissed Astronics' further appeal.

38. On 26 July 2017 and 29 December 2017 Lufthansa brought claims for damages against Astronics in Mannheim in relation to shipments to Germany ("Mannheim II" and "Mannheim III" respectively). On 6 December 2019 the Regional Court in Mannheim II awarded Lufthansa 50% of Astronics' profits as damages. On 23 July 2023 the Higher Regional Court dismissed Astronics' appeal ("Appeal II"). On 6 December 2019 and 12 July 2023 there were decisions by the Regional Court and Higher Regional Court in Mannheim III, but those proceedings are ongoing.

The 2014 Teaming Agreement

39. In 2014 Lufthansa decided to terminate the 1998 Teaming Agreement with effect from 1 January 2015. On 18 December 2014 Lufthansa and KID entered into a new agreement (the "2014 Teaming Agreement") which took effect on 1 January 2015. This grants KID a non-exclusive licence under the Patent.

Litigation in France

40. On 29 December 2017 Lufthansa commenced proceedings against Astronics for infringement of the French designation of the Patent in Paris. Astronics challenged the validity of the French designation and denied infringement. This led to the French designation being revoked, but the order for revocation was set aside by the Cour de Cassation, and the validity and infringement proceedings are ongoing.

<u>The Patent</u>

41. The Patent was considered in detail by Morgan J in his judgment and by Birss LJ, with whom Moylan LJ and Sir Nicholas Patten agreed, in his judgment on the first appeal to this Court.

42. Claim 1 was as follows:

> "A voltage supply apparatus for providing a supply voltage for electric devices (36) in an aeroplane cabin, comprising
>
> a socket (22) to which the device (36) is connectable by means of a plug (38) and to which the supply voltage can be applied,
>
> the socket (22) comprising a socket detector (45, 46, 48) detecting the presence of a plug (38) inserted in the socket (22), and
>
> a supply device (16) being provided remotely from the socket (22) and being connected to the socket (22) via a signal line (18) and via a supply line (20) for the supply voltage,

the supply device (16) applying the supply voltage to the socket (22) when the plug detectors (45, 46, 48) indicate the presence of the plug (38) via the signal line (18) to the supply device (16)

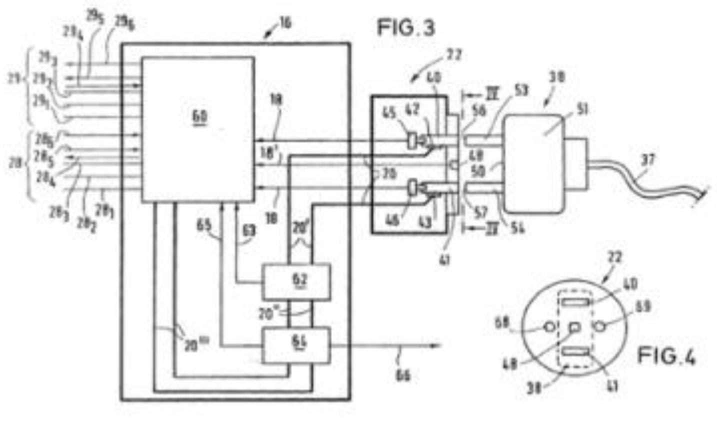
characterized in that

the plug detector (45, 46) is formed such as to detect the presence of two contact pins (53, 54) of the plug (38) in the socket (22), and

the supply device (16) only applies the supply voltage to the socket (22) if the presence of two contact pins (53, 54) of the plug (38) is detected simultaneously."

43. As Birss LJ explained at [8], the claim was drafted using the conventional practice in the European Patent Office of having two parts divided by the words "characterised in that", in which the pre-characterising part is based on prior art and the characterising part identifies features that differentiate the claimed invention from that prior art. It can be seen that the characterising portion of the claim requires a plug detector (items 45, 46) which detects the presence of two contact pins (items 53, 54) of the plug (item 38) in the socket (item 22) so that the power supply device (item 16) only applies the voltage to the socket if the presence of the two contact pins is detected simultaneously.

44. Figure 3 of the Patent shows a power supply device 16, a socket 22 and a plug 38. Figure 4 depicts an alternative socket which can accommodate two kinds of plug.



45. Figure 1 depicts an aircraft seat showing the location of the power supply device 16 and the socket 22:

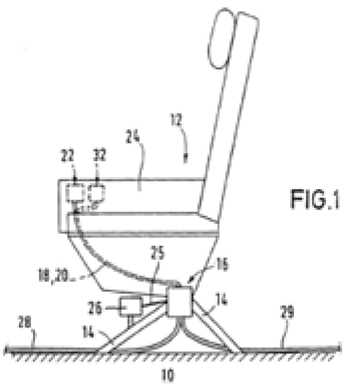


FIG.1

Lufthansa's appeal

46. Lufthansa's appeal raises fundamental questions as to the correct approach to an account of profits for patent infringement.

Accounts of profits for patent infringement: basic principles

47. Section 61(1) and (2) of the Patents Act 1977 provide, so far as relevant (emphasis added):

> "(1) Subject to the following provisions of this Part of this Act, civil proceedings may be brought in the court by the proprietor of a patent in respect of any act alleged to infringe the patent and (without prejudice to any other jurisdiction of the court) in those proceedings a claim may be made—
>
> …
>
> (c) for damages in respect of the infringement;
>
> (d) for *an account of the profits derived by him from the infringement*;
>
> …
>
> (2) The court shall not, in respect of the same infringement, both award the proprietor of a patent damages and order that he shall be given an account of the profits.
>
> …
>
> (6) Subject to the following provisions of this Part of this Act, in determining whether or not to grant any kind of relief claimed under this section and the extent of the relief granted the court or the comptroller shall apply the principles applied by the court in relation to that kind of relief immediately before the appointed day.
>
> …"

48. It is conventional for a patentee such as Lufthansa when bringing a claim for patent infringement to seek by way of remedy either an inquiry as to damages or an account of profits at their election. If liability is established, the patentee will be required to elect between these remedies once the defendant has provided the patentee with sufficient information to make a reasonably informed election. In the present case Lufthansa elected for an account of profits.

49. Although expressly provided for by section 61(1)(d), it is well established that an account of profits is an equitable remedy: see *Lifestyle Equities CV v Ahmed* [2024] UKSC 17, [2025] AC 1 at [145] (Lord Leggatt). The wording of section 61(1)(d) is more precise than that in earlier legislation such as section 60 of the Patents Act 1949, but it remains a codification of law going back at least to the mid-nineteenth century. As section 61(6) makes clear, it was not intended to change the law.

50. An account of profits is also a remedy for infringements of other intellectual property rights, including copyrights, performers' property rights, designs and trade marks: see sections 96(1) (copyright), 191I(2) (performers' property rights) and 229(2) (unregistered design right) of the Copyright, Designs and Patents Act 1988, section 24A(2) of the Registered Designs Act 1949 (registered designs) and section 14(2) of the Trade Marks Act 1994 (trade marks) (although it is worth noting that the language of these provisions is less precise than that of section 61(1)(d) of the 1977 Act). It is also an established remedy for passing off and misuse of confidential information.

51. I note in passing that neither side suggested that any light was cast on the issues on Lufthansa's appeal by either Article 45(2) of the Agreement on Trade-Related Aspects of Intellectual Property Rights annexed to the Agreement Establishing the World Trade Organisation (which provides that "[i]n appropriate cases, Members may authorize the judicial authorities to order recovery of profits … even where the infringer did not knowingly, with reasonable ground to know, engage in infringing activity") or Article 13(2) of European Parliament and of the Council Directive 2004/48/EC of 29 April 2004 on the enforcement of intellectual property rights (which provides that "[w]here the infringer did not knowingly, or with reasonable grounds to know, engage in infringing activity, Member States may lay down that the judicial authorities may order the recovery of profits …").

52. The rationale for an account of profits as a remedy for infringement of intellectual property rights such as patents was described by Lord Leggatt, with whom the other members of the Supreme Court agreed, in *Lifestyle v Ahmed* as follows:

> "155. A central purpose of intellectual property rights is to encourage and reward creativity and innovation by enabling the owner of the right to enjoy the fruits of its exploitation. That purpose is promoted by allocating profits made from exploiting the right to the owner, including where the right is infringed by commercial use made without the owner's consent. For this purpose it does not matter whether the infringement is deliberate or innocent. The reason for redirecting the profits to the owner of the right is not to punish or deter wrongdoing. It is to achieve the goals which the right exists to further. As Robert Stevens puts it in a valuable discussion of this subject in *The Laws of Restitution* (2023) at p 306: 'The remedy of an account of profits

> is here the continuation of the reason for the right.' This explains why, in the words of Kitchin LJ in *Hollister Inc v Medik Ostomy Supplies Ltd* [2013] Bus LR 428, para 55, the infringer 'is treated as if he has conducted the infringing business on behalf of the claimant'.
>
> 156. Seen from this perspective, ordering an account of profits against an innocent infringer is in fact easier to justify than awarding compensatory damages. Whereas an award of damages may make the infringer worse off than if the infringement had not occurred, an account of profits does not have this effect. The effect is simply to put the infringer back in the same position financially as if no infringement had taken place. It is hard to see how an innocent infringer can legitimately object to such restitution. …"

53. It is debatable whether the remedy of an account of profits for infringement of an intellectual property right is accurately described as a restitutionary one, although it can certainly be viewed as a remedy for unjust enrichment. For this reason, some scholars prefer to term the remedy "disgorgement". Either way, the remedy should be distinguished from using the infringer's profits as either evidence of, or a proxy for, the damages suffered by the right owner, as some legal systems do. It is well established that the purpose of the remedy is not to punish the infringer. On the other hand, it has been recognised by some courts that deterrence is part of the rationale, since an award of damages may in some circumstances leave the infringer better off than if it had not infringed, whereas an account of profits cannot have that effect: see, for example, *Nova Chemical Corp v Dow Chemical Co* [2022] SCC 43, [2022] 3 SCR 352 at [44]-[48] (Rowe J).

54. In *Recovery Partners GP v Rukhadze* [2025] UKSC 10, [2025] Bus LR 610 Lord Briggs, with whom Lords Reed, Hodge and Richards agreed, distinguished accounts of profits for infringement of intellectual property rights, which are purely remedial, from the fiduciary duty to account for profits, which exists in its own right. As he put it at [21]:

> "The fiduciary duty to account for profits is not to be confused or conflated with the remedy of an account of profits which equity makes available to the owner of (usually) intellectual property which has been infringed, misused or misappropriated by a defendant. In such cases the account of profits is truly just a remedy. It does not depend at all upon the defendant being a fiduciary, and the defendant owes no prior duty to account to the owner of the intellectual property. It is imposed, as the result of an election by the owner, as one of the available remedies, by order of the court."

Causation

55. As section 61(1)(d) makes clear, the profits for which an infringer must account are the profits "derived by him from the infringement". Thus the profits must have been caused by the infringing acts. It is common ground that this involves both factual causation and

legal causation. It is also common ground that, to this extent, the same principles are applicable to accounts of profits as to damages for patent infringement: see *Imperial Oil Ltd v Lubrizol Corp* (1996) 71 CPR (3d) 26 at 30 (Canadian Federal Court of Appeal), *Celanese International Corp v BP Chemicals Ltd* [1999] RPC 203 at [37] (Laddie J) and *OOO Abbott v Design and Display Ltd* [2016] EWCA Civ 98, [2016] FSR 27 at [14] (Lewison LJ).

56. I discussed factual causation and legal causation in the context of damages for patent infringement (specifically, damages for lost profits on lost sales by the patentee) in *Anan Kasei Co Ltd v Neo Chemicals & Oxides (Europe) Ltd* [2023] EWCA Civ 11, [2023] FSR 14 at [46]-[52] (general principles, including factual causation and legal causation) and [93]-[119] (legal causation in more detail). As I noted at [50], "in patent cases the test of factual causation which is applied is the ordinary 'but for' test". In that case there was no dispute on the appeal that the lost sales claimed by Rhodia had factually been caused by Neo's infringing supplies applying that test. As I explained at [95], the central issue on the appeal was whether "the damages claimed are too remote in the broader sense that the losses were not legally caused by the infringing acts because those acts were not a sufficiently effective or substantial or proximate cause of the losses".

Factual causation in the present case

57. It was common ground before the judge that the "but for" test of factual causation required consideration of a hypothetical counterfactual world in which the Defendants had adopted the nearest non-infringing alternative ("NIA") to the arrangement claimed in the Patent. As explained in slightly more detail below, the Defendants argued that, had they not infringed, they could and would have made an alternative outlet unit referred to as the 1171M. The judge found that the Defendants had established this on the balance of probabilities, but that the 1171M would still have fallen within the claims of the Patent. Thus the Defendants failed to establish the only NIA for which they contended. Accordingly, the judge found that the profits claimed by Lufthansa had been factually caused by the Defendants' infringing acts.

58. There is no challenge by the Defendants to the judge's finding of factual causation. It should nevertheless be noted that the Defendants no longer support the proposition that factual causation in an account of profits for patent infringement requires consideration of an NIA. The Defendants consider that factual causation is a much simpler question: what profits were the consequence of the pleaded acts which were held to infringe? In the present case the infringing acts consisted of the supply of the Primary Components in the United Kingdom. Those supplies led to the profits being made which the parties' accounting experts were able to identify as being consequent on those acts, including profits made by the supply of Secondary Components.

Outline of the judge's reasoning in the Main Judgment

59. The judge considered the Defendants' NIA at [158]-[304]. As he explained, it was Astronics' evidence that, had it not infringed the Patent, it could and would have produced a modified version of the 1171 Twist Lock referred to as the 1171M. The judge found that it was technically possible for Astronics to produce the 1171M before the beginning of the Relevant Period, and that it probably would have done so had that been necessary i.e. if Lufthansa had obtained an injunction to restrain infringement of

the Patent in 2009 or 2010. But he concluded that the 1171M did not avoid infringement. He also considered some third-party products relied on by the Defendants, but found that Astronics would not have marketed any of them and that two of them would not have avoided infringement.

60. The judge considered the question of causation at [305]-[472]. He began by considering the law at [306]-[355]. As he explained, it was common ground that, on an account of profits, the patentee must establish both factual causation and legal causation in relation to both the Primary Components (the infringing products) and the Secondary Components (convoyed goods). As he also explained, Lufthansa conceded that it was appropriate to apportion Safran's profits, but disputed that it was appropriate to apportion Astronics' or Panasonic's profits and argued for a differential profits analysis. He concluded at [351] that "the Court should apportion the relevant profits where the test for legal causation in [*Anan v*] *Neo* is not satisfied and Lufthansa is unable to establish that the infringement drove the sales of the EmPower Fusion system".

61. The judge set out his findings of fact on causation at [356]-[431]. He first considered the scope of the invention at [356]-[361]. He concluded at [360] that "the inventive core of the Patent was safety and it had two features which were designed to achieve that objective, namely, the insertion feature and the remoteness feature". He went on to make it clear that it was the combination of these two features that mattered (it is not necessary for present purposes to explain these two features). Nor did it make any difference if the inventive concept was taken also to include a third feature referred to as the "timing" feature.

62. Secondly, he considered whether the Patent was a "barrier" or "gateway" patent at [362]-[431]. He made findings which he summarised as follows:

"<u>(iii) Certification</u>

435. I have found that the 'mating' condition in the 1999 Memorandum was not introduced to require compliance with the insertion test and that the 1999 Memorandum did not require compliance with the remoteness test. But I have also found that the presentation made by KID of the SkyPower System was instrumental in persuading the Study Group to accept that ISPSS systems could use high voltage AC power to supply PEDs and that the only means by which GD (and later Astronics) was able to comply with the 'mating' condition was by adopting the insertion feature of the Patent. Finally, I have found that the Patent provided the answer to one single safety requirement which required a lower degree of assurance than hardware features and that Astronics had to satisfy a further twenty four conditions in order to obtain certification.

<u>(iv) Airframe manufacturers' approval</u>

436. I have found that it was necessary for GD to rely on all three inventive features of Claim 1 to obtain Boeing's approval for the EmPower Classic system and that Astronics would not have obtained approval from Boeing for the EmPower Fusion system

if it had not continued to use those inventive features in the 12xx series. However, I have also found that these features were amongst many features which GD had to satisfy before it obtained approval for the EmPower Classic system and the EmPower Fusion system. In particular, I have accepted Mr Brady's evidence and found that Astronics had to satisfy 36 additional safety tests which were unconnected with those features and that failure to comply with those tests could result in a safety threat.

437. I have also found that it was necessary for Astronics to rely on the insertion and timing features of Claim 1 to obtain approval for the EmPower Fusion system from Airbus and that it would not have obtained approval from Airbus for the 12xx series if it had not done so. But I have also found that the remoteness feature was not a requirement and that the requirement for use of the insertion and timing features was a not a safety critical feature or one which significantly reduced [*sic*] airplane safety. Finally, I have found that the EmPower Fusion system had to satisfy seven major safety critical requirements and one other minor requirement in order to obtain approval.

<u>(v)</u> <u>Essentiality</u>

438. *Functional essentiality.* Morgan J held that the Primary Components were functionally essential to the EmPower Fusion system and I have also held that they were functionally essential for direct power only sales to the airlines. However, I have also held that the Defendants' case is made out and that the ability to supply AC power to PEDs was incidental and not essential to the overall function of EmPower systems in providing power to IFE systems. I have also held that the power management functions of the EmPower systems were not trite or commonplace.

439. *Commercial essentiality*. I have held that both the AC power and the power management functions were equally essential to the commercial exploitation and success of the EmPower Fusion system for direct power only sales to airline customers. But I have held that the provision of AC power to PEDs was not essential to the commercial success of integrated IFE systems in the sense ... that it was the most significant reason for that success in commercial terms. I set out the most significant reasons for that success below.

<u>(vi)</u> <u>Revenue</u>

440. I have found that Astronics generated revenue of approximately US $233 million from ISPSS systems during the Relevant Period and that this was 10 times more than the revenue of US $23 million which KID generated from the sale of ISPSS

systems during the same period. I have also found that the percentage of power only sales which Astronics made during the Relevant Period represented 22% of its overall sales and that the remaining 78% represented IFE sales.

(vii) Commercial Factors

441. I have found that Astronics provided a superior product and a superior service both to the airlines and to the IFE providers during the Relevant Period and that the dominant factor which gave the Astronics SPM [seat power module] or SPB [seat power box] superiority over the KID SkyPower System and other products in the market was weight. I have also found that the superior product and service which Astronics provided to the airlines and IFE providers was not dependent upon exploitation of the Patent but a number of wider commercial factors. I have also found that the failure of the Lufthansa project and KID's failure to find a satisfactory technical solution to the heat dissipation issue with the KID SPM were significant commercial set-backs for KID and that their failure shut KID out of the market for the supply of SPMs and SPBs during Phase 2 integration [i.e. integration into IFEs].

(viii) Customer motivation

442. Finally, I have found that what motivated the airlines to purchase IFE systems was the quality and variety of the entertainment experience which it provided and that the provision of PED power was not a differentiating factor. But I have also found that it was standard for every IFE package to contain a number of AC power outlets and that Panasonic and other IFE providers would not have sold integrated IFE systems to the airlines unless they included AC power."

63. The judge applied the law to the facts at [443]-[472]. He dealt with "but for" causation at [443]-[466]. First, he found at [443]-[451] that Astronics would not have made the profits in issue but for the infringement of the Patent for which Morgan J had held Astronics liable. Secondly, he found at [452]-[465] that, but for the supply of the Components to Safran and Safran connecting them together and incorporating them into airline seats, Panasonic would not have made the profits in issue. Thirdly, he found at [466] that Safran would not have made the profits in issue but for the infringement of the Patent for which Morgan J had held Safran liable.

64. He dealt with legal causation at [467]-[472]. First, he held in relation to Astronics:

"467. I have held that the Patent was a 'barrier' or 'gateway' patent in the sense that Astronics would not have been able to obtain certification of the EmPower systems or the approval of the airframe manufacturers without using some or all of the features of the Patent. The critical issue is whether this is sufficient to establish that the infringement was the legal or proximate cause of the profits in issue given the range of other factors which were causative of those profits. In my judgment, this is not sufficient to establish legal causation and I hold that the infringement of the Patent by Astronics was not the legal or proximate cause of the profits in issue for the following reasons:

(1) Although Astronics used the insertion and timing features of the Patent in order to satisfy the ‘mating’ condition in the 1999 Memorandum, that condition was not introduced to ensure or require compliance with either the insertion test or the Patent. Moreover, the ‘mating’ condition was only one of twenty-four conditions which GD had to satisfy to obtain certification of its EmPower systems. Finally, this safety feature required a lower degree of assurance than the hardware features of those systems.

(2) Again, although Astronics used all three inventive features of Claim 1 to obtain Boeing approval and the insertion and timing features to obtain Airbus approval, Astronics had to satisfy many other safety requirements in order to obtain airframe manufacturer approval. In the case of Boeing these included 36 additional safety tests which were unconnected with the features of Claim 1. In the case of Airbus the relevant requirement was not a safety critical feature or one which significantly reduced [*sic*] aircraft safety and Astronics had to satisfy seven major safety critical requirements and one other minor requirement in order to obtain approval.

(3) I accept that the insertion and remoteness features, which I have held to be the inventive core of the Patent, were necessary for GD and then Astronics to obtain certification and airframe manufacturer approval. But, in my judgment, they were not sufficient. Each EmPower Fusion system had to satisfy the other safety requirements contained in the 1999 and 2005 Memoranda and the detailed technical specifications of the airframe manufacturers before they could obtain certification and approval. In my judgment, it was Astronics' ability to satisfy <u>all</u> of the requirements of those memoranda and technical specifications which was the real driver of the sales of the EmPower systems. In this respect there is a close analogy with [*Anan v*] *Neo*: see Arnold LJ’s judgment at [116].

(4) I accept that the AC power function was functionally and commercially essential for Astronics’ power only sales direct to the airlines. But I have also found that its power management functions of the system were equally essential to the commercial exploitation of that system. I

am satisfied, therefore, that without both functions Astronics would not have made the direct and power only sales in issue and that its power management function systems drove the sales of the EmPower Fusion system just as much as the infringement of the Patent during the Relevant Period.

(5) However, power only sales represented no more than 22% of the market during the Relevant Period and Astronics generated 78% of its revenue from IFE sales. The provision of AC power outlets to PEDs was not commercially essential to those sales. In my judgment, the most significant feature of the IFE systems was the quality and variety of the entertainment experience which the system provided. The insertion and remoteness features were not, therefore, commercially essential in the sense used by HHJ Hacon in … *Abbott v Design & Display* ….

(6) The market for ISPSS systems was a duopoly between Astronics and KID. But although they were the dominant players, Astronics had a market share of 87.9% and achieved sales of USD $233 million compared with KID's market share of 9.8% and sales of USD $23 million. Further, 78% of those sales in issue were IFE sales. I have found that Astronics achieved this dominance because of its superior product and services and, in particular, the weight of its SPM or SPB. I have also found that KID's failure to find a satisfactory solution to the heat dissipation issue with the KID SPM and the failure of the Lufthansa project effectively shut it out of the market. In my judgment, these factors and not the infringement of the Patent drove the sales of the EmPower Fusion system in the integrated market during the Relevant Period.

(7) Moreover, the reasons why Astronics' product and services were superior to the SkyPower System were unrelated to the exploitation of the Patent and the reasons why the Lufthansa project failed and KID was unable to find a satisfactory solution to the heat dissipation issue were also unrelated to the inventive features of the Patent. Indeed, this proposition can be tested simply. During the Relevant Period, both Astronics and KID were able to use those inventive features in their ISPSS systems and KID was able to compete with Astronics on price. But Astronics outsold KID by a factor of ten. In my judgment, the scale of Astronics' market dominance cannot be explained by the exploitation of the Patent.

(8) I have accepted Mr Mosebach's evidence that Airbus had a policy in relation to second-tier suppliers but placed little or no weight on that evidence because that policy was not known to the market or KID's potential customers and had no effect on its ability to compete with Astronics. But even if that policy prevented KID from participating in the IFE market this would not have affected my conclusion that the infringement of the Patent was not the proximate cause of Astronics' sales during the Relevant Period. This is because the Airbus policy as also unrelated to the exploitation of the Patent.

(9) Arnold LJ made it clear in [*Anan v*] *Neo* that the absence of an NIA is not determinative of the question of legal causation and a counterfactual test may be problematic or have the potential to confuse: see [117]. He made those observations in the context of a claim for damages but they are particularly apt in the context of an account of profits where the function of the test is not to determine whether recovery should be excluded altogether but to determine whether the Court should apportion the profits. In my judgment, Lufthansa … fell into the trap of treating the question whether there was an NIA as determinative of the overall issue of legal causation.

468. I have held that Astronics' ability to satisfy all of the requirements of the regulatory authorities and the airframe manufacturers drove the sales of all of the EmPower systems by analogy with *Neo*. I have also held that the superior quality of its product and services and KID's failure to compete drove the sales of the EmPower Fusion system in the integrated market during the Relevant Period. In my judgment, either finding might have justified the conclusion that the infringement of the Patent was not the proximate cause of the profits in issue. …"

65. Secondly, he noted at [470] that the parties drew no distinction between Astronics and Panasonic in relation to legal causation, and therefore held for the same reasons that infringement of the Patent by Panasonic was not the legal or proximate cause of the profits in issue. Thirdly, he noted at [471] that Lufthansa had conceded that apportionment was appropriate in relation to Safran's profits, and therefore it was unnecessary for him to decide whether infringement by Safran was the legal or proximate cause of the profits in issue; but added that he would have held that it was not. Fourthly, he held at [472] that, even if he was wrong about the profits generated by sales of Primary Components, he would hold that infringement was not the proximate cause of the profits derived from the sales of Secondary Components and Ancillary Goods and Services.

66. The judge addressed two of the unresolved issues concerning Panasonic's liability, and explained why it was unnecessary to deal with a third, at [473]-[485]. This part of the judgment can be ignored for present purposes.

67. The judge considered the calculation of the profits in issue at [486]-[554]. As he explained, Lufthansa called Daniel Ryan to give expert forensic accountancy evidence on this question and the Defendants called Mark Bezant. He found both witnesses to be reliable and conscientious witnesses doing their best to assist the court. Many of the differences between them were no more than a reflection of the differing instructions they had been given in relation to factual matters. The experts had set out agreed figures on various bases in tables in a joint statement.

68. First, the judge considered Astronics' profits at [489]-[499], and found that the total net profits earned by Astronics on its sales of EmPower Fusion systems containing the infringing outlets during the Relevant Period in the UK (including some final assembly components which were shipped outside the UK, "FAL Components") were US$34.0 million. Secondly, he considered Panasonic's profits at [500]-[548], and found that the total net profits earned by Panasonic on its sales of IFE systems incorporating EmPower Fusion systems during the Relevant Period in the UK (including FAL Components) were US$56.8 million. Thirdly, he considered Safran's profits at [549]-[554], and found that Safran's profits for the Relevant Period were US$38.7 million after deduction of overheads of US$165.1 million and US$168.5 million if no overheads were deducted.

69. The judge considered the question of apportionment at [555]. He began by recalling at [555] that he had held that it was appropriate to apportion the profits the individual Defendants made "because infringement did not drive the sales or profits of any of the Defendants even though Lufthansa has proved but for causation and that the Patent was, in that sense, a 'barrier' or 'gateway' patent."

70. At [556]-[573] he considered the methods of apportionment which had been adopted in a number of earlier cases. As he explained in this passage, Mr Ryan and Mr Bezant agreed that one possible approach to this was a "royalty or licensing approach". The judge agreed with this. In this context he said at [572]:

> "Mr Bezant also accepted that the differential profits approach is to be preferred and that no apportionment may even be necessary where the profits derived from the infringement can be isolated perfectly. Again, I agree. Where it is clear that either all of the profits made by the infringer from a complex product or a specific proportion of them can be attributed solely to the infringement of the patent, then the Court will adopt a differential profits approach to apportionment. But that is not this case. I have found that the infringement was not the legal or proximate cause of the Defendants' profits and Lufthansa did not argue that a particular profit stream or proportion of the profits could be attributed solely to the infringement of the Patent. For instance, Lufthansa might have argued that it was entitled to all of the profits on direct, power only sales and a royalty for the profits on the integrated sales. But it chose not to advance a positive case on apportionment at all (as I explain below)."

71. The judge considered the parties' statements of case at [574]-[577]. He noted at [574] that the Defendants had pleaded four alternative ways of apportioning their profits: (i) patent counting, (ii) the cost of the Components, (iii) the causative effects of the Patent and other factors and (iv) by reference to the 2014 Teaming Agreement. They also

pleaded a separate case in relation to Safran. As he explained at [575], their primary case in closing submissions was based on the 2014 Teaming Agreement. As he explained at [576]-[577], Lufthansa denied that the Defendants' profits were to be apportioned in any of the four ways advanced by the Defendants, but it advanced no positive case as to how the profits should be apportioned, which was a considered position.

72. He considered the expert evidence at [578]-[585]. He set out his conclusions at [586]-[592]. First, he considered the Defendants' case at [586]-[589], upholding some of Lufthansa's criticisms of Mr Bezant's evidence, but rejecting others. Secondly, he turned to Lufthansa's case and held as follows:

> "590. I agree with Bacon J [at the hearing on 1 December 2023] that if Lufthansa was going to put forward a positive case either in relation to the methodology which the Court should adopt or in relation to an appropriate comparable or, indeed, in relation to the percentage proportion which the Court should award, then it ought to have done so in the Reply. But it elected not to do so and this was a considered decision. In my judgment, this did not prevent Lufthansa from arguing that it was entitled to 100% of those profits on the basis that it was essential to all of the sales and drove all of the profits or to testing Mr Bezant's evidence. But it did not entitle Lufthansa to advance an alternative case in relation to a proportion of the profits or alternative comparables.
>
> 591. Accordingly, I disallow Mr Ryan's evidence in relation to the 1998 Teaming Agreement. In my judgment, this extended beyond an expert analysis or commentary on Mr Bezant's approach and was an attempt to advance a positive case. Moreover, if Lufthansa had intended to rely on the 1998 Teaming Agreement as an alternative to the 2014 Teaming Agreement, Mr Ryan should have given evidence about in Ryan 1 and given Mr Bezant an opportunity to answer it in Ryan 2. It should also have been the subject of discussion between the experts and dealt with in the Joint Statement.
>
> 592. Finally, the Lufthansa team submitted that I should reject Mr Bezant's evidence in relation to the 2014 Teaming Agreement and I address that submission below. However, I do so in the context of Mr Ryan's evidence in cross-examination. He accepted that it was possible to apportion profits by reference to an implied royalty rate taken from a comparable licence agreement. [Counsel for the Defendants] also pressed him on whether he had any objection in principle to the methods of apportionment which Mr Bezant had adopted and he declined to answer the question. If he had had a reasoned objection to the use of any of those methodologies and, in particular, to either the royalty or licensing approach or the distribution of cost approach, this was the time to make it clear."

73. The judge applied his conclusions to the total net profit figures he had previously determined at [593]-[631]. First, he considered Astronics. He began by explaining at [596]:

> "Mr Bezant calculated that Astronics would have paid Lufthansa US $3.4 million under the terms of the 2014 Teaming Agreement. To reach this sum he used the per-unit royalty rate although he did not adjust it upwards for inflation in later years or downwards for the royalty rate payable before it came into effect. He also assumed that Astronics would have paid the same lump sum as KID. He also concluded that this sum implied a royalty percentage of 21% deducting all overheads and a royalty percentage of 13% deducting incremental overheads only. Lufthansa advanced six objections to Mr Bezant's evidence and I deal with each in turn."

74. He considered and rejected each of those objections at [597]-[613]. Of significance to the appeal is what he said about the first objection:

> "597. Lufthansa's primary submission was that the licensing or royalty approach permitted Astronics to share its profits with Lufthansa whereas the purpose of an account of profits was to require Astronics to disgorge all of its profits. The Lufthansa team placed particular reliance upon [an] extract from *Patent Remedies for Complex Products* …. They also placed reliance upon Mr Bezant's acceptance in cross-examination that in the real world a licence involved a profit split between the patentee and the licensee.
>
> 598. I reject this submission. Its premise is that Lufthansa was entitled to all of Astronics' profits from the sale of products which included the infringing EmPower system. But I have rejected this premise in reaching the conclusion that the infringement was not the legal or proximate cause of those profits. Given that the sale of the products generated a single pool of profits, the function of an apportionment is to divide the profits by reference to the relative contribution of the Patent and the other factors which generated the relevant sales (as the experts agreed). The licensing approach enables the Court to place a value on that contribution by looking at comparable transactions in the market in which parties negotiating at arm's length have placed a value on that contribution."

75. The judge turned to consider the appropriate royalty rate at [614]-[617] and reached the provisional conclusion (subject to further argument on one point) that Astronics derived profits of US$4.42 million (i.e. 13% of US$34.0 million) from the infringement of the Patent during the Relevant Period. He adopted the same approach to Panasonic's profits at [618], and reached the provisional conclusion Panasonic derived profits of US$7.384 million (i.e. 13% of US$56.8 million) from the infringement of the Patent during the Relevant Period. He considered Safran at [619]-[631], and reached the provisional conclusion (subject to a further argument on another point) that Safran derived profits

of US$81,800 from the infringement of the Patent during the Relevant Period. As noted above, the judge subsequently revised the figure for Safran after further argument. The parties agreed the provisional figures for Astronics and Panasonic.

76. Finally, the judge considered the impact of the 1998 Teaming Agreement at [632]-[690]. I will consider this when I come to Astronics' and Panasonic's appeal on KID apportionment. The judge summarised his conclusions at [691]-[693] and in Appendix 1.

Lufthansa's grounds of appeal

77. Lufthansa appeals on four grounds. Ground 1 is that, having correctly carried out a differential profits analysis, the judge was wrong then to make an apportionment of the Defendants' total profits because those approaches are alternatives. Ground 2 is that the judge erred in his approach to legal causation. Ground 3 is that the judge wrongly applied the test for legal causation. Ground 4 is that, even if he was right to apportion the Defendants' profits, the judge erred in his approach to apportionment.

Ground 1: differential profits versus apportionment

78. The problem which gives rise to Lufthansa's first ground of appeal is a familiar one. How should the court distinguish between "profits derived … from the infringement" and profits which are not "derived … from the infringement"? Although the problem is a general one in accounts of profits for infringement of intellectual property rights, it is particularly acute in cases involving patents for inventions concerning small components of complex products supplied by the defendant. The problem was graphically illustrated by Laddie J in *Celanese v BP* at [51]:

> "… The point can be illustrated by the tin whistle example much beloved of patent practitioners. Someone invents a new form of tin whistle. With the aid of his patent agent he obtains a patent. Regrettably, but as is now common, the patent ends with claims of ever greater particularity and narrowness. … Claim 1 is for the tin whistle. Claim 10 is for a funnel to which the new tin whistle is connected. Claim 15 is for a battleship with a funnel to which the tin whistle is connected. No doubt none of the subsidiary claims are independently valid over Claim 1 but they are probably not *per se* invalid. Nor is there any doubt that an injunction or an order for delivery up would be directed to the tin whistle alone rather than the whole battleship. Similarly on an account substance not form counts. What the defendant has to account for is the profit made by exploitation of the invention, *i.e.* the whistle, not profits made by exploitation of material or activities which are not attributable to the plaintiff's ingenuity, *i.e.* the rest of the battleship."

79. Although Laddie J did not expressly say so, it will be appreciated that this example presupposes that the defendant sold battleships equipped with the claimed whistle and made profits by doing so. If the defendant sold funnels equipped with the claimed whistle, the problem is less acute. If the defendant just sold whistles, there may appear to be no problem. But what if the defendant's whistles incorporate technology which is

of value to the customer that owes nothing to the claimed invention? The relevance of this question is easier to understand if a more realistic example is substituted for the whistle, such as a sonar system.

80. Lufthansa contends that, in most cases, the correct way in which to distinguish between "profits derived … from the infringement" and profits which are not "derived … from the infringement" is by ascertaining the difference between the profits which the defendant made from its infringing activities and the profits which the defendant would have made from the nearest available NIA. This type of analysis is most commonly referred to in the case law and the academic literature as a "differential profits" analysis, although other terms (such as "incremental profits") are sometimes used. Once a differential profits analysis has been undertaken, Lufthansa contends that there is no legal or economic justification for applying an apportionment of the profits: these are alternative approaches to the isolation of profits caused by the infringement. Lufthansa accepts that there may be cases in which apportionment is appropriate, but it argues that a differential profits analysis is usually preferable. What is not legitimate is to apply both. Lufthansa also accepts that, having carried out a differential profits analysis, it remains necessary to ask whether any of the resulting profits were too remote (in the broad sense) from (i.e. not legally caused by) the defendant's acts of infringement. Lufthansa argues that this addresses the problem of long chains of causation, and does not justify apportionment.

81. Lufthansa contends that, since the judge found that the Defendants had failed to establish any NIA, the result of the differential profits analysis is that all of the profits in question "derived … from the infringement". The Defendants' failure to establish an NIA demonstrates the Patent was a "gateway" patent which controlled access to the relevant market. Accordingly, Lufthansa says, it is just that Lufthansa should recover all of the profits generated as a result.

82. Astronics and Panasonic contend that apportionment is a well-established approach in English law to determining what profits are "derived … from the infringement", and that the use of apportionment is not precluded by a finding that all of the profits in issue were factually caused by the infringing acts. They agree with Lufthansa that a differential profits analysis is a potential alternative to apportionment, but they dispute that the judge applied both a differential profits analysis and an apportionment. Rather, they contend, he applied an apportionment instead of a differential profits analysis. Furthermore, he was correct, or at least entitled, to do so. It would be unjust for Lufthansa to recover all of the profits in issue, because there were multiple causes for the generation of those profits. Although infringement of the Patent was necessary for those profits to be generated, it was not sufficient.

83. We were referred to a large number of authorities from a variety of common law jurisdictions, and to academic commentary from a number of scholars. It is not necessary to discuss all of these materials. I shall begin by considering the authorities relied upon by Astronics and Panasonic as establishing that apportionment is a well-established approach in English law; then consider some cases which Astronics and Panasonic acknowledge demonstrate that apportionment is not always appropriate; then consider the authorities and academic writings relied upon by Lufthansa as establishing that the differential profits analysis is to be preferred; and then attempt to draw some conclusions.

84. *Apportionment is a well-established approach in English law*. Counsel for Astronics and Panasonic began with *My Kinda Town Ltd v Soll* [1983] RPC 15. In that case Slade J had previously given judgment in favour of the plaintiffs on their claim for passing off, finding that the use by the defendants of the name "L.S. Grunts Chicago Pizza Co" in connection with their restaurant business had been calculated to mislead a substantial number of members of the public into believing that this restaurant was connected with the plaintiffs' restaurant "The Chicago Pizza Pie Factory". The plaintiffs submitted that there should be an account of all the profits which the defendants had earned during the relevant period, regardless of whether such profits had been made from meals served to customers who had been misled. Slade J rejected that submission. Subsequently this Court allowed an appeal against the judgment on liability ([1983] RPC 407), but that does not affect this point.

85. Slade J considered nine earlier authorities at 49-55. The three he primarily relied upon in making his decision were *Cartier v Carlisle* (1862) 31 Beav 292, *United Horse Shoe and Nail Co Ltd v Stewart & Co* (1888) 5 RPC 260 and *Siddell v Vickers* (1892) 9 RPC 152.

86. In *Cartier v Carlile* the plaintiff manufactured embroidery cotton made up with labels bearing a distinctive trade mark. The defendants in ignorance of the existence and rights of the plaintiff manufactured and sold cotton with labels similar to those of the plaintiff. Sir John Romilly MR said at 298 that "equity will restrain the further use of the trade mark by the person imitating it, and will make him account for such advantage, if any, as he may have derived from its user". He said that he would grant what he termed the usual account, but continued:

> "I do not propose in taking the account in Chambers, to make the Defendants account for every species of profit during the last six years, but I shall consider how much of the profits are properly attributable to the user of the Plaintiff's trade mark."

87. In *United Horse Shoe* the pursuers claimed damages for patent infringement. Lord Watson distinguished such a claim from a claim to the infringer's profits at 266–267:

> "When a patentee elects to claim the profits made by the unauthorised use of his machinery, it becomes material to ascertain how much of his invention was actually appropriated, in order to determine what proportion of the net profits realised by the infringer was attributable to its use. It would be unreasonable to give the patentee profits which were not earned by the use of his invention; but the case is altogether different when the patentee of machinery who does not grant licenses claims damages from an infringing manufacturer who competes with him by selling the same class of goods in the same market."

88. Although Slade J did not cite this, it is also worth noting what the Lord Ordinary (Lord Kinnear) said at first instance in the Outer House of the Court of Session in that case, *United Horsenail Co v. Stewart & Co* (1886) 3 RPC 139 at 143:

> "… there certainly is a great deal of authority for saying that where only a part of a complex machine is protected by a patent,

> the infringer cannot be made liable for the aggregate profit derived from the entire machine, as if that were the profit he had made by the use of the patent."

89. In *Siddell v Vickers* the plaintiff had obtained judgment for patent infringement and elected for an account of profits. The invention was an appliance for turning large ingots. Prior to infringing the patent, the defendants had used manual labour. After they were restrained from using the invention, the defendants used a non-infringing modification of the plaintiff's appliance called the "snickel chain". On the account the Chief Clerk found that the profit for which the defendants should account was £250 based on a comparison with the snickel chain, but that if the correct comparison was with manual labour the figure should be £2,016. Both parties appealed, the plaintiff arguing that the correct comparison was with manual labour and that the defendants had made a greater profit than £2,016. During the course of argument on the appeal, the Court of Appeal (Lindley, Lopes and Kay LJJ) stated at 162 that the "[t]he true test of comparison seems to be with what the Defendants were likely to use, looking at all the circumstances of the case" i.e. if the defendants had not infringed. The defendants accepted that test, and the parties then agreed to the Court of Appeal itself determining the correct amount. The Court fixed the figure at £3,000 without giving reasons, but it must have accepted the plaintiff's argument.

90. Slade J said at 55 that *Siddell v Vickers* was "another instance where the court made an order directing apportionment of the defendant's profits so as to ascertain those profits attributable to the use of the plaintiff's invention". Counsel for Lufthansa submitted that this was wrong, and that what the Court of Appeal had actually carried out was a differential profits analysis by reference to the NIA which the evidence showed that the defendants would have been likely to use at the relevant time, namely manual labour. There is force in that submission, but I agree with Laddie J in *Celanese v BP* at [71] that the case does not lay down any clear principle.

91. In *My Kinda Town* itself Slade J held at 55-58:

> "The purpose of ordering an account of profits in favour of a successful plaintiff in a passing off case is not to inflict punishment on the defendant. It is to prevent an unjust enrichment of the defendant by compelling him to surrender those profits, or those parts of the profits, actually made by him which were improperly made and nothing beyond this. Before specifying the form of the account, the court therefore should, I think, initially ask itself this question: What categories of the relevant profits or parts of such profits ought to be treated as having been improperly made by the defendants? The facts of many particular cases may justify the conclusion that the whole of the relevant profits should be so treated. The facts of the present case, however, do not in my judgment justify such a conclusion.
>
> …
>
> To ascertain the profits which have been improperly made by the defendants, it is therefore necessary to ascertain how much of the

> profits made by the defendants over the relevant period are properly attributable to the use of the name 'Chicago Pizza Co'. Clearly, profits made by the defendants by the sale of meals to customers who were *not* confused by this name are not attributable to this use.
>
> …
>
> An account in this form will, in my judgment, accord with the principles established by cases such as *Cartier v. Carlile* …, because it will operate to give the plaintiffs that part of the defendants' profits which is attributable to the defendants' wrongful acts, no more and no less. The evidence before me indicated that the defendants' restaurant is a thriving concern and that a considerable part of their profits owes nothing to the plaintiffs or the plaintiffs' reputation. To order an account in the form sought by the plaintiffs would be tantamount to a decision that Mr. Soll and Mr. Jager, whose personal honesty is not in dispute, should be treated as having conducted the whole of the business of the defendants' restaurant throughout the relevant period as trustees for the benefit of the plaintiffs, albeit at a reasonable wage for themselves. In my judgment, any such order on the facts of this case would be quite inequitable.
>
> …
>
> Confronted with [the plaintiffs'] claim, the general intention of the Court in making the order which it has made had been to achieve a fair apportionment, so that neither party will have what justly belongs to the other. What will be required on the inquiry … will not be mathematical exactness but only a reasonable approximation."

92. Counsel for Lufthansa submitted that, upon analysis, the account directed by Slade J involved a differential profits analysis, because in a trade mark or passing off case the defendant always has available an NIA consisting of the use of a different sign or indicium (or possibly none at all). I accept that the decision can be analysed in that way, but that was not how Slade J approached the matter. On the contrary, the principle he applied was that there should be "a fair apportionment". That approach was supported by *Cartier v Carlisle* and by Lord Watson's dictum in *United Horse Shoe*, even if not by *Siddell v Vickers*.

93. In *Potton Ltd v Yorkclose Ltd* [1990] FSR 11 the plaintiffs brought an action for infringement of copyright in drawings of a style of house. The defendants admitted certain infringements, including the construction of 14 houses which they had sold. The plaintiffs moved for interim judgment on admissions and elected for an account of profits. The plaintiffs sought an account of "the profits … obtained by [each] defendant by reason of its [or his] infringements of the plaintiffs' copyrights admitted in the defence." The defendants submitted to an account, but contended that the words "properly attributable to" should be substituted for the words "by reason of." This small difference in wording reflected a major disagreement on principle. There were two main

issues between the parties. The first was whether the plaintiffs were entitled to an account of unrealised profits. The second was whether the plaintiffs were entitled to "the whole of the profits capable of being realised on the completion of the construction of each house, or only of some apportioned part of such profits, and if the latter how should such apportionment be made?".

94. Millett J held the first issue did not in fact arise for the reasons he explained at 16:

> "In the present case, however, the houses have been sold, and in my judgment the question is not whether the plaintiffs are entitled to an account of unrealised profits, but how the profits realised by the sale of the houses should be apportioned between those attributable to the infringing acts of building them and those attributable to other acts of the defendants such as selling them. It will be necessary, for example, to exclude any part of the profits which may be attributable to (i) the purchase, landscaping and sale of the land on which the houses are built; (ii) any increase in value of the houses themselves during the interval, if any, between the completion of the infringing building works and the sale; and (iii) the advertising, marketing and selling of the houses."

95. Turning to the second issue, the defendants argued that the relevant comparison was between the profits which the defendants in fact made from the 14 houses and the profits they would have made in respect of the 14 houses if they had not used the plaintiffs' drawings, but similar drawings from another source. Millett J rejected this argument on the ground that the houses themselves constituted a reproduction in a material form of the plaintiffs' drawings, and therefore the plaintiffs were entitled to "all of the profits obtained by the defendants by building the houses as and where they built them". He went on at 18:

> "It may seem hard that the defendants should have no share of the profits obtained by their skill and efforts in building the houses, but these were the infringing acts complained of and the profits made thereby belong in equity to the plaintiffs. The plaintiffs are entitled to be put in the same position as if they had built the houses. Profits, of course, means net profits, and the defendants are entitled to deduct the costs and expenses of building the houses. Such deductions may include just allowances for time and effort, but just allowances do not include profits ….
>
> There remains one further problem which cannot be explored on the material before me but which will have to be resolved when the account is taken. The defendants claim that they have done much work, such as installing kitchen equipment, which has nothing to do with the plaintiffs' … drawings and does not reproduce them in any sense. If so, and if such work can sensibly be distinguished from the admitted infringing acts of constructing the houses, then any part of the profits properly

> attributable to it ought to be excluded. The plaintiffs are entitled only to the profits attributable to the infringing acts."

96. This decision is clear authority in favour of apportionment. Furthermore, as Laddie J noted in *Celanese* at [40], the defendants argued in favour of a differential profits analysis, but that approach was rejected.

97. It is convenient to turn next to the Canadian decision in *Imperial Oil*, because Laddie J relied strongly on it in *Celanese*. In that case Imperial had infringed a Lubrizol patent for a dispersant additive for motor oil, and Lubrizol had elected for an account of profits. Imperial appealed from a decision denying a motion for the discovery (or, as we would now say, disclosure) of certain documents which were said to be relevant to Imperial's contention that it was entitled to apportion its profits on its sales of infringing motor oils as between those attributable to the infringing dispersant and those attributable to other factors like goodwill or even other additives. The lower court had held that the terms of the judgment excluded any question of apportionment. The Federal Court of Appeal held that this was wrong, although it dismissed Imperial's appeal for other reasons.

98. The judgment of the Court was given by Hugessen JA, who said (footnote omitted) at 30:

> "An account of profits is confined to profits actually made, its purpose being not to punish the defendant but to prevent its unjust enrichment. The ordinary requirement of the principles of unjust enrichment that regard be paid to matters of substance rather than technical form is applicable.
>
> … Just as in a reference on a claim for damages issues of fact relating to causality and remoteness may properly be explored, so may they be likewise on an accounting of profits. The issue of apportionment is at bottom a question of fact bearing on the relationship between the profits earned and the appropriation of the plaintiff's invention. It may be possible for Imperial to show that some part of the profits made on the infringing sales are not profits 'arising from' the infringement in that they are not caused by but simply made on the occasion of such infringement. …
>
> But there is more. Form must not be allowed to triumph over substance. While motor oil containing the dispersant additive was properly claimed in the patent … and while that claim was properly found to have been infringed, the reality is that Lubrizol did not invent motor oil and that Imperial's motor oils contain other additives than the one here in issue. The terms of the judgment … make it plain that it is the presence of the additive … claimed in the … patent which caused Imperial's motor oils to infringe. Thus, it is possible that such oils have achieved their market share and attendant profits for reasons other than the presence of Lubrizol's patented additive. A finding that Imperial's motor oils infringed the Lubrizol patent does not necessarily amount to a finding that all the profits from the sales

> of such motor oils are profits arising from the infringement. That is an issue of fact to be decided on the reference."

99. Later he said at 33:

> "The remedy of an account of profits is an equitable one. Its purpose is not to punish the defendant but simply to have him surrender the actual profits he has made at the plaintiff's expense. But if some part of Imperial's profit on the infringing sales can be shown to have been due not to the appropriation of the Lubrizol invention but to some other factor where is the equity? We were told that Lubrizol contends that Imperial's motor oil infringes another of its patents and has sued in respect thereof. May the same profits be claimed a second time? And if not by Lubrizol what of some third party patentee who likewise claims infringement? And even if no other patents were involved, to allow Lubrizol to take profits which Imperial succeeds in showing were solely attributable to some non-infringing feature of its motor oil would be to judicially sanction Lubrizol's unjust enrichment at Imperial's expense."

100. In *Celanese v BP* BP had infringed Celanese's patent for an improved process for manufacturing acetic acid which involved using a "guard bed" to remove iodide impurities, and Celanese elected for an account of profits. Celanese's contention in opening at the trial was that it should recover all the profits made by BP from the production of acetic acid using the patented method, but in closing submissions it contended in the alternative that, if apportionment was appropriate, 50% of the profits should be apportioned to infringement. BP contended that Celanese should only be awarded the "incremental" profits made by BP from the improved process rather than a non-infringing one i.e. differential profits. Laddie J held that the correct approach was to apportion the profits BP had made, and arrived at a much lower percentage than that contended for by Celanese.

101. In reaching that conclusion, he held at [39] that "it should be no answer to an account that the defendant could have made the same profits by following an alternative, non-infringing course". It is common ground that, to the extent that he was suggesting that a differential profits analysis is precluded on an account of profits as a matter of law, he was in error. (*United Horse Shoe* is authority for the proposition that reliance upon an NIA is no answer to a claim for damages suffered by a patentee through lost sales of a patented device; but as noted above, Lord Watson was careful to distinguish between damages and an account of profits in this respect.)

102. He held that, on principle, apportionment was the correct approach for the reasons he gave at [43]:

> "Although the infringer cannot avoid paying over profits by relying on possible non-infringing alternatives, the patentee … cannot recover profits which were not earned by use of his invention. I have already referred to a case where the defendant has two businesses, one infringing and the other not. But the same approach should apply where only part of a product or

> process infringes. Profits attributable to the non-infringing parts were not caused by or attributable to the use of the invention even if the use of the invention was the occasion for the generation of those profits. For example imagine a case in which there is a 3-stage process for making a product. The profits achieved by making and selling the product are attributable to each of the three stages. Assume also that each stage is protected by a separate patent. There is only one profits 'pot' which has to be divided amongst the three stages. Where each stage is as expensive to run and as important to the characteristics of the final product as the other stages it may be that one third of the profits should be attributed to each of them. If this is so, then that attribution applies whether the three patents are owned by the same or different proprietors. It must also apply even when one or more of the patents expires or even if one or other patent has not been applied for. The existence or expiry of patent protection does not alter which stages make what profit. In such a case it is necessary to apportion the total profits actually made among the stages or parts which generated it."

103. He went on at [44]-[52] to hold that apportionment was supported by *Cartier v Carlisle*, *United Horse Shoe*, *Imperial Oil* and *Potton v Yorkclose*. At [63]-[72] he considered *Siddell v Vickers* and *My Kinda Town*, which BP relied on, together with *Imperial Oil*, as supporting differential profits analysis, and held that they did not support that approach. Thus this is another clear decision in favour of apportionment.

104. As he explained at [47], this does not mean that apportionment is appropriate in all cases:

> "Sometimes the court may come to the conclusion that all the profits are attributable to the act of infringement. That is what Pennycuick J. did in *Peter Pan* [*v Silhouette*]. There the whole of the defendant's brassieres were made by misuse of the plaintiff's confidential information. Without it brassieres to that design would not have existed. No apportionment was appropriate. Similarly, the court may come to the conclusion, as a matter of fact, that the invention was the essential ingredient in the creation of the defendant's whole product or process. If so, it may be appropriate not to apportion. See *Dart Industries v. Decor Corp* ."

I shall discuss the cases referred to by Laddie J in this paragraph below.

105. In *Hotel Cipriani Srl v Cipriani (Grosvenor Street) Ltd* [2010] EWHC 628 (Ch) the defendants had infringed the claimants' trade mark and committed passing off. The claimants elected for an account of profits. Although they had served a report from an accounting expert, the defendants did not appear at the hearing. Even so, the following observations by Briggs J (as he then was) at [8] are instructive:

> "The principles are well settled and summarised by Millett J in *Potton v Yorkclose* [1990] FSR 11 at 14 to 16. First, the

> purpose is to deprive the defendants of the profits which they have improperly made by the wrongful acts committed in breach of the claimants' rights and to transfer those profits to the claimants. … Fourthly, where a single head of profit is attributable to a number of causes, some of them infringing and some not, it is necessary and appropriate for the court to conduct an apportionment so as to work out on a broad-brush basis what proportion of the profit was due to the act of infringement."

106. In *Abbott v Design & Display* the defendant had infringed the claimants' patent for slatwall display panels used in shops. The invention was the provision of a snap-in insert made from a resilient metal like aluminium and shaped in a particular way. The claim was to a panel incorporating such an insert. The claimants elected for an account of profits. The defendant sold both panels with inserts separately for subsequent assembly by the customer and panels with inserts already in position (referred to as "unincorporated" and "incorporated" panels respectively). HHJ Hacon sitting in the Intellectual Property Enterprise Court held that the profits derived from the infringement extended to all the profits made by the defendant on the sale of panels together with infringing inserts. An appeal by the defendant was allowed by this Court.

107. Lewison LJ, with whom Sir Terence Etherton C and Tomlinson LJ agreed, began by considering the basic principles:

> "7. Section 61(1)(d) of the Patents Act 1977 entitles a patentee to claim against an infringer an account of the profits 'derived by him from the infringement'. An account of profits is confined to profits actually made, its purpose being not to punish the defendant but to prevent his unjust enrichment. The underlying theory is that the infringer is treated as having carried on his business (to the extent that it infringes) on behalf of the patentee. The broad principle is that the patentee is entitled to profits that have been earned by the use of his invention. If the patentee does not recover those profits, the infringer will have been unjustly enriched. So the purpose of the account is to quantify the extent to which the infringer would be unjustly enriched if he were to retain the profits derived by him from the infringement. That requires the fact finder first to identify the patentee's invention and second to decide what (if any) profits the infringer derived from the use of that invention. The second of these questions may give rise to difficulty where the infringer sells products associated with the subject matter of the patent (often called 'convoyed goods') or products into which the subject matter of the patent is incorporated. The court must determine what profit has been earned, in a legal sense, by the infringer's wrongful acts. …
>
> 8. The first question requires the identification of the invention. It is common ground that, for the purpose of assessing damages or taking an account of profits, the scope of the invention is not necessarily co-terminous with the scope of the claims. Laddie J

> explained the reason for this in *Celanese … v BP …* at [51] [citing the passage set out in paragraph 78 above]."

108. Having discussed some cases on damages for patent infringement, Lewison LJ turned to consider *Dart v Decor* (discussed below) and *Celanese v BP*. He noted at [28] that in *Celanese v BP* Laddie J "concluded that an apportionment would be inappropriate where without the infringement the infringing articles would not have existed or where the invention was an essential ingredient in the creation of the infringer's whole product".

109. Lewison LJ identified the error in the judge's approach as follows:

> "36. Let me revert to the example given by the Full Court in *Dart ... v Decor* …. A manufacturer sells a car which includes a patented brake. If the car did not have brakes, the manufacturer could not have sold it, but it did not have to have that particular brake. In those circumstances the Full Court clearly thought that it would be unjust to charge the manufacturer with the whole profit made on the car; and I agree with them. In my judgment the legal error that the judge made was to ask whether the sale of the panel plus insert would have happened separately rather than to ask himself how much of the profit on the sale was derived from the infringement. In a case in which the infringement does not 'drive' the sale it seems to me that it is wrong in principle to attribute the whole of the profit to the infringement. In particular it does not follow from the fact that the customer wanted a slat wall that incorporated *an* insert that the customer wanted a slat wall that incorporated the *infringing* insert. [Counsel for the claimants] argued that the infringing inserts and the slot were the 'very essence' of the incorporated and unincorporated panels. But the judge made no such finding, and his observations at [32] suggest the contrary. In addition I do not consider that the judge was correct at [31] in saying that '*because* the sales went together, the sale of inserts caused … the sale of the panels…' The mere fact that the two went together is not, in my judgment, sufficient to establish that the whole of the profit earned on the composite item was derived from the invention. One might just as well say that the sale of the panel caused the sale of the insert. As the judge himself recognised the customer specifies *panels*, and on the hypothesis that he was considering at [31] the customer is indifferent about the inserts (provided that some form of insert is included). On the judge's approach, because the sale of the patented brake went with the sale of the car, the whole of the profit on the car would be included in the account. If the judge had found on the facts that the infringing insert was 'the essential ingredient in the creation of the defendant's whole product' (i.e. the incorporated panel), then he would have been justified, on the facts, in declining to apportion the profit. But I cannot see that he made that finding.

> 37. In my judgment therefore in cases simply falling within the factual hypothesis discussed at [31] the judge should have apportioned the overall profit. The question of apportionment will therefore have to be returned to IPEC, although the judge would not be precluded from finding as a fact that the infringing insert was the 'essential ingredient' of the incorporated panel."

110. Counsel for Lufthansa submitted that the example postulated in *Dart v Decor* (see below) of a car with a patented brake discussed by Lewison LJ was consistent with a differential profit analysis because it was implicit that there was an available NIA, namely a car with an alternative brake. Similarly, he argued that the decision in *Abbott v Design & Display* itself was also consistent with a differential profit analysis because the reasoning implicitly acknowledged the existence of an available NIA, namely slatwall panels with uninventive inserts. That may be so, but as with *My Kinda Town* that was not the reasoning of the Court.

111. In my judgment *Abbott v Design & Display* is authority binding on this Court that apportionment is normally the appropriate approach to identifying what profits are derived from the infringement in cases where it cannot be said that all of the profits in issue are attributable to the acts of infringement. Furthermore, Lewison LJ's statement of principle in the sixth sentence of [36] ("In a case in which …") was cited with approval, albeit obiter, by Lord Leggatt in *Lifestyle v Ahmed* at [175]. In any event, I agree with Lewison LJ's reasoning.

112. It is worth noting that, on the remittal, HHJ Hacon found that only 10% of the sales of incorporated and unincorporated panels were driven by the infringement: [2017] EWHC 932 (Ch), [2017] FSR 43. In most cases customers simply wanted an insert and were indifferent as to whether or not it was an infringing insert.

113. In *Jack Wills Ltd v House of Fraser (Stores) Ltd* [2016] EWHC 626 (Ch) HHJ Pelling QC sitting as a Judge of the High Court held at [61]-[62] that the law is now settled by *Abbott v Design & Display* that, "unless the middlemen line of cases applies … or there is a finding that the infringement drove the sale, there must be an apportionment to take account of the fact that the profits to be disgorged are those properly attributable to the infringing use of the mark not all the profits derived from the sale of the item". (It is unnecessary to explain the reference to "the middlemen line of cases", which is not relevant for present purposes.)

114. *Apportionment is not always appropriate*. As Astronics and Panasonic acknowledge, apportionment is not always appropriate. This is demonstrated by two cases.

115. In *Peter Pan v Silhouette* Peter Pan proposed to Silhouette that Silhouette take a licence to manufacture and sell Peter Pan brassieres in the UK. During the course of negotiations Peter Pan sent Silhouette a complete guide to the manufacture of Peter Pan brassieres, including a layout plan, specification and operation schedules, books of samples, patterns, a complete set of Silhouette brassieres, a list of sources of supply in the USA, specimens of advertising material and other information. In 1953 Silhouette entered into a licence in respect of certain patents and trade marks. For a number of years the arrangement worked smoothly. Peter Pan sent Silhouette a stream of information, and Peter Pan manufactured and sold two Peter Pan styles of brassiere, HT and MR. In October 1958 Peter Pan disclosed to Silhouette in confidence three new

styles referred to as U1, U2 and U3. U1 and U2 were based on MR and HT respectively. In Spring 1959 Silhouette's designer visited Peter Pan's design department where she was shown a new design. Later in 1959 Silhouette designed, manufactured and sold two styles of brassiere referred to as U15 and U25 based on the U1 and U2 designs and on the new design without reference to Peter Pan. Peter Pan terminated the licence and brought a claim for misuse of confidential information. Pennycuick J upheld that claim.

116. During argument as to the form of order, there was a dispute between the parties as to the correct formulation of the account of profits which Peter Pan had elected. Peter Pan sought an account of the profits made by Silhouette in the manufacture and sale of the U15 and U25 styles. Silhouette contended that the account should be of the profits made by Silhouette by the wrongful use of confidential information supplied by Peter Pan in the manufacture and sale of the U15 and U25 styles. Pennycuick J held that the correct form of order was that proposed by Peter Pan. He distinguished *Siddell v Vickers* at 109 as follows:

> "[The statement of the Court of Appeal quoted in paragraph 89 above] means only this, that the defendants could have manufactured the product in question by other means, but were able to manufacture more economically by making use of a particular appliance which they were not entitled to use. The position there seems to be wholly different from that in the present case where the manufacture of the article in question of itself involved the use of the confidential information and the defendants could not have manufactured that article at all without the use of the confidential information. "

117. As Laddie J noted in *Celanese v BP* at [47] (paragraph 104 above), no apportionment was appropriate in *Peter Pan v Silhouette* because "the whole of the defendant's brassieres were made by misuse of the plaintiff's confidential information". Without that information "brassieres to that design would not have existed".

118. *Dart v Decor* is an Australian case. Decor and Rian manufactured and sold plastic kitchen canisters which incorporated a press-button seal. Decor and Rian thereby infringed Dart's patent in respect of a press-button seal. Dart elected for an account of profits. In giving directions for the taking of the account, the judge made two directions which were disputed. The first is not relevant for present purposes. The second directed that the profits for which Decor and Rian had to account were the profits from the manufacture and sale of the complete canisters, including the press-button seals. The Full Court of the Federal Court reversed the judge with respect to the first direction, but upheld the second direction. Dart appealed to the High Court of Australia with regard to the first direction, and Decor and Rian sought leave to cross-appeal on the second direction.

119. The High Court refused Decor and Rian leave to cross-appeal because there were concurrent findings of fact by both the judge and the Full Court. The majority of the High Court (Mason CJ, Deane, Dawson and Toohey JJ), with whom McHugh J agreed on this issue although he dissented on the other issue, approved the ways in which both the judge and the Full Court described the question to be answered. The Full Court put it this way:

> "[Dart] cannot gainsay that it is only entitled to the profits obtained by the infringement. If, for example, a patented brake is wrongfully used in the construction of a motor car, the patentee is not entitled to the entire profits earned by sales of the motor car. He must accept an appropriate apportionment. But the question is how that principle shall be applied to a situation where the patent relates to the essential feature of a single item … it seems to us that it was open to the judge to find, and he correctly found, that what characterised the infringing product was the press button lid, without which this particular container would never have been produced at all."

120. The majority held that the questions posed by the judge and the Full Court concerning the apportionment of a total profit both accurately reflected the principles expressed by Windeyer J sitting at first instance as the sole judge of the High Court in *Colbeam Palmer Ltd v Stock Affiliates Pty Ltd* [1972] RPC 303 in a passage at 315-316 which is worth quoting more fully:

> "The true rule … is that a person who wrongly uses another man's industrial property – patent, copyright, trade mark – is accountable for any profits which he makes which are attributable to his use of the property which was not his. An early form of the order in a patent case is for 'an account of all profits actually made by the defendant by means of the infringement': *Elwood v. Christy* (1865) 18 C.B. (N.S.) 494.
>
> [After citing Lord Kinnear and Lord Watson in *United Horse Shoe*:]
>
> In trade mark cases it has been generally accepted ever since *Cartier v. Carlile* (1862) 31 Beav. 292 … that what a plaintiff who establishes infringement is entitled to is the profit attributable to the use of the mark, and no more.
>
> It has been recognized that it may be very difficult sometimes to establish how much of the total net profit which an infringer has made by sales of his goods is to be attributed to his selling them under another man's mark. That problem, the apportionment of a total profit, has been discussed many times … It is similar to the difficulty, to which I have alluded above, of a patent infringed by the incorporation or use of a patented invention or process as a part of a larger machine or process. The same questions and the same difficulty in accounting for profits … can also arise if a copyright is infringed by the publication of copyright material as part only of a larger work …
>
> If one man makes profits by the use or sale of some thing, and that whole thing came into existence by reason of his wrongful use of another man's property in a patent, design or copyright, the difficulty disappears and the case is then, generally speaking, simple. In such a case the infringer must account for all the

> profits which he thus made. This is so too in the case of a sale of an article which could only be made by the use of confidential information, as in *Peter Pan ... v. ... Silhouette* …"

121. It is convenient to interpolate at this point that *Colbeam v Stock* was a trade mark case, and Windeyer J came to the same conclusion as to the profits for which the defendant had to account as Slade J subsequently did in *My Kinda Town* without the assistance of *Colbeam v Stock* (even though *Colbeam v Stock* had been reported in the Reports of Patent, Design and Trade Mark Cases). More recently, Lord Leggatt endorsed both judges' approach in *Lifestyle v Ahmed* at [175]. As he put it at [176]:

> "In estimating the profits for which Hornby Street was liable to account, the question should therefore have been asked whether it is likely that any, and if so what proportion, of the sales of goods bearing the offending signs which were in fact made would have been made if the signs had not been used. …"

122. As Lewison LJ discussed in *Abbott v Design & Display* at [22]-[28], *Dart v Decor* and *Colbeam v Stock* are consistent with Laddie J's analysis of the law in *Celanese v BP*. As Lewison LJ noted at [27], the key point in *Dart v Decor* was that, without the infringing lid, the containers "would never have been produced at all".

123. As Astronics and Panasonic point out, *Peter Pan v Silhouette* and *Dart v Decor* are not easy to reconcile with differential profits analysis. In *Peter Pan v Silhouette* Silhouette could obviously have manufactured brassieres of an entirely different design. In *Dart v Decor* the majority appear to have accepted in the context of the appeal against the first direction that the defendant could have manufactured alternative products to containers (see 574). In neither case did the court consider the difference between the profits the defendant actually made and the profits it would have made if it had manufactured an alternative product which was non-infringing. The only way to reconcile these cases with differential profits analysis is to say that the NIA was not to manufacture products at all, but it is far from obvious why that should be so.

124. *The Canadian courts have held that a differential profits analysis is preferable*. Counsel for Lufthansa particularly relied upon decisions of the Canadian courts as establishing that a differential profits analysis is the preferred method of determining what profits are attributable to the infringement. This principle was established by the decision of the Supreme Court of Canada in *Schmieser v Monsanto Canada Inc* [2004] SCC 34, [2004] 1 SCR 902. In that case the majority (McLachlin CJ, Major, Binnie, Deschamps and Fish JJ) held:

> "101. It is settled law that the inventor is only entitled to that portion of the infringer's profit which is causally attributable to the invention: *Lubrizol Corp. v. Imperial Oil Ltd.*, [1997] 2 F.C. 3 (C.A.); *Celanese International Corp. v. BP Chemicals Ltd.*, [1999] R.P.C. 203 (Pat. Ct.), at para. 37. This is consistent with the general law on awarding non-punitive remedies: ….
>
> 102. The preferred means of calculating an accounting of profits is what has been termed the value-based or 'differential profit' approach, where profits are allocated according to the value

> contributed to the defendant's wares by the patent: N. Siebrasse, 'A Remedial Benefit-Based Approach to the Innocent User Problem in the Patenting of Higher Life Forms' (2004), 20 C.I.P.R. 79. A comparison is to be made between the defendant's profit attributable to the invention and his profit had he used the best non-infringing option: …"

125. The result in that case was that Monsanto recovered nothing from the account of profits because the defendants' profits from planting and harvesting canola incorporating Monsanto's patented gene, which conferred resistance to Roundup herbicide, were precisely the same as they would have been had they planted and harvested ordinary canola. Nor had the defendants saved any costs, or gained any other advantage, since there was no evidence that they had used Roundup.

126. This approach was confirmed by the subsequent decision of the Supreme Court of Canada in *Nova v Dow*, where Rowe J (with whom Wagner CJ, Moldaver, Karakatsanis, Brown, Martin, Kasirer and Jamal JJ agreed) held at [15] that the following three-step test should be adopted:

> "Step 1: Calculate the actual profits earned by selling the infringing product — i.e., revenue minus (full or differential) costs.
>
> Step 2: Determine whether there is a non-infringing option that can help isolate the profits causally attributable to the invention from the portion of the infringer's profits not causally attributable to the invention — i.e., differential profits. It is at this step that judges should apply the principles of causation. Causation 'need not be determined by scientific precision: it is "essentially a practical question of fact which can best be answered by ordinary common sense"' ….
>
> Step 3: If there is a non-infringing option, subtract the profits the infringer could have made had it used the non-infringing option from its actual profits, to determine the amount to be disgorged."

127. In that case Dow had obtained a patent for metallocene linear low-density polyethylenes that had superior strength and processability characteristics as compared to conventional linear low-density polyethylenes. Nova infringed the patent, and Dow elected for an account of profits. Nova conceded that there were no direct non-infringing alternatives to the patented plastics. The judge awarded Dow all of Nova's profits from selling the patented plastics. His award was upheld by the Federal Court of Appeal. On the appeal to the Supreme Court Nova argued for the first time that, had it not made the patented plastics, it would have used its manufacturing capacity to make entirely different plastics, namely high-density polyethylenes. Nova argued that this was its "best non-infringing option". The Supreme Court rejected that argument.

128. Having cited from *Imperial Oil* and noted that the reasoning of the Federal Court of Appeal in that case accorded with that in *Schmieser*, Rowe J went on:

> "[58] In sum, a non-infringing option is any product that helps courts isolate the profits causally attributable to the invention from the profits which arose at the same time the infringing product was used or sold, but which are not causally attributable to the invention.
>
> [59] A non-infringing option is not, as Nova and [Coté J, who dissented] contend, an infringer's 'most profitable' alternative sales product that it 'would have' and 'could have' sold had it not infringed. This approach is flawed for two reasons."

129. The first reason given by Rowe J was that this was contrary to *Schmieser v Monsanto*. The second was that that reading of non-infringing options would distort the purpose of an account of profits. This would have unacceptable consequences, one being that it would favour larger infringers and disadvantage smaller ones. Rowe J concluded his discussion of the law at [67]:

> "Whether there is a non-infringing option that can assist courts in isolating the profits causally attributable to the invention is a question of fact. There are no strict rules around this factual exercise. Despite [Coté J's] assertions that I hold otherwise, the non-infringing option need not be a strict market substitute for the patented product. The onus is on the infringer to adduce sufficient evidence to satisfy the court that the profits from its infringing product arose by virtue of features other than the patentee's invention and that there is a non-infringing option that can help the courts isolate this value …. Typically, non-infringing options will be most relevant when a patent covers only part of the product sold. In those situations, the profits generated by the sale of the infringing product may be attributable to inventive and non-inventive features of the product. But non-infringing options may also be relevant when the entire product sold is patented. Ultimately, 'the question is whether the patent contributes the whole *value* of the thing that was sold, or merely a part', 'not whether the patent is the whole *thing* that was sold, or merely a part' (N. Siebrasse, 'A Remedial Benefit-Based Approach to the Innocent-User Problem in the Patenting of Higher Life Forms' (2004), 20 C.I.P.R. 79, at p. 109 (emphasis in original))."

130. Turning to the application of the law to the facts, Rowe J held that the judge had not erred for two reasons:

> "[69] First, the … judge found that customers only purchased Nova's infringing plastics *because* they contained the features captured by Dow's patent, i.e., Nova sold the unique, patented thin and durable plastics covered by Dow's patent. Dow's invention had created a distinct market and Nova could only service that market because it sold infringing plastics. The two companies were the only companies serving the distinct market created by the patented plastics …."

> [70] Second, Nova did not establish that there were relevant non-infringing options that would help the court isolate the profits causally attributable to Dow's invention from profits attributable to non-inventive features of the infringing product. As explained earlier, the existence of an appropriate non-infringing option is a question of fact. Nova bore the evidentiary onus to establish this fact. It failed to discharge this onus. Before the … judge, Nova conceded that there were no non-infringing options available for the purpose of applying the differential profits approach …"

131. It is important to note that, at [15], [58] and [67], Rowe J identified a key question as being "whether there is a non-infringing option that can help isolate the profits causally attributable to the invention from the portion of the infringer's profits not causally attributable to the invention". Rowe J's reasoning at [67] and [70] suggests that the burden to identify such a non-infringing option lies on the defendant, and that if the defendant fails to discharge that burden, the claimant is entitled to all of the profits generated by the infringing acts (see also [3], [8]). But on the facts, as is clear from [69], *Nova v Dow* was a case, like *Dart v Decor*, where the invention was the essential ingredient in the creation of the infringer's whole product.

132. Furthermore, it is important to note what Rowe J said at [64] when discussing *Monsanto Canada Inc v Rivett* [2009] FC 317, [2010] 2 FCR 93 (a similar case to *Schmieser v Monsanto*):

> "… Mr. Rivett was unable to establish that he 'could have' planted regular soybean seeds, as they were not available for purchase in his locale …. Despite this unavailability, under the reading of *Schmeiser* adopted in these reasons and by the Federal Court in *Rivett*, it was appropriate to consider regular soybean seeds as a relevant non-infringing option. Considering what profits Mr. Rivett would have earned with regular soybean seeds allowed the courts to isolate the 'portion of the infringer's profit which [was] causally attributable to the invention' (the patented genes that made the plants glyphosate herbicide-resistant) from the profits attributable to non-patented features of the sold product (the soybean seed itself), as per the instructions in *Schmeiser* (para. 101)."

I shall return to this point below.

133. *Academic writing*. Counsel for Lufthansa also relied strongly upon academic writing as supporting different profits analysis, in particular: (i) the article by Professor Norman Siebrasse cited by the Supreme Court of Canada in both *Schmieser v Monsanto* at [102] and *Nova v Dow* at [67]; (ii) Norman Siebrasse, Alexander Stack, Andrew Harrington, Scott Davidson, William Dovey and Stephen Cole, "Accounting of Profits in Intellectual Property Cases in Canada" (2007) 24 CIPR 83; (iii) chapter 4 of Professor Thomas Cotter's book *Comparative Patent Remedies: A Legal and Economic Analysis* (OUP, 2013); and (iv) Christopher Seaman, Thomas Cotter, Brian Love, Norman Siebrasse and Masabumi Suzuki, "Lost Profits and Disgorgement" in Bradford Biddle,

Jorge Contreras, Brian Love and Norman Siebrasse (eds), *Patent Remedies and Complex Products* (CUP, 2019).

134. Interesting and valuable though these articles and chapters are, it is not feasible to discuss them at length. I shall therefore confine myself to the following comments. In the first article, Prof Siebrasse states near the beginning of his discussion of accounts of profits at 83 (footnotes omitted):

> "When an accounting of profits is ordered, the infringer is required to disgorge those profits made by the infringer as a result of the infringement. But the patentee is not necessarily entitled to the entirety of the infringer's profits. For example, in *Gordon Form Lathe Co. v. Ford Motor Co.* the patent in issue was for a lathe for turning automobile camshafts. Though Ford Motor Co. was found to have infringed the patent, the patentee was clearly not entitled to the entire profits made by Ford on each car sold which had a camshaft ground with an infringing lathe. How then are the profits to be apportioned between the infringer and the patentee?
>
> It is uncontroversial that an apportionment is sometimes necessary. It is also universally acknowledged that the governing principle is that the patentee is only entitled to that portion of the infringer's profit which is causally attributable to the infringement. This is simply a reflection in patent law of the fundamental legal principle that a causal link between the wrong and the award is an essential element in the assessment any non-punitive compensation. The controversy is in the approach to be used in implementing the causation requirement in an accounting. Precisely what rule should be used in apportioning profits?"

135. Prof Siebrasse goes on to argue that differential profits analysis should be used to apportion profits. His core argument at 91 is that this is simply an application of the "but for" test of causation:

> "… the differential profit approach to an accounting is simply a more specialized statement of this general principle. It says that the defendant's profit caused by the infringement is the difference between the profit which the defendant in fact made and the profit which the defendant would have made but for the infringement, on the supposition that but for the infringement the defendant would have used the next best non-infringing method."

136. Among other points, Prof Siebrasse argues that what he calls the "whole profits rule" (a rule that "the patentee is entitled to the whole profits when the patented item comprises the whole physical part of what was sold") is unjustified unless the application of the differential profits analysis leads to that result. In this context he says at 109, as noted by the Supreme Court of Canada in *Schmieser v Monsanto*:

> "Thus the question is not whether the patent is the whole *thing* which was sold, or merely a part; the question is whether the patent contributes the whole *value* of the thing which was sold, or merely a part. The confusion of these two questions is understandable as it is not infrequently the case that when the patented item is the whole physical thing, the patent also contributes the entire value. But it is important to recognize the true rule, since there are some cases in which the patented item is the whole thing yet not the whole value; and conversely there are other cases in which it is only a part of the thing, and yet represents the whole value."

137. I find much of what Prof Siebrasse says persuasive, and in particular the last passage I have cited, but the question which he does not appear to me to answer is what the court should do where the evidence does not identify "the next best non-infringing method". In any event, he does not say that differential profit analysis is the only method of apportioning value.

138. Approaches to identifying the best non-infringing option are discussed in section 2.4 of the 2007 article by Prof Siebrasse and his co-authors, but again I do not find a clear answer to the question I have identified. Be that as it may, in section 5.0 the authors state at 112-113 and 115:

> "Apportionment will generally be unnecessary when the Differential Profits approach is used, because the plaintiff is only entitled to the difference between the profits actually earned by the defendant and those that would have been earned with the most likely non-infringing alternative. This gives a conceptually precise test for determining what profits are attributable to the infringement; the plaintiff is entitled only to the value or profits causally attributable to the infringement using a 'but for' test. Put another way, a value-based apportionment is embedded in the Differential Profits approach.
>
> …
>
> Fundamentally, apportionment should not be led by the form of the claim, but should look to the value of the invention itself. [The decision in *Imperial Oil*] … is entirely consistent with the Differential Profits approach; notwithstanding that the whole product was patented, the key issue is the extent to which the infringing motor oil was more valuable than a non-infringing motor oil."

Again, the authors do not say that differential profit analysis is the only method of apportioning value.

139. Professor Cotter perhaps goes slightly further in his 2013 book at 205:

> "… if I am correct in arguing … that, for purpose of calculating the defendant's profit attributable to the infringement,

> apportionment and consideration of the next-best noninfringing alternative are really two sides of the same coin, there should be no need in future cases to determine what portion of the profits earned from the sale of infringing items are properly allocable to the presence of the infringing feature, as Canadian courts have sometimes done in other cases.[138] If the presence of the infringing feature caused the infringer to earn ten sales that it otherwise would not have earned, the proper measure of the benefit derived from the use of the patent is the profit earned on the ten additional sales. Similarly, if the infringer would have made the same number of sales at the same prices, but at higher production costs, the benefit derived from the use of the patent is the cost saving. No other apportionment would appear to be necessary to restore the defendant to the position it would have occupied, but for the infringement.[139]"

140. Since footnote 139 cites the first sentence of the passage from section 5.0 of the article by Prof Siebrasse and his co-authors, this may acknowledge that differential profit analysis is not the only method available. In any event, Prof Cotter again does not seem to me to answer the question as to what the court should do if the evidence does not identify "the next-best noninfringing alternative".

141. Similarly, the chapter in *Patent Remedies and Complex Products* argues that differential profits analysis is "the correct approach", but does not answer the question as to what the court should do if the evidence does not identify "the next best noninfringing alternative"; nor does it rule out other approaches in that event.

142. By contrast with the literature discussed above, the Court drew to the parties' attention Prof Cotter's most recent book, *Remedies in Intellectual Property Law* (Edward Elgar, 2026), in which he states at 288-289 that "the practice of apportioning profits to reflect only the contribution of the IP rights at issue appears now to be widely accepted", citing among other authorities *Potton v Yorkclose*, *Celanese v BP*, *Abbott v Design & Display, Dart v Decor* and *Aristocrat Technologies Australia Pty Ltd v Konami Australia Pty Ltd (No 3)* [2022] FCA 1373 (Federal Court of Australia)

143. *Analysis of the law*. As is common ground, factual causation is not enough on an account of profits any more than it is on an inquiry as to damages. The reason is simple: factual causation proves too much. Applying the usual "but for" test of factual causation, the infringer may have made profits which it would not have made but for the infringement, but which are not in truth derived from the infringement as opposed to other factors. This was convincingly explained by Hugessen JA in *Imperial Oil* at 30 and 33 (paragraphs 98-99 above), Laddie J in *Celanese v BP* at [43] (paragraph 102 above) and Lewison LJ in *Abbott v Design & Display* at [36] (paragraph 109 above). Accordingly, as is also common ground, legal causation is required as well as factual causation.

144. What divides the parties are two interrelated questions. The first is the correct test for factual causation. The second is the correct approach to legal causation in this context.

145. Lufthansa argues that a correct application of the "but for" test of factual causation involves the identification of a counterfactual world in which the infringements did not

take place. That requires identification of the nearest NIA available to the defendant. The difference between the profit the infringer in fact made and the profit the defendant would have made had it adopted that NIA (i.e. the differential profit) represents the profit derived from the infringement. On this argument, a differential profit analysis identifies with precision the profits attributable to infringement as opposed to other factors. Thus it accounts for the causal potency of the different factors. Accordingly, the only role for legal causation is to police the length of the causation chain, and to exclude profits which are too remote from the infringing acts (e.g. profits made by reinvestment of the profits from the infringing acts into a cryptoasset which performs very well).

146. Astronics and Panasonic argue that the "but for" test of factual causation simply requires the court to identify the total profits which resulted from the infringing acts, and does not necessarily require identification of an NIA. Once the total profits which resulted from the infringing acts have been identified, it remains necessary to determine what profits are attributable to the infringement as opposed to other factors. This is the role of legal causation.

147. In considering these arguments, it is necessary to return to basic principles. Counsel for Lufthansa emphasised that patents are infringed by acts, not by products or processes: see section 60(1) and (2) of the 1977 Act. That is true, but the acts will only infringe if they are carried out in relation to products or processes that fall within the claim(s) of the patent. For that reason it is common, even if slightly inaccurate, to speak of "infringing products" and "infringing processes". As Laddie J vividly explained in *Celanese v BP*, however, the inventive contribution of a claim is not coextensive with the scope of the claim. Thus the claim may include far more than the inventive element. This is why, as both Hugessen JA in *Imperial Oil* and Laddie J in *Celanese v BP* stated, it is important to consider substance not form: are the profits derived from the inventive contribution made by the claimed invention? The same question is implicit in Lewison LJ's analysis in *Abbott v Design & Display*.

148. I agree with Astronics and Panasonic that the "but for" test of factual causation does not necessarily require the identification of a specific NIA. I also agree with Astronics and Panasonic that the role of legal causation in this context is not limited in the manner contended for by Lufthansa. The role of legal causation in this context is, as Slade J recognised in *My Kinda Town*, to differentiate between the profits which justly belong to the claimant and the profits which justly belong to the defendant.

149. As Astronics and Panasonic accept, there may be cases in which a differential profit analysis is useful for this purpose. As they submit, however, differential profit analysis is fraught with difficulty. The problems are similar to those which are encountered with the use of counterfactual analysis as a way to help identify the extent of the loss suffered by the claimant which falls within the scope of the defendant's duty of care in cases involving the provision of information: see *Manchester Building Society v Grant Thornton LLP* [2021] UKSC 20, [2022] AC 783 at [23]-[27] (Lord Hodge and Lord Sales) (discussed in *Anan v Neo* at [117]).

150. The reason why differential profit analysis is fraught with difficulty is that, in order to identify with precision the profits attributable to the infringement, as opposed to other factors, it is necessary to identify a counterfactual in which all other factors are held constant and the minimum change is made to ensure that the patent is no longer

infringed, so that the economic impact of the infringement can be isolated from the economic impact of other factors. In theory, this should present no difficulty. In the real world, the opposite is true.

151. The first question is who bears the burden of identifying and proving the NIA. The Canadian courts have held the burden rests on the defendant, but it is not clear to me why this should be so. One could argue that the burden should lie on the claimant, since the claimant is claiming the profits derived from the infringement, and if it relies upon differential profits analysis to quantify those profits, then the claimant must prove the NIA which should be used for that purpose. A potential difficulty with that approach is that it would enable the claimant to skew the differential profits analysis by selecting a very unprofitable NIA. As I understand the jurisprudence of the US courts on this question, they apply a shifting burden of proof under which the claimant must first identify an NIA, and then the onus is upon the defendant if it wishes to rely upon a different NIA as being a better one. That is a principled approach, but in many cases it will lead to an evidential burden on both parties.

152. If the defendant bears the burden of proof either in full or in part, the next question is what happens if the defendant proposes an NIA which the claimant contends is not an NIA because it also infringes the patent in suit? This is what happened in the present case. The first problem with this is that it required the judge to undertake a patent infringement trial as part of the account of profits, with all the attendant complexity and expense.

153. The next problem is what happens if the claimant turns out to be correct, and the proposed NIA actually infringes. Lufthansa argues that, because the Defendants failed to prove their chosen NIA, Lufthansa can claim all the profits. But all this shows is that the supposed NIA is inapposite for a differential profit analysis because it is not actually an NIA. It should not mean that the court is relieved from the burden of identifying an NIA, because differential profit analysis requires an NIA. One answer to this would be for the defendant to plead and prove a series of alternative potential NIAs, each further away from the claimed invention than the last, but that would simply compound the first problem.

154. The next difficulty is that a question may arise as to whether the defendant could have undertaken the NIA. Suppose that the NIA requires access to a particular raw material or part, but the defendant did not have access to that material or part at the relevant time. As I understand Lufthansa's argument, this means that the defendant cannot rely upon the NIA, but I question why not. The availability of that material or part does not alter the inventive contribution of the patent. The object of a differential profit analysis is to identify what profits are caused by the use of invention, not what profits are caused by adventitious commercial factors. A similar problem arises if the defendant is prevented from using the NIA by regulatory factors unrelated to the invention. I note that in *Nova v Dow* Rowe J approved at [64] the analysis in *Monsanto v Rivett* which held that it did not matter that the NIA was not available to the defendant for commercial reasons. That makes sense for the reasons I have given, but it is in tension with the proposition that the burden lies on the defendant to prove that there is an available NIA.

155. Furthermore, a question may arise as to whether, even if the defendant could have undertaken the NIA, it would probably have done so. This seems to me to even less

relevant, since *ex hypothesi* we are considering a counterfactual. A counterfactual is a thought experiment whose purpose is objectively to identify the consequences of what the defendant actually did. It does not depend on the probability of the defendant doing the alternative in the counterfactual world. Even supposing that one can meaningfully and accurately assess probability in a counterfactual context, why should it matter for this purpose whether the probability of the defendant adopting a particular alternative was 51% or 49%? Yet in this case the judge was drawn into considering precisely this question.

156. The next difficulty is the one I mentioned when discussing the academic literature. In adversarial litigation courts depend on the parties to adduce evidence. What happens if the evidence does not enable the court to identify a suitable NIA? Counsel for Lufthansa argued that it is always possible to postulate an NIA, even if it is simply not producing the product in question at all. The problem with this argument is that an NIA only serves the purpose of the differential profit analysis if it enables the court to distinguish between the profits derived from the infringement from the profits derived from other factors. As explained above, this requires the identification of an NIA in which the minimum change necessary to avoid infringement is made, but all other factors are held constant. As the present case illustrates, the evidence may not permit this satisfactorily to be done.

157. The final problem I will mention is the one touched on by Laddie J in *Celanese v BP* at [43] (paragraph 102 above). In the real world, it is often the case that a complex product or process is covered (or arguably covered) by multiple patents relating to different aspects of the product or stages of the process. How does differential profits analysis work on a claim for an account of profits for infringement of just one of those patents? It cannot be correct to treat all of the profits generated by the manufacture and sale of the complex product or process as attributable to that infringement and none as attributable to the use of the other inventions. It could be argued that this depends on whether the other patents are (a) valid and (b) infringed, but that raises the spectre of determining the validity and infringement of each of those patents, without the participation of the owners of those patents, for the purposes of an account of profits. The better answer is the one given by Laddie J.

158. In short, while differential profit analysis has much to be said for it in terms of legal and economic theory, applying it in real world litigation is at best difficult, costly and uncertain.

159. The conclusions which I draw from this discussion are as follows. First, as Astronics and Panasonic accept, there are some cases in which it is possible to say that all of the profits in issue are derived from the infringement. As Laddie J explained in *Celanese v BP* at [47] (paragraph 104 above) and Lewison LJ noted in *Abbott v Design & Display* at [28] (paragraph 108 above), these are cases where, without the infringement, the infringer's product or process would not have existed at all or where the invention was the essential ingredient in the creation of the infringer's whole product or process. It may be possible, as discussed above, to reconcile such cases with differential profit analysis on the basis that the NIA is not manufacturing products at all, but that does not seem satisfactory. In any event, that is not how they have been analysed in the English or Australian case law. I shall return to this question in the context of ground 2.

160. Secondly, as Astronics and Panasonic also accept, there may be some cases in which differential profit analysis is a useful tool to identify the profits derived from the infringement, rather than from other factors. These will be cases where there is a well-defined and uncontested NIA which only changes the defendant's product or process to the minimum extent necessary to avoid infringement and holds all other factors constant. For the reasons given in paragraphs 149-157 above, I am sceptical as to whether there are likely to be many such cases.

161. Thirdly, the English and Australian case law demonstrates that there is a well-established alternative to differential profit analysis, which is for the court to make a fair apportionment of the profits in issue. This approach is to be adopted when the case does not fall into either of the two categories discussed in paragraphs 159-160 above, that is to say, it is not a case where all of the profits are derived from the infringement or where a differential profit analysis can readily be undertaken. I will discuss how apportionment is to be carried out when I come to ground 4.

162. *Application to the present case*. Lufthansa contends that the judge erred by applying successively both a differential profit analysis and an apportionment. I agree with Astronics and Panasonic that this is not an accurate characterisation of the judge's reasoning. That reasoning involved three stages.

163. The judge first held that the only NIA which had been proposed had not been established (and hence that factual causation had been established). He therefore did not undertake a differential profit analysis, which would have involved the identification of an NIA.

164. Counsel for Lufthansa submitted that the Defendants could have relied upon a different NIA to the 1171M, namely a USB-based system or a DC system. By contrast with the 1171M, however, there was no investigation at trial of the profits that would have been made by Astronics and Panasonic from such an NIA. Counsel for Lufthansa also submitted that the burden of proving the NIA lay on the Defendants, and that the Defendants' failure to prove the only NIA for which they contended meant that the result of the differential profits analysis was that all the profits were attributable to the infringement. For the reasons given above, I do not accept this submission, which would lead to a plainly unjust result.

165. Secondly, the judge held that this was not a case in which all of the profits in issue were derived from the infringement. Thirdly, he therefore proceeded to carry out an apportionment. Although I do not entirely agree with the judge's approach at the second stage for reasons that I will discuss in connection with ground 2, he did not make the error alleged by Lufthansa in ground 1.

166. A final forensic point with respect to ground 1 is that, as the judge noted at [349]-[350] and [351](5)-(6), there is an inconsistency between Lufthansa's contention that Astronics' and Panasonic's profits should not be apportioned and Lufthansa's acceptance that it was appropriate for Safran's profits to be apportioned even though Safran relied upon the same NIA as Astronics and Panasonic (the 1171M). Counsel for Lufthansa had no convincing explanation for this.

Ground 2: the test for legal causation

167. Lufthansa contends that the judge erred in his approach to legal causation. As noted above, it was common ground before the judge that legal causation was required as well as factual causation. It was also common ground that assistance with respect to legal causation could be gained from the reasoning in *Anan v Neo*. Lufthansa argues that the judge made two errors. First, he wrongly held that the test for legal causation was whether the invention was "the real driver" of the profits, whereas the correct test is whether the infringing acts were "a proximate cause" of the profits. Secondly, he wrongly treated the decision on legal causation as determining the applicability of apportionment.

168. The first criticism focusses on a passage in the main judgment at [334] where the judge derived five propositions from *Anan v Neo*. Lufthansa submits that three of them are incorrect (propositions (2), (3) and (4)), two critically so (propositions (2) and (3)). These propositions are as follows:

> "(2) It is necessary for the patentee to prove that the infringer was unable to develop, produce or supply a Non-Infringing Alternative but this is not sufficient by itself to establish that the infringement was a proximate cause: see [116].
>
> (3) Where the infringement relates to a single component of a complex product and the infringer has to meet performance standards not only in relation to that component but the other components or the product as a whole, the patentee must demonstrate that the performance of the infringing component was the real driver of the sales in issue: see [116].
>
> (4) In order to determine whether the infringement is a proximate cause of the relevant losses, it is not enough simply to consider the counterfactual in which the infringer did not make the infringing supplies although this may be a useful cross-check: see [117]."

169. The second criticism is that the judge was wrong to hold that, because the total profits claimed by Lufthansa were not legally caused by the infringing acts, he should apportion those profits.

170. It is convenient to take these criticisms in reverse order. As Lufthansa points out, the approach the judge took was first to ask himself whether all the profits in issue were legally caused by the infringing acts. Having answered that question in the negative, he then proceeded to apportion the profits. In taking that approach, I agree with Lufthansa that he fell into error. In fairness to the judge, it appears that this was due to the way the case was argued before him.

171. As discussed above, *Anan v Neo* was concerned with legal causation in the context of a claim for damages. In that context, it was held that the test for legal causation was whether the infringing acts were a sufficiently effective or substantial or proximate cause of the losses claimed. In the context of an account of profits, however, the approach to legal causation which has been established is that identified by Laddie J in

Celanese v BP and by Lewison LJ in *Abbott v Design & Display*. This has two stages. The first stage is to ask whether the infringer's product or process would not have existed at all but for the infringement or whether the invention was the essential ingredient in the creation of the infringer's whole product or process. As the passage from *Dart v Decor* quoted in paragraph 119 above shows, these are two ways of asking essentially the same question. If the answer to that question is yes, then all of the profits were legally caused by the infringing acts. If the answer to that question is no, then the second stage is to apply an apportionment to differentiate between profits derived from the infringement and those not derived from the infringement.

172. A repeated theme in Lufthansa's submissions was that, once factual causation is established, legal causation has a limited role to play. I disagree. As Astronics and Panasonic submit, factual causation establishes that infringement was necessary for the profits to be generated, but it does not establish that infringement was sufficient. Where infringement was not sufficient, and profits were generated by multiple causes, legal causation involves distinguishing between those causes. As discussed above, apportionment is an established tool for this.

173. I would not exclude the possibility that, in some cases, questions may arise concerning the length of the chain of causation i.e. where there are successive causes of the profits in issue. I agree with Lufthansa that, if so, such questions also form part of the enquiry as to legal causation. It does not appear from the reported cases on account of profits, however, that such questions tend to arise with any frequency. By contrast, the problem with distinguishing between profits generated by multiple concurrent causes arises regularly.

174. Although the judge erred in his approach to legal causation, it does not follow that he was wrong to apportion the profits in issue. On the contrary, I consider that, given his findings of fact and subject to ground 3, he was correct to do so. In assessing legal causation, the key question the judge asked himself was whether the infringing acts were "the real driver" of the profits claimed by Lufthansa, a question he answered in the negative: see in particular [467](3) and [468] (paragraph 64 above). Although the judge derived this question from *Anan v Neo*, Lewison LJ identified essentially the same question in *Abbott v Design & Display* at [36]:

> "In a case in which the infringement does not 'drive' the sale it seems to me that it is wrong in principle to attribute the whole of the profit to the infringement."

175. It follows that it is unnecessary to consider Lufthansa's first criticism, because it focuses on the propositions which the judge drew from *Anan v Neo*. Even if the judge stated those propositions wrongly, that does not mean that he was wrong to ask himself the question that I have identified.

176. I should nevertheless address one of the points made by Lufthansa in respect of proposition (3), which is that the judge was wrong to ask himself what was "the real driver" or "the proximate cause", because it is well established that "a" proximate cause is sufficient for legal causation. Even if the judge was in error in referring some of the time to "the", rather than "a", proximate cause (cf. *Anan v Neo* at [100]-[101]), I do not consider that this means that he was wrong to ask himself whether the infringing acts were "the real driver" of the profits in issue.

Ground 3: application of the test for legal causation

177. Lufthansa contends that, even if the judge was correct to ask himself whether the infringing acts were "the real driver" of the profits in issue, he should have answered that question in the affirmative. Lufthansa makes five criticisms of the judge's reasoning.

178. In considering these criticisms it is necessary to bear in mind that legal causation is, as Lord Nicolls of Birkenhead made clear in *Kuwait Airways Corp v Iraqi Airways Co (Nos 4 and 5)* [2002] UKHL 19, [2002] 2 AC 883 at [70], a matter for the evaluative judgment of the court. In the present case that evaluation involved, as the judge made clear at [468], consideration of a range of different factors. It follows that this Court can only interfere with the judge's conclusion if he erred in law or principle.

179. Lufthansa's first criticism is that the judge was inconsistent in his approach to the question of whether the Patent was a barrier to the relevant market. Since he had rejected the Defendants' proposed NIA, it necessarily follows that the Patent was a barrier or gateway to the market. In those circumstances, Lufthansa says that he was wrong to revisit that question in the context of legal causation and to reach what Lufthansa characterise as equivocal and contradictory conclusions. This criticism is unfounded. As can be seen from [467], the judge found that the Patent was a barrier or gateway patent in the sense that it was necessary for Astronics to infringe it in order to access the market, but he also found that that was not sufficient for Astronics to generate the profits in issue and that the real drivers of the profits were other factors. There is no inconsistency in his reasoning.

180. Lufthansa's second criticism is that the judge's consideration of the relative success of Astronics and KID was logically flawed. The judge found that the much greater market success of Astronics than KID when both were exploiting the claimed invention demonstrated that factors other than infringement were responsible. In summary, these were that (i) Astronics provided a superior product and a superior service to both airlines and IFE suppliers, (ii) for IFE suppliers there were three factors that gave EmPower Fusion systems a decisive competitive advantage (weight, power conversion technology and compatibility with a greater number of plus types) and (iii) KID was effectively shut out of the IFE market because (unlike Astronics) it was unable to solve a problem with heat dissipation. Lufthansa argues that, given that both Astronics and KID exploited the invention, this tells one nothing about the relative contribution of the Patent and of other factors. I disagree. As the judge correctly held, this evidence demonstrates that factors other than infringement were largely responsible for Astronics' profits (and hence for Panasonic's profits as well).

181. Lufthansa's third criticism is that the judge was wrong (i) to rely upon the fact that EmPower Fusion systems included additional safety features when Lufthansa's technical expert had given unchallenged evidence that these were all routine and (ii) to rely upon other requirements imposed by regulators and airframers when the Defendants had advanced no case that invention was required to satisfy these requirements. I agree with Astronics and Panasonic that this criticism is misplaced. The judge found that, in order to make the profits Astronics and Panasonic had not only to infringe the Patent, but also to satisfy a large number of other safety and other requirements imposed by regulators and airframers. He was correct to evaluate the extent to which the profits were attributable to use of the invention and the extent to

which they were attributable to other factors. It is immaterial whether or not the other factors involved invention for the reasons explained by Laddie J in *Celanese v BP* at [43] (paragraph 102 above).

182. Lufthansa's fourth criticism is that the judge misunderstood Astronics' profits in issue. The basis for this criticism is the percentages quoted by the judge in [467](5) (paragraph 64 above). Those percentages related to Astronics' global sales. Lufthansa points out that Astronics's IFE sales all took place outside the UK. Accordingly the profits from those sales were not in issue, only Astronics' profits on power only sales. Lufthansa also points out that, when it came to apportionment, the judge said at [572] that "Lufthansa might have argued that it was entitled to all of the profits on direct, power only sales". Lufthansa says that that was its claim, and therefore, on the judge's reasoning, he should have allowed that claim in full.

183. This criticism conflates two different points. At [467](5) the judge was considering the extent to which Astronics' profits from selling EmPower Fusion systems were attributable to infringement as opposed to other factors, in particular in the context of the IFE market. The global sales figures were relevant to that consideration, even though Lufthansa's claim against Astronics concerned power only sales in the UK (its claim against Panasonic concerned IFE sales in the UK, but the Primary Components were supplied by Astronics to Panasonic outside the UK). At [572] the judge was considering a different question, which was the method of apportionment which should be adopted. In that context he noted that Lufthansa had not argued that a particular profit stream could be attributed solely to infringement as distinct from some other profit stream. It was in that context that he made the comment about power sales that Lufthansa relies on.

184. Lufthansa's fifth criticism concerns the judge's treatment of power management. This refers to the way in which the electrical power generated by an aircraft is managed so that power consumption by passengers does not divert power from flight-critical systems. EmPower systems typically included an MCU which carried out power management. The Defendants pleaded power management as part of their case on apportionment.

185. On 11 July 2024 the judge heard an application by the Defendants to amend their Points of Defence, which he dismissed for the reasons he gave in a judgment dated 25 July 2024 ([2024] EWHC 1918 (Pat)). The core of the application was an attempt by the Defendants to rely on Astronics' "power management architecture" as part of a new case on causation. The Defendants argued that the new causation case gave rise to the same issues as the pleaded power management apportionment case.

186. One of the issues that was debated in this context was whether or not the Defendants relied on the GD AES Patents. As the judge explained at [86]-[87], the Defendants were on the horns of a dilemma. If they relied upon the GD AES Patents as protecting Astronics' power management architecture, it would be impossible for Lufthansa to investigate the validity of those patents in time for trial. If they did not rely on the GD AES Patents, as they submitted at the hearing, it was entirely unclear how they could prove the allegations they wished to plead in support of the new causation case.

187. Lufthansa complains that, notwithstanding his rejection of that application, in his main judgment the judge entertained and accepted the Defendants' case on Astronics' power

management architecture in the context of causation. In particular, Lufthansa complains about his conclusion in [467](4):

> "I am satisfied … that [Astronics'] power management function systems drove the sales of the EmPower Fusion system just as much as the infringement of the Patent during the Relevant Period."

188. The judge rejected this pleading point for the reasons he explained at [390]:

> "… The Defendants have always pleaded that the Components were not functionally essential to the EmPower Systems and that its power management systems were 'independent of and unconnected with the inventive concept' of the Patent: see the Points of Defence, ¶23(a). Moreover, this was the first pleaded factor upon which the Defendants relied in support of their case for apportionment and, in my judgment, they were entitled to argue both that the Patent was not an essential feature of the EmPower System and that their own invention was of equal (if not greater) commercial significance as Lufthansa's invention. What they were not entitled to do was to advance an argument or call evidence to prove that the GD AES Patents were 'gateway' or 'barrier' patents which would have operated in the same way as the Patent to prevent competitors entering the market."

189. Lufthansa contends that the judge was wrong to allow the Defendants to rely on power management for three reasons. First, he had refused the Defendants permission to plead reliance on power management in relation to causation. That refusal was not limited to barrier patent status. Secondly, when the Defendants dropped reliance on the GD AES Patents for causation purposes, it followed that they had dropped any claim to having "their own invention". Thirdly, as the judge had accepted in his 25 July 2024 judgment at [87], Astronics' power management technology was in the public domain as a result of the publication of the GD AES Patents. Thus, if the GD AES Patents were invalid or not relied on, third parties were free to use that technology. They could not therefore provide a proper basis for any market preference for the Defendants' products or services.

190. As Astronics and Panasonic submit, the judge's decision to permit the Defendants to rely upon power management was a case management decision which the judge was very well placed to take. As they also point out, Lufthansa's points do not engage with the judge's reasoning in [390]. Furthermore, the first and second points are based on an artificial reading of that paragraph. As for third point, the judge expressly rejected at [395] Lufthansa's contention that "Astronics' power management system [was] trite or commonplace". But in any event it does not matter whether the power management system was subject to patent protection or not for the reasons I have already explained.

Ground 4: the method of apportionment

191. Ground 4 concerns the method adopted by the judge for apportionment. A number of different methods have been adopted in previous cases. In both *Potton v Yorkclose* and

Celanese v BP the basic method adopted was a "distribution by costs" approach. Thus in *Potton v Yorkclose* Millett J said at 19:

> "A better guide is likely to be provided by ordinary accounting principles whereby, in the absence of some special reason to the contrary, the profits of a single project are attributed to different parts or aspects of the project in the same proportions as the costs and expenses are attributed to them."

In *Celanese v BP* Laddie J followed this at [81].

192. As both Millett J and Laddie J recognised, this was only a starting point, with some weighting being required to reflect the actual value of the invention in terms of profitability of the whole. As Briggs J explained in *Hotel Cipriani* at [17]:

> "The problem with [the distribution by costs] approach is that it over simplifies the position, because it assumes that each cost item is equally profitable in terms of a return on investment. So some form of weighting is necessary."

193. In other cases contemporaneous evidence of the value actually placed by the parties on the IP right in the context of the products as a whole has been used. In *Hotel Cipriani*, which was a trade mark case involving a restaurant, this evidence came from the licence fee charged between the defendants, the third defendant having granted the first defendant a licence to use the infringing sign. In *Jack Wills*, which was a trade mark case concerning clothing, it came from the royalty rates paid by the defendant to third parties for the use of their brands.

194. In the present case the judge used a royalty rate derived from the 2014 Teaming Agreement between Lufthansa and KID to determine the appropriate percentage of Astronics' profits which were attributable to the Patent. He then applied the same percentage to Panasonic's profits. In doing so, he relied upon the evidence of Mr Bezant, who had addressed the 2014 Teaming Agreement in detail in his first report and had explained the economic rationale for adopting the licensing approach and the methodology by which the 2014 Teaming Agreement could be used to apportion the Defendants' profits.

195. As the judge explained at [583], Mr Ryan did not consider the 2014 Teaming Agreement in his first report since he had been instructed not to deal with apportionment. As the judge noted at [592], [604] and [606], Mr Ryan accepted in cross-examination that it was possible to apportion profits by reference to an implied royalty rate taken from a comparable licence agreement. Furthermore, he had no reasoned objection to Mr Bezant's use of the 2014 Teaming Agreement or to any of his calculations. Moreover, as the judge noted at [576]-[577], Lufthansa did not advance any positive case that profits should be apportioned in some other way or contend for any percentage other than 100% (i.e. no apportionment).

196. As Astronics and Panasonic point out, the judge had no alternative to the licence-based method of apportionment, because he had rejected the principal alternative method advanced by the Defendants at trial (patent counting) on procedural grounds and Lufthansa did not put forward any other method of apportionment.

197. Given that the judge's approach was firmly based on the expert evidence, Lufthansa accepts that this Court can only interfere if the judge erred in principle. Lufthansa contends that the judge made four errors of principle.

198. First, and most importantly, Lufthansa contends that, notwithstanding the evidence from the experts, it was wrong in principle to apportion the profits by reference to a licence under the Patent. The reason why Lufthansa says this is wrong is simple: it is an inherent in a patent licence that the parties both expect to share in the resultant profits. No patentee would agree to grant a licence under which the licensee received 100%. On the contrary, as Mr Bezant and Mr Ryan agreed, patent licences are usually negotiated on the basis that the licensor will receive 25-50% of the expected economic benefits. Yet the purpose of an account of profits is ensure that the patentee receives 100% of the profits derived from the infringement. Accordingly, Lufthansa argues that it is illegitimate to apportion profits by reference to the 2014 Teaming Agreement. In the alternative, Lufthansa argues that an uplift to the royalty derived from the 2014 Teaming Agreement is required.

199. The first point to note about this contention is that the judge addressed it head on and rejected it at [597]-[598]. Lufthansa argues that the judge was wrong to say that the contention was premised upon Lufthansa being entitled to all of the profits from the sale of products which included the infringing EmPower Fusion system, because the correct premise is that Lufthansa is entitled to all of the profits which are properly attributable to the Patent.

200. I accept the premise is more correctly stated in this way, but that does not undermine the judge's reasoning. Mr Bezant explained in his first report that the royalties in the 2014 Teaming Agreement could be used as a proxy for the share of profits attributable to the Patent on the basis that a licence allocates – via the agreed royalty – a share of the expected additional profits that arise from the use of intellectual property between the holder of the IP and the user of the IP. This then provides a benchmark for the apportionment of Astronics' net profits. Similarly, in a long passage of cross-examination quoted by the judge at [567], Mr Bezant explained that the licensing analysis tells one how the parties agreed to isolate the value of a patent in the hands of the user, which informs the relative contribution of the patent in the context of an account of profits. In other words, the fact that a licence typically involves 25-50% of the expected overall economic benefits being received by the licensor is not inconsistent with using the royalty payable as a guide to the relative importance of the patent compared to other factors which contribute to the total profits generated by the licensee, particularly in the absence of any better guide.

201. As for Lufthansa's alternative argument, the short answer to this is that Lufthansa did not invite the judge to apply any such uplift at trial. It is too late for Lufthansa to do so now.

202. Secondly, Lufthansa contends that the judge's approach is inconsistent with the gateway status of the Patent. Without infringing the Patent Astronics and Panasonic could not have made any of the profits in issue, and this clearly pointed to a higher apportionment than 13%. There are a number of answers to this contention. First, it is a repackaging of ground 1, which I have already rejected. Second, as I have already said, if Lufthansa wanted to contend that a higher percentage was appropriate, it should have advanced such a case at trial, but it did not. Third, the judge found at [603]-[603]

that the 2014 Teaming Agreement had been negotiated on the basis that there was a reasonable prospect that Astronics could be taken off the market. In other words, the parties to the 2014 Teaming Agreement were treating the Patent as a gateway patent. Thus the judge's use of the 2014 Teaming Agreement is not inconsistent with that status. Fourth, Lufthansa relies upon the fact that the German courts awarded Lufthansa 50% of Astronics' profits, but they did so applying German law to different evidence. Lufthansa did not even take us to the reasoning that led to that figure. Fifth, Lufthansa says that the judge's approach ignores the value of the Patent "as a matter of mathematics" because it leads to in an implied royalty of 21% where there is a non-infringing alternative and 13% where there is none. Mr Bezant addressed and rejected this criticism of his approach in his third report at paragraphs 3.5-3.7, and the judge accepted his evidence.

203. Thirdly, Lufthansa contends that the judge was wrong to hold at [590] that it had not pleaded a positive case on apportionment. Lufthansa complains that the judge ignored a response to a Part 18 Request which it served after the hearing before Bacon J on 1 December 2023 in which it said that "[i]nsofar as the court decides that the defendants' profits should be apportioned on any basis, Lufthansa will argue for a high apportionment of profits to the infringement of the Patent on the basis that … the incorporation of the invention into EmPower Systems was the most significant and proximate cause of any resulting sales". Since Lufthansa did not rely upon this response at trial, the judge cannot be criticised for not mentioning it. In any event, this is no answer to the points made by the judge. What Lufthansa failed to do even in that response was to advance any case whatsoever as to the methodology to be adopted for apportionment or as to what the correct figure should be. As the judge observed, that was a considered decision.

204. Fourthly, Lufthansa complains about the judge's rejection at [591] of Mr Ryan's evidence based on the 1998 Teaming Agreement. In Lufthansa's skeleton argument this was said to be "procedurally misconceived". In oral submissions counsel for Lufthansa went further and submitted that it was procedurally unfair.

205. The starting point for this submission is an assertion that the Defendants had not pleaded the 2014 Teaming Agreement as a basis for apportionment. This is incorrect. Paragraph 28B of the Re-Re-Amended Points of Defence pleaded:

> "… the Defendants will say that the appropriate measure of the profits to which Lufthansa is entitled is to be assessed by reference to the payment provisions of the 2014 Teaming Agreement …"

As Lufthansa acknowledged at trial, this plainly relied on the 2014 Teaming Agreement as a basis for apportionment.

206. Consistently with that plea, and as discussed above, Mr Bezant relied on the 2014 Teaming Agreement in his first report. He also explained why he considered the 1998 Teaming Agreement to be less reliable for this purpose. By contrast, although Mr Ryan accepted in cross-examination that it was possible to apportion profits by reference to a comparable licence, he did not consider either of the Teaming Agreements for this purpose in his first report. As explained in paragraph 195 above, this was because Mr Ryan had been instructed by Lufthansa not to deal with apportionment at all.

207. Lufthansa relies on the fact that, in his second report, Mr Ryan responded to Mr Bezant's evidence based on the 2014 Teaming Agreement. Mr Ryan expressed the opinion that the 1998 Teaming Agreement was more relevant, and implied an 84% royalty. Furthermore, Mr Bezant responded to that evidence in his third report. Lufthansa also points out that the Defendants did not object to the admission to the relevant part of Mr Ryan's second report at trial.

208. As Astronics and Panasonic point out, the judge's decision to exclude this evidence was again a case management decision which he was very well placed to take. Furthermore, Lufthansa's argument ignores the fundamental plank of the judge's reasoning, which is that the evidence was adduced to support a case which, as discussed above, was not open to Lufthansa because Lufthansa had not pleaded it. It also ignores the point made by the judge that, if the 1998 Teaming Agreement was to be relied upon, it should have been the subject of discussion between the experts and dealt with in their Joint Statement. As the judge noted at [585], the experts did not discuss the 1998 Teaming Agreement because Mr Ryan had been instructed that the Joint Statement should not introduce new evidence beyond the experts' second reports. In short, there was no procedural unfairness to Lufthansa in excluding this evidence.

Conclusion

209. For the reasons given above I would dismiss Lufthansa's appeal.

<u>Astronics' and Panasonic's appeal on KID apportionment</u>

The context in which the appeal arises.

210. The claims of the Patent were construed by Morgan J as requiring an assembled ISPS, with the components connected together. Astronics and Panasonic supplied the Primary Components unconnected, but Astronics was found liable for infringement pursuant to section 60(2) of the 1977 Act, while Panasonic was found jointly liable with its customers by reason of a common design with its customers to connect the components. (In addition, Panasonic was held liable by the judge in the Main Judgment for infringement pursuant to section 60(2) (one of the unresolved issues); but that does not affect this appeal.) Accordingly, as explained above, the account of profits concerned Astronics' and Panasonic's acts of supplying components for assembly by installers (such as Lufthansa's competitors) or by seat manufacturers (such as Safran).

211. Astronics' and Panasonic's case is that:

i) KID was, pursuant to the 1998 Teaming Agreement, Lufthansa's exclusive licensee under the Patent within the meaning of the 1977 Act in respect of at least the acts which Astronics and Panasonic carried out in infringement of the Patent i.e. the supply of components. This depends on whether the 1998 Teaming Agreement was an exclusive licence, as Astronics and Panasonic contend, or a sole licence, as Lufthansa contends ("the Construction Issue").

ii) As outlined above, KID subsequently asserted a claim for infringement against Astronics' predecessor, GD, on the basis that it had a "right of exclusive use". However, it compromised that claim for good and valuable consideration (a cross-licence) in the 2003 Settlement Agreement. That compromise included

KID's right to claim profits derived from infringement from Astronics and its customers ("the Compromise Point").

iii) Astronics and Panasonic have the benefit of that compromise because it passed to Astronics and its customers when Astronics bought AES pursuant to the 2005 Asset Purchase Agreement ("the Succession of Benefit Issue").

iv) The profits which Lufthansa is entitled to do not include the profits due to KID that were the subject of the compromise. Lufthansa's claim to profits must therefore be reduced to account for KID's (compromised) share of the profits ("the Single Pot of Profits Issue").

v) That apportionment should be achieved by allocating to KID 50% of Astronics' and Panasonics' profits that were derived from the infringement, for the duration of the 1998 Teaming Agreement (i.e. until 31 December 2014), and reducing the sums payable to Lufthansa accordingly ("the KID Allocation Issue").

212. Astronics' and Panasonic's appeal concerns the Construction Issue. The judge held that the 1998 Teaming Agreement was a sole licence. Astronics and Panasonic contend that he was wrong about that.

213. Lufthansa did not dispute the Compromise Point. The judge resolved the Succession of Benefit Issue in favour of Astronics and Panasonic, and there is no challenge by Lufthansa to that conclusion. The judge did not determine the Single Pot of Profits Issue. Lufthansa contends by a respondent's notice that, if necessary, that issue should be resolved in its favour. As for the KID Allocation Issue, as will appear, the logic of Astronics' and Panasonic's argument is that Lufthansa's profits should be reduced by 100% of the relevant profits. Nevertheless Astronics and Panasonic offered, if successful on the other two issues, to accept 50%. During the course of argument Lufthansa accepted that offer.

The relevant provisions of the 1998 Teaming Agreement

214. Lufthansa is referred to in the 1998 Teaming Agreement as "LHT". So far as relevant, the 1998 Teaming Agreement provides:

> "**Preamble**
>
> Responding to a permanently increasing market demand for PC Power Outlets in aircraft seats, several companies have introduced in-seat power supply systems to the market. On account of safety regulations issued by the airworthiness authorities (FAA, JAA) these in-seat power supply systems apply only a low 15 VDC output voltage into the seat outlets.
>
> KID is one of the suppliers of a 15 VDC system (hereinafter referred to as 'Classic System').
>
> LHT has developed a technical concept for a 110 VAC in-seat power-supply system (hereinafter referred to as 'Advanced System'). This concept is concentrated mainly upon solutions regarding the necessary safety aspects in order to comply with

the safety regulations of the airworthiness authorities, thus facilitating a system certification.

Article 1 Scope

KID will, under its own sole responsibility, introduce the Advanced System to the market. The parties agree that this responsibility comprises the development, the manufacturing, the marketing and after-sales support for, the said system.

LHT will participate in the revenues resulting from such activities of KID.

The parties agree that this applies only to the Advanced System. KID will be free to merchandise the Classic System freely without any participation or interference by LHT. … The initial introduction of the 110 VAC system to the market will be realized as follows: [DLH] intends to supply its Long Range Fleet of airplanes with said Advanced Systems. The details and delivery schedule of such order … will be subject to a separate agreement between the parties [i.e. the 1998 Purchase Agreement] ….

Article 2 Team Work

In order to arrive at best possible marketing results LHT will render the following support to KID applying its best efforts and to the extent reasonably feasible.

LHT will render with best efforts to the extent reasonably feasible and at its own cost in actively supporting and cooperating with KID in acquiring the certification for said systems ….

Article 3 System Installation

KID undertakes to recommend LHT to any potential buyer as partner for the installation of the systems into the respective aircraft.

In principle within this context LHT may offer the following services:

- complete installation of the systems including certification (STC) and complete documentation (full turn key package),
- installation kits,
- certification support.

In such a case LHT will place an offer for such service in its own name, but after consultation with KID, adapted to the individual requirements of the buyer. The placement of the offer and the negotiations resulting therefrom (to be conducted together with KID) will be performed with the express aim to arrive at a commercially attractive over-all offer.

In case a potential buyer abstains from choosing the offer of LHT, KID will be free to cooperate with other partners in this respect.

LHT will inform KID in due time, if LHT sees no possibility to perform the installation as asked for by the buyer.

Article 4 Promotion

In principle KID will take charge of promotion campaigns at its own costs. However, LHT is also entitled to promotion activities, in which case KID will provide LHT with existing advertising material such as brochures free of charge.

Promotion Campaigns conducted by both Parties will be coordinated in advance, especially in respect of contents and costs.

Article 5 Commercial Conditions

The participation of LHT in the returns of the sales of the Advanced Systems will be based upon the following principles:

LHT will receive a fixed amount per system (OEM series) sold, spares excluded. ….

Article 6 Patents/Intellectual Property Rights

The Parties agree that LHT remains the owner of the intellectual property rights concerning the Advanced System, for which LHT grants to KID an exclusive user's right in return for the payment of royalties as stated above for as long as this Agreement is in force.

After termination of this Teaming Agreement, KID shall be granted a non-exclusive user's right in return for the payment of royalties as stated above, enabling KID to fulfil any obligations it has entered into with Customers up to the time of such termination."

215. Although there is no express choice of law clause, it is common ground that the 1998 Teaming Agreement is governed by German law.

The Construction Issue

216. The judge was not assisted in determining this issue by the way in which the parties argued it before him. The judge received evidence from two eminent experts in German law, Professor Axel Metzger (called by Lufthansa) and Professor Christoph Ann (called by the Defendants). The function of expert witnesses when an issue arises as to the interpretation of a contract governed by foreign law is to prove the relevant principles of contractual interpretation under that law. The court then interprets the contract applying those principles. Evidence from the experts as to how the contract in question should be interpreted is inadmissible: see Dicey, Morris and Collins, *The Conflict of Laws* (16th ed and 2nd supplement) at 3-018, and the authorities cited in footnote 94.

217. Despite this, both parties adduced evidence from their experts as to how the 1998 Teaming Agreement should be interpreted, and cross-examined each other's expert on that evidence. To make it worse, both parties adduced evidence from their experts, and cross-examined, on questions that, upon analysis, were questions of German patent law. For example, there was a lot of evidence about what the Higher Regional Court had held in Appeal I and Appeal II, but the question which that court was considering (although it did not find it necessary to decide it on either occasion) was whether the 1998 Teaming Agreement was an exclusive licence of the German designation of the Patent under German patent law. That evidence was not only irrelevant, but it was also bound to confuse, if not positively mislead, the judge.

218. I should make it clear that this confusion was not the fault of the experts. Thus Prof Metzger was careful in his reports to differentiate between German contract law and German intellectual property law (mainly patent law, but he also explained two doctrines originating from copyright law). Prof Ann was slightly less clearcut in differentiating between the two owing to the questions he was asked by those instructing him, but nevertheless did distinguish them.

219. There are two stages to the required analysis. The first is to interpret the 1998 Teaming Agreement as a contract applying German contract law principles. Once the 1998 Teaming Agreement has been interpreted as a contract, the second stage is to ask whether it qualifies as an exclusive licence of the Patent under UK patent law.

220. *German contract law*. As one would expect, there was little disagreement between the experts as to the applicable principles of German contract law. The judge made the following findings which are relevant.

> "(ii) <u>Objective interpretation</u>
>
> 656. The experts were also agreed that contracts are concluded by exchanging corresponding declarations of intent which must be interpreted objectively. Professor Ann also accepted Professor Metzger's formulation that the decisive factor in the interpretation of a party's declaration is how a reasonable third party in the position of the recipient of the declaration would have understood the declaration in good faith taking into account customary practices. He also accepted that where the parties had chosen different words in the same agreement, the German

Court would assume that they had done so intentionally and for a purpose:…

…

(iv) Later documents

658. Contrary to English law, both experts agreed that documents created or executed after the 1998 Teaming Agreement had come into force were admissible as an aid to construction. Professor Ann gave evidence that the justification for the rule was that the way in which the parties gave effect to an agreement or how it 'was lived' might cast light on its meaning. However, when [counsel for Lufthansa] cross-examined him, he accepted that the Court would be cautious in attributing weight to documents such as the 2014 Teaming Agreement which were created during the course of litigation: …

> (v) The transfer purpose rule
>
> 659. The experts were also agreed that there is a rule of last resort under German law called 'the transfer purpose rule' which applies where there is doubt or uncertainty about the interpretation of an agreement. There was initially a dispute between them when it should be applied and also whether it applied to patent licensing agreements. Professor Ann conceded in cross-examination that it applied to patent licences. It was also his evidence (which I accept) that if all of the principles of interpretation have been exhausted and there remains a doubt whether a … exclusive licence or sole … licence or, indeed, a non-exclusive licence, is intended by the parties, then it should be construed as only conferring rights which were necessary to give effect to its purpose: …"

221. There is no challenge by either side to these findings so far as they go. It will be noted that the judge referred in [656] to "good faith taking into account customary practices". The judge made no finding as to what was by meant by "good faith", but Astronics and Panasonic accept Prof Metzger's explanation in paragraph 25 of his first report:

> "The principle of good faith is a broad principle, which in general terms means that parties cannot argue for an interpretation that would be contrary to their behaviour when entering into the agreement. It seeks to ensure that the spirit of the agreement is upheld. In accordance with this principle, an interpretation is to be sought which takes appropriate account of the legitimate interests of both parties and meets the requirements of fair commercial practice."

222. Prof Ann's unchallenged evidence in paragraph 12 of his second report was that section 157 of the Bürgerliches Gesetzbuch (German Civil Code) "gives precedence to the principle of good faith, whilst requiring customary practice … only to be taken into consideration".

223. The judge made no explicit finding as to what "customary practices" meant, but it appears that he proceeded on the basis of the explanation given by Prof Metzger in paragraph 26 of his first report: "Customary practice is the practice prevailing in the circles concerned at the time the agreement was made." More importantly, the judge made no finding as to whether, under German contract law, customary practices are a matter for evidence or a matter for judicial notice. We were shown no evidence which answered this question. The judge proceeded on the basis that this was a matter for evidence, and there is no ground of appeal challenging that approach. The judge also proceeded, correctly, on the basis that admissibility of evidence was governed by the law of the forum, that is to say, English law. He admitted some evidence about customary practices in the aircraft industry over an objection by the Defendants, and there is no challenge to that decision.

224. *UK patent law*. Section 130(1) of the 1977 Act provides, so far as relevant:

> "'exclusive licence' means a licence from the proprietor of or applicant for a patent conferring on the licensee, or on him and persons authorised by him, to the exclusion of all other persons (including the proprietor or applicant), any right in respect of the invention to which the patent or application relates, and 'exclusive licensee' and 'non-exclusive licence' shall be construed accordingly".

225. It is well established that one of the effects of the definition in section 130(1) is that an exclusive licence can be granted in respect of a sub-set of the rights conferred by a patent: see *Terrell on the Law of Patents* (20th ed) at 18-28.

226. It is worth noting that, under UK patent law, a licence is either exclusive or non-exclusive. The 1977 Act does not recognise the concept of a sole licence, meaning a licence granted by the patentee to a single licensee, which thus excludes third parties but not the patentee. By contrast, as Prof Metzger explained in his first report, German patent law distinguishes between an exclusive licence, a sole licence and a non-exclusive licence. This is another reason why the evidence of German patent law before the judge is likely to have confused him. Despite this, I have continued to use the term "sole licence" in this judgment because it is a commercially well-recognised concept which accurately describes Lufthansa's interpretation of the 1998 Teaming Agreement.

227. *Analysis*. Interpreting the 1998 Teaming Agreement in accordance with the principles of German contract law set out above, I consider that it qualifies as an exclusive licence of the Patent under UK patent law. My reasons are as follows.

228. There is no dispute that the "technical concept" defined as the Advanced System in the Preamble is the invention claimed in the Patent. Article 1 gives KID sole responsibility for the development, manufacturing, marketing and after-sales support of the Advanced System, with Lufthansa receiving a share of the revenues resulting from such activities of KID. This makes it clear that KID is to undertake those activities, not Lufthansa.

229. Article 2 provides that Lufthansa will support KID in acquiring certification for said systems. It is clear that "said systems" here refers to the Advanced System. The same goes for "the systems" in Article 3.

230. In Article 3 KID undertakes to recommend Lufthansa as partner for installation of the systems into aircraft. Lufthansa is allowed within this context to offer the following services: complete installation of the systems, installation kits and certification support. Lufthansa may do this in its own name, but after consultation with KID. Article 3 then provides for negotiations relating to that offer, which will be conducted together with KID. Nevertheless, Article 3 envisages that the buyer may decline Lufthansa's offer, in which case KID is free to cooperate with other partners in respect of installation.

231. Two alternatives are thus envisaged. The first is that Lufthansa will carry out installation of the systems. In that case KID will supply the systems to Lufthansa for Lufthansa to install. The second is that KID will supply the systems to a third party for the third party to install. This is consistent with the 1998 Purchase Agreement: as the judge noted at [652], this "contemplated that either Lufthansa or a seat manufacturer would assemble and install the SkyPower System". Either way, it is evident from Article 3 that installation will be charged for separately to the supply of the systems.

232. Article 4 provides that KID will take charge of promotional campaigns, but Lufthansa is also entitled to undertake promotional activities, in which case KID will provide Lufthansa with advertising materials.

233. Article 5 provides that Lufthansa will receive a royalty from KID consisting of a fixed amount per Advanced System sold. This confirms that Lufthansa's role is that of licensor (and potential installer) of products developed, manufactured and marketed by KID.

234. Article 6 provides that Lufthansa grants KID "an exclusive user's right in return for the payment of royalties". The key question is what the word "exclusive" means in this context and in the context of the 1998 Teaming Agreement as a whole. Does it mean to the exclusion of Lufthansa and third parties or does it mean to the exclusion of third parties, but not Lufthansa? In my judgment it means the former.

235. First, it is clear from the rest of the 1998 Teaming Agreement that KID has sole responsibility to develop, manufacture and market the Advanced System to the exclusion of Lufthansa. Lufthansa's only involvement in those activities is to receive royalties from KID. Lufthansa may install the systems, and be paid for such installation. It may also be involved in promotional activities. But that is the limit of Lufthansa's involvement. Thus Lufthansa is excluded from developing, manufacturing and marketing (in the sense of placing on the market) the Advanced System.

236. Secondly, this interpretation is supported by the principle of good faith. It would be inconsistent with KID's legitimate interests under the 1998 Teaming Agreement for Lufthansa to able to compete with KID in developing, manufacturing and marketing the Advanced System.

237. Thirdly, this interpretation is supported by the letter dated 15 May 2002 (paragraph 32 above) and the 2003 Settlement Agreement (paragraph 33 above), both of which indicate that KID considered that it had an exclusive licence under patents including the Patent. The fact that KID did not consult Lufthansa before entering into the 2003 Settlement Agreement is entirely consistent with this. Although this evidence would be inadmissible as an aid to interpretation of the 1998 Teaming Agreement under English contract law, under German contract law it is admissible. Since these documents came into existence as part of a legal dispute, a German court would approach them with caution, but it seems to me that the 2003 Settlement Agreement in particular is quite telling.

238. I disagree with the reasons given by the judge for reaching the opposite conclusion as to the correct interpretation of the 1998 Teaming Agreement. First, the judge held in [685](1) that the underlying purpose of the 1998 Teaming Agreement was a collaboration between Lufthansa and KID. That I accept, but the respective roles of the collaborators are clearly defined.

239. Secondly, contrary to the view expressed by the judge at [685](2), it is immaterial that Article 6 "was not intended to confer unlimited intellectual property rights upon KID which it could exploit for purposes outside the agreement". As explained above, it is well established that an exclusive licence may be limited to a sub-set of the rights conferred by the relevant patent. It is commonplace for exclusive licences only to cover a particular commercial sector.

240. Thirdly, contrary to the view expressed by the judge at [685](3), it is immaterial that the agreement was terminable upon six months' notice, and that after termination KID was only entitled to a non-exclusive user's right. It is commonplace for exclusive licences to be either of defined duration or terminable upon notice. If anything, the fact that KID was only entitled to a non-exclusive user's right after termination supports the view that the licence was exclusive.

241. Fourthly, contrary to the view expressed by the judge at [685](4) and (10), it is irrelevant that Prof Ann accepted in cross-examination that it was unnecessary for KID to be granted an exclusive licence in order to perform its obligations under Article 1 and that a sole licence would be sufficient. That evidence was inadmissible for the reasons explained above. Furthermore, asking what was necessary for KID to carry out its obligations under Article 1 is the wrong question, since all that KID required was a licence. A wholly non-exclusive licence would suffice for this purpose. Thus the correct question is what licence Lufthansa agreed to grant KID, which depends on what the word "exclusive" means in Article 6 in the context of the Agreement as a whole.

242. Fifthly, contrary to the view expressed by the judge at [685](5), the fact that Article 1 used the word "sole" does not support Lufthansa's interpretation. As explained above, Article 1 makes it clear that development, manufacturing and marketing are the responsibility of KID, not Lufthansa. Furthermore, the key Article is Article 6, which uses the word "exclusive".

243. Sixthly, contrary to the view expressed by the judge at [685](6)-(11), interpreting the 1998 Teaming Agreement as granting KID an exclusive licence would not prevent Lufthansa from carrying out the installation services contemplated by Article 3. The fact that Lufthansa advanced this argument is deeply ironic since it was the great German scholar Joseph Kohler who originated the doctrine of exhaustion of intellectual property rights which is now a fundamental principle of European Union and UK, as well as German, intellectual property law. No one needs a licence to deal in products which have been put on the market by, or with the consent of, the owner of an intellectual property right. Accordingly, neither Lufthansa nor a third-party installer would need a licence under the Patent to install systems manufactured and marketed by KID.

244. Counsel for Lufthansa made the point that there was little evidence before the judge as to the doctrine of exhaustion of rights in German law, although the concept was referred to by Prof Ann in re-examination. This is immaterial. As explained above, exhaustion of rights is a key principle of EU intellectual property law, as established by a large number of decisions of the Court of Justice of the European Union prior to 31 December 2020 which have been assimilated into UK law post-Brexit. Thus the law is the same in Germany and in the UK. In any event, as I have already explained, the applicable patent law is UK patent law, not German patent law.

245. But there is no need to resort to exhaustion of rights, because Article 3 of the 1998 Teaming Agreement is crystal clear that both Lufthansa and third-party installers can install systems manufactured and marketed by KID. It necessarily follows that the rights granted to KID do not prevent this. Even if Lufthansa needed to retain the right to install the systems, then Article 3 makes it clear that it does so. (On that view, Article 3 would presumably operate as a licence of the installation right for the benefit of the third-party installers; but it is not necessary to consider that question, which would raise issues of

German law that do not appear to have been explored before the judge at all.) That does not affect the exclusivity granted to KID in respect of development, manufacturing and marketing.

246. The judge considered that Lufthansa's argument was supported by findings he made as to customary practices and as to the meaning of a "turn key package" at [646]-[651]. The judge said at [650] that "the key point" he took from the evidence was that "ISPSS manufacturers regularly shipped components ex-works and that the installer and systems integrator could be expected to assemble those components." If and insofar as "assembly" is said by Lufthansa to be distinct from "installation", the points I have made in the preceding three paragraphs are equally applicable to "assembly". I would add that, as explained above, customary practices are in any event subsidiary to good faith when interpreting a contract under German law.

247. Seventhly, the judge said at [686]-[687] that, in reaching his conclusion, he had had regard to the German decisions, and considered it was consistent with them. For the reasons I have explained, the German decisions are irrelevant and the judge was wrong to have regard to them. To repeat, that was not his fault.

248. Eighthly, for the reasons given above, it is not necessary to resort to the transfer purpose rule. Furthermore, contrary to the view expressed by the judge at [688], it would not assist Lufthansa anyway. That is because the licence which was necessary to give effect to the purpose of the 1998 Teaming Agreement as a whole was an exclusive licence. A sole licence would not give effect to that purpose.

The Single Pot of Profits Issue

249. I have set out the relevant parts of section 61 of the 1977 Act in paragraph 48 above.

250. Section 67 provides:

"**Proceedings for infringement by exclusive licensee**

(1) Subject to the provisions of this section, the holder of an exclusive licence under a patent shall have the same right as the proprietor of the patent to bring proceedings in respect of any infringement of the patent committed after the date of the licence; and references to the proprietor of the patent in the provisions of this Act relating to infringement shall be construed accordingly.

(2) In awarding damages or granting any other relief in any such proceedings the court or the comptroller shall take into consideration any loss suffered or likely to be suffered by the exclusive licensee as such as a result of the infringement, or, as the case may be, the profits derived from the infringement, so far as it constitutes an infringement of the rights of the exclusive licensee as such.

(3) In any proceedings taken by an exclusive licensee by virtue of this section the proprietor of the patent shall be made a party to

> the proceedings, but if made a defendant or defender shall not be liable for any costs or expenses unless he enters an appearance and takes part in the proceedings."

251. The question raised by the Single Pot of Profits Issue is what happens if a patent subject to an exclusive licence is infringed, and the exclusive licensee compromises its claim against the infringer. Can the patentee nevertheless claim all of the profits made by the infringer? Lufthansa contends that the answer to this question is yes, while Astronics and Panasonic contend that the answer is no. It is common ground that there is no authority which addresses this question. The answer to it depends on the proper interpretation of the statutory provisions.

252. Lufthansa argues that sections 61 and 67 provide a complete code for the remedies of patentees and exclusive licensees for patent infringement. Under that code, the patentee has the right to an award of profits, as can be seen from the fact that the patentee is not required to join any exclusive licensee to its claim. By contrast, an exclusive licensee only has a right for profits derived from the infringement to be taken into account under section 67(2), and must join the patentee pursuant to section 67(3).

253. Lufthansa's argument highlights an oddity in the statutory scheme in that section 67(3) requires an exclusive licensee to join the patentee to its claim, but there is no requirement in section 61 for the patentee to join an exclusive licensee to its claim. There is no rational explanation for this omission, which appears to be a slip in the drafting.

254. Be that as it may, Lufthansa's argument seems to me to be contrary to the purpose of section 67. As I explained in *Neurim Pharmaceuticals (1991) Ltd v Generics (UK) Ltd* [2022] EWCA Civ 359, [2022] RPC 16, with the agreement of Newey and Birss LJJ, at [22]:

> "…as is apparent from section 67(2), and confirmed by paragraphs 129-134 of the Final Report of the Departmental Committee on the Patents and Designs Acts chaired by Kenneth Swan QC (Cmd 7206, September 1947) which led to the introduction of the predecessor provision into the 1949 Act, the purpose of section 67 is to enable an exclusive licensee to recover its own losses (or its share of the infringer's profits) in the event of infringement."

255. This purpose is primarily achieved by section 67(1), which gives an exclusive licensee the same right to bring proceedings for infringement as the patentee, and provides that references to the proprietor "in the provisions of this Act relating to infringement shall be construed accordingly". That includes section 61(1)(d). Thus an exclusive licensee may claim an account of profits derived from the infringement.

256. Although the patentee and an exclusive licensee may each sustain different losses due to an infringement, which they can each recover as damages, there is only one pot of profits derived by the infringer from the infringement. It cannot be right for both the patentee and the exclusive licensee to have an equal claim to that pot of profits. (Not a joint claim: it is common ground that the patentee and an exclusive licensee have separate causes of action.)

257. The answer to this conundrum is in my judgment provided by the concluding words of section 67(2): "the profits derived from the infringement, so far as it constitutes an infringement of the rights of the exclusive licensee as such". To the extent that the rights conferred by the patent are subject to an exclusive licence, the exclusive licensee stands in the shoes of the patentee. To that extent, it is therefore the exclusive licensee which is entitled to the profits to the exclusion of the patentee. If the exclusive licence covers a sub-set of the rights conferred by the patent, then outside the scope of exclusive licence the patentee remains entitled to the profits. In such cases the patentee and the exclusive licensee are each entitled to a share of the profits. Thus it may be necessary to apportion the profits as between the patentee and the exclusive licensee after one has apportioned the total profits between those derived from the infringement and those derived from other factors.

258. This approach is in my view supported by the fact that an account of profits is an equitable remedy. A court of equity would surely take into consideration the rights of both the patentee and the exclusive licensee, and would not allow the patentee to scoop all of the profits derived from the infringement.

259. There was some debate during the course of argument as to the meaning of "such proceedings" in section 67(2). I incline to the view that this refers to "proceedings in respect of any infringement of the patent" in section 67(1) whether such proceedings are brought by the patentee or the exclusive licensee (or both), but I acknowledge that it is arguable that it refers to proceedings brought by the exclusive licensee. Either way, given that there is no requirement in section 61 for the patentee to join an exclusive licensee, the question arises as to how section 67(2) is supposed to operate if proceedings are brought by the patentee, the patentee does not join the exclusive licensee, and the defendant (and therefore the court) remains ignorant of the existence of the exclusive licence. The 1977 Act contains incentives for registration of exclusive licences, but registration is not mandatory. I suspect that it will be a rare case in which the patentee fails to join the exclusive licensee, the defendant (and therefore the court) remains ignorant of the existence of the exclusive licence, and the patentee claims all the profits. What the solution to this problem is will have to be determined if and when such a case arises.

260. Accordingly, I would resolve the Single Pot of Profits in favour of Astronics and Panasonic.

Conclusion

261. For the reasons given above I would allow Astronics' and Panasonic's appeal on KID apportionment, with the consequence noted in paragraph 213 above.

<u>The Defendants' appeal on double recovery</u>

262. At the hearing on 20 March 2025, the Defendants adduced evidence that there was scope for double recovery by Lufthansa in the Mannheim III proceedings. This was explained in a passage from the Defendants' skeleton argument which the judge quoted in the Second Judgment at [46]:

> "82. The potential for double recovery arises in respect of the [Mannheim III] (which has loosely been referred to as the

'indirect damages' claim but which includes claims for shipments to Germany both directly and indirectly). In those proceedings Lufthansa's cases are broad enough to catch the following:

(a) Profits made by Astronics in respect of Primary Components shipped to third parties in the UK (such as Safran) which are then shipped to Germany (after, for example, having been incorporated into seats). This scenario arises where the seats are for linefit on Airbus aircraft - the majority of Airbus final assembly lines being in France and Germany.

(b) Profits made in respect of FAL components shipped directly to Germany where they are included within the scope of the English Account by virtue of being installed in the same aircraft as a UK-delivered Primary Component.

(c) Profits, said to be payable by Astronics, but made by Panasonic in respect of Primary Components shipped to the UK (which parts are then shipped by others to Germany).

83. Whether and precisely how double recovery arises depends on whether and precisely how each of the allegations above is pursued by Lufthansa and the findings made in the foreign proceedings. However, take the following examples:

(a) A Primary Component is shipped to the UK by Astronics. Astronics contends that the Judgment proceeds on the basis that, in effect, Astronics receives payment and makes its entire profit in respect of that part upon supply in the UK . That same part is shipped by a third party (assume a seat maker) to Germany. Astronics received no further payment for that part upon its delivery to Germany (and so no further profit). In that scenario there is only one transaction that caused profits to be generated for Astronics, namely the shipment to the UK and all of Astronics' profits in respect of that part were in play in this Account. It is clear from Lufthansa's second letter of 14 March 2025 … that Lufthansa nonetheless intends to claim in Germany in respect of the same transaction, for example by arguing that the 87% that this Court has not attributed to the infringement are somehow available in Germany and are not 'the same profits' in respect of which a determination has been made in this Account. If that is the case, the Defendants wish to argue that recovery of such profits would be re-litigating an issue that has already been decided by this court and amounts to double recovery.

(b) FAL components shipped directly to Germany where they are installed in the same aircraft as a UK-delivered Primary Component. Again, the UK award covers FAL components relative to the number of Primary Components shipped to the UK. A proportion of such FAL components will have been installed in Germany.

(c) Profits made by Panasonic upon shipment to the UK. Panasonic makes no further profits when such parts are shipped to Germany having been incorporated into a se[at]. Nonetheless, in Germany Lufthansa is arguing that Astronics is liable for such profits."

263. As the judge explained at [48], there was very little evidence before him concerning the French proceedings, but Lufthansa accepted that there was a theoretical possibility of double recovery.

264. Lufthansa's position was, and remains, that, as pleaded in its Points of Reply, it accepts that it is not entitled to double recovery in France or Germany where an award of the same profits has already been made in these proceedings in respect of the same physical products.

265. The Defendants are concerned that this concession does not go far enough to prevent double recovery. Accordingly, they asked the judge to include a recital in his final Order together with permission to apply. The recital which they invited the judge to include was a statement that the sums which he found due in the Main Judgment were "provisional pending the final resolution of the Account involving the parties in France and Germany". The purpose of this is to enable the Defendants to ask the English court to reduce the award of profits to Lufthansa in the event that the French or German courts award Lufthansa sums which the Defendants consider involve double recovery.

266. The judge declined to accede to this request on two grounds. First, he did not consider that he had jurisdiction to make a provisional award of profits. Secondly, even if he had jurisdiction, he declined to exercise his discretion to do so for the reasons he gave at [56]:

"(1) There was no evidence that the French or German claims would be resolved in the near future and it could be years before a final award of profits is made. I might have been prepared to stay any final Order and grant permission to apply if those claims were likely to be determined in a matter of weeks or months but that was not the position. In my judgment, the Court should be very wary of granting an open-ended permission to apply to vary or set aside an Order which a party might seek to exercise years later.

(2) Furthermore, I am not prepared to grant a stay of execution of any final Order pending the determination of the French and German claims. [Counsel for the Defendants] attempted to meet this point by stating that the Defendants were willing to comply with the Order and pay over the funds and that Lufthansa would

only be required to pay them back if the Defendants sought permission to apply and were successful in setting aside or varying the Order. In my judgment, this is unsatisfactory. No party who has the benefit of a final judgment should be required to live with the uncertainty that they might be ordered to repay the fruits of the judgment. The fact that Lufthansa is a multi-national corporation with the ability to raise and repay the funds should not, in my judgment, make a difference.

(3) [Counsel for the Defendants] did not challenge [Lufthansa's] evidence in relation to the defence of performance under German law or argue that they would not be able to deduct the profits which they are ordered to pay by the English Court either as costs of manufacturing the infringing articles or as a matter of general principle. I am not satisfied, therefore, that there is a real risk that the German Courts (or, for that matter, the French Courts) would permit double recovery or that Lufthansa's assurance in the Reply does not give the Defendants adequate protection.

(4) But even if there is a risk that the French or German Courts would permit double recovery, I have reached the conclusion that this should be a matter for determination by them and not by the English Courts. For example I have held that the Defendants are liable to pay 13% of the profits in issue. It is possible, say, that the French Courts may award a further 15% of those profits and the German Courts a further 25%. It does not appear to me to be self-evident that each award should be set off against the others so that the Defendants pay a total of 25% of the profits. The French Court might take the view that profits awarded by the English Court should be set off against its own award but the German Court might take the view that the awards should be cumulative. Much may depend on the evidence and the principles of law which the Court must award [*sic*]. In my judgment, those are matters for each national court applying its own law.

(5) Finally, even if I were persuaded that this is a matter for the English Court, it is entirely unclear what the scope of any further issue between the parties will be. Again, it is unsatisfactory for the Court to be asked to give permission to apply without the Defendants formulating precisely what issue they should be permitted to bring back before the Court. If I make a provisional award of profits and give the Defendants permission to apply, I fully expect the parties to treat this as an invitation to re-open the Order which I have made and to raise a raft of issues about the effect of the French and German decisions. It is time to bring this litigation to an end (at least at first instance)."

267. The Defendants appeal on two grounds. First, they contend that the judge was wrong to hold that he lacked jurisdiction to make the order sought. Secondly, they contend that

the judge's exercise of his discretion was flawed because he took into account irrelevant matters, misunderstood the evidence and took no account of relevant matters.

268. I will assume, without deciding, that the Defendants are correct on the first ground. In my judgment the judge's exercise of his discretion was unimpeachable. Whatever might be said about his other reasons, the decisive one is the fourth one. As he correctly held, it is the function of the English courts to make such order as is appropriate on the evidence adduced and arguments advanced in these proceedings applying UK law. It is then for the French and German courts to do likewise applying their own national laws. It is up to those courts to decide whether, and if so to what extent, Lufthansa's claims involve double recovery, and if they do involve double recovery, what to do about it. It is not the function of the English courts to mark the homework of the French and German courts once they have undertaken that exercise. That would be a gross breach of comity.

269. Accordingly, the judge was plainly correct not to accede to the Defendants' application. I would therefore dismiss the Defendants' appeal on this issue.

<u>The Defendants' appeal on interest</u>

270. The Defendants dispute that the High Court has power to award pre-judgment interest prior to the date on which the patentee elects for an account of profits (22 September 2022 in the present case) either in equity or pursuant to section 35A(1) of the Senior Courts Act 1981. The Defendants accept that interest can be awarded from the date of the election pursuant to section 35A(1), but contend that it cannot be awarded in equity at all. The judge held that the Court had jurisdiction to award interest prior to the date of the election on both bases. He proceeded to award interest at the US Prime Rate plus 2% in the case of Astronics and Panasonic and at the UK Base Rate plus 2% in the case of Safran. The Defendants contend that the judge was wrong as to jurisdiction. Astronics and Panasonic also contend that he was wrong to award interest by reference to the US Prime Rate, and that he should have awarded interest by reference to the Euribor rate. Astronics and Panasonic also raised an issue as to the deductibility of tax, but accepted that this did not arise if interest was being awarded on a compensatory basis. For the reasons explained below I consider that interest is indeed being awarded on a compensatory basis in a case such as this.

The purpose of awarding interest

271. Before turning to the detailed arguments, it is worth considering the purpose of an award of pre-judgment interest. The value of money varies over time. Almost invariably, it diminishes as a result of inflation. The Bank of England makes an inflation tool available on its website. That tool indicates that £1 in 2011 is equivalent to £1.49 in 2025. That means that £1.49 today has the same purchasing power as £1 in 2011. There has been a reduction in the purchasing power of sterling over that period. (Different figures would apply to US dollars, or any other currency, because different rates of inflation were in effect.) In addition, it is preferable to have money now rather than in the future. These two factors were explained by Henderson J in *Littlewoods Ltd v Revenue and Customs Commissioners* [2014] EWHC 868 (Ch), [2014] STC 1761, based on the expert evidence of the distinguished economist Professor John Kay CBE, at [377]-[380]. Neither depends on the capacity of litigants to borrow, or upon the investment decisions they make.

272. As Lord Reed and Lord Hodge, with whom the other members of the Supreme Court agreed, said in *Littlewoods Ltd v Revenue and Customs Commissioners* [2017] UKSC 70, [2018] AC 869 at [30], "interest is a measure of the time value (or use value) of money". In *Interdigital Technology Corp v Lenovo Group Ltd* [2024] EWCA Civ 743, [2024] RPC 24 I explained, with the agreement of Newey and Birss LJJ, at [213] that:

> "… it is a very widely accepted principle that the timing of a payment of money should be economically neutral. As the judge noted, Messrs Bezant and Meyer [two expert forensic accountants] agreed that the economically correct approach was to convert past royalties to present value using a relevant interest rate to reflect the time value of money."

273. As Phillips LJ, with whom Males and Moylan LJJ agreed, said in *R (Chief Constable of South Yorkshire) v Crown Court at Sheffield* [2021] EWCA Civ 1699, [2022] ICR 623 at [51]:

> "… The obvious and usual order a court makes to do justice when determining what money is due is the award of interest, thereby adjusting the value of the award to reflect the time value of money (and inflation) and so ensuring that the claimant has not been unjustly prejudiced by being kept from their money and the defendant does not benefit through doing so. …."

274. The Defendants argue that an account of profits is different because, as Lord Leggatt explained in *Lifestyle v Ahmed* at [156] (paragraph 53 above), an account of profits does not make the infringer worse off, but simply puts the infringer in the same position financially as if no infringement had taken place. I do not accept this argument. The time value of money is just as relevant to an account of profits as to an award of damages. The value of the profits paid by the infringer to the patentee will have been diminished by the passage of time due to the fact that the infringer had the money during that time and the patentee did not. The legal and economic justifications for an award of interest are just as applicable.

275. In general, an award of interest pursuant to either the equitable jurisdiction or section 35A(1) is compensatory. As Lord Wright stated in a passage in his speech in *Riches v Westminster Bank Ltd* [1947] AC 390 at 400 which was cited with approval by Lord Reed, Lord Hodge and Lord Mance, with whom Lord Sumption and Lord Carnwath agreed, in *Prudential Assurance Co Ltd v Revenue and Customs Commissioners* [2018] UKSC 39, [2019] AC 929 at [76]:

> "… the essence of interest is that it is a payment which becomes due because the creditor has not had his money at the due date. It may be regarded either as representing the profit he might have made if he had had the use of the money, or conversely the loss he suffered because he had not that use. The general idea is that he is entitled to compensation for the deprivation."

Jurisdiction in equity

276. The most frequently cited statement of the equitable jurisdiction to award interest is that of Lord Brandon of Oakbrook in his speech in *President of India v La Pintada Compania Navigacion SA* [1985] AC 104 at 116A-B:

> "The Chancery courts, again differing from the common law courts, had regularly awarded simple interest as ancillary relief in respect of equitable remedies, such as specific performance, rescission and the taking of an account. Chancery courts had further regularly awarded interest, including not only simple interest but also compound interest, when they thought that justice so demanded, that is to say in cases where money had been obtained and retained by fraud, or where it had been withheld or misapplied by a trustee or anyone else in a fiduciary position."

277. As was pointed out by Lord Woolf in *Westdeutsche Landesbank Girozentrale v Islington London Borough Council* [1996] AC 669 at 726F-G, this passage of Lord Brandon's speech seems to have been taken from sections of the Law Commission's *Law of Contract: Report on Interest* (Cmnd 7229, 1978): the first sentence comprises text found in paragraph 10 of the Report, and the second sentence is from paragraph 21. These sections of the Law Commission's Report are themselves quite short and unsupported by citation of authority. Perhaps for that reason, Lord Brandon did not distinguish between equity's exclusive jurisdiction and its concurrent or auxiliary jurisdiction. Nor did either party argue that this distinction was relevant to the present issue.

278. Although they did not cite it, the Defendants implicitly invoke Lord Simmonds LC's famous warning in *Chapman v Chapman* [1954] AC 429 at 444 that "the range of [equity's] authority can only be determined by seeing what jurisdiction the great equity judges of the past assumed and how they justified that assumption". As Sir Frank Kitto wrote in his foreword to the first edition of Meagher, Gummow and Lehane, *Equity: Doctrines and Remedies*, "[t]he last five words might well be written in letters of fire". (Unfortunately, that great work offers no assistance on the present issue.)

279. The Defendants argue that the courts of equity did not award interest on a monetary award unless there was either a fiduciary or a contractual relationship giving rise to an implied obligation to pay interest. So far as accounts not involving fiduciaries are concerned, they argue that interest was not awarded except in the special case of an account stated.

280. In support of this argument they rely upon two authorities. The first is *Boddam v Riley* (1785) 2 Bro CC 2, where Lord Thurlow LC said at 3:

> "The cases cited apply only where there are accounts regularly stated between the parties, in which case there is an implied contract on the part of the debtor to pay; and all contracts to pay, undoubtedly, give a right to interest from the time when the principal ought to be paid. But this is not so here. It is true, the sum claimed does, in fact, appear to be due, on balance, at the

> close of the account; but there was no settlement or acknowledgment by the debtor, which raises a contract to pay, and which is the only ground upon which interest is given."

281. The second is *Techno-Impex v Gebr. Van Weelde Scheepvaartkantoor BV* [1981] QB 648, where Oliver LJ said at 668:

> "The rule in equity seems to have been firmly established by this time (see *Boddam v. Riley* (1785) 2 Bro.C.C. 2) that interest would not be awarded on taking an account except upon an account stated, the ground being that only when an account was stated could it be said that there was a contract to pay."

282. As Lufthansa points out, however, neither of these authorities was considering the case of an account of profits as a remedy for infringement of intellectual property rights. Lufthansa accepts that there is no contract to pay in such a case, but submits that there is nevertheless a clear obligation to pay which a court of equity would regard as attracting interest.

283. The Defendants try to meet this point by drawing an analogy with claims for mesne profits as a remedy for trespass to land, which is a tortious invasion of property like infringement of an intellectual property right. The Defendants rely upon *Quarrell v Beckford* (1816) 1 Madd 269. In that case a mortgagee had taken possession of a property and obtained from it more money than he was owed. He ought to have delivered up the estate once the debt was paid but did not do so, instead earning considerable extra sums in profit. An account was carried out from which the sums owing to the beneficial owners of the estate were assessed. The question arose whether interest should be awarded on those sums. The mortgagee argued that the case was akin to a case of mesne profits so there was no right to interest.

284. Sir Thomas Plumer V-C recited the argument and rejected it at 281:

> "Under these circumstances the case is assimilated to a simple contract debt, which does not carry interest; it is compared also to the case of mesne profits, improperly received by a trespasser; in which cases, it is clear, the Courts of law and Equity are not in the habit of charging the party with interest. What analogy do those cases bear to the present? The main point here does not exist in those cases, viz., a sum due from a trustee to a *cestui que trust*. The mesne profits are received by an adverse holder, by a trespasser, where there is no privity between the one and the other; but here, the profits are received under an implied contract by the mortgagee to account; that is not like the case of a trespasser receiving mesne profits. This mortgagee received the rents as trustee—he received them to pay himself first, and afterwards to account to the mortgagor; he has therefore made himself liable to account."

285. As Lufthansa points out, however, mesne profits are a measure of damages for trespass. As the Vice-Chancellor noted, neither courts of law nor courts of equity awarded interest on damages (equity following the law in that respect). (As he also noted, the

same was true of simple contract debts, unless the parties expressly or impliedly agreed that interest should be payable: see *Al-Wazir v Islamic Press Agency Inc* [2001] 1 Lloyd's LR 410 at [32]-[37] (Sir Anthony Evans)).

286. Furthermore, it is important to note his explanation of the justification for awarding interest in a case such as the instant one at 281-282:

> "Courts of Equity give interest in many cases where there is no express contract. In this very case the mortgagee himself is allowed interest which he was not entitled to by contract, I mean, the interest upon lasting improvements, &c. Why is he entitled to it? Because a Court of Equity considers itself competent in this relation between mortgagor and mortgagee to go beyond the contract – to consider what is just and equitable between parties, standing in that relation; and because when the trustee in possession has been expending his own money to improve the estate of the *cestui que trust*, it is not justice to say, you shall be repaid the very money laid out, without any allowance for the same, with interest. What interest? Where is there any contract? The interest is ten per cent. on one mortgage, and eight per cent. on another. Is he to have that? No; six per cent. Why? Because it is equitable that being an expenditure on the spot, by a trustee, he shall have the current interest of the country, just the same as if he had lent so much money. This, I say, is strong proof to shew you are not to restrict a Court of Equity by the narrow principles applying to simple contract debts, or mesne profits, but that the Court looks at the question as applying to mortgagee and mortgagor, and gives either party interest, as justice requires …"

287. Finally, the Defendants rely upon the point made by Lord Briggs in *Recovery v Rukhadze* at [21] (see paragraph 55 above) that an account of profits for infringement of an intellectual property right is "imposed, as the result of an election by the owner, as one of the available remedies, by order of the court", rather than there being a prior duty to account.

288. As Lufthansa submits, however, the effect of the court's order where the patentee elects for an account of profits is (subject to any question of limitation or laches) to oblige the infringer to disgorge all the profits it has derived from the infringement. As Lord Leggatt noted in *Lifestyle v Ahmed* at [155] (paragraph 53 above), the infringer is treated as if it was conducting the infringing business on behalf of the patentee. Thus from the first day of infringement each day's profits should have been paid to the patentee. As discussed above, the effect of the passage of time is to devalue the sum received by the patentee unless interest is awarded.

289. In addition to *Quarrell v Beckford*, Lufthansa relies on *Karberg's case* [1892] 3 Ch 1, where this Court (Lindley, Bowen and Kay LJJ) held at 17 that "where a contract was rescinded, interest on money actually paid under it ought to be allowed, not by way of damages, but on the ground that the parties were to be restored so far as possible to their original position." As Lufthansa submits, these authorities support the view that a court of equity would consider that an infringer accounting for its profits should also pay

interest. Otherwise, the patentee and the infringer will not be put in the position that they would have been in if the infringing acts had been carried out by the patentee.

290. Accordingly, I agree with Lufthansa and the judge that there is jurisdiction in equity to award interest on an account of profits. In case I am wrong about that, I shall go on to consider section 35A(1).

Jurisdiction under section 35A(1)

291. Section 35A(1) provides:

> "Subject to rules of court, in proceedings (whenever instituted) before the High Court for the recovery of a debt or damages there may be included in any sum for which judgment is given simple interest, at such rate as the court thinks fit or as rules of court may provide, on all or any part of the debt or damages in respect of which judgment is given, or payment is made before judgment, for all or any part of the period between the date when the cause of action arose and—
>
> (a) in the case of any sum paid before judgment, the date of the payment; and
>
> (b) in the case of the sum for which judgment is given, the date of the judgment."

292. It is common ground that an account of profits is not, nor is it part of, a "proceeding[] for the recovery of … damages". The question is whether it is, or is part of, a "proceeding[] for the recovery of a debt". The Defendants accept that, once the patentee has elected for an account of profits, there is a "proceeding[] for the recovery of a debt", but submit that there is no such proceeding before that date.

293. As the Defendants accept, the courts have taken a broad view of what may be regarded as a "debt" for this purpose. In *BP Exploration Co (Libya) Ltd v Hunt (No. 2)* [1983] 2 AC 352 Lord Brandon dismissed the submission that section 3(1) of the Law Reform (Miscellaneous Provisions) Act 1934 (the predecessor to section 35A(1) of the 1981 Act) did not enable interest to be granted on the award of a "just sum" by way of restitution under the Law Reform (Frustrated Contracts) Act 1943 in a much-cited passage at 373F-G:

> "In my opinion the words 'any debt or damages', in the context in which they occur, are very wide, so that they cover any sum of money which is recoverable by one party from another, either at common law or in equity or under a statute of the kind here concerned. In this connection I adhere to the view with regard to the scope of section 3(1) which I expressed in *The Aldora* [1975] Q.B. 748, 751. I hold, therefore, that Robert Goff J. had power to order the payment of interest on the principal sums awarded by him."

294. In *The Aldora* Brandon J (as he then was) had held that interest could be award on a restitutionary quantum meruit claim for salvage for the reasons he gave at 751D-F:

> "I do not think that a claim for salvage is a proceeding for the recovery of damages, and the question is accordingly reduced to this, whether it is a proceeding for the recovery of a debt. As to this it is to be observed that the words used are 'any debt,' indicating that the net is being spread as widely as possible. Those words are, as it seems to me, apt to cover sums, whether liquidated or unliquidated, which a person is obliged to pay either under a contract, express or implied, or under a statute."

295. The Defendants particularly rely upon the judgment of the Court of Appeal delivered by Lawton LJ in *BP v Hunt (No. 2)* [1981] 1 WLR 232 at 245E-G:

> "[Robert Goff J] chose June 14, 1974 [as the date from which interest was to run], because until then the defendant did not know that the plaintiffs were going to make a claim against him and before then it had not been made clear that they would or could. The judge's choice of this date was made in the exercise of his judicial discretion. We can see no reason for saying he exercised his discretion wrongly. The defendant's submission [that interest should run from the date of judgment because there was no debt until that date] could not be supported. His liability to pay the plaintiffs a just sum arose on 7 December 1971 [the date when Libya expropriated BP's concession]. From then onwards he was indebted to the plaintiffs but the amount of his indebtedness could not be known until the judge had assessed it."

296. The Defendants submit that, so too in the present case, they were indebted to Lufthansa from the date of Lufthansa's election, although the amount of the indebtedness was not known until the judge assessed it; but they were not indebted to Lufthansa before that.

297. The Defendants also rely upon the principle stated by Hamblen LJ, with the agreement of Kitchin LJ (as they then were), in *Carrasco v Johnson* [2018] EWCA Civ 87 at [17](1):

> "Interest is awarded to compensate claimants for being kept out of money which ought to have been paid to them rather than as compensation for damage done or to deprive defendants of profit they may have made from the use of the money."

This principle appears to be based on what Lord Denning MR said in *Jefford v Gee* [1970] 2 QB 130 at 146A.

298. Finally, the Defendants rely upon the decision of this Court in *Agbaje v Robert Frew Medical Co Ltd* [2023] EWCA Civ 702. In that case no interest was awarded on the sum determined by the judge because the claimant's claim was not for recovery of a debt, but rather a declaration as to what amount was payable by the defendant for the claimant's shares. The claim was not for recovery of debt because the defendant never

became legally obliged to pay the claimant the purchase money since the claimant refused to deliver up his share certificate.

299. In considering the Defendants' argument, it seems to me that the starting point, as in *Agbaje v Robert Frew,* is to identify the cause of action on which the claimant has obtained judgment. In the present case, there is no dispute that Lufthansa obtained judgment on a cause of action for patent infringement. Nor is there any dispute that that cause of action arose as against each Defendant from the first date of their respective acts of infringement. Nor is there any dispute that the nature of that cause of action is that each infringing act is a separate tort (and hence the effect of limitation in a case such as this is to limit recovery to the six years prior to the date of the claim form, not to bar the cause of action altogether: see paragraph 3 above).

300. It is well established that, as one might expect, the cause of action for the purposes of section 35A(1) is the same as the cause of action for the purposes of limitation: see *General Tire & Rubber Co v Firestone Tyre & Rubber Co Ltd* [1975] 1 WLR 819 at 835H-836 (Lord Wilberforce) and 840H-841C (Lord Salmon), *Sevcon Ltd v Lucas CAV Ltd* [1986] 1 WLR 462 at 468A-469B (Lord Mackay of Clashfern) and *Nykredit Mortgage Bank plc v Edward Erdman Group Ltd (No.2)* [1997] 1 WLR 1627 at 1629G-1630B (Lord Nicholls of Birkenhead) and 1638B (Lord Hoffmann).

301. In my judgment it is impossible to say, as the Defendants do, that "the cause of action arose" for the purposes of section 35A(1) when the Defendants started infringing the Patent, yet there was no debt until Lufthansa elected for an account of profits. The debt only exists because the Defendants infringed the Patent. The correct analysis is that the Defendants became indebted to Lufthansa as soon as they started infringing the Patent if, as turned out to be the case, Lufthansa elected for an account of profits. If Lufthansa had elected for an inquiry as to damages, then, as is common ground, the proceeding would have been one for the recovery of damages, and interest would also be available (subject to limitation) from the date of the first infringement.

302. Accordingly, I agree with Lufthansa and the judge that the court has power under section 35A(1) to award interest on an account of profits prior to the date of the patentee's election.

The rate of interest

303. As explained above, the judge awarded interest against Astronics and Panasonic by reference to the applicable US Prime rate, whereas Astronics and Panasonic contend that he should have referred to the applicable Euribor rate. The basis for this contention is that a company in the position of Lufthansa would have borrowed at Euribor rates, since Lufthansa is a German company and its corporate borrowing is done through its parent company DLH in euros. The Defendants adduced evidence that such borrowing would have typically been at Euribor plus 1% or plus 2%. Astronics and Panasonic argue that the judge should have awarded Euribor plus 1%.

304. Astronics and Panasonic rely upon the principles stated by Hamblen LJ in *Carrasco v Johnson* at [17]:

> "(2) …. The court will consider the position of persons with the claimants' general attributes, but will not have regard to

> claimants' particular attributes or any special position in which they may have been.
>
> (3) In relation to commercial claimants the general presumption will be that they would have borrowed less and so the court will have regard to the rate at which persons with the general attributes of the claimant could have borrowed. This is likely to be a percentage over base rate and may be higher for small businesses than for first class borrowers."

305. The judge relied upon *Lonestar Communications Corp LLC v Kaye* [2023] EWHC 732, [2023] 1 All ER (Comm) 605, in which Foxton J (as he then was) said at [14]:

> "There are some contexts … when the existence of a clear default rule is important, even if there is much which can be said for both competing options. I am satisfied that the default interest rate for US$ awards in the Commercial Court going forward should be US Prime, irrespective of whether the claimant has a US place of operations or not and irrespective of whether the claim is a maritime claim or not."

306. Astronics and Panasonic argue that the judge was wrong for various reasons to rely upon *Lonestar v Kaye*. It is not necessary to consider those arguments, because I agree with Lufthansa that there is a more fundamental reason why the judge was correct to award interest by reference to a rate applicable to US$.

307. As Lufthansa points out, Astronics' and Panasonic's approach involves converting the judge's awards of profits, which were in US$, into euros using a conversion factor derived by averaging the exchange rate between US$ and euros over the period when each relevant sum of profits was made, then applying a Euribor-based rate of interest to the resulting euro sums and then converting the resulting amounts of interest into US$ using a conversion factor based on the exchange rate at the end of the period over which interest was to be awarded.

308. As Lufthansa submits, this approach is contrary to the principle that it is no part of the court's function to allow for exchange rate fluctuations between the date as at which monetary awards are assessed and the date of judgment: see *Attorney General of Ghana v Texaco Overseas Tankships Ltd (The Texaco Melbourne)* [1994] 1 Lloyd's Rep 473, where Lord Goff of Chieveley, with whom the other members of the House of Lords agreed, stated at 466-467:

> "We have at all times to bear in mind that fluctuations in the relevant currency between the date of breach and the date of judgment are not taken into account. … Delay between the date of breach and the date of judgment is compensated for by an award of interest (as indeed is delay in the satisfaction of the judgment). But, as I have said, no account is taken of fluctuations in the relevant currency as against other currencies between the date of breach and the date of judgment. … The proper approach is to identify, in accordance with established principle, the appropriate currency in which the award of damages is to be

> made, and to award an appropriate sum by way of damages in that currency, and also of interest in that currency to compensate for the delay between the date of breach and the date of judgment."

309. This reasoning is, if anything, even more applicable to an account of profits from patent infringement for the reasons explained above. It follows that the judge was correct to select a US interest rate. Astronics and Panasonic do not dispute that, if a US interest rate was appropriate, then the judge was entitled to select US Prime as the rate. I would therefore dismiss Astronics' and Panasonic's appeal against the judge's order for interest.

Overall result

310. For the reasons given above I would dismiss Lufthansa's appeal, dismiss the Defendants' appeals on interest and double recovery and allow Astronics' and Panasonic's appeal on KID apportionment with the result noted in paragraph 213 above.

Lord Justice Nugee:

311. I have had the advantage of reading the judgments both of Arnold LJ and of Lewison LJ in draft, and agree with both of them.

312. I add only that in paragraph 259 above Arnold LJ says that he inclines to the view that "such proceedings" in section 67(2) of the Patents Act 1977 refers to "proceedings in respect of any infringement of the patent" in section 67(1) whether such proceedings are brought by the patentee or the exclusive licensee (or both); my own inclination would be to interpret this as referring only to the case where proceedings are brought by the exclusive licensee. But it is not necessary to resolve this point for the purposes of these appeals.

Lord Justice Lewison:

313. I agree that Lufthansa's appeal should be dismissed on the issue of the account of profits; that the Defendants' appeal on the question of interest should likewise be dismissed; but that Astronics' and Panasonic's appeal on the interpretation of the KID agreement should be allowed, all for the reasons that Arnold LJ has given. But since the correct approach to an account of profits has wider implications (and because the judge relied heavily on a previous judgment of mine) I wish to say something more on that subject.

314. In *Siddell v Vickers* (1892) RPC 152 Lindley LJ (who knew more about accounts than most judges) said:

> "… I do not know any form of account which is more difficult to work out, or may be more difficult to work out than an account of profits. …The litigation is enormous, the expense is great and the time consumed is out of all proportion to the advantage ultimately obtained… I believe that in almost every case people get tired of it and get disgusted."

315. The proceedings relating to the account in this case occupied 12 days of court time, required the calling of multiple expert witnesses, required the judge to decide a hypothetical case of patent infringement and resulted in a judgment running to 693 paragraphs spread over nearly 400 pages, followed by a four-day appeal in this court. But these appeals demonstrate that doughty parties do not tire easily.

316. The case is one of patent infringement. The patentee has a choice of monetary remedies: damages or an account of profits. A patentee whose patent has been infringed is entitled to damages as of right. An account of profits is, by contrast, an equitable remedy and the court has a discretion whether or not to grant it, although it is standard practice to allow the patentee to elect between the two: *Lifestyle Equities CV v Ahmed* [2024] UKSC 17, [2025] AC 1 at [145]. In this case the patentee has chosen an account of profits. In such a case the statutory instruction is that the patentee is entitled to "an account of the profit derived by [the infringer] from the infringement": Patents Act 1977 s. 61 (1) (d). The Act does not mandate any particular method by which the inquiry must be conducted.

317. The underlying theory is that the infringer is treated as having carried on his business (to the extent that it infringes) on behalf of the patentee. The broad principle is that the patentee is entitled to profits that have been earned by the use of his invention. If the patentee does not recover those profits, the infringer will have been unjustly enriched. So the purpose of the account is to quantify the extent to which the infringer would be unjustly enriched if he were to retain the profits derived by him from the infringement. That requires the fact finder first to identify the patentee's invention and second to decide what (if any) profits the infringer derived from the use of that invention: *Hollister Inc v Medik Ostomy Supplies Ltd* [2012] EWCA Civ 1419, [2013] FSR 24 at [55]; *OOO Abbott v Design and Display Ltd* [2016] EWCA Civ 98, [2016] FSR 27 at [7]; *Lifestyle Equities CV v Ahmed* at [155].

318. As Slade J put it in *My Kinda Town Ltd v Soll* [1983] RPC 15, 58:

> "… the general intention of the Court in making the order which it has made had been to achieve a fair apportionment so that neither party will have that which justly belongs to another."

319. Mr Cuddigan KC argued that it is necessary to investigate the nearest non-infringing alternative that the infringer could have produced and compare the profits that would have been earned by that with the profits that the infringer in fact earned. This is known as "the differential profits approach". The difference between the two is the sum to be awarded on the account. If the infringer fails to prove a non-infringing alternative, then he must pay the patentee the entirety of the profits. The question arises in the present case because the patented article was incorporated in a more complex product, whose commercial success was not driven by the use of that patented product.

320. In a simple case there may be no need to investigate a counterfactual non-infringing alternative. Suppose that the patent in suit is a patent for an inventive widget. The infringer makes widgets falling within the claims of the patent and sells them. In such a case, the court need do no more than assess what profit the infringer made from the sale of the widgets and order him to pay that amount to the patentee.

321. That seems to me to have been the kind of issue that was considered by the Supreme Court of Canada in *Nova Chemicals Corporation v The Dow Chemical Company* [2022] SCC 43, [2022] 3 SCR 352 on which Mr Cuddigan KC placed very heavy reliance. In that case Nova made and sold products covered by Dow's patent for metallocene linear low-density polyethylenes, which are thin but strong plastics. Dow claimed an account of profits. Giving the judgment of the majority, Rowe J explained the purpose of the account, in terms with which I agree, at [48]:

> "An accounting of profits should therefore discourage infringement but do no more. This requires disgorging *only* the profits causally attributable to the invention. Requiring infringers to disgorge anything more would constitute punishment and risk chilling public innovation and competition. Disgorging anything less would reduce the incentive to invent… " (Original emphasis)

322. The relevance in that case of the non-infringing alternative was that Nova argued that if it had not sold the infringing plastic it would have manufactured and sold an entirely different kind of plastic; and that the profits that it would have made from those hypothetical sales should be deducted from the profits that it in fact made from selling the infringing plastic: see [41]. Not surprisingly, that argument was rejected. Commenting on the function of the non-infringing alternative, Rowe J said at [51]:

> "… a non-infringing option helps courts isolate the profits causally attributable to the invention from the profits which arose at the same time the infringing product was used or sold, but which are not causally attributable to the invention. For example, when a company sells a product with a component that infringes a patent, courts need to determine the profit generated by (1) the patented invention and (2) the rest of the non-patented product. To generate these sums, courts should compare the profits generated from the sale of the infringing product with the patented feature — i.e., the actual profits — with the profits the infringer would have made on the sale of a similar product without the patented feature — i.e., the non-infringing option."

323. He added at [53]:

> "Non-infringing options can also help courts determine when some, but not all, of the infringer's profits are causally attributable to the invention."

324. He summarised the position at [58]:

> "In sum, a non-infringing option is any product that helps courts isolate the profits causally attributable to the invention from the profits which arose at the same time the infringing product was used or sold, but which are not causally attributable to the invention."

325. I do not read those observations as prescriptive. The non-infringing alternative is merely a tool to help isolate those profits that are derived from the infringement. Rowe J himself described the method at [15]:

> "Step 1: Calculate the actual profits earned by selling the infringing product — i.e., revenue minus (full or differential) costs.
>
> Step 2: Determine *whether* there is a non-infringing option that *can help* isolate the profits causally attributable to the invention from the portion of the infringer's profits not causally attributable to the invention — i.e., differential profits. It is at this step that judges should apply the principles of causation. Causation "need not be determined by scientific precision: it is 'essentially a practical question of fact which can best be answered by ordinary common sense'" …
>
> Step 3: *If* there is a non-infringing option, subtract the profits the infringer could have made had it used the non-infringing option from its actual profits, to determine the amount to be disgorged." (Emphasis added)

326. On its way to the Supreme Court *Nova* passed through the Federal Court of Appeal: [2020] FCA 141, [2021] 1 FCR 551. Stratas JA considered the question of a complex product as follows:

> "[33] To reiterate, under an accounting of profits, the patentee is entitled to the benefits obtained by infringers as a result of the infringement of the patent, properly construed and understood, no more, no less. The key words are "as a result" and "infringement of the patent, properly construed and understood". The former stresses the need for the court to analyze causation, for only those amounts causally linked to the infringement are captured by the accounting of profits; anything extra is punitive. The latter reminds us that the focus is on the protection afforded by the patent; anything extra effectively extends, improperly, the scope of protection afforded by the patent.
>
> [34] Thus, an accounting of profits must walk a fine line between deterring infringement, i.e., extracting any economic incentive to infringe, without punishing, i.e., extracting sums not causally connected to the infringement. And it must focus on defending and vindicating—not expanding—the patentee's lawful monopoly under the patent.
>
> [35] To illustrate this, consider a luxury car manufacturer that uses a screw in its windshield wipers. The screw infringes a patent. The patentee's monopoly covers that screw, not luxury cars. If the infringer would be forced to disgorge all of its profits from the luxury cars, in practical terms the remedy would place the

> patentee in the position of enjoying a monopoly that it simply does not possess. The patentee did not invent luxury cars, it only invented a screw. An accounting of profits defends and, thus, is constrained by a patent's borders, nothing more.
>
> [36] The jurisprudence has developed two rules for courts to help them implement these principles: (1) only actual profits, meaning actual revenues minus actual costs, are disgorged; (2) only profits that have resulted from the patent infringement are disgorged."

327. Those are the "rules". Everything else is simply a means for giving effect to the rules.

328. My reading of *Dart Industries Inc v Decor Corporation Pty Ltd* [1993] HCA 93, (1993) 179 CLR 101 is that the High Court of Australia rejected the "differential profit" approach. The case concerned plastic containers with a press button seal. The press button seal infringed a patent. The infringer argued that it was entitled to deduct from the profit made on the sale of the canisters the profit that it would have made if it had manufactured non-infringing products. The High Court rejected that argument. The judgment of the plurality stated at [14]:

> "In calculating an account of profits, the defendant may not deduct the opportunity cost, that is, the profit forgone on the alternative products."

329. In his judgment McHugh J said at [13]:

> "In a litigious world of unlimited time and resources, the best approach for determining the profit derived from the infringement might be to estimate the profit of the product after allowing a proportion of the overheads and then deduct the opportunity cost of producing the infringing product. This would show the true gain of the infringer from producing or distributing the infringing product instead of the next best alternative. Another but less exact method of determining the profit and preventing the unjust enrichment of the infringer might be to determine what was the best alternative open to the infringer, determine what gross revenue would have been obtained from that alternative, and deduct that sum from the gross revenue obtained from the infringing product. Another suggested method is that there should be a deduction for that part of the overhead which would have been absorbed in producing or selling the alternative to the extent that it was used in producing or selling the infringing product. But to adopt any of these methods would make an often complex subject more complex than it already is. Very likely, it would increase the prospect of contested litigation over the taking of the account and the cost and length of the hearing while the parties and their witnesses investigated and debated the hypothetical. Depending on which method was used, the person taking the accounts would have to estimate one or more of the following figures: the gross revenue from the

> alternative, the direct costs of the alternative and the proportion of overhead attributable to the alternative. Lindley L.J., who knew more about accounts of profits than most lawyers, once said that he did "not know any form of account which [was] more difficult to work out, or may be more difficult to work out than an account of profits". The court should be slow to adopt a rule which might increase that difficulty."

330. Laddie J touched on the same question in *Celanese International Corp v BP Chemicals Ltd* [1999] RPC 203 at [43]:

> "[Although the infringer cannot avoid paying over profits by relying on possible non-infringing alternatives], the patentee, as noted above, cannot recover profits which were not earned by use of his invention. I have already referred to a case where the defendant has two businesses, one infringing and the other not. But the same approach should apply where only part of a product or process infringes. Profits attributable to the non-infringing parts were not caused by or attributable to the use of the invention even if the use of the invention was the occasion for the generation of those profits."

331. It is common ground that the first part of this passage (which I have placed in square brackets) is wrong; but the remainder of it is, in my view, plainly right. I also considered a similar question in *OOO Abbott v Design and Display Ltd*. That was a case of patent infringement. The items in issue were slatwall display panels which contained preformed slots into which inserts could be introduced to carry shelves and hangars for displaying goods. The patented article was a particular kind of insert ("snap-in" rather than "slide-in"). The trial judge taking the account found that in some cases the customer either specified or was recommended the infringing inserts; and that in those circumstances the sale of the infringing inserts "drove the sale". He held that 100 per cent of the profits on those sales of panels with the infringing inserts should be paid to the patentee. It is important to note that the judge's decision on that point was not challenged on appeal. But he also found that in the case of some sales the customer was indifferent to the type of inserts that accompanied the panels. Nevertheless, he allocated 100 per cent of the profit on those sales to the patentee. It was only that part of his judgment that was challenged on the appeal. The appellant in that case accepted that so much of the profit on the panel as was attributable to the infringing insert was to be included in the account. But the argument was that it was not a case in which the article itself would not have come into existence at all but for the infringement; nor was the infringing insert an essential ingredient in the panel. I said at [36]:

> "Let me revert to the example given by the Full Court in *Dart Industries v Decor Corp* [1994] FSR 567. A manufacturer sells a car which includes a patented brake. If the car did not have brakes, the manufacturer could not have sold it, but it did not have to have that particular brake. In those circumstances the Full Court clearly thought that it would be unjust to charge the manufacturer with the whole profit made on the car; and I agree with them. In my judgment the legal error that the judge made was to ask whether the sale of the panel plus insert would have

> happened separately rather than to ask himself how much of the profit on the sale was derived from the infringement. In a case in which the infringement does not "drive" the sale it seems to me that it is wrong in principle to attribute the whole of the profit to the infringement. In particular it does not follow from the fact that the customer wanted a slat wall that incorporated an insert that the customer wanted a slat wall that incorporated the infringing insert. Mr Cuddigan argued that the infringing inserts and the slot were the "very essence" of the incorporated and unincorporated panels. But the judge made no such finding, and his observations at [32] suggest the contrary. In addition I do not consider that the judge was correct at [31] in saying that "because the sales went together, the sale of inserts caused … the sale of the panels…" The mere fact that the two went together is not, in my judgment, sufficient to establish that the whole of the profit earned on the composite item was derived from the invention. One might just as well say that the sale of the panel caused the sale of the insert. As the judge himself recognised the customer specifies panels, and on the hypothesis that he was considering at [31] the customer is indifferent about the inserts (provided that some form of insert is included). On the judge's approach, because the sale of the patented brake went with the sale of the car, the whole of the profit on the car would be included in the account. If the judge had found on the facts that the infringing insert was "the essential ingredient in the creation of the defendant's whole product" (i.e. the incorporated panel), then he would have been justified, on the facts, in declining to apportion the profit. But I cannot see that he made that finding."

332. In the event, the matter was remitted to the trial judge to make additional findings: see [2017] EWHC 932 (IPEC); [2017] FSR 43. At least part of the quoted passage in my judgment was approved by Lord Leggatt (in a doubly or possibly trebly obiter passage) in *Lifestyle Equities CV v Ahmed* at [175].

333. The legal question was "how much of the profit on the sale was derived from the infringement". In order to answer that question, the word I used in that passage was "apportion". I did not say in the quoted passage (and did not mean to suggest) that the only way in which profits could be apportioned was by constructing a counter-factual scenario in which the infringer made sales without the infringing insert. Particularly in the field of an account of profits (which is at heart an equitable remedy although prescribed by statute) it is not always necessary to construct a counter-factual hypothetical scenario in which the court has to identify the nearest non-infringing course of action that the infringer could have taken.

334. The purpose of an account of profits in a patent infringement case is to transfer from the infringer to the patentee the profit "derived from" the infringement: no less and no more. No less because if the infringer is able to keep some of the profits derived from the infringement he will be unjustly enriched. No more because if there is transferred to the patentee profits attributable to something other than the infringement, it is the patentee who will be unjustly enriched. Even if the patented brake (or the patented

screw in the windshield wipers) is the only available component for use in the luxury car it would still be overcompensating the patentee if the infringer had to disgorge the whole profit made on the car. To say that without the patented brake (or screw) the infringer would not have sold any cars at all is an uncritical application of a "but for" test which, as is well-recognised, is liable to produce far too many false positives.

335. Briggs J put it well in Hotel Cipriani SRL v Cipriani (Grosvenor Street) Ltd [2010] EWHC 628 at [8]:

> "… where a single head of profit is attributable to a number of causes, some of them infringing and some not, it is necessary and appropriate for the court to conduct an apportionment so as to work out on a broad-brush basis what proportion of the profit was due to the act of infringement."

336. A counterfactual scenario may, depending on the facts, be a useful tool in isolating the profits derived from the infringement, but it is not the only way. Leggatt J discussed the available tools in *Marathon Asset Management Ltd v Seddon* [2017] EWHC 300 (Comm), [2017] ICR 791, which was a case of misuse of confidential information. At [230] he pointed out that the test of causation varied according to the nature of the defendant's wrong. He continued:

> "… where the wrong consists in misuse of intellectual property, the court's task is likewise to decide what profits made by the defendant may fairly be attributed to the defendant's wrongful act, but the court will more readily engage in an apportionment between profits attributable to the infringement of the claimant's intellectual property and profits which should be attributed to other, non-infringing elements of the defendant's activities…"

337. He then discussed cases in which there were alternative means by which the defendant could have obtained an equivalent benefit, cases in which it was reasonable to expect the defendant to obtain a licence to use the claimant's property and cases where there would have been no prospect of obtaining a licence and no alternative means of obtaining an equivalent benefit. It was this last category of case that he discussed at [236]:

> "In such cases the appropriate method of valuation, as it seems to me, is to assess the amount of profit made by the wrongdoer which is fairly attributable to its wrongful use of the claimant's property (or other wrongful act). As the law currently stands, there are two routes by which this can in principle be achieved. One is to order an account of profits and to apportion the profits made by the defendant between profits which should be attributed to its wrongful act and profits which should be attributed to other factors. The other route is to order payment of a percentage of the defendant's profits as licence fee damages…
> It may be that, as the law of remedies in this area develops further, these two different methods of awarding a percentage of profits made by a wrongdoer will be harmonised into a single

> measure. For the time being, however, they remain doctrinally distinct."

338. The judge in this case held at [325] that the court should adopt the differential profits approach to "every account of profits". In my view he was wrong to do so; and Mr Cuddigan did not defend the judge's uncompromising statement. There are other ways of isolating the profits that should fairly be attributed to the infringement. Ultimately, however, I do not consider that what I regard as a legal error led to the wrong result, because the judge found that the alternative scenarios that the defendants relied on would themselves have infringed the patent. He was, therefore, faced with a case in which on the evidence called before him there was no non-infringing alternative. Moreover, the judge himself said at [467] that the absence of a non-infringing alternative was not conclusive of legal causation.

339. In effect, therefore, the judge embarked upon the three stage process described by Rowe J in *Nova*; but that process came to a halt at step 2 because there was no non-infringing alternative that could "help isolate the profits" derived from the infringement. He was not, therefore, able to proceed with a differential profits analysis; and had to adopt some different method of isolating the profits derived from the infringement. In my judgment that was an entirely legitimate approach for the judge to have adopted.

340. In that regard, I consider that there is considerable help in the judgment of Arnold LJ in *Anan Kasei Co Ltd v Neo Chemicals & Oxides (Europe) Ltd* [2023] EWCA Civ 11, [2023] FSR 14. That was a case of damages rather than an account of profits, but it raised the question of legal causation. The patent in suit concerned a form of cerium oxide which was used in the manufacture of catalytic converters in vehicles. The market for catalytic converters in Europe was driven by the EU emissions standards (Euro 6) that car manufacturers were legally required to meet. Neo supplied cerium oxide (which infringed the claims in the patent) to its own customer, JM. JM in turn used it in the supply of catalyst systems to vehicle manufacturers. The patentee claimed damages for infringement. Much of the argument concerned liability for losses incurred outside the UK, which is not relevant to this appeal.

341. At [101] Arnold LJ described the task of the trial judge as carrying out "an evaluation of whether the infringing acts were sufficiently proximate to the losses." At [102] he said:

> "… the fact that an infringing act creates an opportunity to make a non-infringing sale does not mean that the former is legally a cause of the latter: it is necessary to consider whether the infringing act is a sufficiently significant driver of the non-infringing sale that it may be regarded as a proximate cause."

342. At [113] he recorded the judge's finding:

> "As the judge explained … Neo's sales depended not only on JM's decision as to whose cerium oxide to purchase, but also on the car makers' decisions as to which catalyst system to purchase. Thus it was not enough for Neo to satisfy JM's requirements, it was also necessary for JM to satisfy the car makers' requirements. As the judge found at [186], the car

> makers' decisions turned on the car makers' assessments of the performance of the catalyst system *as a whole* rather than their assessments of the specific individual components." (Original emphasis)

343. At [116] he noted the judge's finding that the infringer could not satisfy its own customer with a non-infringing alternative but that it did not follow that that was sufficient. As Arnold LJ put it:

> "It is probable, given the judge's findings as to JM's requirements and Neo's inability to satisfy them with a non-infringing alternative, that the performance of the cerium oxide component was necessary for JM to obtain favourable decisions from the car makers, but it does not follow that it was sufficient. It is also probable that each of the other components had to satisfy performance requirements of their own. Moreover, it is clear that the whole catalyst system will have had to satisfy the overall performance requirements laid down by the car makers based upon the Euro 6 standard. This was the real driver of the sales in issue."

344. In other words the fact (if it be a fact) that the patent in suit is a "gateway" patent is not conclusive. Finally at [117] he considered the use of a counterfactual. As to that he said:

> "It is a tool for distinguishing between loss flowing from the fact that, due to the defendant's negligence, the information was wrong (loss which falls within the scope of the defendant's duty) and loss flowing from the decision to enter into the transaction at all (loss which would not have been sustained but for the negligence). The counterfactual test may be a useful cross-check, but it can be problematic and has the potential to confuse. Accordingly, it should not replace the decision that needs to be made as to the scope of the duty. As discussed above, the issue in the present case is not as to the scope of the duty, but whether the infringing acts were a proximate cause of the losses claimed."

345. Here again we see that the evaluation of legal causation involves identifying the "real driver" of the sales.

346. In the present case, having considered the commercial success of the defendants' products, the reasons for it and the contribution that the patented article made to that success, the judge said at [468]:

> "I have held that Astronics' ability to satisfy all of the requirements of the regulatory authorities and the airframe manufacturers drove the sales of all of the EmPower systems by analogy with *Neo*. I have also held that the superior quality of its product and services and KID's failure to compete drove the sales of the EmPower Fusion system in the integrated market during the Relevant Period. In my judgment, either finding might

> have justified the conclusion that the infringement of the Patent was not the proximate cause of the profits in issue. But I make it clear that in reaching this conclusion I have carried out an evaluative exercise in which I assessed the cumulative effect of all of the factors which I have set out above. In doing so, I have adopted the same course as Bacon J in *Neo* and followed the guidance of Arnold LJ in the Court of Appeal."

347. The judge considered expert accountancy evidence in arriving at his calculation of the relevant profits. At [593] he described the nature of that exercise:

> "The experts were agreed that the first step is to identify the gross profits (being revenue less direct costs) made on the Defendants' relevant sales. They were also agreed that the second step was to deduct the overheads and tax attributable to the relevant sales. They also stated that they had both performed their calculations on the basis that overheads (excluding tax) are deductible where: (1) they were incremental to the relevant sales; or (2) those overheads could have been used to support sales of an alternative non-infringing product. Finally, they were also agreed that, where applicable as a matter of law, the final step was to apportion the Defendants' net profits to the infringement and that the aim of this apportionment was to recognise the relative contribution of the Patent as opposed to other factors in generating the profits that relate to the relevant sales…"

348. In relation to the apportionment exercise he noted that in some previous cases (*Hotel Cipriani* and *Jack Wills Ltd v House of Fraser (Stores) Ltd* [2016] EWHC 626 (Ch)) profits had been apportioned on the basis of a notional royalty, calculated by reference to actual royalties charged in the market. That was also one of the methods canvassed by Leggatt J in *Marathon Asset Management Ltd v Seddon* in a case where there was no non-infringing alternative. He decided that it was appropriate to use that method of apportionment. In so deciding, the judge accepted the evidence of Mr Bezant, the expert called by the Defendants, to the effect that the use of a royalty was a way of sharing the profit between the contribution made by the patent and the contribution made by other factors to the success of the Defendants' products.

349. Mr Hall argued that the use of the licence was wrong in principle. A licence is designed to share profit between the right holder and the licensee, whereas the object of an account of profit is to transfer the whole of the profit from the infringer to the right holder. Although that argument was attractively put, it contains an unarticulated premise which, in my view, is wrong. The premise is that the share of profit for which a licence provides is a share of the profit derived from the right. But that is not (or at least not necessarily) so. The pool of profits which must be shared between licensor and licensee may be (and often is) the overall profit of the complex product into which the patented article is incorporated. If so, then the share of the overall profit for which the licence provides may well be the entirety of the overall profit attributable to the patented article.

350. In paragraph 7.7 of his first expert report Mr Bezant said:

> "In principle, the Teaming Agreements can be used to estimate the appropriate apportionment of [Astronics'] net profit between infringing acts and its other activities. Specifically, one can assume that the royalties agreed between Lufthansa and KID reflect expectations as to the Patent's value when used in power supply systems… On this basis, the royalties in the Teaming Agreements can be used as a proxy for the share of profits attributable to the patent on the basis that a licence allocates – via the agreed royalty – the share of the expected additional profits that arise from the use of the IP between the holder and the user of the IP."

351. In a further passage quoted by the judge at [567] he recorded Mr Bezant's oral evidence thus:

> "Somebody has used the right, albeit without permission, and they've used their other resources and they have made some profit. So it's not a licensing negotiation, it's using the learnings and the outcome of a licensing negotiation and an actual contract to inform an apportionment in an account."

352. Mr Ryan, Lufthansa's expert, did not disagree with the principle; although he had some criticisms of Mr Bezant. I consider that the judge was entitled to accept Mr Bezant's evidence and base his apportionment on it.

353. Accordingly for the reasons given by Arnold LJ, and these additional reasons, I too would dismiss Lufthansa's appeal.