

*European Communities and Certain Member States –  
Measures Affecting Trade in Large Civil Aircraft:  
Recourse to Article 22.6 of the DSU by the European Union*

(DS316)

**RESPONSES OF THE UNITED STATES  
TO THE THIRD SET OF QUESTIONS FROM THE ARBITRATOR  
AND  
RESPONSES OF THE UNITED STATES  
TO THE QUESTIONS BY THE EUROPEAN UNION**

March 15, 2019



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Compliance Appellate Report	Appellate Body Report, <i>European Communities and Certain Member States – Measures Affecting Trade in Large Civil Aircraft – Recourse to Article 21.5 of the DSU by the United States</i> , WT/DS316/AB/RW and Add.1, adopted 28 May 2018
Compliance Panel Report	Panel Report, <i>European Communities and Certain Member States – Measures Affecting Trade in Large Civil Aircraft – Recourse to Article 21.5 of the DSU by the United States</i> , WT/DS316/RW and Add.1, adopted 28 May 2018, as modified by Appellate Body Report WT/DS316/AB/RW
Original Appellate Report	Appellate Body Report, <i>European Communities and certain member States – Measures Affecting Trade in Large Civil Aircraft</i> , WT/DS316/AB/R, adopted 1 June 2011
Original Panel Report	Panel Report, <i>European Communities and certain member States – Measures Affecting Trade in Large Civil Aircraft</i> , WT/DS316/R, adopted 1 June 2011, as modified by Appellate Body Report WT/DS316/AB/R
<i>EU – Bananas III (22.6 – EC)</i>	Decision by the Arbitrators, <i>European Communities – Regime for the Importation, Sale and Distribution of Bananas – Recourse to Arbitration by the European Communities under Article 22.6 of the DSU</i> , WT/DS27/ARB, 9 April 1999, DSR 1999:II, 725
<i>US – FSC (22.6)</i>	Decision by the Arbitrator, <i>United States – Tax Treatment for "Foreign Sales Corporations" – Recourse to Arbitration by the United States under Article 22.6 of the DSU and Article 4.11 of the SCM Agreement</i> , WT/DS108/ARB, 30 August 2002
<i>US – Gambling (22.6)</i>	Decision by the Arbitrator, <i>United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services – Recourse to Arbitration by the United States under Article 22.6 of the DSU</i> , WT/DS285/ARB, 21 December 2007
<i>US – Offset Act (22.6 – EC)</i>	Decision by the Arbitrator, <i>United States – Continued Dumping and Subsidy Offset Act of 2000, Original Complaint by the European Communities – Recourse to Arbitration by the United States under Article 22.6 of the DSU</i> , WT/DS217/ARB/EEC, 31 August 2004
<i>US – Tuna II (22.6)</i>	Decision by the Arbitrator, <i>United States – Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products – Recourse to Article 22.6 of the DSU by the United States</i> , WT/DS381/ARB, 25 April 2017
<i>US – Upland Cotton (22.6 II)</i>	Decision by the Arbitrator, <i>United States – Subsidies on Upland Cotton – Recourse to Arbitration by the United States under Article 22.6 of the DSU and Article 7.10 of the SCM Agreement</i> , WT/DS267/ARB/2 and Corr.1, 31 August 2009

## 1 QUESTIONS SENT TO PARTIES ON 7 FEBRUARY 2019

### 1.1 For the United States

#### Question 93 (US)

**With reference to paragraph 182 of the United States' written submission and paragraph 4 of Exhibit USA-24 (BCI), could the United States please provide the delivery schedule and price information (gross price, price concessions, escalation formula, escalation factors, and pre-delivery payments) contained in the [BCI]?**

1. The United States provides the requested information in Exhibit USA-59(HSBI).<sup>1</sup> However, the United States has already explained why there is no basis to reject the 2013 Cathay Pacific 777-300ER order information it has proposed for valuing the 2012 Cathay Pacific lost sale.<sup>2</sup> Note that [[HSBI]].<sup>3</sup> If the Arbitrator were to [BCI], it [[HSBI]].

#### Question 94 (US)

**With reference to, *inter alia*, the European Union's response to question Nos. 25 (fn 420), 28 (fn 455), 30, and 43, assume for purposes of this question that the Transaero "lost sale" should be valued taking into account, and under the assumption, that the order would have been cancelled in the counterfactual. In this scenario, could the Arbitrator nonetheless value the order as the sum of the deposits due upon order and pre-delivery payments (PDPs) that Boeing would have received in connection with this order? If so, please explain why this would be proper in the light of the apparent facts that: (i) any such deposits and PDPs would appear to have been intended to cover anticipated and actual ongoing production costs of the LCA ordered; and (ii) no direct trade effect would appear to arise in connection with this cancelled order, i.e. no LCA would be delivered pursuant to the order regardless of whether the deposit payments and PDPs are made. In this context, please also confirm whether Boeing customarily retains such deposits and PDPs in the event of subsequent cancellation by the order by the customer.**

2. As explained previously, the United States does not equate the valuation of adverse effects to the interests of the United States under Articles 5 and 6.3 of the SCM Agreement with the effect that Article 6.3 market phenomena have on revenue to The Boeing Company. However, if the adverse effects determined to exist were valued on the basis of revenue effects suffered by The Boeing Company, this would be the basis for including PDPs in the valuation of the order. In that scenario, the valuation would properly include PDPs that Boeing would have received in the counterfactual. The conceptual reason often used to justify charging PDPs – covering anticipated and actual ongoing production costs – would not be relevant to whether the PDPs are included in the valuation of adverse effects. The fact that Boeing would have received the PDPs in the counterfactual – but did not because Airbus won the sale – would establish the

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<sup>1</sup> [BCI] (Exhibit USA-59(HSBI)).

<sup>2</sup> See U.S. Written Submission, paras. 207-209; U.S. Response to Arbitrator Question (“RAQ”) 61, paras. 36, 39-41.

<sup>3</sup> [BCI], p. 4 (Exhibit USA-59(HSBI)).

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revenue effects and, therefore, would support including in the valuation of the orders the PDPs Boeing would have collected.

3. The reference to anticipated and actual ongoing production costs may be intended to imply that, although Boeing would have received additional revenue in the counterfactual, it also would have incurred greater costs. If so, the United States considers that it would not be appropriate to ignore revenues and instead attempt to capture lost profits. No arbitrator in the past has considered lost profits. For example, in *US – Upland Cotton (22.6)*, the arbitrator valued the “production effects” (*i.e.*, volume effects) component by multiplying the additional volume that non-U.S. farmers would have sold by the counterfactual price at which the cotton would have been sold.<sup>4</sup> The arbitrator did not subtract from the number the additional costs that cotton farmers would have had to incur in order to grow and sell that additional cotton.

4. With respect to subpart (ii) of the question, as the United States has explained previously, the relevant question is the valuation of adverse effects for purposes of Article 5, and it is unnecessary and inappropriate to conduct a further inquiry into whether those adverse effects can also be characterized as “trade effects.” Article 7.9 of the SCM Agreement states that countermeasures must be commensurate with the degree and nature of the adverse effects determined to exist. Article 6.3 of the SCM Agreement explicitly lists certain forms of adverse effects, including significant lost sales. To the extent that “trade effects” differ from “adverse effects,” there is no basis to ignore the latter in favor of the former. On the contrary, the analysis must be based on “adverse effects.” (Of course, if “trade effects” are *not* different from “adverse effects,” then trying to analyze it as a separate concept serves no purpose.) Thus, if PDPs, including deposits, are proper metrics for valuing adverse effects, it is irrelevant whether or not they also have or reflect “trade effects.”

5. In the event of a cancellation of an order after the customer has already paid PDPs to Boeing, [BCI].<sup>5</sup>

## **1.2 For the European Union**

### **Question 95 (EU)**

**With reference to section IX.B.4 of the European Union's written submission, and in particular paragraph 354 thereof, could the European Union please elaborate on how the Arbitrator should take into account the "revenue impact" arising from Boeing's relevant counterfactual LCA sales on Members other than the United States? For example, should the Arbitrator: (i) take into account whether Boeing directs certain revenues realized from LCA**

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<sup>4</sup> See *US – Upland Cotton (22.6 II)*, Annex 2, Worksheet 9, Row 38, Column B (showing that AErp (reduced production effect) = actual world prod. \* dlnSr (the percentage change in the supply of the rest of the world) \* 1+ dlnP (1 + the percentage change in prices) \* actual WP (actual world price)).

<sup>5</sup> Boeing E-mail from [BCI] (Feb. 10, 2019) (Exhibit USA-60(BCI)); Boeing E-mail from [BCI] (Feb. 11, 2019) (Exhibit USA-100(BCI)) (providing [BCI]).

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**sales to foreign companies other than LCA component suppliers; or (ii) trace such revenues through the supply chain back to the suppliers of raw materials to ensure that one of Boeing's foreign suppliers was itself not using US-sourced components or raw materials, the value of which should be included in the level of countermeasures? In sum, where should the Arbitrator assume such "revenue impact" analytically begins and ends?**

**Question 96 (EU)**

**With reference to paragraph 342 of the European Union's written submission, could the European Union please elaborate on what is the appropriate "contractually agreed escalation rate" to be used to perform the methodology suggested by the European Union? Specifically, to what particular "contract" is the European Union referring in making this statement?**

**Question 97 (EU)**

**97. With reference to paragraph 421 of the European Union's responses to the first set of Arbitrator questions, paragraphs 234-242 of the European Union's responses to the second set of Arbitrator questions, paragraphs 243-244 of the European Union's written submission, and Exhibit USA-17 (HSBI), could the European Union please explain exactly how it proposes to calculate the value of lost sales to Emirates using the average delivery price of aircrafts delivered to Lufthansa in 2013.**

**Question 98 (EU)**

**With reference to Table 7 (HSBI) of the European Union's responses to the second set of Arbitrator questions, could the European Union please explain how the contractually agreed and current delivery schedules of United Airlines have been determined based on Exhibits EU-91 (HSBI) and EU-92 (HSBI)?**

**1.3 For both parties**

**Question 99 (both parties)**

**Certain previous arbitration decisions have included discussions regarding the propriety of taking a "short-run" or "short-term" perspective with respect to certain issues. Are those principles and considerations relevant to this arbitration proceeding and how, especially with respect to the selection of an appropriate reference period?**

6. In this arbitration, the United States has consistently argued that the appropriate reference period is the compliance reference period, which occurred immediately following the end of the EU's reasonable period of time to comply ("RPT"). By contrast, the EU has argued that the Arbitrator should focus on a more recent (or future) reference period, which would effectively entail a reassessment of causation and adverse effects. The principles and considerations in the cited arbitration reports support that the Arbitrator should evaluate commensurateness with reference to a valuation of the instances of adverse effects in the December 2011 – 2013 period, which immediately followed the end of the RPT.

7. Article 7.9 of the SCM Agreement authorizes countermeasures commensurate with the degree and nature of the adverse effects determined to exist. The purpose of this proceeding is to determine whether the proposed countermeasures are indeed commensurate with the degree and

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nature of the adverse effects determined to exist, not to reassess the degree and nature of adverse effects that the EU subsidies cause.

8. In the relevant passages, the arbitrators repeatedly opted for short-run or short-term perspective and emphasized that proximity to the end of the RPT favored the selection of these short-run or short-term perspectives. For example, the arbitrator in *US – Gambling* stated that forecasts beyond the period following the RPT should not be considered.<sup>6</sup> Similarly, the arbitrator in *US – Tuna II* rejected an argument for a longer term perspective because it found that such a long-term trend was not relevant to its task, which it viewed as assessing nullification or impairment as of the expiry of the RPT.<sup>7</sup> In none of the cases referenced in the question did the arbitrator opt for a longer-term perspective that would, in essence, evaluate a period further removed from the end of the RPT. Therefore, these passages all support the U.S. view of the proper approach in this arbitration.

9. It is also worth noting that the levels of adverse effects (or nullification or impairment) in a subsequent period further removed from the end of the RPT could just as easily be higher than lower. This was assumed to be the case in *US – Gambling (22.6)*.<sup>8</sup> Yet, the arbitrator in that dispute considered that it could not measure equivalence with nullification or impairment by reference to the higher levels of nullification or impairment expected in subsequent periods. Here, similarly, there is no basis to assess the degree and nature of the adverse effects in a subsequent period, and it would be improper to evaluate commensurateness with reference to adverse effects in such a subsequent period, regardless of whether they are assumed to be higher or lower.

**Question 100 (both parties)**

**With reference to, inter alia, the European Union's response to question No. 26, if the level of countermeasures were to be determined with respect to "trade effects", how should the Arbitrator take into account the apparent fact that, in the counterfactual, Boeing (a US company) would have won the "lost sale" to United (a US customer)?**

10. As discussed in response to Question 94, Articles 7.9 and 7.10 of the SCM Agreement require countermeasures to be commensurate with “*adverse effects* determined to exist,” and it would accordingly be erroneous to rely on the concept of “trade effects” to the extent it differs from “adverse effects.” Among the adverse effects explicitly listed in Article 6.3 of the SCM Agreement are significant lost sales “in the same market.” There is nothing that prevents that “same market” from being the market of the complaining Member, and lost sales in a

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<sup>6</sup> See *US – Gambling (22.6)*, para. 3.144.

<sup>7</sup> See *US – Tuna II (22.6)*, para. 4.18.

<sup>8</sup> See *US – Gambling (22.6)*, para. 3.144.

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complaining Member's home territory have previously been found to be "lost sales," as the United sale was here.

11. Thus, to the extent that the term "trade effects" refers to effects on trade between or among Members, the absence of "trade effects" does not prevent a finding that market phenomena are "adverse effects." By operation of Article 7.9, a Member suffering such adverse effects is entitled to seek authorization to take countermeasures commensurate with those effects.

12. In this regard, the United States notes that the arbitrator in *US – FSC (22.6)* reasoned that:

Where trade effects are specifically dealt with under the *SCM Agreement*, in provisions other than Article 4, the criteria for assessment are not at all arbitrary or artificial in this way. This is evident in those provisions of the *SCM Agreement* where a demonstration of trade effects is relevant, and the provisions relating to such assessments (*e.g.* to injury to the domestic industry or serious prejudice – Article 6 on actionable subsidies – and application of countervailing duties – Part V–). In such cases, the relevant concepts (such as price undercutting, price depression and suppression, etc) *are manifestly aimed at objectively determining certain effects.*<sup>9</sup>

Thus, in addressing the relevance of trade effects in Part III of the SCM Agreement, the arbitrator considered that the market phenomena specified in Article 6.3 were the "relevant concepts" to objectively determine the requisite effects. It did not adopt the reverse view advocated by the EU, namely that the existence of "trade effects" was an (unwritten) prerequisite to establish that a market phenomenon in Article 6.3 is in fact an adverse effect that can be taken into account in determining the level of countermeasures.

13. Finally, to the extent that the Arbitrator considers that a consideration of the "trade effects" of adverse effects is relevant, the United States notes that the term "trade effects" does not appear in the SCM Agreement or the DSU. To the extent it appears in adopted panel, appellate, or arbitral reports, it has no specific, restrictive meaning, and could encompass effects on trade within the market of a Member, such as a sale by Boeing to a customer in the United States. But again, no purpose is served by determining what is included in the concept of "trade effects," and then asking whether it differs from adverse effects. The correct approach, which is also more straightforward, is simply to base the analysis on adverse effects in the first instance, as mandated by the SCM Agreement.

**Question 101 (both parties)**

**With reference to, inter alia, paragraph 36 of the European Union's responses to the first set of Arbitrator questions, and the European Union's response to question No. 4, could the parties please elaborate on the relationship between the "dissipation" of the effects of the**

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<sup>9</sup> *US – FSC (22.6)*, para. 6.40 (emphasis added).

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**subsidies at issue in this proceeding, and the counterfactual launch dates of the A380 and A350XWB? In particular: (i) are the counterfactual launch dates the, and the only, mechanism through which the effects of the subsidies will "dissipate"; or (ii) is the "dissipation" of such effects related to some other process? If it is the latter, please describe what those other processes are that contribute to the "dissipation" of relevant effects and describe how these processes result in the relevant "dissipation" of the direct and indirect effects of LA/MSF. Additionally, please describe how the relevant "effects" (both direct and indirect) of the subsidies would be affected by the counterfactual launch dates of the A380 and A350XWB.**

14. The counterfactual launch of the A380 and A350 XWB is a necessary, but not necessarily sufficient, condition for the dissipation of adverse effects based on sales and deliveries of the A380 and A350 XWB. That is, as long as the A380 and A350 XWB would not be available for offer in the counterfactual situation absent existing LA/MSF – and therefore not available for delivery – the sales and deliveries they take during that period from competing Boeing LCA continue to represent adverse effects caused by the subsidies.

15. However, the point at which the A380 and A350XWB would launch in the counterfactual is not necessarily the point at which adverse effects would cease. There are several reasons why adverse effects would not cease at the moment of a counterfactual launch in this dispute, including those discussed below.

16. First, A380 LA/MSF would still contribute to the adverse effects caused in the twin-aisle market. Both A380 LA/MSF and A350 XWB LA/MSF – assessed through aggregation as a single subsidy – were found to cause significant lost sales in the twin-aisle market. Therefore, both A380 LA/MSF and A350 XWB LA/MSF would remain out of compliance unless the EU somehow could have demonstrated, in addition to a counterfactual A380 launch, that Airbus also would have been able to offer and deliver the A350 XWB in the absence of the aggregated LA/MSF subsidies.

17. Second, there would still be adverse effects in the form of impedance in the VLA market. The findings of impedance in the VLA market were based on *deliveries*. Delivery of an aircraft necessarily lags by several years behind the launch of an aircraft. The real-world A380 was launched in 2000, but first delivery did not occur until 2007.<sup>10</sup> Therefore, even if the counterfactual launch of the A380 marked the moment at which a customer could *order* A380s, at least another seven years would have to pass before Airbus could make deliveries of the A380. Accordingly, counterfactual launch will not coincide with an end to impedance resulting from LA/MSF-enabled A380 deliveries.

18. Third, there may even still be significant lost sales involving the A380 in the global VLA product market after the counterfactual A380 launch. A later launch can have several important effects on a sales campaign. For example, market perceptions regarding the value proposition an

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<sup>10</sup> See Compliance Panel Report, paras. 6.1220, 6.1383 (citing to a 2011 Airbus presentation entitled “A380 Update: Four Years in Service”).

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LCA model offers can be strengthened by a model's demonstrated success in service. A manufacturer cannot benefit in early sales campaigns from such demonstrated success. In addition, the timing of a launch may affect the delivery slots a manufacturer is able to offer in a particular campaign. Whether or not the subsidies would continue to cause significant lost sales in the global VLA market after the counterfactual A380 launch would be a fact-specific inquiry assessed on the basis of the relevant campaign-specific evidence. If these or other factors made it so that Airbus's offer in a particular campaign would have been less attractive in the counterfactual, and as a result Boeing would have won the sale, then the subsidies would still be the cause of a lost sale even though in the counterfactual the A380 would have launched.

19. As the United States has demonstrated, these are not proper considerations in the context of this arbitration. However, even in the context of a compliance proceeding, compliance would require that any existing subsidies no longer cause adverse effects. In particular, with respect to the VLA market, the EU would have failed to achieve compliance if, absent existing LA/MSF, Boeing would have made additional significant sales. To be sure, establishing compliance by severing the causal link would have meant showing that the A380 would have been launched in the absence of LA/MSF. But demonstrating a counterfactual launch alone would be insufficient if it were still the case that, for any of the reasons listed above or based on any other considerations, Boeing still would have made sales after the end of the RPT to customers that instead ordered the A380.

20. For these reasons, even if a counterfactual launch date had been established, it is not certain that any of the forms of adverse effects in any of the relevant product markets would have ceased at the time of that launch. Of course, the EU established no such thing. The compliance proceeding found that the subsidies cause significant lost sales and impedance in the VLA product market, and significant lost sales in the twin-aisle product market.

21. There are other ways in which the adverse effects caused by A380 LA/MSF and A350 XWB LA/MSF could dissipate. In particular, if generations of LCA passed and the technological knowledge, experience, and financial gains from the subsidies no longer bore a significant relationship with the LCA models being sold at that time, the effects could be found to have dissipated. Specifically, the compliance panel explained:

Nevertheless, it is possible to envisage a number of different scenarios pursuant to which the "product-creating" effects of the pre-A350XWB LA/MSF subsidies might well come to an end. One such possibility could be through the launch of new *unsubsidized* models of Airbus LCA. The introduction of a new *unsubsidized* model of Airbus LCA would ensure that its market presence could not be attributable to the *direct effects* of LA/MSF. Yet because of the particular features of LCA production, it is highly unlikely that a new unsubsidized model of Airbus LCA could be launched today in the absence of the "learning", scope and financial effects associated with the LA/MSF subsidies provided for certain (but not necessarily all) previous models of LCA. Indeed, as already noted, it is

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undisputed that “learning” effects are fundamental to the very existence of any competitive LCA producer. However, were a *second* unsubsidized LCA model to be developed, it is possible that the *indirect effects* of the LA/MSF subsidies provided for the purpose of developing previous models of LCA would play a relatively minor role in its launch and bringing to market compared with the *first* unsubsidized new model of Airbus LCA. The impact of the same *indirect effects* on a *third* unsubsidized new model of Airbus LCA would be even smaller as its development would most likely be based on mainly the “learning”, scope and financial effects generated from the *first* and *second unsubsidized* models of Airbus LCA.<sup>11</sup>

22. Finally, the United States recalls that these findings were adopted by the DSB and cannot be re-evaluated in this arbitration. Article 7.10 of the SCM Agreement requires the Arbitrator to determine whether the proposed countermeasures are commensurate with the degree and nature of the adverse effects determined to exist. It would therefore be improper to replace the degree and nature of the adverse effects determined to exist with new adverse effects findings. The EU is welcome to argue (again) that the adverse effects have dissipated. The United States is confident any such effort will fail (again). However, this is not the forum for those arguments.

## **2 QUESTIONS SENT TO PARTIES ON 11 FEBRUARY 2019**

### **2.1 For the United States**

#### **Question 102 (US)**

**With reference to paragraph 81 of the European Union's opening statement, could the United States please explain whether it agrees with the contention of the European Union that the Arbitrator "is required to determine, separately for each product market, a level of countermeasures corresponding to the adverse effects determined to exist"?**

23. The Arbitrator is not required to determine, separately for each product market, a level of countermeasures corresponding to the adverse effects determined to exist. The EU provides no support for the assertion in paragraph 81 of its opening statement. There is nothing in the text or context of the relevant provisions of the SCM Agreement that contains such a requirement or would support its existence, and no previous arbitrator has even considered such a requirement to exist.

24. Indeed, the only relevant provisions are in Articles 7.9 and 7.10, namely that “the DSB shall grant authorization to the complaining Member to take countermeasures, commensurate with the degree and nature of the adverse effects determined to exist . . . .”<sup>12</sup> and that “the

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<sup>11</sup> Compliance Panel Report, para. 6.1529 (emphasis original).

<sup>12</sup> SCM Agreement, Art. 7.9.

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arbitrator shall determine whether the countermeasures are commensurate with the degree and nature of the adverse effects determined to exist.”<sup>13</sup> There is no additional requirement that an arbitrator determine commensurate levels of countermeasures at the level of product markets.

25. All this being said, as the United States noted at the meeting with the Arbitrator, the U.S. methodology makes it easy to discern what portion of the countermeasures corresponds to the adverse effects in each of the respective product markets.

**Question 103 (US)**

**With reference to paragraphs 33 and 35 of the United States' opening statement, could the United States please explain whether the Arbitrator can adjust actual data associated with the Reference Period if that data were deemed to be unrepresentative?**

26. There is nothing that precludes an arbitrator from making adjustments to data on the record if doing so is necessary to render the countermeasures commensurate with the degree and nature of the adverse effects determined to exist.

27. However, the inquiry into “representativeness” discussed in *US – Upland Cotton (22.6 II)* is relatively narrow. It seeks only to understand whether the data used as a component of the countermeasures calculation is particularly anomalous. In that dispute, the question was whether cotton prices in FY 2005 were “unrepresentative.”<sup>14</sup> The arbitrator relied on a demonstration showing that FY 2005 prices were relatively similar to the average cotton price over a nine-year period (1998-2007) that was entirely backward-looking as of the date of the arbitration.<sup>15</sup> After determining that they were not “unrepresentative” – in other words, they were not anomalous or an outlier – the arbitrator used the FY 2005 prices put forward by Brazil.<sup>16</sup> Notably, to the extent FY 2005 differed from the nine-year average, they arbitrator did not use the nine-year average as more representative. Because the original respondent (the United States) had not met its burden of proving that the FY 2005 prices put forward by the party requesting authorization (Brazil) were *unrepresentative*, the U.S. challenge failed, and the arbitrator used the FY 2005 prices put forward by Brazil.

28. The arbitrator there did not attempt – as the EU urges – to determine whether the degree of adverse effects determined to exist by the compliance panel was representative of the degree of adverse effects suffered in some period after the compliance panel’s reference period or expected to materialize in the future. This would be improper, as Article 7.10 of the SCM Agreement provides that an arbitrator *shall* determine countermeasures commensurate with the degree and nature of the adverse effects determined to exist. Thus, re-assessing the degree and

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<sup>13</sup> SCM Agreement, Art. 7.10.

<sup>14</sup> See *US – Upland Cotton (22.6 II)*, paras. 4.115-4.118.

<sup>15</sup> See *US – Upland Cotton (22.6 II)*, para. 4.118.

<sup>16</sup> *US – Upland Cotton (22.6 II)*, paras. 4.118-4.119.

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nature of the adverse effects in some subsequent or future period is not the purpose of this arbitration. Accordingly, any “representativeness” inquiry must be with respect to an aspect of the countermeasures calculation that was not part of, or incorporated in, the adverse effects determination in the compliance proceeding. Otherwise, any adjustment would be tantamount to an improper reconsideration of the degree and nature of the adverse effects determined to exist.

29. An example in this dispute would be the price of a particular LCA model. For example, part of the U.S. countermeasures calculation requires the use of 777-300ER prices, which were not part of or incorporated in the adverse effects determined to exist. If the EU showed that 777-300 ER prices in the December 2011 – 2013 period were “unrepresentative” – that is, that they reflected an unusual spike or drop in the price of that model over time that made this data anomalous or an outlier – then an adjustment might be justified. But the EU has not alleged “unrepresentativeness” of this kind. Instead, it attempts to modify this limited inquiry to insert what are essentially challenges to the degree and nature of the adverse effects determined to exist. If allowed, this effort would produce a result contrary to the Arbitrator’s mandate under Article 7.10 to “determine whether the countermeasures are commensurate with the degree and nature of the adverse effects determined to exist.”

## **2.2 For the European Union**

### **Question 104 (EU)**

**With respect to paragraphs 11 and 56 of the European Union's opening statement, could the European Union please clarify the legal basis for its position that the United States should have provided an estimate of adverse effects "today, and in the future"?**

### **Question 105 (EU)**

**With reference to paragraph 250 of the European Union's written submission, discussing alleged shortcomings of the United States' evidence in the context of valuing lost sales, could the European Union please explain what it means by the relevant order being "competitive"? Would such a "competitive" order only arise if Airbus also competed for the relevant sales campaign that resulted in the order? And if so, could Airbus confirm whether the order was "competitive"?**

### **Question 106 (EU)**

**With reference to paragraphs 250 of the European Union's written submission, and paragraph 3 (sixth bullet) of the European Union's response to question No. 52, discussing alleged shortcomings of evidence offered by the United States to determine the value of lost sales, could the European Union please elaborate on how the Arbitrator would use additional information regarding engines, flight deck equipment, buyer-furnished equipment, and maximum take-off weights, in determining the counterfactual prices of the Boeing LCA that would have been ordered had Boeing won the five "lost sales" identified in the Reference Period? Is the European Union suggesting that the prices of the Boeing LCA that were ordered pursuant to the comparator orders (whatever those prices actually are) should be adjusted somehow?**

### **2.3 For both parties**

#### **Question 107 (both parties)**

**If the Arbitrator were to use December 2011–2013 as the Reference Period, could the Arbitrator:**

- a. choose to value the lost sales and impedance that occurred only during a temporal subset of the Reference Period (e.g. the calendar year 2012 or 2013 only)?**
- b. use different temporal periods within the Reference Period for purposes of quantifying adverse effects resulting from lost sales involving A380 aircraft and A350XWB aircraft, considering that these are different LCA in different product markets?**

30. Nothing would preclude the Arbitrator from pursuing either of the proposed approaches if doing so were necessary to render the countermeasures commensurate with the degree and nature of the adverse effects determined to exist.

31. But before any such step could be taken, the EU would first need to meet its burden of proof in establishing that the period used by the United States to calculate the amount of countermeasures – the entire December 2011 – 2013 period – would render the proposed countermeasures not commensurate. Only in that circumstance would it be appropriate for the Arbitrator to adopt a different approach from the calculation put forward by the United States. The EU has made no such showing. Accordingly, the proper approach in this dispute is the one put forward by the United States, which values the instances of adverse effects from the entire December 2011 – 2013 period.

#### **Question 108 (both parties)**

**Could the parties please explain, with respect to the decisions by previous arbitrators that authorized "ongoing" or "annual" countermeasures (as the United States uses those terms in footnote 77 of its written submission), what was the justification for such authorizations in those arbitrations?**

32. The United States is not aware that any Member other than the EU has even argued that ongoing or annual suspension of concession proposed by another Member be converted to fixed, one-time values. Therefore, in every case in which the original complaining Member requested annual or ongoing countermeasures – which is every case but one – the arbitrator approved of annual or ongoing countermeasures as requested. Thus, because all involved Members considered ongoing or annual countermeasures uncontroversial, the arbitrator decisions do not discuss any “justification.”

#### **Question 109 (both parties)**

**With reference to, inter alia, the parties' responses to question Nos. 42 and 43, if it were determined that the value of the Transaero A380 sale was zero in the light of its cancellation,**

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**could the "lost sale" still, even at this time, be deemed "significant" due to the non-price factors discussed in paragraph 7.1845 of the report of the original panel?**

33. As explained at the meeting with the Arbitrator, in the abstract, it is certainly possible that a lost sale could be significant even if an order was cancelled, including where no aircraft were delivered. Therefore, if for some reason, an adopted approach ascribed a value of zero to an order that was cancelled, this would not necessarily preclude the lost sale from being “significant.” However, the United States does not consider that this is the best reading of the adopted reports from the compliance proceeding. That is, those reports do not indicate that the Transaero lost sales were considered significant due to non-price factors, including those discussed in paragraph 7.1845 of the report of the original panel.

**Question 110 (both parties)**

**With reference to, inter alia, footnotes 176 and 177 of the European Union's written submission, in cases where certain LCA ordered pursuant to the five "lost sales" are converted, should the Arbitrator take account of that conversion in its valuation of the lost sales, and if so how should the Arbitrator do so?**

34. The Arbitrator should not take account of any such conversions. The adopted reports found that each of the aircraft ordered by the relevant customers represented a significant lost sale. The findings also were made with respect to specific Airbus aircraft. The United States based its calculation on the nearest competing Boeing model with respect to each of the Airbus models indicated in the findings.

35. Reflecting a conversion from the model found to be associated with particular lost sales to a different model would be altering the adopted findings based on a new factual record. This is not appropriate in the context of this arbitration pursuant to Article 22.6 of the DSU and Article 7.9 of the SCM Agreement. It also assumes that the customer in the counterfactual Boeing order would have converted that order, which, as the United States explains in response to Question 117, is not a valid assumption.

**Question 111 (both parties)**

**With reference to paragraph 435 of the European Union's response to question No. 29, paragraph 272 of the European Union's written submission, and paragraph 85 of the European Union's opening statement, could the parties please explain whether Boeing's borrowing rate can be used as a proxy for Boeing's discount rate?**

36. The proper “discount rate” is that of the United States, not Boeing, because the SCM Agreement disciplines subsidies that cause adverse effects to the interests of a Member, not a private company.

37. If the calculation were instead performed from Boeing’s perspective, then consistent with arguments by the EU, there is no need to first escalate and then discount the price. Instead, where the base year is the order year, the base year price would be the relevant price. And where the base year differs from the order year, the base year price would be escalated to the order year

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to determine the order year price. Once the order year price is determined, it can simply be multiplied by the number of aircraft ordered to arrive at a value in order year dollars of the relevant lost sale.

**Question 112 (both parties)**

**With reference to, inter alia, paragraph 94 of the European Union's opening statement, in the event of limited delays of one to three years in the delivery of ordered LCA, how do airline customers commonly react? Do they generally wait for the originally ordered LCA regardless; cancel the orders; and/or lease LCA similar to the LCA ordered pending delivery of the delayed aircraft? In the case of leasing, is it easy for airlines to get access to the type of aircraft that they ordered or is there very limited access? As much as possible, please focus your answers on delays in VLA deliveries.**

38. As an initial matter, the United States notes that the situation envisioned in the question – delays of one to three years in the delivery of *ordered* LCA – differs fundamentally from the situation encountered in this arbitration. The findings of significant lost sales and impedance in the VLA market were based on the unavailability of the A380 even for order. This is much different from when a customer orders an LCA (that necessarily is available) and then encounters delays of the contracted delivery dates.

39. In its oral statement, the EU presumed that, despite adopted findings that Airbus would have been unable to offer the A380 through at least 2013, customers in the December 2011 – 2013 period would have somehow known enough about the A380 to consider waiting for it – even if they could not order it – and that the A380 would somehow have had a delivery schedule such that it could be said to have experienced delays.<sup>17</sup> Thus, the EU's argument addresses a scenario that is not consistent with the adopted reports from the compliance proceeding. The Arbitrator should therefore take care not to erroneously presume the market presence (or expectation of imminent market presence for order or delivery) of the A380 or the A350 XWB in the counterfactual situation.

40. Moreover, in the context of this arbitration, there is no scope to re-assess whether, in the counterfactual December 2011 – 2013 period, a delay for a subsidized aircraft model might lead to fewer orders for that model, or additional orders for a competing model. The compliance proceeding already addressed and settled those questions. In that proceeding, the EU tried, and failed, to establish that customer- and campaign-specific factors severed the causal link between LA/MSF and adverse effects. Notably, regarding impedance, neither the first compliance panel report nor the first compliance appellate report hinted in any way that the A380 was only slightly delayed (and therefore looming in customers' minds) or even that the A380 would have benefitted from a delay in the 747-8's entry into service. Findings were made of significant lost sales and impedance in the VLA market based on the unavailability of the A380. Moreover, the

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<sup>17</sup> See EU Oral Statement, para. 94.

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appellate report noted that, even if 747 availability were an issue in the counterfactual situation, customers could turn to the 777.<sup>18</sup>

41. Having addressed the inappropriateness of the scenario proposed by the EU, the United States notes in response to the question that real-world examples of limited delivery delays show that they are highly fact-specific. Where an airplane program experiences delivery delays of one to three years, the typical customer response is to retain the orders it has already placed, as opposed to cancelling.<sup>19</sup> However, customer response to limited delivery delays can vary based on factors such as:

- *Identity of customer:* Customers vary in terms of business model, financial stability, sophistication of fleet planning, and ability to adjust to unanticipated delivery schedule changes. Generally, a customer with fewer resources and less stability will be more likely to react to delays by cancelling, compared to a more established, well-resourced customer.<sup>20</sup>
- *Availability of suitable alternatives:* A customer is less likely to cancel if it will have difficulty finding sufficient numbers of another airplane that can perform the missions anticipated for the model on order. For example, the only models with more than 400 seats in a standard three-class configuration are the 747-8I and A380. If a real-world customer were to consider cancelling 747-8Is that it ordered to serve very high-density routes, it would need to confront the fact that the A380 is the only airplane with as much or greater capacity. Of course, the customer's options would be even more limited in the counterfactual situation where the A380 would not have been available.<sup>21</sup>
- *Negotiations with the manufacturer:* [BCI].<sup>22</sup>

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<sup>18</sup> See First Compliance Appellate Report, para. 6.38 (“With regard to displacement and impedance in the VLA market, our review of the Panel’s findings, as well as the relevant findings from the original proceedings, indicates that, in the absence of the LA/MSF subsidies existing in the post-implementation period, *Airbus would not have been able to offer the A380 at the time it did.* We also recall that, as the Panel’s analysis of the competitive dynamics in the VLA market shows, Boeing’s and Airbus’ respective product offerings – the 747 and the A380 – are sufficiently substitutable. *With respect to the non-attribution factor alleged by the European Union concerning the development and production delays affecting the 747-8, we note the Panel’s observation that the larger versions of the 777 may also at times challenge for sales in the VLA market.* Therefore, we see no reason to disturb the Panel’s finding that this non-attribution factor would not be capable of diluting the genuine and substantial relationship of cause and effect between the LA/MSF subsidies and the alleged market phenomena.” (emphasis added)).

<sup>19</sup> Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

<sup>20</sup> Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

<sup>21</sup> Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

<sup>22</sup> See Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

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42. Emirates provides both a real-world example of how a customer can react to delivery delays, and as a legal matter, an example of how a customer's actual decision to take deliveries of subsidized LCA despite delays is not an impediment to findings of significant lost sales. When the A380 was delayed in the mid-2000s, Emirates turned to the Boeing 777 for its near-term needs.<sup>23</sup> But Emirates still took delivery of A380 passenger models it had already ordered pursuant to Emirates' original A380 launch order, which was found to be a significant lost sale in the original proceeding. Emirates also continued to order A380s in the future, which resulted in additional findings of significant lost sales in the compliance proceeding.

43. Leasing will rarely be a viable alternative to eventually taking delivery of new aircraft that have already been ordered but are subject to delays. Models vary in terms of their availability and attractiveness on the leasing market. For example, an airline that faces delayed delivery of 20 Model A aircraft will likely encounter difficulty finding sufficient numbers, at suitable times, of Model A aircraft already in service. The same would likely be true if there were some Model B that could be a substitute for Model A. This is particularly the case for a model that is relatively new to the market; if deliveries for a recently launched model are delayed, it is highly unlikely that a customer would find any aircraft of the same model available for transfer from their current operator.

44. Before initial deliveries of a model (*e.g.*, the 747-8I), customers for that model have no ability to respond to delivery delays for that model by leasing the same model. In the case of the 747-8I delays that arose during 2008 to 2011, there was essentially no leasing market for the A380, which had only recently entered service in 2007.<sup>24</sup> And even if sufficient numbers of aircraft can be located for lease at suitable times, the customer must still evaluate whether the value and lease rates for those aircraft represents a more efficient solution than maintaining the orders it originally placed.<sup>25</sup>

**Question 113 (both parties)**

**With reference to, inter alia, paragraph 177 of the United States' written submission, if Boeing under the counterfactual had had a monopoly in the VLA product market with the 747-8I in the Reference Period, would there have been incentives for Boeing to decrease supply of the 747-8I to the market and/or raise prices such that customers would have opted out of buying Boeing LCA? Assume for purposes of this question that the A380 would not have been launched before 2014.**

45. Under the counterfactual situation posited by this question, Boeing would not have faced incentives to decrease 747-8I supply or raise prices to an extent that customers likely would have

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<sup>23</sup> See Original Panel Report, para. 7.1831.

<sup>24</sup> See Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

<sup>25</sup> See Boeing E-mail regarding Question 112 (Exhibit USA-62(BCI)).

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opted out of buying the 747-8I.<sup>26</sup> Compared to the situation after the A380’s launch, Boeing in the 1990s achieved much higher 747 sales and production rates,<sup>27</sup> despite not facing a competing Airbus aircraft with the same or greater seating capacity. Thus, “even where Boeing had the only 400+ seat airplane offering, it priced and produced the 747 to meet customer demand; it did not choke off demand in an attempt to reap unusually high profits on a smaller number of sales.”<sup>28</sup>

### **3 ADDITIONAL QUESTIONS FOR THE PARTIES**

#### **3.1 For the United States**

##### **Question 114 (US)**

**With reference to Table 13 of the Appellate Body report in the first compliance proceeding and paragraphs 238–243 of the United States’ written submission, if, during an established Boeing LCA program that is producing LCA at full capacity, an unexpected order arrives for approximately 50 new LCA, how long would it take Boeing to produce and deliver these LCA?**

46. The time required to deliver approximately 50 new Boeing LCA ordered in a particular transaction depends on a number of factors, including: “the program’s production rate at the time; any planned production rate changes [BCI]; the existing order backlog for that program and the delivery schedules for the orders in the backlog; [BCI]; supplier capabilities to support production rate changes; and the delivery schedule preferences of the customer that ordered the 50 aircraft.”<sup>29</sup>

47. Boeing’s production rate for the 747-8 in 2013 was two per month, which was [BCI]. In 2013, when Emirates ordered 50 A380s, 25 A380s were scheduled to be delivered to the airline before the first quarter of 2018.<sup>30</sup> At that time, Boeing [BCI].<sup>31</sup>

48. Even if the 747-8I had achieved a higher production rate in the absence of the A380, an order for 50 747-8Is would still have been extremely important for Boeing. To accommodate such an order, Boeing would have [BCI].<sup>32</sup> Assuming (i) the actual 747-8I production rate and delivery skyline as of 2013; (ii) the new customer would be willing to take delivery of

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<sup>26</sup> Boeing E-mail regarding Question 113 (Exhibit USA-63(BCI)).

<sup>27</sup> See *infra* U.S. RAQ 116.

<sup>28</sup> Boeing E-mail regarding Question 113 (Exhibit USA-63(BCI)).

<sup>29</sup> Boeing E-mail regarding Question 114 (Exhibit USA-64(BCI)).

<sup>30</sup> *Emirates Announces Largest-Ever Aircraft Order*, Press Release, Emirates, (Nov. 17, 2013) (“the first 25 of these latest A380 aircraft orders are scheduled to be delivered before the first quarter of 2018”) (Exhibit USA-88).

<sup>31</sup> Boeing E-mail regarding Question 114 (Exhibit USA-64(BCI)).

<sup>32</sup> Boeing E-mail regarding Question 114 (Exhibit USA-64(BCI)).

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approximately one 747-8I per month, similar to Airbus deliveries to Emirates of A380s over time; and (iii) the customer selected [BCI], Boeing estimates it could have made the initial delivery for the 50-aircraft order in [BCI] and delivered the 50<sup>th</sup> aircraft [BCI].<sup>33</sup> Again, those delivery timing estimates do not assume an increase in production rates above the 2013 level; higher production rates would have enabled Boeing to deliver the 50 aircraft over [BCI].<sup>34</sup>

**Question 115 (US)**

**With reference to, inter alia, paragraphs 429–433 of the European Union's response to question No. 29(a) and paragraphs 83–87 of the United States' response to question No. 73, could the United States please elaborate on the cancellation rate that the Arbitrator should use (assuming that the Arbitrator uses one) to estimate the probability that a particular Boeing LCA ordered pursuant to the "lost sales" in the Reference Period and that would not yet have been delivered in the counterfactual would be cancelled? That is, could the United States please provide an alternative cancellation rate from that offered by the European Union in its response to question No. 29(a)?**

49. If the Arbitrator determines that it must account for the probability that an order might be cancelled before its scheduled delivery, it should apply a “survival rate” – the probability that any particular aircraft will *not* be cancelled. (Mathematically, this is the inverse of the cancellation rate.) To do so, it should calculate year-specific survival rates based on Boeing’s historically observed survival rates. This then allows, for each particular ordered aircraft, the calculation of an overall survival rate based on the year of order and the year of scheduled delivery. The overall survival rate for a particular aircraft is the product of the annual survival rate for each year from the order year up to the delivery year – that is, the product of the probabilities of the order remaining in Boeing’s aircraft backlog in each year from the order year up to the delivery year.

50. Applying this overall survival rate to the value of a particular order would yield a sort of “expected value” for that order. Note that, if and to the extent the exercise is intended to measure Boeing’s “expected revenues,” it would not account for PDPs paid prior to cancellation. The United States explains in detail the process of calculating the overall survival rate for order year-delivery combinations below. The United States also provides in Exhibit USA-65(BCI) the data that demonstrates the year-specific survival rates and then resulting overall survival rates for each order-year delivery combination.<sup>35</sup>

51. Referencing page 8 of USA-65(HSBI), the following calculation will yield the survival :

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<sup>33</sup> Boeing E-mail regarding Question 114 (Exhibit USA-64(BCI)).

<sup>34</sup> See Boeing E-mail regarding Question 114 (Exhibit USA-64(BCI)).

<sup>35</sup> See Survival Rate Calculation (Exhibit USA-65(HSBI)).

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**Step 1:** Calculate the cancellation rate (i.e., the measure of the probability that an order is cancelled) in each year (denoted by  $t$ ) as the ratio between the number of cancellations,  $Cancellations_t$ , and the measure of potential cancellations,<sup>36</sup> calculated as the backlog at the beginning of the year,  $Beginning\ Backlog_t$ , plus gross orders during the year,  $Gross\ Orders_t$ , minus conversions during the year,  $Conversions_t$ , minus the number of deliveries during the year,  $Deliveries_t$ :

$$Cancellation\ Rate_t = \frac{Cancellations_t}{Beginning\ Backlog_t + Gross\ Orders_t - Conversions_t - Deliveries_t}$$

Conversions are subtracted because, when an order from the backlog is converted, Boeing includes the conversion in the gross orders for that year. Therefore, to prevent double counting, the conversions must be subtracted because the converted aircraft is already included in the beginning backlog. Of course, an aircraft order can only be cancelled once.

**Step 2:** Calculate the probability of an order not being cancelled in each year ( $pNBC_t$ ) as one minus the cancellation rate in each year:

$$pNBC_t = 1 - Cancellation\ Rate_t$$

**Step 3:** Calculate the survival rate of an order placed in year  $t$  to be delivered in year  $t+Y$ ,  $Survival\ Rate_{t+Y}$  (i.e., survival rate in year  $t+Y$ ), as the product of the probabilities of the order not being cancelled in each year starting from the year of order ( $t$ ) to the year prior to the delivery year ( $t+Y-1$ ):

$$Survival\ Rate_{t+Y} = pNBC_t * pNBC_{t+1} * pNBC_{t+2} * \dots * pNBC_{t+Y-1}$$

52. For orders specifying delivery dates beyond the last year for which data on actual cancellations are available, use the average of the probability of an order not being cancelled in each of the ten most recent years for which data are available to the United States (i.e., 2008 to 2017) as a proxy for the likelihood of an order being cancelled in any subsequent year (i.e., 2018 and onward).

53. In Exhibit USA-65(BCI), the United States performs Steps 1 and 2 described above and calculates the cancellation rate and corresponding  $pNBC$  for each year between 2008 and 2017

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<sup>36</sup> The information for this step is provided on page 9 of Exhibit USA-65(HSBI). The beginning backlog, gross orders, net orders, deliveries, and ending backlog are publicly available on Boeing's website. See Boeing website, *Products & Services* (last visited March 14, 2019), <http://www.boeing.com/commercial/#/orders-deliveries>. The cancellation and conversion data were [BCI] and are provided in Exhibit USA-65(HSBI).

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by applying the approach described above in Steps 1 to 2. The United States also calculates the average of the pNBC over the 2008-2017 period (*Average pNBC<sub>2008-2017</sub>*).

54. In the second part of Exhibit USA-65(BCI), the United States moves to Step 3 and calculates the survival rates for delivery of orders placed in 2012 and 2013 as follows:

- The survival rate of an order placed in 2012 when the delivery year (2012 + Y) is 2018 or earlier:

$$\begin{aligned} \text{Survival Rate}_{2012+Y} \\ = pNBC_{2012} * pNBC_{2013} * pNBC_{2014} * pNBC_{2015} * \dots * pNBC_{2012+Y-1} \end{aligned}$$

To illustrate, the survival rate of an order placed in 2012 with delivery year 2017 (*i.e.*, Y=5) is calculated as follows:

$$\text{Survival Rate}_{2017} = pNBC_{2012} * pNBC_{2013} * pNBC_{2014} * pNBC_{2015} * pNBC_{2016}$$

And the survival rate of an order placed in 2012 with delivery year 2018 (*i.e.*, Y=6) is calculated as follows:

$$\begin{aligned} \text{Survival Rate}_{2018} \\ = pNBC_{2012} * pNBC_{2013} * pNBC_{2014} * pNBC_{2015} * pNBC_{2016} \\ * pNBC_{2017} \end{aligned}$$

- The survival rate of an order placed in 2012 when the delivery year (2012 + Y) is 2019 or later:

$$\begin{aligned} \text{Survival Rate}_{2012+Y} \\ = \text{Survival Rate}_{2018} * (\text{Average } pNBC_{2008-2017})^{2012+Y-2018} \end{aligned}$$

To illustrate, the survival rate of an order placed in 2012 with delivery in year 2020 (*i.e.*, Y=8) is calculated as follows:

$$\text{Survival Rate}_{2020} = \text{Survival Rate}_{2018} * (\text{Average } pNBC_{2008-2017})^2$$

- The survival rate of an order placed in 2013 to be delivered in year 2013+Y when the delivery year (2013+Y) is in 2018 or earlier:

$$\text{Survival Rate}_{2013+Y} = pNBC_{2013} * pNBC_{2014} * pNBC_{2015} * \dots * pNBC_{2013+Y-1}$$

To illustrate, the survival rate of an order placed in 2013 with delivery in year 2018 (*i.e.*, Y=5) is calculated as follows:

$$\text{Survival Rate}_{2018} = pNBC_{2013} * pNBC_{2014} * pNBC_{2015} * pNBC_{2016} * pNBC_{2017}$$

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- The survival Rate of an order placed in 2013 to be delivered in year 2013+Y when the delivery year (2013+Y) is 2019 or later:

$$\text{Survival Rate}_{2013+Y} = \text{Survival Rate}_{2018} * (\text{Average } pNBC_{2008-2017})^{2013+Y-2018}$$

To illustrate, the survival rate of an order placed in 2013 with delivery in year 2021 (*i.e.*, Y=8) is calculated as follows:

$$\text{Survival Rate}_{2021} = \text{Survival Rate}_{2018} * (\text{Average } pNBC_{2008-2017})^3$$

55. Following is how survival rates as calculated above would be applied to the valuation of adverse effects. First, for every year in which aircraft are scheduled for delivery in a particular transaction, one must multiply the number of aircraft to be delivered in that year by the delivery year price to get the total delivery year value. Then, one would multiply that total delivery year value by the survival rate for the relevant order year and delivery year combination, and then divide that product by the discount factor. The United States illustrates this calculation for each of the lost sale campaigns in pages 2-7 of Exhibit USA-65(HSBI), which shows what the total 2012 and 2013 significant lost sales values would be if a survival rate were incorporated. On pages 1-2 of Exhibit USA-65(HSBI), the United States shows what the effect of incorporating a survival rate would be on the aggregate adverse effects calculation.

**Question 116 (US)**

**With reference to, inter alia, Exhibit USA-43 and the United States' response to question No. 71, could the United States please explain:**

- a. **how many total 747-8I aircraft Boeing delivered in the December 2011–2013 Reference Period, and into how many country markets Boeing delivered them? For each year, please specify the number of aircraft delivered and into which country markets they were delivered that year;**

56. Boeing did not deliver any 747-8Is in December 2011. In 2012, Boeing delivered 12 747-8Is into the following country markets: four into Germany for Lufthansa, and [BCI].<sup>37</sup> In 2013, Boeing delivered five 747-8s, all into Germany for Lufthansa.<sup>38</sup> Thus, Boeing delivered a total of 17 747-8Is worldwide in the December 2011 – 2013 period.

57. The United States notes that [BCI].<sup>39</sup> As stated previously, the United States [BCI].

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<sup>37</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>38</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>39</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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- b. how many total 747-400 aircraft Boeing delivered in the 1990s (i.e. before the launch of the A380), and into how many country markets Boeing delivered them? For each year, please specify the number of aircraft delivered and into which country markets they were delivered that year; and**

58. The requested 747-400 delivery information is set forth in the table below.<sup>40</sup> This information includes deliveries for all 747-400 variants: 747-400 is the basic passenger model of the 747-400; 747-400D is a high-density 747-400 configuration developed for short-haul, high-volume domestic Japanese routes; 747-400F is the freighter version of the 747-400; and 747-400M is a passenger/freighter “combi” variant with a forward passenger cabin and an aft main deck cargo hold.

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<sup>40</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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747 Deliveries 1990 - 1999 from Investor Relations Website												
Sum of Total		YEAR										
Model	CountryArea	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Grand Total
747-400	Australia	6	5	4							2	17
	Canada	1	1	1			1					4
	China			2	1	1	1					5
	France		3	3	1							7
	Germany	3	2	3				1	4	2	2	17
	Hong Kong	3	4	4	3	1						15
	India				3	1		2				6
	Indonesia					2						2
	Israel					2	1				1	4
	Japan	12	9	6	3	3			1	4	6	44
	Malaysia	1	1	1	4	3		1	1	3		15
	Netherlands	1	1		1							3
	New Zealand	1		1						1		3
	Philippines				2		1					3
	Saudi Arabia								1	2	1	4
	Singapore	2	5	4	6	6	3	4	2			32
	South Africa		2	1	1					4		8
	South Korea		3	2	4	4	4	4	2	2		25
	Taiwan	2	1	2	4		1		4	6	1	21
	Thailand	2	2	2	1	1	1	1	2	1	1	14
	United Arab Emirates											1
	United Kingdom	11	3	4	3	4	2	2	7	12	6	54
	USA	9	6	7	5	4	1	3	6	6	13	60
<b>747-400 Total</b>		<b>54</b>	<b>48</b>	<b>47</b>	<b>42</b>	<b>32</b>	<b>16</b>	<b>18</b>	<b>30</b>	<b>43</b>	<b>34</b>	<b>364</b>
747-400D	Japan		2	8	6	1	2					19
<b>747-400D Total</b>			<b>2</b>	<b>8</b>	<b>6</b>	<b>1</b>	<b>2</b>					<b>19</b>
747-400F	Hong Kong					1	1					2
	Luxembourg				2		1		2	1	4	10
	Singapore					2	2	1	1	1	1	8
	South Korea					1	1	2	1	1		6
	USA									5	5	10
<b>747-400F Total</b>					<b>2</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>10</b>	<b>36</b>
747-400M	Canada		3									3
	China	2							2	2	1	7
	France		3	2	1							6
	Germany	2	3									5
	Kuwait					1						1
	Namibia										1	1
	Netherlands	3	2	2	1	1		1	2		1	13
	Philippines							1				1
	South Korea	1	1	2	1			1	1			7
	Taiwan				3	1	2	2				8
<b>747-400M Total</b>		<b>8</b>	<b>12</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>52</b>
<b>Grand Total</b>		<b>62</b>	<b>62</b>	<b>61</b>	<b>56</b>	<b>40</b>	<b>25</b>	<b>26</b>	<b>39</b>	<b>53</b>	<b>47</b>	<b>471</b>

c. **how long it took Boeing, following the launch of 747-400, to deliver, in a single calendar year, at least 54 747-400 aircraft to all customers worldwide?**

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59. From the launch of the 747-400 in 1985, it took Boeing until 1990 to deliver at least 54 747-400 aircraft to all customers worldwide in a single year.<sup>41</sup> For the 747-8I, 2010 was the fifth year after launch, which occurred in 2005.

**Question 117 (US)**

**With reference to, inter alia, footnotes 176 and 177 of the European Union's written submission, could the United States please provide:**

- a. **a comparator order for the United Airlines lost sale if the Arbitrator were to value the order as a sale of ten 787-10 aircraft in 2013; and**
- b. **a comparator order for the Cathay Pacific lost sale if the Arbitrator were to value the order as for eight 777-300ER aircraft and two 787-10 aircraft?**

**With respect to the comparator orders that the United States proposes in response to this question, please provide, at minimum, the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section.**

60. As an initial matter, it would be erroneous to value the instances of lost sales from the first compliance proceeding as if they involved orders for Airbus models other than those identified in the first compliance appellate report.<sup>42</sup> To do so would amount to a collateral attack on the findings in the reports adopted by the DSB.

61. In addition, such an approach would presume erroneously that, if a customer actually converted an original order for a given Airbus model (*e.g.*, the A350 XWB-1000) to another Airbus model (*e.g.*, the A350 XWB-900), then the same customer in the counterfactual situation would necessarily have converted the originally ordered Boeing model (*e.g.*, the 777-300ER) to another Boeing model (*e.g.*, the 787-10). Conversion activity can result from various factors, including factors specific to Airbus models and Airbus's customer relationships, such that it cannot be assumed that actual Airbus conversions would translate to counterfactual Boeing conversions. That said, in the event that the Arbitrator nonetheless finds it necessary to account for conversions in the manner suggested by this question, the United States is providing responsive information.

62. With respect to subpart (a) of this question, which references a counterfactual sale of 10 787-10s to United Airlines, the best alternative comparator order would be United's actual order for 10 787-10s in 2013, since it involves the same customer, the same model, and the same order year as the 2013 United lost sale. The United States is providing the information specified in the

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<sup>41</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>42</sup> See U.S. RAQ 58, paras. 14-16. See also Compliance Appellate Report, para. 5.705, Table 10 and para. 5.723, Table 12; Compliance Panel Report, para. 6.1781, Table 19.

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explanatory note for that actual 2013 United 787-10 order.<sup>43</sup> This information is also responsive to the request in Question 138 concerning the 2013 United 787-10 order.

63. With respect to subpart (b) of this question, which references a counterfactual sale of eight 777-300ERs and two 787-10s to Cathay Pacific, the best alternative comparator order for the eight 777-300ERs would be Cathay Pacific's 2013 order for 777-300ERs, since it involves the same customer, the same model, and an order year only a year removed from the 2012 Cathay Pacific lost sale. And contrary to the EU's arguments [BCI].<sup>44</sup>

64. As to the two counterfactual 787-10 orders for Cathay Pacific, the airline has not ordered the 787-10, [BCI]. Accordingly, the best alternative comparator order for those counterfactual 787-10 orders is Singapore Airlines' 2013 787-10 order, since Singapore Airlines' order is from another major Asian airline, is for the same model, and has an order year only a year removed from the 2012 Cathay Pacific lost sale.

65. The United States provides the information specified in the explanatory note for the Cathay Pacific 2013 777-300ER order in Exhibit USA-68(HSBI), and for the Singapore Airlines 2013 787-10 order in Exhibit USA-73(HSBI).<sup>45</sup> This information is also responsive to the requests in Question 135.<sup>46</sup>

**Question 118 (US)**

**With reference to, inter alia, footnotes 176 and 177 of the European Union's written submission, could the United States please explain whether a customer's ability to convert an LCA order into another LCA model or variant is contractually controlled? If not, please describe how customers convert orders. If so, how common are such rights in Boeing contracts, in general and with respect to sales for the "closest Boeing model[BCI]" listed in paragraph 33 of the United States' Methodology Paper? If such a conversion right is exercised, how does that affect the price that the customer ultimately pays for the LCA that is ultimately delivered? How often do conversions occur, especially with respect to original orders for the "closest Boeing model[BCI]" listed in paragraph 33 of the United States' Methodology Paper? Could the United States provide an estimate of the respective average number of converted orders of the 787-10, 777-300ER and 747-8I based on historic data?**

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<sup>43</sup> United 2013 787-10 Order Documentation (Exhibit USA-67(HSBI)).

<sup>44</sup> [BCI].

<sup>45</sup> Cathay Pacific 2013 777-300ER Order Documentation (Exhibit USA-68(HSBI)); Singapore Airlines 2013 787-10 Order Documentation (Exhibit USA-73(HSBI)).

<sup>46</sup> See *infra* U.S. RAQ 135.

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66. For Boeing, the conversion of an order for one model into another model (known as “substitution” or the exercise of “substitution rights”) [BCI].<sup>47</sup>
67. [BCI] substitution rights [BCI].<sup>48</sup>
68. If a customer exercises a substitution right, the price of the aircraft being substituted into [BCI].<sup>49</sup>
69. Exercise of substitution rights with respect to the 787-10, 777-300ER, and 747-8I [BCI].<sup>50</sup>

**Question 119 (US)**

**With reference to, inter alia, the United States' oral response to question Nos. 101 and 103 at the substantive meeting regarding the propriety of adjusting data in a reference period if anomalous market conditions arose, assuming that any data from the Reference Period pertaining to orders and deliveries that are reflected in Tables 10, 12, and 13 of the Appellate Body report in the first compliance proceeding appear anomalous, could the United States please explain whether, and if so, how would the Arbitrator go about making an adjustment with regard to the data pertaining to orders and deliveries within the Reference Period to make it more representative?**

70. As the United States explained orally and has confirmed above in response to question 103, within the narrow scope of the potential inquiry into “representativeness” – which we reiterate is not forward-looking and deals only with whether data not included in the findings in the adopted reports is anomalous or an outlier – the EU bears the burden of demonstrating that the data relied upon by the United States is unrepresentative. The EU has not attempted such a showing. If an original respondent did demonstrate that data was unrepresentative, the manner of, and rationale underlying, that demonstration presumably would inform the adjustment an arbitrator would make.

**Question 120 (US)**

**With reference to the European Union's response to question No. 52, discussing alleged shortcomings of evidence offered by the United States to determine the value of lost sales, could the United States please respond to the arguments contained therein?**

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<sup>47</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>48</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>49</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>50</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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71. The EU’s response to Question 52 lists seven criticisms of the U.S. evidence concerning the valuation of lost sales. Each fails for the reasons discussed below.

72. First, the EU questions the reliability of the Emirates [BCI], arguing that the Arbitrator lacks “proof of Boeing’s internal approvals for the document” that would enable an assessment of how realistic it is.<sup>51</sup> This criticism is moot. The United States is providing the [BCI] documentation.<sup>52</sup> Moreover, this and other relevant evidence shows that the [BCI] was indeed realistic.<sup>53</sup> The United States discusses these and related issues in greater detail in response to Question 121 below.

73. Second, the EU criticizes the 2013 Singapore Airlines 787-10 sales prices as “not credible” because, in the EU’s view, the airline should have paid a lower price as a launch customer placing a large, 30-aircraft order.<sup>54</sup> The EU also contends that the 787-10 is an invalid comparator for the airline’s purchase of A350 XWB-900 “Regional jets” in the 2013 lost sale.<sup>55</sup> These critiques do nothing but highlight the erroneous and unfounded notions on which the EU relies. The United States is providing original documentation concerning 2013 Singapore Airlines 787-10 sales prices,<sup>56</sup> so there can be no question about their validity. Put simply, the documentary evidence shows that the earlier reported prices are not wrong; it is the EU’s generalized suppositions about aircraft pricing, and the relationship between price and order size, that are wrong.

74. The EU is also wrong about the validity of the 787-10 as a comparator for the A350 XWB-900s that Singapore Airlines ordered. Airbus developed this “regional” A350 XWB-900 *precisely to compete against the 787-10*:

Singapore Airlines has signed up as the launch customer for a lower operating weight “regional” version of the Airbus A350-900 long-range widebody twinjet.

*Aimed at addressing the competitive threat posed by Boeing's 787-10 double stretch, the aircraft will be structurally identical to the baseline A350-900 but*

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<sup>51</sup> EU RAQ 52, para. 3 (first bullet).

<sup>52</sup> [BCI] (Exhibit USA-71(HSBI)).

<sup>53</sup> *See infra* U.S. RAQ 121.

<sup>54</sup> EU RAQ 52, para. 3 (second bullet) (emphasis original).

<sup>55</sup> EU RAQ 52, para. 3 (second bullet) (emphasis original).

<sup>56</sup> Singapore Airlines 2013 787-10 Order Documentation at pp. 6-7, 107-111, 112-116 (Exhibit USA-73(HSBI)).

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certificated to a reduced maximum take-off weight of 250t, compared with the standard 268t.

It will be equipped with the de-rated, 75,000lb-thrust (334kN) Rolls-Royce Trent XWB engines that will power the -800 shrink version of the A350, rather than standard 84,000lb powerplants, allowing cyclic engine maintenance intervals to be extended.<sup>57</sup>

75. [[HSBI]].<sup>58</sup>

76. Thus, the EU’s criticisms of the use of the 2013 Singapore Airlines 787-10 as a comparator order for the Singapore Airlines lost sale are unfounded in every respect.

77. Third, the EU repeats its allegation that the order prices for the United 2013 777-300ER order are “not credible,” supposedly because the 777-300ER was “outdated” and being replaced by the 777X.<sup>59</sup> This is a bald assertion untethered to anything but the EU’s speculation as to what the United 777-300ER price ought to be, as the United States demonstrated previously.<sup>60</sup> The United States submits the requested information for the United Airlines 2015 777-300ER order in Exhibit USA-74(HSBI). The documents in this exhibit demonstrate that the EU’s baseless allegation is incorrect.<sup>61</sup>

78. Fourth, the EU criticizes the original use and presentation of escalation formulas by the United States.<sup>62</sup> This criticism is misplaced. For example, the EU alleges that the evidence concerning a comparator order contains “two conflicting escalation formulae” when in fact it uses synonymous terms to refer to the same escalation formula.<sup>63</sup> The EU’s criticism is also moot. Considering the evidence already provided together with the documentation in this submission, the United States has provided a comprehensive range of evidence concerning escalation, including original documentation pertaining to the comparator orders. The United

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<sup>57</sup> *Singapore Launches Lower-Weight ‘Regional’ A350*, FlightGlobal (July 23, 2013) (Exhibit USA-72) (emphasis added).

<sup>58</sup> See Singapore Airlines 2013 787-10 Order Documentation at p. 6 (Exhibit USA-73(HSBI)).

<sup>59</sup> EU RAQ 52, para. 3 (third bullet).

<sup>60</sup> See U.S. Written Submission, para. 221.

<sup>61</sup> See United 2015 777-300ER Order Documentation at pp. 55-58 (Exhibit USA-74(HSBI)).

<sup>62</sup> EU RAQ 52, para. 3 (fourth bullet).

<sup>63</sup> Compare EU RAQ 52, para. 3 (first bullet), with U.S. RAQ 136, *infra*; U.S. RAQ 60, paras. 23-25; U.S. RAQ 77, paras. 95-96; Transaero 2013 747-8I Order Information (Exhibit USA-13(HSBI)); Transaero 2013 747-8I Order Documentation (Exhibit USA-75(HSBI)).

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States also provides detailed illustrations of the escalation calculations in response to Question 136 below.

79. Fifth, the EU asserts that further information is needed so that the Arbitrator can assess whether [BCI] for the comparator orders proposed by the United States to value lost sales.<sup>64</sup> This is yet another moot point; the responses to these questions provide original documentation concerning [BCI] for the comparator orders.<sup>65</sup> As the United States has indicated previously, the services provided are incidental to the sale, even where [[HSBI]].

80. Sixth, the EU argues that the Arbitrator lacks sufficient information about the characteristics of the Boeing aircraft in the comparator orders.<sup>66</sup> This criticism is moot because the responses to these questions provide original documentation concerning characteristics such as maximum take-off weight, engine type, and engine thrust.<sup>67</sup>

81. It is also a specious critique because no comparison of these aspects of the Boeing comparator orders and the actual Airbus orders is necessary. Although the EU never provides detailed argument, it insinuates that adjustments would be appropriate whenever features of the Boeing aircraft differ from the Airbus aircraft the customer actually ordered. But this is not the case. LCA are differentiated products, and a customer that in the counterfactual ordered a Boeing product could not get one that exactly matched the Airbus product it ordered. A customer may be able to customize the optional features of an aircraft to its preferences to some extent, but it cannot go to Boeing and get an Airbus aircraft.

82. Thus, the specifications of the aircraft that each customer actually ordered from Boeing provide the best proxy for the specifications of aircraft they likely would have ordered in the counterfactual. The price that they paid accordingly provides the best measure of the value of the aircraft that would have been ordered in the counterfactual. In addition, there are not reliable methods to adjust LCA pricing for differences in the countless physical characteristics and other specifications between Airbus and Boeing aircraft.

83. The United States also notes that these prices are just proxies for counterfactual sales. Even if the requisite information was available and there was a reliable methodology to make price adjustments, there is no indication that any differences in physical characteristics or other specifications between the Airbus aircraft ordered and the counterfactual Boeing model would necessitate price adjustments so large as to affect the conclusion whether proposed countermeasures are “commensurate.” Accordingly, there is no basis to undertake an immensely

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<sup>64</sup> EU RAQ 52, para. 3 (fifth bullet).

<sup>65</sup> See *infra* U.S. RAQ 135.

<sup>66</sup> EU RAQ 52, para. 3 (sixth bullet).

<sup>67</sup> See *infra* U.S. RAQ 135.

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complicated, unreliable, and improper exercise of adjusting the submitted prices, if that indeed is what the EU is advocating.

84. Seventh, the EU repeats its argument that the Arbitrator should attempt to exclude non-U.S. inputs from the valuation of Boeing aircraft in the calculation of countermeasures. The EU goes so far as to ask that all “engine costs” should be excluded from the calculations because one Boeing model, the 787, offers customers a choice between Rolls Royce engines and General Electric engines.<sup>68</sup> As demonstrated previously, the EU’s argument is untenable, and would inherently result in countermeasures that are *not* “commensurate” because the goods experiencing serious prejudice are U.S. LCA, not the U.S. parts thereof.<sup>69</sup> The EU’s argument is also incoherent: for LCA incorporating millions of parts from several tiers of suppliers, it would exclude complex assemblies, such as engines, based on the country in which they were assembled, without regard to any U.S.-origin parts in such assemblies.<sup>70</sup>

85. In sum, the EU’s criticisms of the U.S. lost sales evidence are meritless. They include a mixture of inaccurate guesswork, legal error, and demands for documentation that is now on the record. These arguments are emblematic of the EU’s failure to demonstrate that the U.S. calculations are not “commensurate with the degree and nature of the adverse effects determined to exist.”

**Question 121 (US)**

**With respect to, inter alia, paragraph 48 of the Methodology Paper, paragraph 181 of the United States’ written submission, and Exhibits USA-5 (BCI) and USA-24 (BCI), could the United States please explain:**

**a. what is a [BCI]?**

86. A [BCI].<sup>71</sup>

**b. how was the price in this [BCI] formulated?**

87. [BCI].<sup>72</sup>

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<sup>68</sup> See EU RAQ 52, para. 3 (seventh bullet).

<sup>69</sup> See U.S. Written Submission, paras. 266-269.

<sup>70</sup> See U.S. Written Submission, para. 269.

<sup>71</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>72</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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88. With respect to [BCI].<sup>73</sup>
89. [BCI].<sup>74</sup>
- c. was this [BCI]?**
90. [BCI].<sup>75</sup>
- d. what is the United States' response to the European Union's arguments in this context in paragraphs 243–244 of the European Union's written submission and paragraph 3 (first bullet point) of the European Union's response to question No. 52?**
91. Please refer to the U.S. response to Question 122 below, where the United States rebuts those EU arguments.
- e. could the United States further elaborate on the status of negotiations between Boeing and [BCI] and the processes that Boeing went through to [BCI]?**
92. Please refer to the U.S. response to subpart (b) of this question.
- f. if the Arbitrator rejects this [BCI] as a basis upon which to illustrate the sales price of a counterfactual sale of 747-8I aircraft to [BCI], what would be the United States' suggestion for an alternative?**
93. In that situation, a reasonable alternative would be to use Boeing's 2013 747-8I order price to Korean Air.<sup>76</sup> Korean Air is a major airline in Asia that has ordered and taken delivery of both A380s and 747-8Is, and its 2013 order for 747-8Is occurred in the same year as the Emirates A380 lost sale.

**Question 122 (US)**

**With reference to the European Union's response to question Nos. 52 (para 3) and 28 (para. 421) that the pricing information contained in the [BCI] (Exhibit USA-16 (HSBI)) should not be used for the purpose of valuing the [BCI] lost sales and that, instead, the Lufthansa 2013 per-aircraft delivery prices should be used for valuing the [BCI] lost sale, could the United States please respond to these arguments/approaches?**

94. The EU has made essentially three arguments for rejecting the [BCI] in favor of using Lufthansa 2013 per-aircraft delivery prices. Each is unfounded.

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<sup>73</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>74</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>75</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>76</sup> See Korean Air 2013 747-8I Order Documentation at pp. 17, 22-25 (Exhibit USA-76(HSBI)).

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95. First, the EU contends that the [BCI] information is unreliable because the Arbitrator lacks “proof of Boeing’s internal approvals for the document” that would allow it to assess whether the [BCI] was realistic.<sup>77</sup> The United States has already provided evidence concerning the circumstances of the [BCI],<sup>78</sup> as well as [BCI].<sup>79</sup> The responses to these questions provide further evidence confirming the previously submitted information: [BCI]<sup>80</sup> and, as discussed in response to Question 121, additional Boeing statements concerning the circumstances of the [BCI].<sup>81</sup>

96. Second, the EU speculates that [BCI].<sup>82</sup> The evidence contradicts this speculation. As Boeing states, [BCI].<sup>83</sup>

97. Third, the EU argues that 2013 delivery prices for Lufthansa’s [BCI] should be used instead of the [BCI] sale because [BCI].<sup>84</sup> The EU’s argument rests on the false premise that [BCI].

98. Moreover, the EU ignores the importance of [BCI] and timing for determining airplane prices.<sup>85</sup> The [BCI]. In contrast, the Lufthansa 747-8I delivery prices are [BCI], and those prices were set in 2006, [BCI]. Accordingly, even if the Arbitrator opted not to use [BCI], the Korean Air 2013 order would be better comparator than the Lufthansa 2006 order (or the deliveries resulting from it).

99. In sum, the EU has failed to demonstrate that the U.S. approach in this respect would result in a level of countermeasures that is not commensurate with the degree and nature of the adverse effects determined to exist. The [BCI]. In contrast, the Lufthansa “2013 747-8I delivery prices” – which are based on Lufthansa 2006 order prices – are [BCI]. Given these facts, the EU’s preferred approach is inferior, and in any event, certainly insufficient to demonstrate that the U.S. approach is not “commensurate.” And even if the Arbitrator did not use [BCI], there would still be a comparator order on the record (Korean Air 2013) that would be superior to the Lufthansa 2006 order.

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<sup>77</sup> EU RAQ 52, para. 3 (first bullet).

<sup>78</sup> See Declaration of [BCI] (Exhibit USA-5(BCI)).

<sup>79</sup> Emirates [BCI] Information (Exhibit USA-16(HSBI)). See also [BCI] (Exhibit USA-71(HSBI)).

<sup>80</sup> [BCI] at pp. 3-4 (Exhibit USA-71(HSBI)).

<sup>81</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>82</sup> See EU Written Submission, para. 243.

<sup>83</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>84</sup> See EU Written Submission, paras. 244, 246.

<sup>85</sup> See *infra*, U.S. RAQ 125; U.S. RAQ 61, para. 31.

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**Question 123 (US)**

**With reference to paragraphs 86–87 of the United States' Methodology Paper, could the United States please explain whether the delivery price expressed in delivery year dollars could be discounted directly to 2013 using the discount rate, instead of being discounted to the order year and re-inflated to 2013 using a PPI-based ratio?**

100. No, this would not properly reflect the different functions in the U.S. methodology served by discounting and time consistency adjustments.

101. Discounting accounts for the fact that economic activity tomorrow has less value than economic activity today. The United States accounts for this by applying to the value in future (*i.e.*, delivery year) a discount rate corresponding to the interest rate on U.S. sovereign debt, which is the “price” that the United States “pays” to move economic activity forward from tomorrow to today. This adjusts the value of the economic activity tomorrow to today’s dollars so that the adverse effects to the interests of the United States are stated in dollars of the respective years in which the United States suffered the instances of adverse effects.

102. In contrast, the time consistency adjustment accounts for inflation so that, for each year, the countermeasures remain commensurate with the degree and nature of the adverse effects determined to exist. For a 2012 order, if a delivery year value were discounted to 2013, this would not capture the value of the significant lost sale at the time the adverse effect occurred.

103. On the other hand, it would be consistent with the conceptual approach of the U.S. methodology to “inflate” using PPI the adverse effects from each year (*i.e.*, December 2011, 2012, and 2013) directly to the year in which the countermeasures are applied (*e.g.*, 2019) without first inflating the December 2011 and 2012 adverse effects values to 2013 dollars. However, this would make the calculation of the countermeasures each year more complicated. For 2019, for example, the December 2011 value would have to be inflated to 2019 dollars, the 2012 value would have to be inflated using a different PPI adjustment factor to 2019 dollars, and the 2013 value would have to be inflated using a third PPI adjustment factor to 2019 dollars. Then these three values would have to be summed and divided by 25/12.

104. For this reason, the United States first inflates the December 2011 and 2012 adverse effects values to 2013 dollars to get a single number that, after dividing by 25/12, provides a single value for the annual adverse effects in 2013 dollars. This single annual adverse effects value stated in 2013 dollars is then easily inflated to the relevant year in which countermeasures are to be applied. In other words, once the annual adverse effects value in 2013 dollars is calculated, then for each year in which countermeasures are to be applied, it only takes one step – inflating from 2013 to the relevant year – to calculate the countermeasures.

**Question 124 (US)**

**With reference to the United States' response to the question No. 78, could the United States please provide:**

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**a. an estimate of the respective average monthly and yearly production of the 787-10, 777-300ER and 747-8I based on historic data;**

105. Because Boeing produces aircraft to order and does not produce for inventory, its delivery data is, in essence, equivalent to its yearly production. The table below provides annual delivery data for the 787-10, 777-300ER, and 747-8I. The monthly averages are derived by dividing the annual total by 12.<sup>86</sup>

Model		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
787-10	Annual	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
	Monthly Avg.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
777-300ER	Annual	10	20	39	53	47	52	40	52	60	79	83	79	88	65	32
	Monthly Avg.	0.8	1.7	3.3	4.4	3.9	4.3	3.3	4.3	5.0	6.6	6.9	6.6	7.3	5.4	2.7
747-8I	Annual	0	0	0	0	0	0	0	0	12	5	10	11	3	6	0
	Monthly Avg.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	0.8	0.9	0.3	0.5	0.0

**b. an estimate of the respective average production/delivery delay of the 787-10, 777-300ER and 747-8I based on historic data; and**

106. The table below provides delivery delay information covering the period for each model’s first delivery through Feb. 22, 2019. The “number of delays” column shows the number of instances in which the aircraft’s actual delivery month was at least one month later than the delivery month contracted in the firm order, which includes deliveries that were deferred at the customer’s request. The “average delay (days)” column shows the average length of delay for those instances in the “number of delays” column. For example, from the start of 747-8I deliveries through February 22, 2019, [BCI] 747-8I deliveries were made more than one month later than the originally contracted delivery month. Looking just at those [BCI] deliveries – and excluding all of the deliveries that were on time – the delivery occurred, on average, [BCI] days later than the originally contracted delivery month.<sup>87</sup> Thus, [BCI] days is the average length of a delay for the 747-8I. It is not the case that a contracted delivery is delayed, on average, by [BCI] days.

[BCI]

107. Next, for each model listed, the table below reproduces the “number of delays” figure from the table above and compares it to all deliveries of that model from the model’s first delivery through February 22, 2019. The percentage is the number of delays divided by the total deliveries over the same period.<sup>88</sup> Thus, for each model, the percentage shows the portion of

<sup>86</sup> Boeing E-mail regarding Question 124 (Exhibit USA-82(BCI)). Note that the delivery data for the 747-8I includes deliveries to Business/VIP customers.

<sup>87</sup> Boeing E-mail regarding Question 124 (Exhibit USA-82(BCI)).

<sup>88</sup> Boeing E-mail regarding Question 124 (Exhibit USA-82(BCI)).

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total deliveries that were delayed by more than one month from the contracted delivery month of the firm order. The deliveries in the remaining portion of total deliveries occurred as originally scheduled.

[BCI]

108. For each model, the data in these tables show that [BCI]. The data also show that, when delivery delays do occur, [BCI].

109. Thus, for the 747-8, more than [BCI] percent of the deliveries occurred as originally scheduled, and just under [BCI] percent were delayed by, on average, [BCI]. For the 777-300ER, about [BCI] percent of the deliveries were on time, and about [BCI] percent of the deliveries were delayed by, on average, [BCI]. And for the 787-10, there was [BCI].

**c. an estimate of the average amount of penalty payments for late deliveries for the 787-10, 777-300ER and 747-8I based on historic data?**

110. Boeing's [BCI].<sup>89</sup>

111. Boeing's revenue management system [BCI].<sup>90</sup>

**Question 125 (US)**

**With reference to the European Union's response to question No. 28, could the United States please:**

**a. explain whether and how the price in the comparator orders should be adjusted in the counterfactual when the number of aircraft ordered in the comparator order differs from the number of aircraft that would have been ordered in the counterfactual; and**

112. The price in the comparator orders should not be adjusted in the counterfactual when the number of aircraft ordered in the comparator order differs from the number of aircraft that would have been ordered in the counterfactual. The evidence on the record does not support the premise that orders involving larger numbers of aircraft consistently or predictably have lower per-airplane prices than orders involving smaller numbers of aircraft.

113. [BCI]. The EU highlighted [BCI] as the "one customer" where "the comparator campaign was substantially smaller than the lost sales campaign{ } that it was supposed to approximate."<sup>91</sup>

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<sup>89</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>90</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>91</sup> EU Written Submission, para. 237.

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The United States proposed the use of [BCI], while the relevant lost sales campaign concerned [BCI]. The EU argued:

[BCI].<sup>92</sup>

114. The [BCI].<sup>93</sup>

**b. provide an estimate of any typical volume discounts, when they are granted, by Boeing on orders of the 787-10, 777-300ER and 747-8I based on historic data?**

115. Boeing [BCI’].<sup>94</sup>

**Question 126 (US)**

**With reference to the United States’ response to question No. 69, could the United States please explain whether it disagrees that there is an inherent risk of order cancellation and delivery delay associated with each order, and if so why?**

116. Risk describes exposure to danger or loss. Where orders were found to be significant lost sales, constituting adverse effects to the interests of the United States, these are legal findings adopted by the DSB that are not subject to appeal or other modification, and therefore not subject to potential “danger or loss.” In fact, to the contrary, the countermeasures must reflect them. There is accordingly no “risk” associated with these findings.

117. Of course, from the perspective of Boeing revenues, there is a risk of cancellation, which describes exposure to the loss of revenues. From the customer’s perspective, there is a risk of delivery delay, which describes exposure to the danger of not receiving aircraft consistent with fleet planning and critical to the operation of the customer’s business.

118. As explained in response to Question 69, the SCM Agreement disciplines adverse effects to the interests of a Member, which makes the appropriate perspective that of the United States. As there is no risk with respect to adopted findings of adverse effects, the “risks” of order cancellation or delivery delay are not relevant to calculating the value of adverse effects.

**Question 127 (US)**

**With reference to, inter alia, paragraph 122 of the United States’ response to question No. 87, could the United States please explain the extent to which Boeing would have been in a position to take additional orders for 777-300ER aircraft such that they could have been delivered to customers during the Reference Period instead of the A380 aircraft that are**

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<sup>92</sup> EU RAQ [BCI] (emphasis original).

<sup>93</sup> See [BCI]; [BCI]; [BCI].

<sup>94</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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**reflected in Table 13 of the Appellate Body report in the first compliance proceeding? What was Boeing's production capacity vis-à-vis the 777-300ER like in the years leading up to the Reference Period?**

119. Based on Ascend data, the 47 Airbus A380 deliveries referenced in Table 13 of the compliance appellate report (to customers in the EU, Australia, China, Korea, Singapore, and the U.A.E.) were made pursuant to orders placed in 2001, 2003, and 2005-2008.<sup>95</sup> The United States therefore understands this question to ask about the extent to which Boeing could have accepted up to 47 additional 777-300ER orders over the 2001 – 2008 period, from the customers indicated above, and delivered them during the December 2011 – 2013 period. The evidence shows that Boeing would have been able to deliver 47 additional 777-300ERs under those circumstances, for the reasons discussed below.

120. It is useful to begin with some background on the 777-300ER and LCA production in general. The 777-300ER is a major derivative model of the 777 family of large, twin-engine, twin-aisle commercial aircraft.<sup>96</sup> The 777 originally launched in 1990, and the first 777 deliveries occurred in 1995.<sup>97</sup> The 777-300ER launched in 2000, and first deliveries occurred in 2004.<sup>98</sup> The 777-300ER has been the best-selling model in the 777 program's history.<sup>99</sup>

121. The 777-300ER undergoes final assembly on the same final assembly line as all other 777 models.<sup>100</sup> The table below shows Boeing's annual 777 and 777-300ER production in the years leading up to the December 2011 – 2013 period.

	777 Deliveries (1995-2013)																		
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>777-300ER</b>	0	0	0	0	0	0	0	0	0	10	20	39	53	47	52	40	52	60	79
<b>777 Total</b>	13	32	59	74	83	55	61	47	39	36	40	65	83	61	88	74	73	83	98
<b>777-300ER % of Total</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	50%	60%	64%	77%	59%	54%	71%	72%	81%

Source: Boeing E-mail regarding Question 127 (Exhibit USA-127(BCI)).

122. In the commercial airplane industry, manufacturers produce to order. They do not normally produce for inventory or produce at a level lower than the production system is designed to achieve. Production is therefore equivalent to production capacity, and production

<sup>95</sup> See Ascend Data (Exhibit EU-54).

<sup>96</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>97</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>98</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>99</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>100</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

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capacity utilization is essentially always 100 percent.<sup>101</sup> However, treating production capacity utilization as 100 percent does not mean that Boeing cannot accommodate new orders. To the contrary, as with any of its commercial airplane programs, Boeing seeks to sell and produce as many 777s as it can in an efficient, profit-maximizing manner. Boeing generally competes for any commercial airplane sale it has a reasonable chance of winning. Boeing does not stop pursuing new orders when it has a significant backlog of orders. Rather, Boeing works to ensure that its production rates are sufficient to meet demand, using all the means at its disposal.<sup>102</sup>

123. [BCI].<sup>103</sup>

124. Another means of accommodating new orders is to increase production rates. If Boeing finds that current and anticipated orders will support a sustained increase in production rates, it will increase the production rate.<sup>104</sup> As indicated in the table of 777 deliveries above, Boeing increased and lowered 777 production rates over the years to align with demand. All 777 models are produced in the same final assembly facilities in Boeing's Everett, Washington factory, and the 777-300ER has been the primary driver of overall 777 production rates since it entered production. If Boeing had won an additional 47 777-300ER orders over the 2000-2008 period from the strategically significant airlines that took the A380 deliveries indicated in the table above, and if [BCI], then Boeing likely would have increased 777 production rates above those actually achieved in 2011 – 2013.<sup>105</sup>

125. Because the orders would have been won over 2000 – 2008, Boeing would have had sufficient lead-time to implement a rate increase.<sup>106</sup> Boeing would also have had strong economic incentives to implement a rate increase, assuming the additional 777-300ER sales were made at prices around the 777-300ER price levels that actually prevailed at the time: those 47 orders would have represented billions in additional revenue, significant additional profits, and the likelihood of significant follow-on orders from strategically significant customers.<sup>107</sup> Boeing could have increased production by [BCI] over the 25 month December 2011 – 2013 time period. This rate increase would have permitted Boeing to deliver 47 additional aircraft.<sup>108</sup>

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<sup>101</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>102</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>103</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>104</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>105</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>106</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)). [BCI]. *Ibid.*

<sup>107</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

<sup>108</sup> Boeing E-mail regarding Question 127 (Exhibit USA-105(BCI)).

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**Question 128 (US)**

**With reference to, inter alia, paragraph 122 of the United States' response to question No. 87, could the United States please explain how the sale price of a 747-8I aircraft generally compares to that of the sale price of a 777-300ER aircraft? If possible, please use prices that would have been applicable for the time-period in which the orders for A380 aircraft were placed that resulted in the deliveries reflected in Table 13 of the Appellate Body report in the first compliance proceeding.**

126. The December 2011 – 2013 A380 deliveries in Table 13 of the Appellate Body report were made pursuant to orders placed in 2001, 2003, and 2005 – 2008, according to Ascend data.<sup>109</sup>

127. Boeing launched the 777-300ER in 2000 and the 747-8I in 2005.<sup>110</sup> It is therefore not possible to compare 777-300ER and 747-8I order prices over the exact periods during which the relevant A380 orders arose. However, it is possible to compare prices for the 777-300ER and 747-8I during the 2005 – 2009, a period in which more than one customer ordered these models.<sup>111</sup> Based on final net revenue data from Boeing's revenue management system, the average final net revenue for 777-300ER that were ordered between 2005 – 2009, in 2009 dollars, was \$[[HSBI]] (excluding VIP/Boeing Business Jet sales), and the average final net revenue for 747-8I that were ordered between 2005 – 2009, also in 2009 dollars, was \$[[HSBI]] (excluding VIP/Boeing Business Jet sales).<sup>112</sup> [BCI].<sup>113</sup>

**Question 129 (US)**

**Could the United States please explain how the sale price of a 747-8F aircraft compared to the sale price of a 747-8I aircraft in the years leading up to the Reference Period?**

128. Based on final net revenue data from Boeing's revenue management system, the average final net revenue for 747-8Fs (freighters) that were ordered between 2005 – 2009, in 2009 dollars, was [[HSBI]], and the average final net revenue for 747-8Is that were ordered between 2005 – 2009, also in 2009 dollars, was [[HSBI]] (excluding VIP/Boeing Business Jet sales).<sup>114</sup> [BCI].<sup>115</sup>

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<sup>109</sup> See Ascend Data (Exhibit EU-54).

<sup>110</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>111</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>112</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>113</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>114</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

<sup>115</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

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**Question 130 (US)**

**With reference to the United States' response to question No. 88, could the United States please elaborate on the ease or difficulty with which Boeing could have switched production capacity between 747-8I and 747-8F aircraft in the years leading up to the Reference Period? Has Boeing ever actually traded off production capacity between these two LCA programs in the past? If so, please elaborate on the details of such production changes.**

129. The easiest way to switch production capacity between the 747-8I and 747-8F would have been at the start of the program, and this is likely what would have happened if the A380 were absent from the market. Typically, a new or major derivative airplane program will prioritize the development, production, and sale of passenger models over freighter models. When Boeing launched the 747-8 program in 2005 as a major derivative of the 747, [BCI].

130. However, the A380's freighter variant, the A380-800F, was compromised in terms of its ability to efficiently carry cargo pallets, and in contrast to the A380-800 passenger version, it had not captured an outsize share of very large freighter demand. [BCI]. Accordingly, Boeing planned the development and initial production of the 747-8 program so that the 747-8F would enter service first, followed shortly by the 747-8I. But if the A380 had been absent from the market, the sales opportunities for the 747-8I would have been much greater, and [BCI]. In addition, the greater actual and anticipated sales of the 747-8I would have justified [BCI].<sup>116</sup>

131. The 747-8I and 747-8F are produced on the same final assembly line at Boeing's factory in Everett, Washington, and there is a very high degree of commonality in terms of parts, production processes, and production employees. Thus, by design, the 747-8 production system has produced a mix of 747-8Is and 747-8Fs, and Boeing has a 747-8 production rate that can be freely allocated between the 747-8I and 747-8F. If Boeing had more 747-8I orders (which is what would have occurred if the A380 were not in the market), Boeing would have produced more 747-8Is, including by increasing production rates.<sup>117</sup>

132. A similar situation exists for Boeing's other LCA production operations. For years, Boeing's other lines at its Everett factory have produced (i) a mix of 777-300ERs, 777-200LRs, and 777 Freighters, and (ii) a mix of 767-300ERs and 767-300F freighters, with the relative proportion for each model fluctuating according to customer orders.<sup>118</sup>

**Question 131 (US)**

**With reference to paragraph 126 of the United States' response to question No. 88, could the United States please elaborate on the reasons behind Boeing delaying the delivery of the first 747-8I from 2010 to 2012? In particular, was this delay the result of, for example, production**

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<sup>116</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-84(BCI)).

<sup>117</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-84(BCI)).

<sup>118</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-84(BCI)).

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**difficulties, customer requests, and/or other factors? Further, what exactly was the "work stoppage" referred to in Exhibit USA-56 (BCI)?**

133. The first 747-8I delivery was originally scheduled for late 2010. The actual first 747-8I delivery was to a VIP/Boeing Business Jet customer in February 2012, and the first delivery to an airline customer, Lufthansa, was in April 2012.<sup>119</sup> In total, the time between the 747-8I's originally scheduled first delivery and its actual first delivery was less than two years.<sup>120</sup>

134. The delay in the 747-8I's first deliveries was the result of several factors arising during the development and initial production phases of the program, primarily supply chain issues, late design changes, and performance issues discovered during flight testing (including vibration in certain flight conditions and an underperforming aileron actuator).<sup>121</sup> Over the past 20 years, it has not been unusual for a new or major derivative commercial airplane program to encounter problems that prolong the development and initial production phases beyond what was originally scheduled. The time required to address those problems is in large part a function of the resources allocated, such as engineers to solve design issues.<sup>122</sup>

135. [BCI].<sup>123</sup>

136. The work stoppage referenced in this question refers to an eight-week strike from September – November 2008 by Boeing employees represented by the International Association of Machinists and Aerospace Workers.<sup>124</sup>

**Question 132 (US)**

**Can a customer who has previously placed an LCA order cancel the order at any time or are there limitations on when the customer can cancel the order?**

137. Where a customer places a firm order by executing an aircraft purchase agreement with Boeing, [BCI].<sup>125</sup>

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<sup>119</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)).

<sup>120</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)).

<sup>121</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)).

<sup>122</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)).

<sup>123</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)). *See also* Boeing e-mail from [BCI] (Exhibit USA-56(BCI)).

<sup>124</sup> Boeing E-mail regarding Questions 130-131 (Exhibit USA-85(BCI)); *Machinists Back Contract With Boeing: 8-Week Strike Ends*, New York Times (Nov. 2, 2008) (Exhibit USA-86).

<sup>125</sup> Boeing E-mail regarding Questions 116, 118, 121, 124(c), 125, 128-129, 132 (Exhibit USA-66(HSBI)).

**Question 133 (US)**

**With reference to paragraph 18 of the European Union's oral statement, could the United States please comment on the European Union's view that the United States' Article 22.2 request asks for countermeasures corresponding to lost sales and displacement, but not impedance and thus provides no basis for requesting countermeasures for findings of impedance?**

138. The comment referenced in this question consists of two sentences and a footnote citing to two reports of previous arbitrators under Article 22.6.<sup>126</sup> It does not provide an explanation of the legal basis for its request that the Arbitrator exclude the DSB-adopted findings of impedance from the quantification of adverse effects and, therefore, does not satisfy the EU's burden of proof on this point. Nonetheless, for the sake of completeness, the remainder of this response will address the inapplicability of the provisions and findings cited by the EU to the U.S. request for authorization to take countermeasures.

139. The EU's comment contains two assertions:

- (1) a **factual assertion** that the U.S. request "asked for countermeasures corresponding to *lost sales* and *displacement*," but "does not identify quantification" of impedance; and
- (2) a **legal assertion** that this request "fails to meet the specificity requirements to authorise countermeasures for *impedance*."<sup>127</sup>

Neither assertion is correct.

140. With respect to the factual assertion, the U.S. request for authorization states:

the United States requests authorization from the Dispute Settlement Body ("DSB") to take countermeasures with respect to the European Union ("EU") at an annual level commensurate with the degree and nature of the adverse effects caused to the interests of the United States by the failure of the EU and certain member States to withdraw subsidies or remove their adverse effects in compliance with the recommendations and rulings of the DSB. This amount corresponds to the annual value of lost sales, of imports of US large civil aircraft displaced from the EU market, and of exports of US large civil aircraft displaced from third country markets.<sup>128</sup>

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<sup>126</sup> EU Oral Statement, para. 18.

<sup>127</sup> EU Oral Statement, para. 18 (emphasis in original).

<sup>128</sup> Communication from the United States, WT/DS316/18, p.1.

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The request is to take countermeasures “commensurate with the degree and nature of the adverse effects caused to the interests of the United States by the failure of the EU and certain member States to withdraw subsidies or remove their adverse effects in compliance with the recommendations and rulings of the DSB.” The subsequent sentence is in the present tense, and explains that “{t}his amount corresponds to the annual value of lost sales, of imports of US large civil aircraft displaced from the EU market, and of exports of US large civil aircraft displaced from third country markets.”

141. Thus, the U.S. *request* was to take countermeasures commensurate with the degree and nature of the adverse effects reflected in the recommendations and rulings of the DSB. The subsequent statement referring to lost sales and displacement *explained* how the United States valued those adverse effects *at that time*. It does not in any way limit the adverse effects to those particular market phenomena or to that time. Thus, the EU errs in asserting that the U.S. request sought countermeasures exclusively with respect to lost sales and displacement.

142. The United States and the EU agree that, for purposes of this proceeding, the relevant adverse effects are those found to exist in the compliance reports adopted by the DSB, and not those from the original proceeding.<sup>129</sup> The parties also agree that these consist of significant lost sales and impedance. Indeed, the parties requested the Arbitrator to suspend these proceedings, and to recommence the arbitration “{i}n the event that the DSB following a proceeding under Article 21.5 of the DSU rules that a measure taken to comply does not exist or is inconsistent with a covered agreement.”<sup>130</sup> Thus, “the failure of the EU and certain member States to withdraw subsidies or remove their adverse effects in compliance with the recommendations and rulings of the DSB” referenced in the U.S. request can only be understood to refer to the adverse effects found to exist in the report of the compliance panel, as modified by the compliance appellate report.

143. With respect to the EU’s legal assertion, the two reports cited by the EU observe that “the specificity standards, which are well established in WTO jurisprudence under Article 6.2 of the DSU were relevant for requests for authorization to suspend concessions under Article 22.2 and for requests for referral of such matter to arbitration under Article 22.6.”<sup>131</sup> They further observe that to meet this standard,

(1) the request must set out a specific level of suspension, i.e. a level equivalent to the nullification and impairment caused by the WTO-inconsistent measure, pursuant to Article 22.4; and (2) the request must specify the agreement and

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<sup>129</sup> U.S. Methodology Paper, paras. 26-29; EU written submission, paras. 72-73, 81.

<sup>130</sup> *Communication from the Arbitrator*, WT/DS316/22 (2 February 2012).

<sup>131</sup> *EU – Bananas III (22.6 – EC)*, para. 20 (quoted in *US – Offset Act (22.6 – EC)*, para. 2.18).

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sector(s) under which concessions or other obligations would be suspended, pursuant to Article 22.3.<sup>132</sup>

144. The U.S. request identified the level of countermeasures in functional terms, as the annual level of adverse effects “determined to exist,” caused to the interests of the United States by the EU’s failure to comply with the DSB’s recommendations and rulings, and then estimated that, as of that time, that would be “between \$7 and \$10 billion per year.”<sup>133</sup> It also specified the relevant sectors (a list of products under the Harmonized Tariff Schedule of the United States and horizontal and sectoral commitments in the U.S. Schedule of Specific Commitments, except for financial services). Thus, the U.S. request is specific similar to DSU Article 6.2 described in the arbitrator decisions cited by the EU.

145. The EU’s citation provides no basis to consider that the relevant statements in the U.S. request excluded impedance. Article 7.9 of the SCM Agreement, explicitly cited in the request, authorizes countermeasures “commensurate with the degree and nature of the adverse effects determined to exist.” The parties agree that in this case, the relevant determinations appear in the report of the compliance panel, as modified by the compliance appellate report,<sup>134</sup> which concluded, *inter alia*, that “the LA/MSF subsidies existing in the post-implementation period are a genuine and substantial cause of impedance of US LCA in the VLA markets in the European Union, Australia, China, Korea, Singapore, and the United Arab Emirates.”<sup>135</sup> Thus, the citation to Article 7.9 in the U.S. request clearly encompasses the compliance proceeding findings of impedance, and the EU is wrong in arguing that the request, as a matter of law, lacks some level of specificity in this regard.

**Question 134 (US)**

**With reference to the European Union's response to question No. 2, could the United States please provide, with respect to the 2011 Cathay Pacific order for 14 777-300ER aircraft, the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

146. Cathay Pacific’s purchase of 14 777-300ERs in 2011 consisted of two orders. The United States provides information pertaining to Cathay Pacific’s order of 10 777-300ERs in March 2011 in Exhibit USA-69(HSBI). The United States provides information pertaining to Cathay Pacific’s order of four (4) 777-300ERs in August 2011 in Exhibit USA-70(HSBI).

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<sup>132</sup> *EU – Bananas III (22.6 – EC)*, para. 21 (quoting *EC – Hormones (Canada) (22.6 – EC)*), para. 16; *US – Offset Act (22.6 – EC)*, para. 2.18.

<sup>133</sup> Communication from the United States, WT/DS316/18, p. 1.

<sup>134</sup> U.S. Methodology Paper, paras. 26-29; EU written submission, paras. 72-73 and 81.

<sup>135</sup> Compliance Panel Appellate Report, para. 6.42(a).

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**Question 135 (US)**

**With reference to Exhibits USA-12 (HSBI) to USA-16 (HSBI) and USA-47 (HSBI) to USA-52 (HSBI) and the LCA orders to which such exhibits pertain, could the United States please provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

147. Exhibits USA-68<sup>136</sup> to USA-71, USA-73 to USA-81, USA-87, and USA-89 - USA-97 provide the information requested by the Arbitrator as specified in the "Explanatory Note: Evidentiary Requests." The table below shows the relevant customer/transaction and the corresponding exhibit in which the documentation can be found, as well as the corresponding exhibits referenced in the question that previously addressed each transaction.

<b>Customer/Transaction</b>	<b>Documentation in:</b>	<b>Previously addressed in:</b>
Cathay Pacific 2013 777-300ER	USA-68	USA-12
Transaero 2013 747-8I	USA-75	USA-13
Singapore Airlines 2013 787-10	USA-73	USA-14
United 2015 777-300ER	USA-74	USA-15
[BCI]	USA-71	USA-16
Lufthansa 2006 747-8I	USA-79	USA-47
Korean Air 2009 747-8I	USA-89	USA-48
Korean Air 2013 747-8I	USA-76	USA-48
Air China 2012 747-8I	USA-77	USA-49
Air China 2013 747-8I	USA-78	USA-49
[BCI]	USA-80	USA-50

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<sup>136</sup> For purposes of the response to this question, the United States does not follow its normal convention of indicating that an exhibit is an HSBI exhibit, e.g., USA-67(HSBI), because the sheer number of times that HSBI exhibits are referenced interferes with the readability. Therefore, with respect to this response, all exhibits referenced are HSBI unless indicated otherwise.

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[BCI]	USA-90	USA-51
[BCI]	USA-81	USA-52

148. The United States discusses below the documentation in the new exhibits pertaining to each comparator order relied on in its methodology paper. These exhibits and explanations supplement the earlier exhibits and explanations.

149. For transactions involving firm orders where deliveries have been made, one exhibit is provided for each transaction and includes:

Tab 1: the relevant pages from [BCI];

Tab 2: [BCI]<sup>137</sup>;

Tab 3: [BCI];

Tab 4: the applicable escalation [BCI]; and

Tab 5: the underlying values for the escalation [BCI].

150. For transactions involving [BCI], one exhibit is provided for each transaction and includes:

Tab 1: the relevant pages from [BCI];

Tab 2: the applicable escalation [BCI]; and

Tab 3: the underlying values for the escalation [BCI].

151. The United States also provides below and in Exhibit USA-99 a revised aggregate adverse effects calculation that incorporates and reflects the information requested by the Arbitrator by making the following adjustments:

- (i) When Boeing first compiled pricing information to calculate the valuation for the lost sales, it relied on information contained in the [BCI]. For this submission, the U.S. calculation has been modified to reflect more precisely the pricing terms applicable at the time of order as reflected in the documentation provided – *i.e.*, at the time of the original Purchase Agreement [BCI] applicable to the order. The results of any such changes on the price are insignificant. Nevertheless, wherever

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<sup>137</sup> For [BCI].

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a number in the calculation has been refined, however slightly, we have indicated as much explicitly and explained the reason.

- (ii) As discussed further below, the net sales value in [BCI]. The U.S. methodology for the impedance calculation incorporates [BCI]. Where [BCI], the U.S. calculation has been updated to reflect the new information. Provided in Exhibit USA-103(HSBI) are revised global delivery prices for 747-8Is for 2012 and 2013, and provided in Exhibit USA-104(HSBI) is a revised calculation of 2011 747-8I delivery prices.

*Comparator Order for Cathay Pacific (2012) Lost Sale*

152. As indicated in paragraph 57 of the Appendix to the U.S. Methodology Paper, Boeing used Cathay Pacific’s 2013 order for Boeing 777-300ERs as the comparator order for the Cathay Pacific 2012 lost sale of 10 A350 XWB-1000s. The 2013 Cathay Pacific 777-300ER order [BCI], which [[HSBI]] that was [BCI]. After submission of the U.S. methodology paper, the EU provided Airbus’s actual contracted delivery schedule with Cathay Pacific. In addition to the explanation below, the revised valuation of the Cathay Pacific 2012 lost sale based on the documentation included in Exhibit USA-68 and provided in Exhibit USA-99 reflects the use of this contracted delivery schedule instead of the Boeing estimates of that schedule that the United States used previously.

153. The information requested in the Explanatory Note for this order is provided in Exhibit USA-68 appears as follows:

- **Base year/month:** [[HSBI]], as indicated in the [BCI]. (Exhibit USA-68, p. 83.)
- **Order year/month:** [[HSBI]], as indicated [BCI] (Exhibit USA-68, p. 81.)
- **Gross price:** [[HSBI]], which represents the gross price of the aircraft in base year ([[HSBI]]) dollars (*i.e.*, without the application of an escalation factor). This figure [BCI]. (Exhibit USA-68, p. 83.)<sup>138</sup>
- **Price concessions (subject to escalation; not subject to escalation):** The [BCI] sets out the applicable price concessions. (Exhibit USA-68, pp. 39-42.) As described therein, [[HSBI]]:

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<sup>138</sup> In Exhibit USA-12, the United States valued [[HSBI]]. It has made [BCI] of [[HSBI]] in its [BCI] included in this submission.

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- [BCI]: Is [BCI] in the amount of [[HSBI]]. For [BCI] being [[HSBI]]. (Exhibit USA-68, pp. 39-40.)<sup>139</sup>
- [BCI]: Is [BCI]. (Exhibit USA-68, p. 40.)
- [BCI]: Is [BCI]. (Exhibit USA-68, p. 40.) Notably, [BCI]. (Exhibit USA-68, p. 40.) However, consistent with its conservative approach, the U.S. has applied [BCI] in the counterfactual deliveries reflecting contracted deliveries between Airbus and Cathay Pacific scheduled for [[HSBI]].
- [BCI]: Is [BCI] in the amount of [[HSBI]]. For [BCI] being [[HSBI]]. (Exhibit USA-68, p. 41.) This credit memorandum also [BCI] (Exhibit USA-68, p. 41.), but again the United States has continued to apply it – and therefore lower the price – of counterfactual deliveries scheduled for [[HSBI]].
- [BCI]: Is [BCI] in the amount of [[HSBI]]. This [BCI]. (Exhibit USA-68, p. 41.)
- [BCI]: Is [BCI] in the amount of [[HSBI]]. For [BCI] being [[HSBI]]. (Exhibit USA-68, pp. 41-42.) This credit memorandum [BCI] (Exhibit USA-68, p. 41.), but again the United States has continued to apply it – and therefore lowered the price – of counterfactual deliveries scheduled for [[HSBI]].

It is possible to see an example of [BCI] by looking at the invoice for an aircraft that Boeing delivered (although this does not reflect a counterfactual delivery date, as those are determined in the U.S. methodology by the contracted schedule between Airbus and the customer). For the Delivery Invoice for Serial No. [[HSBI]], the total price concessions are calculated for a specific delivery as follows (*see* Exhibit USA-68, p. 85)<sup>140</sup>:

[[HSBI]]

- **Delivery Schedule (month/year):** The United States recalls that the U.S. methodology uses the contracted schedule between Airbus and the customer, which would have complemented, rather than duplicated, any delivery schedule in an actual Boeing order. The contracted delivery schedule agreed upon by Boeing and Cathay Pacific at the time of the 2013 order is included in the [BCI]. (Exhibit USA-68, p. 83.) As indicated in [BCI]. (Exhibit USA-68, p. 71.) [BCI]. (Exhibit USA-68, p. 81.) The [[HSBI]], which were scheduled for delivery in [[HSBI]], respectively. (Exhibit USA-68, p. 83.)

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<sup>139</sup> This [BCI].

<sup>140</sup> Note that, on the Delivery Invoice, [BCI]. (*See* Exhibit USA-68, p. 85, where [[HSBI]] is [BCI].) However, [BCI]. (Exhibit USA-68, p. 85.) The [BCI].

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- **Final delivery prices:** The “final” delivery price for each aircraft [BCI]. (Exhibit USA-68, p. 98.) (As indicated above, the [BCI].) However, this delivery price [BCI]. As discussed above, in response to Question 124, [BCI].
- **Escalation formula:** [BCI], as indicated [BCI]. (Exhibit USA-68, p. 83.) As shown at the top of the table in Exhibit USA-68, p. 100, this formula is equal to [[HSBI]]. This formula is [BCI]. (Exhibit USA-68, pp. 3-6.) The U.S. response to Question 136 provides further details.
- **[Projected] escalation factors:** The [BCI] escalation factors are provided in Exhibit USA-68, pp. 100-104. The United States used [BCI] escalation factors at the time of order [BCI] in its calculation of delivery price based on comparative orders for the purposes of calculating the value of the lost sale. Thus, for this order, the U.S. methodology relied on [BCI] from Boeing from the [BCI], which are listed in Exhibit USA-68, pp. 100-104.
- **[BCI] escalation factors:** The [BCI] escalation factors [BCI]. For example, for the Delivery Invoice starting on Exhibit USA-68, p. 86 (Serial No. [[HSBI]]), the [BCI] escalation factor is [[HSBI]], as shown at p. 87.
- **[BCI] escalation from base year/month to order year/month:** Boeing [BCI]. However, this can be calculated as follows: (1) subtract from the gross price in base year dollars the price concessions [BCI] in base year dollars; (2) escalate the resulting price to the year of order; and (3) subtract [BCI] from the escalated price.

For this order, if escalating to the order year/month of the Boeing order (dated [[HSBI]]) rather than the Airbus order date used in the counterfactual, that would entail the following calculation<sup>141</sup>:

[[HSBI]]

If escalating to the order year/month of the Airbus order date used in the counterfactual, however, the appropriate escalation rate would be [[HSBI]], which corresponds with July 2012. (Exhibit USA-68, p. 101.) (The United States uses the midpoint of the year where the data is broken down by year. Thus, July 2012 for 2012 lost sales and July 2013 for 2013 lost sales.) This would result in the following calculation:

[[HSBI]]

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<sup>141</sup> See USA-68, p. 83 (for the [BCI]), p. 39-42 (for the price concessions), and p. 101 (providing the escalation factor for [[HSBI]]).

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The [BCI] escalation from base year/month to [BCI]. (*See, e.g.*, Exhibit USA-68, pp. 85.)

- **Order size:** As noted above, this order was [BCI]. (Exhibit USA-68, p. 83.) [BCI], *i.e.*, [[HSBI]].
- **PDP and down-payments (size and timing of payments):** The [BCI] provides the size and timing of the PDPs, including down-payments (or “deposits”), contracted for at the time of order. (Exhibit USA-68, p. 83.) Thus, for example for [[HSBI]]. The [BCI]. (Exhibit USA-68, pp. 39-42.) Any advanced payments [BCI]. (*See, e.g.*, Exhibit USA-68, p. 85 ([BCI]).)
- **Penalties for late deliveries and performance guarantees:** The [BCI]. (Exhibit USA-68, pp. 36-38 and 48-69.) As detailed in response to Question 124, above, Boeing [BCI].
- **Options:** [BCI].
- **Purchase rights:** [BCI].
- **Conversion Rights (Substitution Rights):** [BCI].
- **Service-related provisions:** [BCI]. (Exhibit USA-68, pp. 7-32, 73-76, and 76-80.) These are incidental to the sale of the aircraft. Indeed, they are described as [[HSBI]] (Exhibit USA-68, p. 73) and [[HSBI]]. (Exhibit USA-68, p. 76.)
- **Other Specifications:** There are no “other specifications” that have a significant impact on price. The United States notes, however, that the items provided as examples in the Explanatory Note, including engine type ([BCI]), thrust level, producer- ([BCI]) and buyer-furnished equipment, and MTOW [BCI]. (Exhibit USA-68, p. 83.) [BCI].

154. The United States uses the information described above to calculate aircraft values as follows.

155. First, the credits [BCI] are subtracted from the base year price. Here, the [BCI] of [[HSBI]], the [BCI] of [[HSBI]], and the [BCI] of [[HSBI]] – or [[HSBI]] – are [BCI]. Therefore, [[HSBI]] is subtracted from the [[HSBI]]. (The [[HSBI]] is [BCI]. (Exhibit USA-68, p.83.)) The resulting figure is [[HSBI]].

156. Second, the appropriate escalation factor is applied to the result of the first step. For example, one delivery pursuant to Airbus’s contract with Cathay Pacific was scheduled for [[HSBI]]. The U.S. methodology utilizes the factor for the mid-year point of July. To ascertain the appropriate escalation factor, one must look to Exhibit USA-68, p. 103, which indicates that the escalation factor for a delivery in July [[HSBI]]. Thus, [[HSBI]] is multiplied by [[HSBI]], which equals [[HSBI]].

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157. Third, the credits [BCI] are subtracted. The [BCI] of [[HSBI]] and the [BCI] of [[HSBI]] – or [[HSBI]] – are [BCI]. Thus, the [[HSBI]] is subtracted from [[HSBI]] to arrive at a final delivery price of [[HSBI]]. This calculation is shown in the table below and is included for all delivery years in the aircraft schedule in Airbus’s contract with Cathay Pacific in Exhibit USA-61(HSBI), p. 1:

[[HSBI]]

158. The following table reflects the revised valuation of the Cathay Pacific 2012 lost sale:

Cathay Pacific (2012)						
Delivery Year	Deliveries <sup>142</sup>	Closest Boeing Model	Delivery Year Price <sup>143</sup>	Total Delivery Year Value (C) = A*B	Discount Factor <sup>144</sup>	Discounted Order Year (2012) Value (E) = C/D
[[HSBI]]	[[ HSBI ]]	777-300ER	[[ HSBI ]]	[[ HSBI ]]	1.1534	[[ HSBI ]]
<b>Total 2012 lost sale value</b>						[[ HSBI ]]

*Comparator Order for Transaero (2012) Lost Sale*

159. As indicated in paragraph 62 of the Appendix to the U.S. Methodology Paper, Boeing used Tansaero’s 2013 order for Boeing 747-8Is as the comparator order for the Transaero 2012 lost sale of 4 A380s. The 2013 Transaero 747-8I order was executed pursuant to a [[HSBI]]. As discussed previously, [BCI]. As noted above, after submission of the U.S. methodology paper, the EU provided Airbus’s actual contracted delivery schedule with Transaero. In addition to the explanation below, the revised valuation of the Transaero 2012 lost sale based on the documentation included in Exhibit USA-75 and provided in Exhibit USA-99 reflects the use of this contracted delivery schedule instead of the Boeing estimates of that schedule that the United States used previously

160. The information requested in the Explanatory Note for this order is provided in Exhibit USA-75 and appears as follows:

<sup>142</sup> 2012/2013 Airbus lost sales campaigns: Cathay Pacific [BCI] (Exhibit EU-87-HSBI).

<sup>143</sup> See, e.g., the revised Net Delivery Price calculated above.

<sup>144</sup> See U.S. 10-Year Treasury Bond Interest Rates (Exhibit USA-10(Non-BCI)).

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- **Base year/month:** [[HSBI]], as indicated in the [BCI]. (Exhibit USA-75, p. 6.)
- **Order year/month:** [[HSBI]], as indicated [BCI]. (Exhibit USA-75, p. 5).
- **Gross price:** [[HSBI]], which represents the gross price of the aircraft in base year ([[HSBI]]) dollars (*i.e.*, without the application of an escalation factor). This figure [BCI] (*i.e.*, [[HSBI]]) and [BCI] (*i.e.*, [[HSBI]]). (Exhibit USA-75, p. 6.)<sup>145</sup>
- **Price concessions (subject to escalation; not subject to escalation):** The [BCI] sets out the applicable price concessions. (Exhibit USA-75, pp. 19-20.) As described therein, [BCI]<sup>146</sup>.
  - [BCI]: Is [BCI] in the amount of [[HSBI]]. (Exhibit USA-75, p. 19.)
  - [BCI]: Is [BCI] in the amount of [[HSBI]]. (Exhibit USA-75, p. 19.)
  - The [BCI]. (Exhibit USA-75, p.20.)
- **Delivery Schedule (month/year):** The United States recalls that its methodology uses the contracted schedule between Airbus and the customer, which would have complemented, rather than duplicated, any delivery schedule in an actual Boeing order. The contracted delivery schedule agreed upon by Boeing and Transaero at the time of the 2013 order is included in the [BCI] (Exhibit USA-75, p. 6.)
- **Final delivery prices:** [BCI].
- **Escalation formula:** [BCI], as indicated [BCI]. (Exhibit USA-75, p. 7.) As shown at the top of the table in Exhibit USA-75, p. 33, this formula is equal to [[HSBI]]. This formula is [BCI]. (Exhibit USA-75, pp. 7-10.)
- **[BCI] escalation factors:** The [BCI] escalation factors are provided in Exhibit USA-75, pp. 33-37. The United States used [BCI] escalation factors at the time of order [BCI] in its calculation of delivery price based on comparative orders for the purposes of calculating the value of the lost sale. Thus, for this order, the U.S. methodology relied on [BCI] from Boeing from the [BCI], which are listed in Exhibit USA-75, pp. 33-37.
- **[BCI] escalation factors:** The [BCI] escalation factors [BCI].

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<sup>145</sup> In Exhibit USA-13, the United States valued [[HSBI]]. It has made [BCI] of [[HSBI]] in its [BCI] included in this submission.

<sup>146</sup> Exhibit USA-13 included [BCI] of [[HSBI]]. This [BCI]. As the U.S. methodology relies on valuation based on the agreement at the time of order, the United States has [BCI].

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- **[BCI] escalation from base year/month to order year/month:** Boeing [BCI]. However, this can be calculated as follows: (1) subtract from the gross price in base year dollars the price concessions [BCI] in base year dollars; (2) escalate the resulting price to the year of order; and (3) subtract [BCI] from the escalated price.

For this order, if escalating to the order year/month of the Boeing order (dated [[HSBI]]) rather than the Airbus order date used in the counterfactual, that would entail the following calculation<sup>147</sup>:

[[HSBI]]

If escalating to the order year/month of the Airbus order date used in the counterfactual, however, the appropriate escalation rate would be [[HSBI]], which corresponds with July 2012. (The United States uses the midpoint of the year where the data is broken down by year. Thus, July 2012 for 2012 lost sales and July 2013 for 2013 lost sales.) (Exhibit USA-75, p. 33). This would result in the following calculation:

[[HSBI]]

- **Order size:** This order [BCI]. (Exhibit USA-75, p. 6.)
- **PDP and down-payments (size and timing of payments):** The [BCI] provides the size and timing of the PDPs, including down-payments (or “deposits”), contracted for at the time of order. (Exhibit USA-74, p. 6.) As reflected [[HSBI]].
- **Penalties for late deliveries and performance guarantees:** The [BCI]. (Exhibit USA-75, pp. 16-18 and 22-29.) As detailed in response to Question 124, above, Boeing [BCI].
- **Options:** [BCI].
- **Purchase rights:** [BCI].
- **Conversion Rights (Substitution Rights):** [BCI].
- **Service-related provisions:** [BCI]. (Exhibit USA-75, pp. 12-16.)
- **Other Specifications:** There are no “other specifications” that have a significant impact on price. The United States notes, however, that the items provided as examples in the

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<sup>147</sup> See Exhibit USA-75, p. 6 (providing the [BCI]), p. 19 (providing the price concessions), and p. 33 (providing the escalation factor for [[HSBI]]).

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Explanatory Note, including engine type ([BCI]), thrust level, producer- ([BCI]) and buyer-furnished equipment, and MTOW [BCI] provided in Exhibit USA-75, p. 6. [BCI].

161. The U.S. methodology uses the information described above to calculate aircraft values as follows.

162. First, the credits [BCI] are subtracted from the base year price. Here, the [BCI] of [[HSBI]] and the [BCI] of [[HSBI]] – or [[HSBI]] – are [BCI]. Therefore, [[HSBI]] is subtracted from [[HSBI]]. (The [[HSBI]]. The resulting figure is [[HSBI]].

163. Second, the appropriate escalation factor is applied to the result of the first step. For example, one delivery pursuant to Airbus’s contract with Transaero was scheduled for [[HSBI]]. The U.S. methodology utilizes the factor for the mid-year point of July. To ascertain the appropriate escalation factor, one must look to Exhibit USA-75, p. 33, which indicates that the escalation factor for a delivery in July [[HSBI]]. Thus, [[HSBI]] is multiplied by [[HSBI]], which equals [[HSBI]].

164. Third, [BCI] are subtracted. [BCI]. This calculation is shown in the table below and is included for all delivery years in the aircraft schedule in Airbus’s contract with Transaero in Exhibit USA-61(HSBI), p. 2:

[[HSBI]]

165. The following table reflects the revised valuation of the Transaero 2012 lost sale:

[[HSBI]]

*Comparator Order for Singapore Airlines (2013) Lost Sale*

166. As indicated in paragraph 68 of the Appendix to the U.S. Methodology Paper, Boeing used Singapore Airline’s 2013 order for Boeing 787-10s as the comparator order for the Singapore Airlines 2013 lost sale of 30 A350 XWB-900s. The 2013 Singapore Airlines 787-10s order [BCI]. After submission of the U.S. methodology paper, the EU provided Airbus’s actual contracted delivery schedule with Singapore Airlines. In addition to the explanation below, the revised valuation of the Singapore Airlines 2013 lost sale based on the documentation included in Exhibit USA-73 and provided in Exhibit USA-99 reflects the use of this contracted delivery schedule instead of the Boeing estimates of that schedule that the United States used previously.

167. The information requested in the Explanatory Note for this order is provided in Exhibit USA-73, and appears as follows:

- **Base year/month:** [[HSBI]], as indicated in the [BCI]. (Exhibit USA-73, pp. 6-7.)
- **Order year/month:** [[HSBI]], as indicated [BCI]. (Exhibit USA-73, p. 5.)

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- **Gross price:** [[HSBI]], which represents the gross price of the aircraft in base year ([[HSBI]]) dollars (*i.e.*, without the application of an escalation factor). This figure [BCI]. (Exhibit USA-73, p. 6.)<sup>148</sup>
- **Price concessions (subject to escalation; not subject to escalation):** The [BCI] sets out the applicable price concessions. (Exhibit USA-73, pp. 107-108.) As described therein, [BCI]:
  - [BCI]: Is [BCI] of [[HSBI]]. The [BCI]. (Exhibit USA-73, pp. 107-108.)

It is possible to see an example of [BCI] by looking at the invoice for an aircraft that Boeing delivered. (It is important to note the following regarding the Delivery Invoice: (1) the delivery dates in the invoice do not reflect a counterfactual delivery date, as those are determined in the U.S. methodology by the contracted schedule between Airbus and the customer; (2) the [BCI]; and (3) the [BCI]. For the Delivery Invoice for Serial No. [[HSBI]], the Net Price can be calculated by taking the Gross Price and subtracting the price concessions, as follows (*see* Exhibit USA-73, p. 187-189):

[[HSBI]]

- **Delivery Schedule (month/year):** The United States recalls that the U.S. methodology uses the contracted schedule between Airbus and the customer, which would have complemented, rather than duplicated, any delivery schedule in an actual Boeing order. The contracted delivery schedule agreed upon by Boeing and Singapore at the time of the 2013 order is included in the [BCI]. (Exhibit USA-73, p. 6-7.) As indicated in [BCI], this order covers the purchase of 30 787-10s.
- **Final delivery prices:** The “final” delivery price<sup>149</sup> for each aircraft [BCI].
- **Escalation formula:** [BCI], as indicated [BCI]. ([BCI].) (Exhibit USA-73, p. 6.) As shown at the top of the table in Exhibit USA-73, p. 166, this formula is equal to [[HSBI]]. This formula is [BCI]. (Exhibit USA-73, pp. 8-12, 31-35.) This contract [BCI]. (Exhibit USA-73, pp. 36-39.) The U.S. response to Question 136 provides further details.
- **[BCI] escalation factors:** The [BCI] escalation factors are provided in Exhibit USA-73, pp. 166-169. The United States used [BCI] escalation factors at the time of order [BCI] in its calculation of delivery price based on comparative orders for the purposes of

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<sup>148</sup> In Exhibit USA-14, the United States valued [[HSBI]]. It has [BCI] of [[HSBI]] in its [BCI] included in this submission.

<sup>149</sup> As indicated above, the [BCI].

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calculating the value of the lost sale. Thus, for this order, the U.S. methodology relied on [BCI] from Boeing from the [BCI]<sup>150</sup>, which are listed in Exhibit USA-73, pp. 36-39.

- **[BCI] escalation factors:** The [BCI] escalation factors [BCI]. For example, for the Delivery Invoice starting on Exhibit USA-73, p. 132 (Serial No. [[HSBI]]), the [BCI] escalation factor is [[HSBI]], as shown at p. 133.
- **[BCI] escalation from base year/month to order year/month:** Boeing [BCI]. However, this can be calculated as follows: (1) subtract from the gross price in base year dollars the price concessions [BCI] in base year dollars; (2) escalate the resulting price to the year of order; and (3) subtract [BCI] from the escalated price.

For this order, if escalating to the order year/month of the Boeing order (dated [[HSBI]]) rather than the Airbus order date used in the counterfactual, that would entail the following calculation:

[[HSBI]]

If escalating to the order year/month of the Airbus order date used in the counterfactual, however, the appropriate escalation rate would be [[HSBI]], which corresponds with July 2013 (the estimated date of the Airbus order). (The United States uses the midpoint of the year where the data is broken down by year. Thus, July 2012 for 2012 lost sales and July 2013 for 2013 lost sales.) (Exhibit USA-73, p. 166). This would result in the following calculation:

[[HSBI]]

The [BCI] escalation from base year/month to [BCI]. (*See, e.g.*, Exhibit USA-73, pp. 133.)

- **Order size:** This order [BCI]. (Exhibit USA-73, p. 6.)
- **PDP and down-payments (size and timing of payments):** The [BCI] provides the size and timing of the PDPs, including down-payments (or “deposits”), contracted for at the time of order. (Exhibit USA-73, p. 6.) As indicated [[HSBI]]. The [BCI]. (Exhibit USA-73, p. 109.) Any advanced payments [BCI]. (*See, e.g.*, Exhibit USA-73, p. 132 ([BCI])).

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<sup>150</sup> [BCI].

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- **Penalties for late deliveries and performance guarantees:** The [BCI]. (Exhibit USA-73, pp. 40-44 and 60-106.) As detailed in response to Question 124, above, Boeing [BCI].
- **Options:** [BCI].
- **Purchase rights:** [BCI].
- **Conversion Rights (Substitution Rights):** [BCI].
- **Service-related provisions:** [BCI]. (Exhibit USA-73, pp. 13-30 and 45-59.) [BCI].
- **Other Specifications:** There are no “other specifications” that have a significant impact on price. The United States notes, however, that the items provided as examples in the Explanatory Note, including engine type ([BCI]), thrust level, producer- ([BCI]) and buyer-furnished equipment, and MTOW [BCI] provided in Exhibit USA-73, p. 6. [BCI].

168. The United States uses the information described above to calculate aircraft values as follows.

169. First, the credits [BCI] are subtracted from the base year price. Here, the [BCI] of [[HSBI]] is [BCI]. Therefore, [[HSBI]] is subtracted from [[HSBI]]. (The [[HSBI]]). (Exhibit USA-73, p. 6.) The resulting figure is [[HSBI]].

170. Second, the appropriate escalation factor is applied to the result of the first step. For example, one delivery pursuant to Airbus’s contract with Singapore was scheduled for [[HSBI]]. The U.S. methodology utilizes the factor for the mid-year point of July. To ascertain the appropriate escalation factor, one must look to Exhibit USA-73, p. 166, which indicates that the escalation factor for a delivery in July [[HSBI]]. Thus, [[HSBI]] is multiplied by [[HSBI]], which equals [[HSBI]].

171. Third, the [BCI] are subtracted. [BCI]. This calculation is shown in the table below and is included for all delivery years in the aircraft schedule in Airbus’s contract with Singapore in Exhibit USA-61(HSBI), pp. 3-4:

[[HSBI]]

172. The following table reflects the revised valuation of the Singapore 2013 lost sale:

[[HSBI]]

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*Comparator Order for the United Airlines (2013) Lost Sale*

173. As indicated in paragraph 73 of the Appendix to the U.S. Methodology Paper, Boeing used United Airline’s 2015 order for Boeing 777-300ERs as the comparator order for the United Airlines 2013 lost sale of 10 A350 XWB-1000s. The 2015 United Airlines 777-300ER order was executed pursuant to [[HSBI]]. After submission of the U.S. methodology paper, the EU provided Airbus’s actual contracted delivery schedule with United. In addition to the explanation below, the revised valuation of the United Airlines 2013 lost sale based on the documentation included in Exhibit USA-74 and provided in Exhibit USA-99 reflects the use of this contracted delivery schedule instead of the Boeing estimates of that schedule that the United States used previously

174. The information requested in the Explanatory Note for this order is provided in Exhibit USA-87 and appears as follows:

**Base year/month:** [[HSBI]], as indicated in the [BCI]. (Exhibit USA-74, p. 6.)

**Order year/month:** [[HSBI]], as indicated [BCI]. (Exhibit USA-74, p. 5).

**Gross price:** [[HSBI]], which represents the gross price of the aircraft in base year ([[HSBI]]) dollars (*i.e.*, without the application of an escalation factor). This figure [BCI] (*i.e.*, [[HSBI]]) and [BCI] (*i.e.*, [[HSBI]]). The [BCI]. (Exhibit USA-74, p. 6.)<sup>151</sup>

**Price concessions (subject to escalation; not subject to escalation):** The [BCI] sets out the applicable price concessions. (Exhibit USA-74, pp. 49-50.) As described therein, [BCI]<sup>152</sup>:

- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 49.)
- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 49.)
- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 49.)
- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 49.)
- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 49.)
- [BCI]: Is [BCI] of [[HSBI]]. This [BCI]. (Exhibit USA-74, p. 50.)

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<sup>151</sup> In Exhibit USA-15 (HSBI), the United States valued [[HSBI]]. Further, it [[HSBI]]. It has [BCI] of [[HSBI]] in its [BCI] included in this submission.

<sup>152</sup> In Exhibit USA-15(HSBI), the United States included [[HSBI]]. However, this price concession [[HSBI]]. As the U.S. methodology [BCI].

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- [BCI]: Will [BCI]. (Exhibit USA-74, p. 50.)
- [BCI]: Will [BCI]. (Exhibit USA-74, pp. 50; *see also* Exhibit USA-74, pp. 16-17.)

It is possible to see an example of [BCI] by looking at the invoice for an aircraft that Boeing delivered. (It is important to note the following regarding the Delivery Invoice: (1) the delivery dates in the invoice do not reflect a counterfactual delivery date, as those are determined in the U.S. methodology by the contracted schedule between Airbus and the customer; (2) the [BCI]; and (3) the [BCI]. For the Delivery Invoice for Serial No. [[HSBI]], the Net Price can be calculated by taking the Gross Price and subtracting the price concessions, as follows (*see* Exhibit USA-74, p. 55-58)<sup>153</sup>:

[[HSBI]]

- **Delivery Schedule (month/year):** The United States recalls that its methodology uses the contracted schedule between Airbus and the customer, which would have complemented, rather than duplicated, any delivery schedule in an actual Boeing order. The contracted delivery schedule agreed upon by Boeing and United at the time of the 2015 order is included in the [BCI] (Exhibit USA-74, p. 6.)
- **Final delivery prices:** The “final” delivery price for each aircraft [BCI].
- **Escalation formula:** [BCI], as indicated [BCI]. (Exhibit USA-74, p. 6.) As shown at the top of the table in Exhibit USA-74, p. 98, this formula is equal to [[HSBI]]. This formula is [BCI]. (Exhibit USA-74, pp. 7-10.) The U.S. response to Question 136 provides further details.
- **[BCI] escalation factors:** The [BCI] escalation factors are provided in Exhibit USA-74, pp. 98-102. The United States used [BCI] escalation factors at the time of order [BCI] in its calculation of delivery price based on comparative orders for the purposes of calculating the value of the lost sale. Thus, for this order, the U.S. methodology relied on [BCI] from Boeing from the [BCI], which are listed in Exhibit USA-74, pp. 98-102.
- **[BCI] escalation factors:** The [BCI] escalation factors [BCI]. For example, for the Delivery Invoice starting on Exhibit USA-74, p. 56 (Serial No. [[HSBI]]), the [BCI] escalation factor is [[HSBI]], as shown at p. 56.
- **[BCI] escalation from base year/month to order year/month:** Boeing [BCI]. However, this can be calculated as follows: (1) subtract from the gross price in base year

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<sup>153</sup> Note that, on the Delivery Invoice, [BCI]. (*See* Exhibit USA-87, p. 55, where Credit Memorandum No. [[HSBI]] is [BCI].) However, [BCI]. (Exhibit USA-87, p. 55.) The [BCI].

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dollars the price concessions [BCI] in base year dollars; (2) escalate the resulting price to the year of order; and (3) subtract [BCI] from the escalated price.

For this order, if escalating to the order year/month of the Boeing order (dated [[HSBI]]) rather than the Airbus order date used in the counterfactual, that would entail the following calculation<sup>154</sup>:

[[HSBI]]

If escalating to the order year/month of the Airbus order date used in the counterfactual, however, the appropriate escalation rate would be [[HSBI]], which corresponds with July 2013 (the estimated date of the Airbus order). (The United States uses the midpoint of the year where the data is broken down by year. Thus, July 2012 for 2012 lost sales and July 2013 for 2013 lost sales.) (Exhibit USA-74, p. 98.) This would result in the following calculation:

[[HSBI]]

The [BCI] escalation from base year/month to [BCI]. (*See, e.g.*, Exhibit USA-74, pp. 56.)

- **Order size:** This order [BCI]. (Exhibit USA-74, p. 6.)
- **PDP and down-payments (size and timing of payments):** The [BCI] provides the size and timing of the PDPs, including down-payments (or “deposits”), contracted for at the time of order. (Exhibit USA-74, p. 6.) Thus, for example, for Serial No. [[HSBI]]. Any advanced payments [BCI]. (*See, e.g.*, Exhibit USA-74, p. 55 ([BCI]).)
- **Penalties for late deliveries and performance guarantees:** The [BCI]. (Exhibit USA-74, pp. 18-21 and 26-48.) As detailed in response to Question 124, above, Boeing [BCI].
- **Options:** [BCI].
- **Purchase rights:** [BCI].
- **Conversion Rights (Substitution Rights):** [BCI].
- **Service-related provisions:** [BCI].

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<sup>154</sup> *See* Exhibit USA-87, p. 6 (providing the [BCI]), p. 49-50 (providing the price concessions), and p. 98 (providing the escalation factor for [[HSBI]]).

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- **Other Specifications:** There are no “other specifications” that have a significant impact on price. The United States notes, however, that the items provided as examples in the Explanatory Note, including engine type ([BCI]), thrust level, producer- ([BCI]) and buyer-furnished equipment, and MTOW [BCI] provided in Exhibit USA-74, p. 6. [BCI].

175. The United States uses the information described above to calculate aircraft values as follows.

176. First, the credits [BCI] are subtracted from the base year price. Here, the [BCI] of [[HSBI]], the [BCI] of [[HSBI]] – or [[HSBI]] – are [BCI]. Therefore, [[HSBI]] is subtracted from [[HSBI]]. (The [[HSBI]] is [BCI] of [[HSBI]] and the [BCI] of [[HSBI]] provided for in the [BCI]. (Exhibit USA-74, p. 6.)) The resulting figure is [[HSBI]].

177. Second, the appropriate escalation factor is applied to the result of the first step. For example, one delivery pursuant to Airbus’s contract with United was scheduled for [[HSBI]]. The U.S. methodology utilizes the factor for the mid-year point of July. To ascertain the appropriate escalation factor, one must look to Exhibit USA-74, p. 100, which indicates that the escalation factor for a delivery in July [[HSBI]]. Thus, [[HSBI]] is multiplied by [[HSBI]], which equals [[HSBI]].

178. Third, the [BCI] are subtracted. [BCI]. This calculation is shown in the table below and is included for all delivery years in the aircraft schedule in Airbus’s contract with United in Exhibit USA-61(HSBI), p. 5:

[[HSBI]]

179. The following table reflects the revised valuation of the United 2013 lost sale:

[[HSBI]],

*Comparator Order for Emirates (2013) Lost Sale*

180. As indicated in paragraph 78 of the Appendix to the U.S. Methodology Paper, Boeing used [BCI]. As noted above, after submission of the U.S. methodology paper, the EU provided Airbus’s actual contracted delivery schedule with Emirates. In addition to the explanation below, the revised valuation of the Emirates 2013 lost sale based on the documentation included in Exhibit USA-71 and provided in Exhibit USA-99 reflects the use of this contracted delivery schedule instead of the Boeing estimates of that schedule that the United States used previously

181. The information requested in the Explanatory Note for this order is provided in Exhibit USA-71 and appears as follows:

- **Base year/month:** [[HSBI]], as indicated in the [BCI]. (Exhibit USA-71, p. 4.)

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- **Order year/month:** [BCI].
- **Gross price:** [[HSBI]], which represents the gross price of the aircraft in base year ([[HSBI]]) dollars (*i.e.*, without the application of an escalation factor). This figure [BCI]. (Exhibit USA-71, p. 4.)
- **Price concessions (subject to escalation; not subject to escalation):** The [BCI] sets out the applicable price concessions. (Exhibit USA-71, p. 4.) As described therein, [BCI]:
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
  - [BCI]: Is [BCI] of [[HSBI]]. (Exhibit USA-71, p. 4.)
- **Delivery Schedule (month/year):** The United States recalls that its methodology uses the contracted schedule between Airbus and the customer, which would have complemented, rather than duplicated, any delivery schedule in an actual Boeing order. The [BCI]. (Exhibit USA-71, p. 4.)
- **Final delivery prices:** [BCI].
- **Escalation formula:** [BCI], as indicated [BCI]. (Exhibit USA-71, p. 4.) As shown at the top of the table in Exhibit USA-71, p. 6, this formula is equal to [[HSBI]].
- **[BCI] escalation factors:** The [BCI] escalation factors are provided in Exhibit USA-71, pp. 6-11. The United States used [BCI] escalation factors [BCI] in its calculation of delivery price based for the purposes of calculating the value of the lost sale. Thus, for this order, the U.S. methodology relied on [BCI] from Boeing from the [BCI], which are listed in Exhibit USA-71, pp. 6-11.
- **[BCI] escalation factors:** The [BCI] escalation factors [BCI].
- **[BCI] escalation from base year/month to order year/month:** Boeing [BCI]. However, the [BCI] can be calculated as follows: (1) subtract from the gross price in base

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year dollars the price concessions [BCI] in base year dollars; (2) escalate the resulting price to the year of [BCI]; and (3) subtract the [BCI] from the escalated price.

[[HSBI]]

If [BCI].

- **Order size:** This [BCI]. (Exhibit USA-71, p. 4.)
- **PDP and down-payments (size and timing of payments):** The [BCI] provides the size and timing of the PDPs, including down-payments (or “deposits”). (Exhibit USA-71, p. 3.) As reflected, [[HSBI]].
- **Penalties for late deliveries and performance guarantees:** [BCI].
- **Options:** [BCI].
- **Purchase rights:** [BCI].
- **Conversion Rights (Substitution Rights):** [BCI].
- **Service-related provisions:** [BCI].
- **Other Specifications:** There are no “other specifications” that have a significant impact on price. The United States notes, however, that the items provided as examples in the Explanatory Note, including engine type ([BCI]), thrust level, producer- ([BCI]) and buyer-furnished equipment, and MTOW [BCI] provided in Exhibit USA-71, p. 4. [BCI].

182. The U.S. methodology uses the information described above to calculate aircraft values as follows.

183. First, the credits [BCI] are subtracted from the base year price. Here, the [BCI] of [[HSBI]], and the [BCI] of [[HSBI]] – or [[HSBI]] – are [BCI]. Therefore, [[HSBI]] is subtracted from [[HSBI]]. (The [[HSBI]] is [BCI]. (Exhibit USA-71, p. 4.)) The resulting figure is [[HSBI]].

184. Second, the appropriate escalation factor is applied to the result of the first step. For example, one delivery pursuant to Airbus’s contract with Emirates was scheduled for [[HSBI]]. The U.S. methodology utilizes the factor for the mid-year point of July. To ascertain the appropriate escalation factor, one must look to Exhibit USA-71, p. 7, which indicates that the escalation factor for a delivery in July [[HSBI]]. Thus, [[HSBI]] is multiplied by [[HSBI]], which equals [[HSBI]].

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185. Third, the [BCI] are subtracted. [BCI]. This calculation is shown in the table below and is included for all delivery years in the aircraft schedule in Airbus's contract with Emirates in Exhibit USA-61(HSBI), p. 6-9:

[[HSBI]]

186. The following table reflects the revised valuation of the Emirates 2013 lost sale:

187. [[HSBI]].

**Question 136 (US)**

**With reference to Exhibits USA-12 (HSBI) to USA-16 (HSBI) and USA-47 (HSBI) to USA-52 (HSBI), could the United States explain with illustrative examples how the escalation factors are computed for the different escalation formulae reported in Exhibits USA-12 (HSBI) to USA-16 (HSBI) and USA-47 (HSBI) to USA-52 (HSBI)?**

188. The exhibits referenced in the question correspond to the Cathay Pacific 2013 777-300ER, Transaero 2013 747-8I, Singapore Airlines 2013 787-10, and United 2015 777-300ER orders; the [BCI]; the Lufthansa 2006 747-8I, Korean Air 2009 and 2013 747-8I, and Air China 2012 and 2013 747-8I orders; the [BCI]; and the [BCI]. The documentation providing the requested information for these orders, [BCI] is now contained in new exhibits submitted with the responses to these questions.

189. Below the United States walks through four sets of examples to show how escalation factors are calculated. Specifically, these illustrations are based on information associated with each of the United 2015 777-300ER order, the Cathay Pacific 2013 777-300ER order, the Singapore Airlines 2013 787-10 order, and the Lufthansa 2006 747-8I order. The United States starts with the United 2015 777-300ER order, providing [[HSBI]]. The United States then provides [[HSBI]]. The United States considers that the United example of [BCI] is generally instructive for calculating [BCI], while the [BCI].

190. *United 2015 777-300ER order.* For this order, [[HSBI]].<sup>155</sup>

191. [[HSBI]].<sup>156</sup>

192. Thus, the escalation factor [[HSBI]].<sup>157</sup>

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<sup>155</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>156</sup> See United 2015 777-300ER Order Documentation at pp. 8-9 (Exhibit USA-74(HSBI)); Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>157</sup> See United 2015 777-300ER Order Documentation at pp. 8-9 (Exhibit USA-74(HSBI)); Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

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193. [BCI]. Below, the United States first discusses [BCI] escalation and provides a (slightly simplified) illustrative example of how the [BCI] escalation factor was calculated for counterfactual 777-300ER deliveries to United that Boeing estimated would occur in 2018. Then, the United States discusses [BCI] escalation and provides an illustrative example of the [BCI] escalation factor calculation for a delivery that occurred pursuant to United's 2015 777-300ER order.

194. To calculate the [BCI], Boeing follows a [BCI] process:

- [BCI].
- [BCI].
- [BCI].<sup>158</sup>

195. To illustrate how a [BCI] escalation factor is calculated, the table below provides calculations [BCI].<sup>159</sup> The calculation starts with [[HSBI]].<sup>160</sup> [[HSBI]].<sup>161</sup> The calculation then proceeds [[HSBI]].<sup>162</sup> [BCI].

[[HSBI]]<sup>163</sup>

196. Thus, as shown in the illustration above, one can [BCI],<sup>164</sup> [BCI] escalation factor [[HSBI]] used to calculate counterfactual Boeing 777-300ER delivery year prices to United for 2018, as shown in Exhibit USA-15(HSBI).<sup>165</sup>

197. Turning to [BCI], the table below uses Boeing's delivery of 777-300ER serial no. [BCI]<sup>166</sup> to United as an example of how [BCI] escalation factors were calculated for the United 2015 order:

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<sup>158</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). The United States response to Question 141 provides additional information regarding Boeing's [BCI].

<sup>159</sup> See United 777-300ER Order Information (Exhibit USA-15(HSBI)).

<sup>160</sup> See United 2015 777-300ER Order Documentation at pp. 105, 111 (Exhibit USA-74(HSBI)).

<sup>161</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>162</sup> See United 2015 777-300ER Order Documentation at p. 99 (Exhibit USA-74(HSBI)).

<sup>163</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>164</sup> See United 2015 777-300ER Order Documentation at pp. 105, 111 (Exhibit USA-74(HSBI)).

<sup>165</sup> See United 777-300ER Order Information (Exhibit USA-15(HSBI)).

<sup>166</sup> United 2015 777-300ER Order Documentation at pp. 55-56 (Exhibit USA-74(HSBI)).

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[[HSBI]]<sup>167</sup>

198. ***Cathay Pacific 2013 777-300ER order.*** Escalation for this order [[HSBI]].<sup>168</sup>

199. The table below uses Boeing's delivery of 777-300ER serial no. [BCI]<sup>169</sup> to Cathay as an example of how the [BCI] escalation factors were calculated for the Cathay 2013 order:

[[HSBI]]<sup>170</sup>

200. ***Singapore 2013 787-10 order.*** For this order, escalation [[HSBI]].<sup>171</sup>

201. Boeing's [[HSBI]].<sup>172</sup>

202. [[HSBI]].<sup>173</sup>

203. [[HSBI]].<sup>174</sup>

204. The table below uses Boeing's delivery of 787-10 serial no. [BCI]<sup>175</sup> to Singapore Airlines as an example of how the escalation factor was calculated for the 2013 order:

[[HSBI]]<sup>176</sup>

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<sup>167</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); United 2015 777-300ER Order Documentation at pp. 55-56 (Exhibit USA-74(HSBI)).

<sup>168</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Cathay Pacific 2013 777-300ER Order Documentation at pp. 4-5, 101 (Exhibit USA-68(HSBI)).

<sup>169</sup> Cathay Pacific 2013 777-300ER Order Documentation at pp. 85-86 (Exhibit USA-68(HSBI)) (providing relevant invoice).

<sup>170</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Cathay Pacific 2013 777-300ER Order Documentation at pp. 85-86 (Exhibit USA-68(HSBI)).

<sup>171</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Singapore Airlines Escalation Documentation (Exhibit USA-85(HSBI)).

<sup>172</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>173</sup> Singapore Airlines 2013 787-10 Order Documentation at p. 9 (Exhibit USA-73(HSBI)).

<sup>174</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>175</sup> See Singapore Airlines 2013 787-10 Order Documentation at pp. 132-133 (Exhibit USA-73(HSBI)) (providing relevant invoice).

<sup>176</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Singapore Airlines Escalation Documentation (Exhibit USA-85(HSBI)).

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205. *Lufthansa 2006 747-8I order.* [[HSBI]].<sup>177</sup>

206. The table below uses Boeing's delivery of 747-8I serial no. [BCI]<sup>178</sup> to Lufthansa as an example of how the [BCI] escalation factors were calculated for the Lufthansa 2006 order:

[[HSBI]]<sup>179</sup>

207. Note that, because [[HSBI]].<sup>180</sup>

**Question 137 (US)**

**With reference to paragraph 182 of the United States' written submission, and in the light of the European Union's response to question No. 40, with respect to the actual [BCI], could the United States please provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

208. The United States provides the requested information in Exhibit USA-59(HSBI).<sup>181</sup> This information is further discussed in response to Question 93.

**Question 138 (US)**

**With reference to Exhibit EU-79 and the 2013 United Airlines order contract for ten 787-10 aircraft could the United States please provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

209. The United States provides the requested information in Exhibit USA-67(HSBI).<sup>182</sup> This information is further discussed in response to Question 117.

**Question 139 (US)**

**With reference to the United States' Exhibits USA-17 (HSBI), USA-18 (HSBI) and USA-26 (HSBI) and the LCA orders to which such exhibits pertain, could the United States please**

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<sup>177</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa Escalation Documentation (Exhibit USA-87(HSBI)).

<sup>178</sup> See Lufthansa 2006 747-8I Order Documentation at pp. 93-94 (Exhibit USA-79(HSBI)).

<sup>179</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa Escalation Documentation (Exhibit USA-87(HSBI)); Lufthansa 2006 747-8I Order Documentation at pp. 93-94 (Exhibit USA-79(HSBI)).

<sup>180</sup> See Lufthansa 2006 747-8I Order Documentation at pp. 93-94 (Exhibit USA-79(HSBI)).

<sup>181</sup> [BCI] (Exhibit USA-59(HSBI)).

<sup>182</sup> United 2013 787-10 Order Information (Exhibit USA-67(HSBI)).

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**provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section, and additionally:**

210. The exhibits referenced in the question correspond to the Boeing 747-8I deliveries in 2012 and 2013,<sup>183</sup> and Boeing 747-8I orders in 2011, 2012, and 2013.<sup>184</sup> The United States is providing responsive information in new exhibits. For each price that appears in Exhibit USA-17(HSBI), Exhibit USA-18(HSBI), or Exhibit USA-26(HSBI), the table below shows the purchase agreement number and the number and name of the exhibit containing the requested information. Using the first line item of this table as an example, responsive documentation concerning the Exhibit USA-17(HSBI) 2012 747-8I delivery price information for PA#[BCI] can be found in Exhibit USA-92(HSBI). As the second line indicates, the pricing information for the 2012 delivery associated with PA#[BCI] related to an aircraft ordered in 2006 by Lufthansa. The documentation that corresponds with this 2012 delivery can be found in Exhibit USA-79(HSBI), which contains the Lufthansa 2006 747-8I Order Documentation. The United States also refers the Arbitrator to its response to Question 135, which includes illustrative discussions of the types of price and other documentation being provided.

Exhibits Referenced in Question 139					Corresponding New Exhibit With Explanatory Note Documentation	
Exhibit No.	Exhibit Name	Year		PA#	Exhibit No.	Exhibit Name
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-92 (HSBI) [BCI]
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-79 (HSBI) Lufthansa 2006 747-8I Order Documentation
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-93 (HSBI) [BCI]
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-94 (HSBI) [BCI]
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-95 (HSBI) [BCI]
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-96 (HSBI) [BCI]

<sup>183</sup> See 747-8I Global Delivery Prices for 2012 and 2013 (Exhibit USA-17(HSBI)); Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI)) (Exhibit USA-26(HSBI)).

<sup>184</sup> See 747-8I Global Order Prices (Exhibit USA-18(HSBI)).

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USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2012	[	BCI	]	USA-97 (HSBI)	[BCI]
USA-17 (HSBI)	747-8I Global Delivery Prices for 2012 and 2013	2013	[	BCI	]	USA-79 (HSBI)	Lufthansa 2006 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2011	[	BCI	]	USA-91 (HSBI)	[BCI]
USA-18 (HSBI)	747-8I Global Order Prices	2012	[	BCI	]	USA-77 (HSBI)	Air China 2012 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-76 (HSBI)	Korean Air 2013 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-78 (HSBI)	Air China 2013 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-75 (HSBI)	Transaero 2013 747-8I Order Documentation
USA-26 (HSBI)	Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI))	2012	[	BCI	]	USA-79 (HSBI)	Lufthansa 2006 747-8I Order Documentation
USA-26 (HSBI)	Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI))	2013	[	BCI	]	USA-79 (HSBI)	Lufthansa 2006 747-8I Order Documentation

- a. explain whether the [BCI] were used to compute the net revenue for Boeing 747-8I aircraft delivered in 2012 and 2013 as reported in Exhibits USA-17 (HSBI) and USA-26 (HSBI); and**

211. The net revenue reported by Boeing in Exhibits USA-17(HSBI) and USA-26(HSBI) for 747-8I deliveries to Lufthansa (denoted by PA#[BCI]) and other customers in 2012 and 2013 was sourced from Boeing’s revenue management system and reflects the delivery price in the system around the time the United States submitted the exhibits. [BCI] Because these are prices for already delivered aircraft, they reflect [BCI]. The [BCI] used for each delivered aircraft can be found in the delivery invoices corresponding to each aircraft serial number.<sup>185</sup> The U.S. response to Question 136 provides an illustration regarding one of those Lufthansa 747-8I

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<sup>185</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). For the actual delivery invoices, see Lufthansa 2006 747-8I Order Documentation at 90-164 (Exhibit USA-79(HSBI)).

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deliveries, showing how the [BCI] escalation factor was determined and how the dollar value of escalation was calculated.

**b. indicate whether the delivery prices reported in Exhibits USA-17 (HSBI) and USA-26 (HSBI) are associated with the order information reported in Exhibit USA-47 (HSBI)?**

212. Yes, the 2012 and 2013 747-8I delivery prices for Lufthansa (denoted by PA#[BCI]) in Exhibits USA-17(HSBI) and USA-26(HSBI) are associated with the Lufthansa 2006 747-8I order information in Exhibit USA-47(HSBI). However, the Lufthansa delivery price information in Exhibits USA-17(HSBI) and USA-26(HSBI) do not match the Lufthansa order price information in Exhibit USA-47(HSBI), primarily because the price information in the latter has not been escalated.

213. Specifically, Exhibit USA-47(HSBI) presents base year (*i.e.*, *not* escalated) pricing information for Lufthansa's 2006 747-8I order. That base price prior to escalation was sourced from a delivery invoice. The order documentation provided in Exhibit USA-79(HSBI) provides a more precise figure for the base price at the time of order.<sup>186</sup> This information includes gross and net airplane prices in base year dollars (*i.e.*, before escalation), as well as escalation terms, but it does not include delivery prices that reflect escalation.<sup>187</sup>

214. In contrast, Exhibits USA-17(HSBI) and USA-26(HSBI) present per-aircraft and average final net revenue data for 747-8Is delivered in 2012 and 2013, which includes price escalation [BCI], as noted in the response to subpart (a) of this question. The final net revenue reported in those exhibits for 747-8I deliveries under PA#[BCI] are for deliveries to Lufthansa in 2012 and 2013 pursuant to the 747-8I firm orders Lufthansa placed in 2006.<sup>188</sup> The Lufthansa net revenue figures for the 747-8Is delivered in 2012 and 2013, as listed in Exhibits USA-17(HSBI) and USA-26(HSBI), reflect [BCI]. Each net revenue figure is equal to the following:

[[HSBI]].<sup>189</sup>

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<sup>186</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa 2006 747-8I Order Documentation at 90-92 (Exhibit USA-79(HSBI)). This means that the price in Exhibit USA-47(HSBI) will include [[HSBI]].

<sup>187</sup> See Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa 747-8I Order Information (Exhibit USA-47(HSBI)).

<sup>188</sup> See Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). See also U.S. RAQ 82, paras. 115-117.

<sup>189</sup> See Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); 747-8I Global Average Delivery Prices (Exhibit USA-17(HSBI)); Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI)) (Exhibit USA-26(HSBI)).

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215. [[HSBI]].<sup>190</sup>

216. Lufthansa took delivery of its 19 747-8Is (including 4 in 2012 and 5 in 2013) [[HSBI]].<sup>191</sup> For example, [[HSBI]].<sup>192</sup> [[HSBI]].<sup>193</sup>

217. [[HSBI]].<sup>194</sup> [[HSBI]].<sup>195</sup> [[HSBI]].<sup>196</sup>

**Question 140 (US)**

**With reference to the United States' Exhibits USA-18 (HSBI) and USA-49 (HSBI), could the United States please explain the difference in order prices for Air China reported in those two exhibits?**

218. Similar to the U.S. response to Question 139(b) regarding Lufthansa price information, the difference in Air China 747-8I prices in Exhibit USA-18(HSBI) and Exhibit USA-49(HSBI) is largely attributable to escalation. Prices in Exhibit USA-18(HSBI) are delivery prices and therefore reflect escalation. The prices in Exhibit USA-49(HSBI) are base-year gross and net prices and therefore have not been subjected to escalation.

219. The Air China 2012 and 2013 747-8I order information in Exhibit USA-49 reports gross and net airplane prices in base year dollars (*i.e.*, before escalation). The escalation terms are also indicated, but no escalation has been applied.<sup>197</sup>

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<sup>190</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>191</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>192</sup> Lufthansa 2006 747-8I Order Documentation at 93 (Exhibit USA-79(HSBI)); Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>193</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); 747-8I Global Average Delivery Prices (Exhibit USA-17(HSBI)); Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI)) (Exhibit USA-26(HSBI)).

<sup>194</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa 2006 747-8I Order Documentation at 166 (Exhibit USA-79(HSBI)).

<sup>195</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa 2006 747-8I Order Documentation at 166 (Exhibit USA-79(HSBI)).

<sup>196</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). *See also* 747-8I Global Average Delivery Prices (Exhibit USA-17(HSBI)); Revised 747-8I Global Delivery Prices for 2012 and 2013 (revision to Exhibit USA-17(HSBI)) (Exhibit USA-26(HSBI)); Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)); Lufthansa 2006 747-8I Order Documentation at 166 (Exhibit USA-79(HSBI)).

<sup>197</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). These prices were sourced from an actual delivery invoice. As stated elsewhere, [BCI]. The price at the time of order can be identified by using the information in Exhibits USA-77(HSBI) and USA-78(HSBI).

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220. The Air China net revenue figures (*i.e.*, prices) for the 747-8Is ordered in 2012 and 2013, as listed in Exhibit USA-18(HSBI), are delivery prices. [BCI].<sup>198</sup> The net revenue figure for each aircraft in the 2013 order represents [BCI].<sup>199</sup> The same process was undertaken for the Air China 2012 order.

221. Specifically, each net revenue figure is equal to the following:

[[HSBI]].<sup>200</sup>

222. Differences in prices *within* Exhibit USA-18(HSBI) also are due to escalation. For example, page 3 of Exhibit USA-18 shows that, for the two 747-8Is ordered by Air China in 2013 [BCI] the net revenue figures are [[HSBI]] for [BCI] and [[HSBI]] for [BCI].<sup>201</sup> The [[HSBI]].<sup>202</sup>

**Question 141 (US)**

**With reference to the United States' Exhibits USA-38 (BCI) to USA-41 (BCI), could the United States please:**

- a. explain how the monthly escalation is calculated based on quarterly indices; and**
- b. explain what interpolation methodology the United States applies to determine monthly escalation rates from quarterly data?**

223. To recall, Boeing generally [BCI].<sup>203</sup>

224. [BCI].<sup>204</sup>

225. [BCI].<sup>205</sup>

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<sup>198</sup> See Boeing 2013 Annual Report (Exhibit USA-102).

<sup>199</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>200</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>201</sup> 747-8I Global Order Prices at p. 3 (Exhibit USA-18(HSBI)).

<sup>202</sup> The same explanation applies with respect to the price differences referenced in Question 142 and discussed in the U.S. response to that question.

<sup>203</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). See also U.S. RAQ 60, paras. 24-26.

<sup>204</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>205</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

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**Question 142 (US)**

**With reference to the United States' Exhibit USA-18 (HSBI), could the United States please explain why the same 2011 campaigns [BCI] show up with two different order prices?**

226. The net revenue figures for the 747-8Is ordered in 2011, as listed in Exhibit USA-18(HSBI), reflect [BCI].<sup>206</sup> The two aircraft ordered pursuant to the same purchase agreement ([BCI]) have different prices because [BCI].<sup>207</sup>

227. The U.S. response to Question 140 provides additional background about the price information in Exhibit USA-18(HSBI).

**Question 143 (US)**

**With reference to the United States' Exhibits USA-19 (HSBI) and USA-27 (HSBI), could the United States please provide the underlying 2012 and 2013 Boeing 747-8I order prices used to compute the average order price for 2012 and 2013, respectively?**

228. The underlying prices for the 2012 and 2013 747-8I average order price information in Exhibits USA-19(HSBI) and USA-27(HSBI) can be found in Exhibit USA-18(HSBI), where they are itemized on pages 2 and 3, respectively. These underlying order prices were sourced from the estimate of its backlog value that Boeing includes in its annual report. Exhibits USA-19(HSBI) and USA-27(HSBI) simply average these underlying order prices, rounded to the nearest hundred thousand U.S. dollars.<sup>208</sup>

229. In the response to Question 139, the United States provides, *inter alia*, responsive documentation for the 2012 and 2013 747-8I orders listed in Exhibit USA-18(HSBI) and reflected in the 2012 and 2013 747-8I average order prices that were used in Exhibits USA-19(HSBI) and USA-27(HSBI). That documentation is contained in the exhibits indicated in the table below.

Exhibits Referenced in Question 139					Corresponding New Exhibit With Explanatory Note Documentation	
Exhibit No.	Exhibit Name	Year	PA#		Exhibit No.	Exhibit Name
USA-18 (HSBI)	747-8I Global Order Prices	2012	[ BCI ]		USA-77 (HSBI)	Air China 2012 747-8I Order Documentation

<sup>206</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)). *See also* 747-8I Global Order Prices (Exhibit USA-18(HSBI)).

<sup>207</sup> Boeing E-mail regarding Questions 136, 139-142 (Exhibit USA-101(HSBI)).

<sup>208</sup> *See* Calculation of 2011 747-8I Delivery Prices (revised in Exhibit USA-27(HSBI)) (Exhibit USA-18(HSBI)); Revised Calculation of 2011 747-8I Delivery Prices (revision to Exhibit USA-19(HSBI)) (Exhibit USA-27(HSBI)). *See also* 747-8I Global Order Prices (Exhibit USA-18(HSBI)).

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USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-76 (HSBI)	Korean Air 2013 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-78 (HSBI)	Air China 2013 747-8I Order Documentation
USA-18 (HSBI)	747-8I Global Order Prices	2013	[	BCI	]	USA-75 (HSBI)	Transaero 2013 747-8I Order Documentation

**Question 144 (US)**

**With reference to paragraph 82 of the United States' Methodology Paper, could the United States please explain how its approach to valuing impedance would have to be modified if the assumption of Boeing counterfactual deliveries occurring in the same year as actual Airbus deliveries were to be relaxed?**

230. If a counterfactual delivery assumed in the U.S. calculation to take place in one year (the year the Airbus aircraft was delivered) was assumed to take place in a different particular year, then it would be assigned the relevant price for the new delivery year, which would then be adjusted to 2013 dollars from the new delivery year.

231. For example, suppose a December 2011 Airbus delivery – which the U.S. calculation treats as a 2011 counterfactual Boeing delivery – was instead treated as a 2012 counterfactual Boeing delivery. Instead of using the 2011 delivery price of \$[[HSBI]], the calculation would use the 2012 delivery price of \$[[HSBI]].<sup>209</sup> In addition, when placing all impeded deliveries on a common basis using 2013 dollars, the delivery price would be adjusted by a factor of 1.02 (2012 to 2013 using PPI) instead of 1.03 (December 2011 to 2013).<sup>210</sup>

232. If no particular delivery year within the December 2011 – 2013 period was assumed for any given delivery, then the Arbitrator would need to calculate a single price for the entire December 2011 – 2013 period. This could be done by averaging all actual delivery prices during the December 2011 – 2013 period.

**Question 145 (US)**

**Further to question No. 111 previously posed to the parties for oral response, could the United States please provide historic annual and monthly Boeing's borrowing interest rate series?**

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<sup>209</sup> See Second Revised Calculation of 2011 747-8I Delivery Prices (Exhibit USA-104(HSBI)); Second Revised 747-8I Global Delivery Prices for 2012 and 2013 (Exhibit USA-103(HSBI)).

<sup>210</sup> See Second Revised Aggregation of Adverse Effects Determined to Exist by Year, boxes P and Q (Exhibit USA-99(HSBI)); *PPI Industry Data File for Aircraft Manufacturing – Civilian Aircraft, Not Seasonally Adjusted (Jan. 1986 - July 2018)*, U.S. Department of Labor, Bureau of Labor Statistics (Exhibit USA-21).

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233. Question 111 asks whether Boeing's borrowing rate can be used as a proxy for Boeing's discount rate. The U.S. response to Question 111 explains why the proper discount rate is that of the United States, not Boeing. It also explains why, if the lost sales calculation were instead performed from Boeing's perspective, the proper approach would be to dispense with escalation and discounting and instead use the order year price as escalated directly from the base year (*i.e.*, without first determining a delivery price for each aircraft).

234. Nevertheless, Exhibit USA-98(BCI) provides Boeing's monthly and annual borrowing rates for 2011 – 2013.<sup>211</sup> For Boeing's "borrowing interest rate," the United States uses Boeing's cost of debt with a five-year maturity. The United States chose the five-year maturity because, compared to other common debt maturities, it most closely corresponds to the time spans between the orders and deliveries associated with the significant lost sales transactions at issue.

### **3.2 For the European Union**

#### **Question 146 (EU)**

**With reference to the United States' response to question No. 71, regarding issues surrounding Boeing's VLA production capacity, could the European Union please respond to the arguments and data contained therein?**

#### **Question 147 (EU)**

**Could the European Union please provide an update on the status of the Emirates order for 50 A380 aircraft in 2013?**

#### **Question 148 (EU)**

**With reference to paragraphs 267–268 of the European Union's written submission, could the European Union please:**

- a. **provide a concrete example of how to use the escalation rate contained in the sales contracts to discount the price paid to Boeing on delivery for each type of escalation factor formula reported in Exhibits USA-12 (HSBI) to USA-16 (HSBI)? In particular, could the European Union please explain which specific year of the escalation factor should be used (e.g. base year, order year, delivery year or ratio); and**
- b. **confirm that if the escalation rate is used to both inflate the order price to the delivery year and to discount the delivery price to the order year, the two operations cancel each other?**

#### **Question 149 (EU)**

**With respect to the A380 aircraft, the deliveries of which are reflected in Table 13 of the Appellate Body report in the first compliance proceeding, could the European Union please explain how many seats each of these A380 aircraft had? Further, with respect to these**

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<sup>211</sup> See Boeing E-mail regarding Question 145 (Exhibit USA-98 (BCI)).

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**deliveries, and with reference to paragraph 28 of the United States' Methodology Paper, could the European Union please:**

- a. identify the customers to which these A380 aircraft were delivered in the relevant geographic markets; and**
- b. with respect to the orders that resulted in the deliveries reflected in Table 13 of the Appellate Body report, please provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

**Question 150 (EU)**

**With reference to paragraph 27 of the United States' Methodology Paper, and with respect to each of the lost sales identified in Table 19 therein, could the European Union please provide the information specified in the "Explanatory Note: Evidentiary Requests" in Section 4, below, and please provide that information in accordance with the other instructions in that Section?**

**Question 151 (EU)**

**With reference to paragraph 173 of the United States' written submission, could the European Union please provide estimates of the demand elasticity for large civil aircraft using available estimates, including, if available, estimates distinguishing between VLA and twin-aisle aircraft?**

**Question 152 (EU)**

**With reference to, inter alia, the parties' oral responses to question No. 110 and footnotes 176 and 177 of the European Union's written submission, could the European Union please explain whether a conversion risk factor is typically built into a LCA sales contract and if so how it is quantified?**

Annex

**Responses of the United States to Questions by the European Union**

**Question EU-1 (US)**

**Please comment on the relevance for these proceedings of the fact that, on 14 February 2019, Airbus announced that Emirates, the largest customer for the A380, has cancelled a significant proportion of the A380 aircraft it had previously ordered, with only a total of 14 A380 aircraft to be delivered to Emirates during 2019 to 2021. As a result, and in light of the fact that it has no substantial A380 order backlog, Airbus announced that it has no basis to sustain production of the A380, is winding down the programme, and will cease deliveries in 2021.<sup>212</sup>**

235. For purposes of responding to this question, the United States assumes, *arguendo*, the factual premise of the question.

236. The purported occurrences would have no relevance to this proceeding. The SCM Agreement is very clear on the purpose of this arbitration – to determine whether the proposed countermeasures are commensurate with the degree and nature of the adverse effects determined to exist, which include findings of impedance in the VLA market in the territory of several Members.<sup>213</sup> The terms of reference of the Arbitrator do not include an inquiry, based on news articles from a subsequent period, allegedly calling those findings into question.

**Question EU-2 (US)**

**Please provide:**

**a) Copies of the primary sources underlying Exhibits USA-12 (HSBI), USA-13 (HSBI), USA-14 (HSBI), USA-15 (HSBI), USA-16 (HSBI), USA-26 (HSBI), USA-47 (HSBI), USA-48 (HSBI), USA-49 (HSBI), USA-50 (HSBI), USA-51 (HSBI), and USA-52 (HSBI). These can be the relevant excerpts from Boeing’s sales contracts, final offers, or proposals (as the case may be), or relevant and comprehensive entries from Boeing’s revenue management system.**

**For each campaign (order, final offer, proposal, respectively), the relevant documentation should contain:**

- **Order-year date;**

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<sup>212</sup> Airbus SE, Unaudited Condensed IFRS Consolidated Financial Information for the year ended 31 December 2018, <https://www.airbus.com/content/dam/corporate-topics/financial-and-company-information/FY2018-Airbus-FINANCIAL-STATEMENTS.pdf>, p. 17; Airbus Press Release, “Airbus reports strong full-year 2018 results, delivers on guidance”, 14 February 2019, <https://www.airbus.com/content/dam/corporate-topics/financial-and-company-information/FY2018-Airbus-PRESS-RELEASE.pdf>; Airbus, “FY Results 2018” (Presentation), <https://www.airbus.com/content/dam/corporate-topics/financial-and-company-information/FY2018-Airbus-PRESENTATION.pdf>, pp. 4, 11; FY 2018 Results Conference Call, <http://streamstudio.world-television.com/CCUIv3/frameset.aspx?ticket=154-155-21008&target=en-default-&status=ondemand&browser=ns-0-1-0-0-0&stream=html5-audio-32>, Remarks of Guillaume Faury, President, Airbus Commercial Aircraft, minute 39:04.

<sup>213</sup> SCM Agreement, Arts. 7.9-7.10.

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- **Base-year date;**
  - **Escalation formula;**
  - **Monthly time series of actual escalation rates from base-year date to order-year date;**
  - **Delivery schedule (date);**
  - **Size of order;**
  - **Further specifications of the order, including, at a minimum: engine type, thrust level, and producer; buyer-furnished equipment; maximum take-off weight; and, flight deck equipment;**
  - **Final delivery prices and/or detailed escalation formula;**
  - **Contractually agreed price concessions (subject to escalation; not subject to escalation);**
  - **Contractually agreed pre-delivery payments, down-payments, and deposits (size and timing of payment);**
  - **Contractually agreed penalties for late deliveries; performance guarantees.**
- b) **Boeing's 2012 Cathay Pacific final offer, as discussed during the Meeting of the Parties with the Arbitration Panel, as mentioned in Question 93 by the Arbitration Panel, and as referenced in para. 182 of the US Written Submission. For form and content of documentation, please see question a), above.**
- c) **Boeing's Cathay Pacific 2011 order contract for 10 777-300ERs. This would assist the Arbitration Panel in determining whether this order is a more appropriate "comparator order" to the 2012 Cathay Pacific "lost sale". For form and content of documentation, please see question a), above.**
- d) **Boeing's 2013 United order contract for 20 787-10s. This would assist the Arbitration Panel in determining whether this order is a more appropriate "comparator order" to the 2013 United "lost sale". For form and content of documentation, please see question a), above.**

237. The United States has provided extensive original documentation concerning the transactions referenced in this EU question. The United States refers the EU to its responses to Questions 93, 117, 134, 135, 137, and 139 from the Arbitrator and associated exhibits.

**Question EU-3 (US)**

**Please identify the precise 2011, 2012, and 2013 747-8I orders on which Exhibit USA-18 is based. The US has not disclosed details of these 747-8I orders, which would enable the Arbitration Panel to pair the reported order prices with specific Boeing orders. For each order identified, please provide the primary source for the order contract. For form and content of the documentation, please see question 1.a), above.**

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238. The United States refers the EU to the U.S. response to Arbitrator Question 143. The United States also refers the EU to Exhibits USA-75(HSBI), USA-76(HSBI), USA-77(HSBI), USA-78(HSBI), and USA-91(HSBI), which provide extensive original documentation concerning the orders referenced in Exhibit USA-18 (HSBI).

**Question EU-4 (US)**

**Please provide:**

**a) A primary source that reports the non-US content (expressed as percentage of the average cost of non-US content, compared to the average sales price) in of the 747-8I.**

**b) A primary source that reports the non-US content (expressed as percentage of the average cost of non-US content, compared to the average sales price) for all relevant LCA types (777-300ER, 787 family, 747-8I) for the December 2011-2013 period.**

239. There is no basis to consider in this arbitration “non-U.S. content” in determining whether the proposed level of countermeasures is commensurate with the degree and nature of the adverse effects determined to exist.<sup>214</sup> The United States refers the EU to the U.S. response to Question 92 from the Arbitrator as well as Exhibit USA-58(BCI).<sup>215</sup> The United States has no additional information to provide.

**Question EU-5 (US)**

**For Exhibits USA-12 (HSBI), USA-13 (HSBI), USA-14 (HSBI), USA-15 (HSBI), and USA-16 (HSBI), please:**

**a) Provide the exact order-year date for the order referenced in each of the exhibits mentioned.**

**b) Provide the exact base-year date for the order referenced in each of the exhibits mentioned.**

**c) Explain how the United States calculated monthly price escalation based on quarterly indices data provided by it in Exhibits USA-38 (BCI), USA-39 (BCI), USA-40 (BCI), and USA-41 (BCI). In particular, please explain the interpolation methodology applied to determine monthly escalation rates on the basis of quarterly data.**

240. With regard to subparts (a) and (b) of this question, the United States refers the EU to its response to Arbitrator Question 135. With regard to subpart (c) of this question, the United States refers the EU to its responses to Arbitrator Questions 136 and 141.

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<sup>214</sup> See U.S. Written Submission, paras. 263-265.

<sup>215</sup> See U.S. RAQ 92, paras. 129-130.

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**Question EU-6 (US)**

**Please provide:**

- a) For Exhibit USA-48 (HSBI), the escalation rate [BCI] applied between August 2015 and the present, as well as the delivery prices resulting from the US' calculations.**
- b) For Exhibit USA-49 (HSBI), the escalation rate [BCI] applied, as well as the delivery prices resulting from the US' calculations.**
- c) For Exhibits USA-50 (HSBI), USA-51 (HSBI), and USA-52 (HSBI), the respective net order-year price, the respective escalation rate [BCI], as well as the respective delivery prices resulting from the US' calculations.**

241. The United States refers the EU to its response to Arbitrator Question 135.

**Question EU-7 (US)**

**Please explain:**

- a) The difference in 2012 delivery prices reported for the 2006 Lufthansa order, as calculated (i) in Exhibit USA-26 (HSBI) and (ii) in Exhibit USA-47 (HSBI).**

242. The United States refers the EU to the U.S. response to Arbitrator Question 139.

- b) The difference in 2013 delivery prices reported for the 2006 Lufthansa order, as calculated (i) in Exhibit USA-26 (HSBI) and (ii) in Exhibit USA-47 (HSBI).**

243. The United States refers the EU to the U.S. response to Arbitrator Question 139.

- c) The difference in 2013 order prices as it pertains to the Koran Air order of 5 747-8Is, as calculated (i) in Exhibit USA-18 (HSBI) and (ii) Exhibit USA-48 (HSBI).**

244. The United States refers the EU to the U.S. response to Arbitrator Question 139. The same distinction is applicable to the Korean Air 2013 order of 747-8Is.

- d) The difference in 2013 order prices as it pertains to the Air China order of 5 747-8Is, as calculated (i) in Exhibit USA-18 (HSBI) and (ii) Exhibit USA-49 (HSBI).**

245. The United States refers the EU to the U.S. response to Arbitrator Question 140.

- e) The difference in 2012 order prices as it pertains to the Air China order of 2 747-8Is, as calculated (i) in Exhibit USA-18 (HSBI) and (ii) Exhibit USA-49 (HSBI).**

246. The United States refers the EU to the U.S. response to Arbitrator Question 140.

- f) Why, in Exhibit USA-18 (HSBI), the same 2011 order (PA #3648) shows up with two different order prices. Please clarify whether, in this Exhibit, the United States is generally reporting delivery prices, rather than order prices (as is asserted, e.g., in US Methodology Paper, para. 88).**

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247. The United States refers the EU to the U.S. response to Arbitrator Question 142.