

**IN THE HIGH COURT OF JUSTICE**

**Claim No. HT-2021-000495**

**BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES**

**TECHNOLOGY AND CONSTRUCTION COURT (QBD)**

**BETWEEN**

**QATAR AIRWAYS GROUP Q.C.S.C.**

**Claimant**

**-and-**

**AIRBUS S.A.S.**

**Defendant**

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**DEFENCE AND COUNTERCLAIM**

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1. In this Defence and Counterclaim:
  - 1.1. Unless otherwise indicated, references to paragraph numbers are to the corresponding numbered paragraphs of the Particulars of Claim.
  - 1.2. Where convenient, the Defendant (“**Airbus**”) adopts the abbreviations and definitions used in the Particulars of Claim without making any admission.
  - 1.3. Capitalised terms which are not otherwise defined in the Particulars of Claim or this Defence bear the same meaning as they do in the CTAPA, the A350 Aircraft Specific Purchase Agreement (“**the A350 ASPA**”) and/or the SCL.
  - 1.4. Where an allegation is stated to be not admitted, Airbus is presently unable to admit or deny the allegation and requires the Claimant (“**QTR**”) to prove it.

## DEFENCE

### **A. SUMMARY AND INTRODUCTION**

2. None of the alleged findings by the Qatar Civil Aviation Authority (“**the QCAA**”) or assertions by QTR as to surface degradation issues (as more fully defined below) on A350 aircraft has any impact on safety or airworthiness. Extensive analysis by Airbus and the European Union Aviation Safety Agency (“**EASA**”) has confirmed that the aircraft have always been and remain airworthy and this has been communicated by them to both QTR and the QCAA. No other agency and no other airline has similarly grounded A350 aircraft on the basis of surface degradation issues. Airbus has also identified and proposed repair and maintenance solutions to address the issues raised by QTR, which any reasonable airline would accept (and other airlines have accepted). QTR has rejected those solutions because it is currently in QTR’s economic interests – not least as a result of the impact of the COVID-19 pandemic on its business - for aircraft to be grounded and to seek to claim compensation from Airbus under the SCL, rather than to keep those aircraft flying. For the reasons set out below in this Defence, QTR has failed to act reasonably or in good faith and has no entitlement to compensation from, nor to reject deliveries of aircraft when tendered by, Airbus.
3. Paragraph 1 is admitted. QTR’s long-standing Chief Executive Officer, Akbar Al Baker, is the directing mind and will of QTR and all significant decisions affecting QTR’s business are made by or with the approval of Mr Al Baker.
4. Paragraph 2 is admitted. Further:
  - 4.1. The A350 is a ‘next generation’ aircraft which was specifically designed to be lighter than ‘previous generation’ aircraft, with a view to greater fuel efficiency. It is integral to the design of the A350 that the load-bearing airframe is manufactured from composite fibre reinforced plastic (“**CFRP**”) and not metal.
  - 4.2. The CFRP airframe is overlain with a layer of expanded copper foil (“**ECF**”) which protects the CFRP from physical damage as a result of lightning strikes and protects aircraft systems from electromagnetic interference. This ECF protection is required due to the lower conductivity of CFRP as compared with metallic aircraft. The ECF does not play any structural or load-bearing role.

- 4.3. During the aircraft manufacturing process, the ECF is embedded into a surfacing film which is then co-cured on to the CFRP. This means that the ECF layer forms an integral part of the airframe and that, following manufacture of the aircraft, it is not therefore practicable to remove and replace the ECF layer in its entirety (although, as explained below, the ECF layer can be repaired if it is damaged).
- 4.4. ECF was selected by Airbus because it was - and at the present time remains - the best available overall solution to meet the specific design requirements for the A350 (i.e. protection against direct and indirect effects of lightning strikes and electromagnetic interference). ECF reflected - and continues to reflect - the state of the art and it is widely used for this purpose in the aerospace industry.
- 4.5. The CFRP and ECF layer are coated in paint using basic primers; an adhesion promoter; an external primer; and an intermediate coat, and top paint layers consisting of a basecoat and a clearcoat (or topcoat or wingcoating on non-customised areas, such as the wings). The paint layers serve a cosmetic function, as well as protecting the ECF layer and the CFRP from exposure to the elements.
- 4.6. By its nature, the paint of any aircraft will inevitably degrade over time as a result of (among other things) environmental exposure. All aircraft therefore need to be repainted a number of times during their life. Further and in any event, all aircraft are required to be subject to repairs and maintenance actions in accordance with the aircraft maintenance manual and/or instructions given by a Design Organisation Approval (“**DOA**”) holder for the relevant type of aircraft.
- 4.7. Further, it is the responsibility of the Continuing Airworthiness Management Organisation (“**CAMO**”) for each aircraft to manage continuing airworthiness of the aircraft and this involves (among other things) implementing repairs and maintenance actions in accordance with the applicable aircraft maintenance manual and/or seeking and implementing instructions, where necessary, from a DOA holder as to repairs or maintenance actions. Airbus is a DOA holder for the A350 and QTR is the CAMO for its fleet of A350s (“**the QTR A350 Fleet**”).
- 4.8. There is no relevant contractual obligation as between Airbus and QTR, nor any other benchmark or design parameter, against which the expected durability of the A350 paint can be measured or tested. In practice, the length of time before any A350 will need to be repainted will depend on a number of factors including

in particular, but without limitation, the way in which the aircraft is operated and maintained and the environmental conditions in which it is kept and operated. The length of intervals between repainting will also depend on the individual preferences of operators, owners or lessors as regards cosmetic appearance.

- 4.9. It appears that the paint on aircraft manufactured from composite materials, such as CFRP, may degrade more rapidly than on metal aircraft and that they may therefore need more frequent repainting and/or surface maintenance. This is caused by the impact of differences in thermal contraction and expansion between the constituent elements of the composite skin and the surface layers on top of the composite skin, as pleaded in more detail below. Thermal cycling during the operation of the aircraft therefore results in higher stresses, which can lead over time to cracks developing in the surface layers (but not the composite skin).
  - 4.10. The potential for faster surface degradation on aircraft manufactured from composite materials is not a design defect in composite aircraft generally - or the A350 in particular. The potential need for more frequent surface repair and maintenance must be viewed alongside the benefits of composite aircraft, as compared with metal aircraft, such as lower weight and improved fuel efficiency.
  - 4.11. EASA has issued type certificates for the A350. These type certificates were only issued after EASA had reviewed and confirmed that the design of the A350 (which included the use of an integrated ECF layer to protect the aircraft from the direct and indirect effects of lightning strikes) and Airbus' A350 instructions for continuing airworthiness (which include the maintenance programme) satisfied all EU certification requirements. EASA is the primary regulatory authority for the A350 and, if (which, for the avoidance of doubt, is denied) any potential airworthiness issue were to arise in relation to the A350, it would be Airbus' duty as a DOA holder to inform EASA and seek its approval for proposed solutions to any identified airworthiness or safety concern in relation to the aircraft. The type certificates issued by EASA for the A350 remain in force, reflecting the fact that EASA has no concerns about the continuing airworthiness of the A350.
5. As to paragraph 3:
    - 5.1. It is admitted that, in November 2020, one A350 aircraft (“**MSN 36**”) in the QTR A350 Fleet was taken out of service by QTR at its election for the purpose of

reworking its livery in preparation for the FIFA World Cup which is to be hosted by Qatar in 2022. MSN 36 was subjected to chemical paint stripping followed by mechanical abrasion. These processes were carried out at QTR's request.

- 5.2. It is also admitted that, following this process, 8 findings affecting the paint and, to a limited extent, the ECF layer, were identified on MSN 36 ("**the Condition**"). At least some of these 8 findings were significantly caused and/or contributed to by the stripping and/or abrasion process, as set out in paragraph 9.2 below.
- 5.3. Airbus has carried out extensive investigations and testing and has determined the root causes of the Condition, as pleaded in more detail below. Further:
  - 5.3.1. the Condition does not affect the structural integrity of MSN 36; and
  - 5.3.2. the Condition also does not degrade the overall functional performance of the ECF in protecting MSN 36 and its systems from the direct and indirect effects of lightning strikes.
- 5.4. It is also admitted that certain other aircraft in the QTR A350 Fleet appear to have suffered from some surface degradation involving cracking to paint and, in some cases, damage to the ECF layer and that findings have been made of a similar type or nature as certain aspects of the Condition ("**Non MSN 36 Findings**").
- 5.5. Airbus and EASA have each independently concluded (correctly) that the Condition and Non MSN 36 Findings do not affect the airworthiness of MSN 36, the QTR A350 Fleet or the A350. The Condition and Non MSN 36 Findings are not and do not reflect any "*defect*" in the design or manufacture of the A350. These conclusions have been communicated to both QTR and the QCAA.
- 5.6. Nevertheless, at QTR's instigation, the QCAA has suspended the Airworthiness Review Certificates ("**ARCs**") for 21 of the A350s in the QTR A350 Fleet ("**the Grounded Aircraft**") on the purported, but erroneous, basis that Non MSN 36 Findings and/or the Condition give rise to a level 1 finding pursuant to M.A.905 of the Qatar Civil Aviation Regulations No. 1003 of 2006 ("**QCAR 1003**"). However, the QCAA's decisions to suspend the ARCs for the Grounded Aircraft fail to identify or explain how any such alleged non-compliance was capable of giving rise to a level 1 finding. Further, there are other aircraft in the QTR A350 Fleet, which Airbus understands to be affected by Non MSN 36 Findings, but

which have not been grounded by the QCAA, and the QCAA also continues to permit A350s operated by other airlines to fly into Qatar and to fly through Qatari airspace without additional restrictions. Yet further, so far as Airbus is aware, no A350s operated by other airlines have been similarly grounded or taken out of service on the basis of the surface degradation issues of which QTR complains.

- 5.7. It is to be inferred that (at best) the QCAA was not provided by QTR with all relevant information regarding the Condition and/or Non MSN 36 Findings and/or that the QCAA simply acquiesced in a request from and/or a perceived wish of QTR that the ARCs of the Grounded Aircraft should be suspended in order to provide a purported basis for QTR to present a claim for AOG compensation from Airbus under the SCL. Further, it is averred that QTR has failed to act in good faith, in breach of its obligations under clause 19.12.7 of the CTAPA and/or the SCL, by engineering or acquiescing in a situation in which the Grounded Aircraft are grounded on an incorrect and inadequate basis.
- 5.8. Pending disclosure Airbus' position is expressly reserved as to whether QTR and the QCAA have wrongfully colluded or conspired and/or otherwise acted together in bad faith in relation to the ARC suspensions with a view to attempting to improve QTR's commercial position against Airbus under the SCL.
- 5.9. Save as aforesaid, paragraph 3 is denied. Without prejudice to the generality of the foregoing denial, it is specifically denied that any of the Grounded Aircraft are presently grounded because they are unairworthy as a result of the Condition. It is further denied (if it is alleged) that the suspensions of the ARCs by the QCAA (whether or not those suspensions are lawful, valid and effective as a matter of Qatar law) establish for the purposes of the SCL that the Grounded Aircraft are grounded because they are unairworthy as a result of the Condition.
- 5.10. In addition, the Condition and Non MSN 36 Findings can be addressed, if and insofar as necessary, by carrying out standard repairs and maintenance actions on the affected aircraft in accordance with the A350 ASR manual and/or as has been or would be recommended to QTR by Airbus (as a DOA holder) on request.
- 5.11. In this regard:

- 5.11.1. in relation to MSN 36, Airbus has proposed to QTR that the Condition should be addressed by:
    - (1) restoring the ECF layer where needed and repainting the affected areas of the surface of the aircraft; and
    - (2) inserting a layer of fibreglass between the window frame resin and the paint to prevent the spread of cracks into the paint.
  - 5.11.2. in relation to some other aircraft in the QTR A350 Fleet affected by Non MSN 36 Findings, QTR has requested and/or Airbus has proposed repairs and maintenance actions for Non MSN 36 Findings.
  - 5.11.3. QTR has not carried out appropriate repairs and maintenance actions on the Grounded Aircraft for the Condition and/or Non MSN 36 Findings in accordance with the A350 ASR manual and/or QTR has not otherwise sought instructions from Airbus (or, so far as Airbus is aware, any other approved design organisation) in relation to the repairs and maintenance actions for the Grounded Aircraft, or other aircraft in the QTR A350 Fleet that are affected by Non MSN 36 Findings (if and insofar as repairs or maintenance actions in respect of any of Non MSN 36 Findings are not specifically covered by the A350 ASR manual).
- 5.12. Further, as to the repairs and maintenance actions that have been proposed by Airbus to QTR for MSN 36 in relation to the Condition and/or other aircraft in the QTR A350 Fleet in relation to Non MSN 36 Findings:
- 5.12.1. It is denied that they would not be a “*satisfactory repair*” for the Condition or Non MSN 36 Findings or, if the same be alleged, a repair solution which does not comply with clause 2 of the SCL and/or which would satisfy a reasonable aircraft operator in QTR’s position.
  - 5.12.2. It is denied for the reasons set out in paragraphs 17 to 27 below that Airbus has not carried out “*a proper analysis*” of the root cause of the Condition in accordance with clause 2 of the SCL.
  - 5.12.3. It is also denied that a “*proper*” (or, indeed, any) root cause analysis is a pre-condition of Airbus identifying a “*satisfactory repair*” for the

Condition or Non MSN 36 Findings or, if the same be alleged, a repair solution which complies with clause 2 of the SCL and/or which would be acceptable to a reasonable aircraft operator in QTR's position.

- 5.13. Further or alternatively, QTR should address the Condition and/or Non MSN 36 Findings on the Grounded Aircraft, in accordance with its responsibilities as CAMO, by carrying out the repairs and maintenance actions that are specified in the A350 ASR manual and/or as recommended by Airbus on receipt of a request from QTR. QTR's unreasonable failure or refusal to do so amounts to a breach of QTR's responsibilities as CAMO and this is the effective cause of the (continued) grounding of the Grounded Aircraft and/or constitutes a failure on QTR's part to mitigate the period for which the Grounded Aircraft are grounded.
6. As to paragraph 4:
  - 6.1. No admissions are made as to any arrangements between QTR and its "*operating lessors*" or "*lessors under financing transactions*" in connection with the purchase of any aircraft in the QTR A350 Fleet or their relevance (if any).
  - 6.2. Airbus tendered two aircraft for delivery to QTR in December 2021 ("**MSN 409**" and "**MSN 430**") in accordance with the A350 ASPA but, as pleaded in more detail below, QTR has wrongfully and in breach of contract refused to pay the balance of the price for and/or to take delivery of MSN 409 and MSN 430.
  - 6.3. By letters dated 18 January 2022 and 28 January 2022, as a result of QTR's breaches of the A350 ASPA, Airbus terminated the A350 ASPA with respect to the two scheduled aircraft deliveries in respect of which Airbus tendered MSN 409 and MSN 438 to QTR in accordance with its common law rights and/or pursuant to clause 17.3 of the CTAPA. There are now only 21 aircraft to be delivered pursuant to the A350 ASPA ("**the Undelivered QTR A350 Fleet**").
  - 6.4. Save as aforesaid, paragraph 4 is admitted.
7. As to paragraph 5:
  - 7.1. The Condition (and Non MSN 36 Findings) are visible on the surface of certain A350 aircraft and are not capable of being "*latent*" (whatever is intended to be



meant by that word). To the extent that paragraph 5 intends to suggest that the Undelivered QTR A350 Fleet suffers from a latent defect, that is denied.

7.2. As part of its continuous improvement approach, Airbus has investigated and continues to investigate how the effects of the matters which give rise to the Condition (and Non MSN 36 Findings) might be addressed or mitigated. However, as set out above, it is inevitable that the paint on any aircraft will degrade or become damaged over time. Paragraphs 4.6 to 4.10 above are repeated.

7.3. It is admitted that Airbus continues to make deliveries of A350 aircraft to QTR in accordance with the delivery schedule agreed between the parties pursuant to the CTAPA and the A350 ASPA. It is denied that such deliveries by Airbus of A350 aircraft to QTR are merely "*purported*". As further pleaded below, notwithstanding the Condition and/or Non MSN 36 Findings, QTR is contractually obliged to accept these deliveries but, wrongfully and in breach of contract, QTR has refused to do so. Paragraphs 6.2 and 6.3 above are repeated.

7.4. Save as aforesaid, paragraph 5 is not admitted.

8. Paragraph 6 is noted, but it is denied that the Claimant is entitled to the relief sought, whether on an urgent basis or otherwise.

**B. MSN 36**

9. As to paragraph 7:

9.1. The first sentence is admitted.

9.2. In relation to the second and third sentences:

9.2.1. MSN 36 was subjected to chemical paint stripping and mechanical abrasion processes at QTR's request while it was in Shannon in order to prepare MSN 36 for repainting. However, the chemical paint stripping and mechanical abrasion went beyond Airbus' recommendations.

9.2.2. It is admitted that, following the chemical paint stripping and mechanical abrasion process, the airframe of MSN 36 suffered from surface degradation affecting the paint and, to a very limited extent, the ECF layer. No admissions are made as to the existence or extent of such degradation on MSN 36 prior to this stripping and abrasion process.

- 9.2.3. As to this surface degradation, it is admitted that 8 specific findings were identified on MSN 36 and categorised (as set out in paragraph 8 of the Particulars of Claim), but it is averred that some of these findings were significantly caused and/or contributed to by the chemical paint stripping and/or mechanical abrasion process to which had been applied to MSN 36. In particular, it is noted that no ECF was reported as missing from MSN 36 prior to the stripping and abrasion process in Shannon.
- 9.2.4. It is denied that there was any damage on MSN 36 to the CFRP that bears the loads of the airframe.
- 9.2.5. Save as aforesaid, the second and third sentences are not admitted.
- 9.3. The fourth sentence is admitted. It is denied (if it is alleged) that the findings identified on MSN 36, so far as they extended to the ECF layer, would affect the functional performance of the ECF in protecting the aircraft and its systems from the effects of lightning strikes and other sources of in-flight electrical charges. In this regard, even after the stripping and abrasion process applied to MSN 36, just 0.60% of the ECF layer was exposed and just 0.18% of the ECF was missing. It is averred that up to 40% of an aircraft's ECF would need to be missing in order for this significantly to reduce the margin of conductivity.
- 9.4. Subject to paragraphs 4.5 to 4.9 above, the fifth sentence is admitted.
10. Paragraph 8 is admitted. Paragraph 9 above is repeated.
11. Paragraph 9 is admitted. Airbus also proposed to QTR that the allowable damage limit in the A350 ASR manual could be increased from 200mm<sup>2</sup> to 1000mm<sup>2</sup> to reduce significantly the number of patch repairs on MSN 36. QTR unreasonably rejected this proposal (which will in any event be incorporated into the ASR manual in March 2022). In any event, the number and extent of the patch repairs that were required on MSN 36 was significantly increased by the chemical stripping and mechanical abrasion process which MSN 36 underwent, which was contrary to Airbus' recommendations.
12. Paragraph 10 is denied. Without prejudice to the generality of the foregoing denial:
- 12.1. There was no need for QTR, whether as CAMO in accordance with its continuing airworthiness oversight responsibilities or otherwise, to prevent

MSN 36 being returned to service. The findings comprising the Condition were not outside the A350 ASR manual or, to the extent that they were or QTR was in any doubt as to how they should be addressed in accordance with the ASR manual, the appropriate course was for QTR to seek instructions from Airbus as manufacturer and DOA holder (or another approved design organisation).

- 12.2. Airbus has in fact given detailed instructions to QTR in relation to the appropriate repair and maintenance actions for the Condition in respect of MSN 36, so that MSN 36 could have been and still could be promptly returned to service, but QTR has elected not to permit those repairs and maintenance actions to be carried out.
- 12.3. Further or alternatively, Airbus and EASA have concluded (correctly) that the Condition does not affect the airworthiness of MSN 36, the QTR A350 Fleet or the A350 fleet generally. QTR is fully aware of those conclusions and the basis on which they were reached, but has chosen to ignore them and to assert instead, without justification, that the Condition may give rise to an airworthiness issue.
- 12.4. It was not (and is not) necessary for MSN 36 to be taken out of service until such time as the root cause (or the “*full root cause*”) of the Condition is identified and understood and/or a repair or maintenance solution is identified to correct the underlying root cause of the Condition. MSN 36 could be promptly returned to service if, in accordance with its continuing airworthiness responsibilities as CAMO, QTR accepted and agreed to the carrying out the repairs and maintenance actions for the Condition that Airbus, as manufacturer and DOA holder, has been proposing to QTR in relation to MSN 36 since December 2020.
- 12.5. It is denied that MSN 36 was “*grounded*” at any time prior to the suspension of its ARC by the QCAA (and, as set out below, the suspension of the ARC for MSN 36 in June 2021, almost 6 months after the SCL, was not justified in any event and does not establish that MSN 36 is or was unserviceable or unairworthy).
- 12.6. In any event, as set out in paragraphs 17 to 27 below, Airbus has already carried out a full root cause analysis of the Condition in relation to MSN 36 in accordance with its contractual obligations under clause 2 of the SCL.
- 12.7. Further and in any event, as further set out herein, the underlying root cause of faster surface degradation on aircraft manufactured from composite materials,

such as the A350, is the difference between the thermal expansion coefficients of the constituent elements of the composite skin and the surface layers on top of the composite skin. The differences in thermal contraction and expansion are inherent in the selection of CFRP for the airframe (since the thermomechanical properties of the CFRP cannot be changed, through any “*repair solution*” or otherwise). The appropriate repairs and maintenance actions are those set out in the ASR manual and/or which Airbus has proposed. Paragraph 7.2 above is repeated.

13. As to paragraph 11:

13.1. In relation to the first sentence, it is admitted that Non MSN 36 Findings have been identified on other aircraft in the QTR A350 Fleet with differing levels of severity and damage location. However, it is denied that all 8 of the findings that were identified on MSN 36 comprising the Condition are present on all of the aircraft affected by Non MSN 36 Findings. The Condition as found on MSN 36 after stripping and abrasion is not representative of the other aircraft in the QTR A350 Fleet affected by Non MSN 36 Findings. In any event, it is denied that Non MSN 36 Findings (or the Condition) give rise to any airworthiness concern.

13.2. The second sentence is admitted. It is denied (if it is alleged) that the QCAA’s suspensions of the ARCs for the Grounded Aircraft on the basis of Non MSN 36 Findings (or the Condition) is or could be justified on safety or airworthiness grounds or otherwise (as to which see further paragraph 30 below).

13.3. As to the third and fourth sentences:

13.3.1. No admissions are made as to what “*appears*” to QTR.

13.3.2. The Reuters report dated 29 November 2021 concerning paint issues reported by Finnair in relation to A350 aircraft is admitted. Airbus will refer as necessary to this press report for its full terms and effect.

13.3.3. It is denied, however, that the issues reported by Finnair were instances of the Condition (which was first identified by Airbus when it inspected MSN 36 in Shannon), or Non MSN 36 Findings.

13.4. In relation to the fifth and sixth sentences, paragraphs 2 and 5 above are repeated. Save as aforesaid, the fifth and sixth sentences are denied. Without prejudice to

the generality of this denial, save for instances of rivet rash (which has been a well-known phenomenon on aircraft, not limited to the A350 or composite aircraft), Airbus had no knowledge of the novel findings comprising the Condition prior to inspecting MSN 36 in Shannon in or about November 2020. The paint issues which had previously been reported by Finnair related to rivet rash and issues arising from processes carried out in the course of in-production reworks. Further and in any event, the Condition does not affect the airworthiness or safety of the A350 and other airlines which have observed findings on A350s that are similar to the Condition have addressed those findings in accordance with the A350 ASR manual and/or as has been recommended to them by Airbus.

**C. THE SCL**

14. Paragraph 12 is admitted.

15. As to paragraph 13:

15.1. Airbus will rely as necessary on all the terms of the CTAPA, the A350 ASPA and the SCL as necessary.

15.2. In relation to paragraph 13.1, the obligation to provide QTR with a Service Bulletin, revised maintenance/repair instructions or any other means as Airbus deemed necessary to correct the Condition applied only in relation to aircraft once they were delivered and formed part of the QTR A350 Fleet (i.e. “*the A350XWB Aircraft delivered by [Airbus] to [QTR] under the Agreement and operated by [QTR]*”) and not (if alleged) to the Undelivered QTR A350 Fleet.

15.3. Save as aforesaid, paragraphs 13.1 and 13.2 are admitted.

15.4. In relation to paragraph 13.3:

15.4.1. It is admitted that Airbus agreed under clause 2 of the SCL to provide QTR with a “*full root cause analysis*” in relation to 7 of the 8 findings making up the Condition on MSN 36 and the outcome of the investigation into the “*Local ECF Condition*” on MSN 36 by various specified dates between 31 January 2021 and 31 July 2021.

15.4.2. It is averred that the SCL does not prescribe the form or content of the root cause analysis to be carried out under clause 2.

- 15.4.3. Further or alternatively, it is Airbus, as manufacturer and DOA holder, that has responsibility for the design of and/or the repair and maintenance programme for the A350. It was therefore for Airbus to determine what constituted a “*full root cause analysis*”, in light of (among other things) the limited period of time in which the root cause analysis required by clause 2 of the SCL was to be completed.
- 15.5. Paragraph 13.4 is admitted. Airbus’ obligation to provide the Estimated Inspection and Repair Duration for the Condition arose in the context of QTR’s obligations, pursuant to clause 3.3 of the SCL, to perform any additional inspection or repair related to the Condition, where possible, at the opportunity of a scheduled maintenance event and also to provide Airbus with notice of the planning for such additional inspections or repairs in sufficient time to enable Airbus to provide feedback and/or assistance, as well as access to the relevant aircraft, in order to reduce any period of operational unavailability of the aircraft.
- 15.6. In relation to paragraphs 13.5 and 13.6:
- 15.6.1. The “*substantiated evidence*” required to support a claim for reimbursement of Additional Costs included, but was not limited to:
- (1) the aircraft technical logbook,
  - (2) the maintenance work packages,
  - (3) configuration data,
  - (4) original detailed invoice;
  - (5) and any other data that Airbus might reasonably consider relevant for the evaluation of the repair work and justification of the cost.
- 15.6.2. The Additional Costs would also exclude any repair performed as a consequence of the non-compliance by QTR or any other third party with the then applicable processes and instructions from Airbus (including any failure to follow the maintenance programme and/or to implement any repairs or maintenance actions identified by Airbus).
- 15.6.3. Save as aforesaid, paragraphs 13.5 and 13.6 are admitted.

15.7. Paragraph 13.7 is admitted (although the AOG Amount as at the date hereof is now USD 206,500 (2022)). Further details of Airbus' case as to the proper construction of the SCL are set out in paragraph 16 below.

15.8. In relation to paragraph 13.8:

15.8.1. By clause 3.3.1, QTR agreed that any additional inspection or repair related to the Condition (i.e. "Condition Inspections and Repairs") would where possible be performed at a scheduled maintenance event taking into account the Estimated Inspection and Repair Duration of the relevant Aircraft as agreed between Airbus and QTR in advance.

15.8.2. By clause 3.3.2, QTR agreed to provide Airbus with:

(1) timely notice of the planning of any Condition Inspections and Repairs which required Airbus' involvement so as to allow sufficient time for it to provide feedback and/or assistance; and

(2) adequate access to the relevant Aircraft in order to reduce any potential period of operational unavailability.

15.8.3. By clause 3.3.3, it was agreed, in summary, that where Condition Inspections and Repairs resulted in extended scheduled operational availability beyond the scheduled (maintenance) event and where this was as a result of the Condition, Airbus would be liable to pay escalated Non-Excusable Delay Compensation (as defined in the A350 ASPA). However, clause 3.3.4 clarified that such compensation was not payable in respect of (1) any period of time unrelated to the Condition Inspections and Repairs, or (2) any period of time resulting from the failure by QTR to provide Airbus with the scheduled maintenance planning or to provide adequate access to the Aircraft.

15.8.4. Subject to the foregoing, paragraph 13.8 is admitted.

16. As to paragraph 14:

16.1. In relation to paragraph 14.1:

16.1.1. It is admitted that clause 2 of the SCL required Airbus to carry out an analysis to identify the root cause(s) of 7 of the 8 findings comprising

the Condition (as defined in the SCL) on MSN 36. Paragraph 15.4 above is repeated. However, it is denied that the aforesaid root cause analysis would reasonably be expected to identify or implement an action plan for permanent corrective action in relation to the Condition, or that clause 2 on its proper construction required Airbus to do so.

16.1.2. Airbus' case as to the root cause analysis required by clause 2 is set out in paragraphs 17 to 27 below. Save as set out there, and in the absence of proper particulars of what is meant by "*a comprehensive analysis of the possible causative factors*", or the source of the alleged obligation to analyse the particular factors set out in paragraph 14.1 or any other factors, the remainder of the paragraph 14.1 is denied.

16.2. Paragraph 14.2 is denied. Without prejudice to the generality of this denial:

16.2.1. On the proper construction of clause 3.2.1(i), AOG compensation is only payable in respect of an Aircraft if:

(1) The Aircraft is not airworthy (i.e. it is "*unserviceable*") as a result of the Condition as found on MSN 36 in the sense that it is objectively incapable of being flown for safety reasons; and

(2) The Aircraft is grounded as a result of the lack of airworthiness that is caused by the Condition as found on MSN 36 (in the sense that this was the effective cause of the Aircraft being grounded) and/or the Aircraft is properly declared to be unserviceable as a result of a lack of airworthiness that is caused by the Condition.

16.2.2. Further or alternatively, if the Aircraft is airworthy notwithstanding the Condition, AOG compensation would not be payable in respect of that Aircraft if it is grounded as a result of any alleged failure by Airbus: (1) to carry out a full root cause analysis (in accordance with clause 2 of the SCL or otherwise), and/or (2) to identify or propose a permanent repair or corrective action in relation to the Condition.

16.2.3. Further or alternatively, AOG compensation would not be payable in respect of an Aircraft if QTR's own unreasonable conduct was the effective cause of the Aircraft being or continuing to be grounded.



16.2.4. Further or alternatively, AOG compensation would also only be payable if and to the extent that QTR had taken all reasonable steps available to it to mitigate the amount of any claim for AOG compensation by minimising the period for which the Aircraft was grounded as a result of the Condition. In the alternative, there was an implied term of the SCL to the same effect which falls to be implied to give business efficacy to the agreement and/or to give effect to the obvious intention of the parties in light of the significant potential daily liability for AOG Compensation (“**the Mitigation Obligation**”).

16.2.5. Further or alternatively, clause 19.12.7 of the CTAPA provided that both Airbus and QTR would act in good faith in the performance of their respective responsibilities under the CTAPA and the A350 ASPA and, on its true construction, this obligation also applied to QTR’s conduct in connection with any claim for AOG compensation that was made by QTR to Airbus under the SCL. In the alternative, it is averred that such an obligation (“**the Good Faith Obligation**”) falls to be implied into the SCL as a matter of necessary implication to give it business efficacy or to give effect to the parties’ obvious unexpressed intentions.

16.3. Paragraph 14.3 is denied. In accordance with clause 3.2.3 of the SCL, AOG compensation is only payable against a substantiated claim submitted by QTR to Airbus in writing and including reasonable technical information. Any such claim may only be submitted by QTR at the end of any relevant AOG period.

## **D. ALLEGED BREACHES OF THE SCL**

### **(1) Alleged failure to perform root cause analysis**

17. Paragraph 15 is denied. Airbus has carried out a full root cause analysis in relation to the Condition on MSN 36 in compliance with clause 2 of the SCL. As to this:

17.1. Airbus identified and put in place a number of structured teams to investigate the various aspects of the Condition. Those teams involved experts and specialists from different functions within Airbus, including (as appropriate) engineering, major repairs, customer support, manufacturing, and paint. This work was

overseen and supported by senior staff, including Mr. Miguel Llorca Sanz (A350 Chief Engineer) and Mr. Nicolas Antoine (A350 Airframe Chief Engineer).

- 17.2. The teams' investigations of different aspects of the Condition involved (as appropriate) collating Airbus' existing relevant knowledge and understanding of the aircraft structure and behaviour, carrying out various visual inspections and laboratory tests; reviewing of published material, in-service data, and quality records; and applying various analytical tools and methodologies, including fishbone analysis, the Kepner-Tregoe Method and the Shainin System.
- 17.3. Airbus provided the results of this work to QTR in 8 detailed memoranda dated between 29 January 2021 and 2 July 2021 for each of the findings on MSN 36 in respect of which Airbus agreed, by clause 2 of the SCL, to provide a full root cause analysis to QTR ("**the RCA Memoranda**"). The RCA Memoranda correctly set out the root cause(s) of the aspect(s) of the Condition they addressed.
- 17.4. In addition to the RCA Memoranda, Airbus and QTR have communicated extensively, both in writing and orally, regarding the Condition and Airbus' ongoing investigations, testing and analysis in relation to the Condition (including at numerous meetings between Airbus and QTR representatives, which at times have taken place on a weekly, or sometimes even daily, basis).
- 17.5. In the course of these communications, Airbus has provided QTR with details of the inspections that it has performed and the laboratory testing and analysis that it has performed or intended to perform in relation to the Condition. Airbus has also responded in detail to numerous specific queries and concerns raised by QTR and it has explained in detail the rationale for the repairs and maintenance actions that it proposed to QTR for the Condition on MSN 36.
- 17.6. Airbus also provided a summary of its investigations, testing and findings in a number of detailed presentations to QTR including, in particular, in December 2020, February 2021, March 2021, April 2021 and May 2021.
- 17.7. The RCA Memoranda, alternatively the RCA Memoranda together with the Airbus presentations and discussions that have taken place between Airbus and QTR during conference calls and meetings, satisfied Airbus' obligation to perform a full root cause analysis of the Condition under clause 2 of the SCL.

18. In any event, Airbus has carried out further investigations into the Condition and Non MSN 36 Findings, going beyond those which it was contractually obliged to carry out pursuant to clause 2 of the SCL in respect of MSN 36, and Airbus has carried out and continues to carry out further investigations, analyses and testing. As to this work:
  - 18.1. In April 2021, Airbus started a fleet-wide investigation in relation to surface degradation on A350s generally. The objective of this fleet-wide investigation is to identify potential enhancements which might address or mitigate this issue. This forms part of Airbus' continuous improvement approach and is ongoing.
  - 18.2. Airbus also produced a Technical Report dated 19 July 2021 which confirmed Airbus' conclusion, which had been repeatedly communicated to QTR since around December 2020, that the Condition had no impact on the airworthiness of MSN 36 (**"the Airworthiness Assessment Technical Report"**). This summarised the findings recorded in the RCA Memoranda, and also concluded that there were no airworthiness implications from the Condition which required any additional inspections and that the airworthiness of the whole A350 fleet was maintained. The Airworthiness Assessment Technical Report built on and reflected previous airworthiness assessments carried out by Airbus. The airworthiness assessments are separate and distinct from root cause analysis.
  - 18.3. In July 2021, Airbus representatives surveyed 12 other aircraft in the QTR A350 Fleet that were affected by Non MSN 36 Findings and produced a detailed 288-page survey report dated 10 September 2021 (**"the September Report"**). The September Report stated: *"Airbus has completed and provided to QTR the root cause analysis in respect of the conditions."* The September Report concluded:
    - 18.3.1. The findings observed on these aircraft were of the same type as those observed on MSN 36 and that no new types of findings had been discovered so that Airbus' airworthiness assessment remained valid.
    - 18.3.2. In accordance with the A350 ASR manual, all findings on these aircraft were within the allowable damage limits and/or could be resolved by QTR, if and insofar as necessary, during scheduled maintenance.
  - 18.4. The September Report also set out the conclusions from further analysis of paint chips collected from these other aircraft and laboratory tests relating to paint

thickness and confirmed that these conclusions were consistent with the findings in the RCA Memoranda and Airworthiness Assessment Technical Report.

19. As to paragraph 16:

19.1. The first sentence is admitted.

19.2. Save as aforesaid, and save as set out in paragraphs 17 and 18 above, paragraph 16 is denied. Without prejudice to the generality of the foregoing denial:

19.2.1. It is specifically denied that the RCA Memoranda (or any of them) do not “*amount to a valid root cause analysis*” and/or identify the root cause(s) of the relevant aspect of the Condition in accordance with Airbus’ contractual obligation under clause 2 of the SCL.

19.2.2. It is further specifically denied that the RCA Memorandum in relation to rivet rash dated 11 April 2021 only set out a “*hypothesis*” for the cause (rather than the root cause itself) but, in any event, if QTR was in any doubt, an Airbus presentation dated 18 April 2021 described the same or similar conclusions as the “*confirmed root cause*”.

20. As to the purported criticisms of the RCA Memoranda in paragraphs 17 to 18:

20.1. Airbus notes that QTR has not identified a single instance in which it alleges that the conclusions set out in the RCA Memoranda are substantively wrong or that Airbus has made inaccurate or incorrect findings in relation to the Condition.

20.2. It is denied that all the items identified in (a) to (j) of paragraph 17 are “*necessary*” to be set out in every root cause analysis document, or that they were contractually required by clause 2 of the SCL (if alleged). Paragraph 16.1 above is repeated. Further, and in any event, Airbus has in fact carried out detailed work and analysis in relation to most of the items listed (a) to (j) of paragraph 17. The RCA Memoranda explained and summarised Airbus’ conclusions as to the root cause(s) of the Condition.

20.3. Airbus did not carry out “*a review and critique of structural analysis*” for the purposes of the RCA Memoranda, but it was not necessary for this work to be done as part of the root cause analysis. However, Airbus did analyse whether the Condition might have any impact on the structural integrity of the aircraft for its

assessment of the airworthiness of MSN 36. Airbus communicated the outcome of this assessment to QTR (i.e. that there was no airworthiness issue).

20.4. The determination of “*an identifiable link between the results of the root-cause analysis and the proposed repair scheme*” would not, by definition, form part of the root cause analysis pursuant to clause 2 of the SCL. The identification and proposal of repairs is separate and distinct from the root cause analysis. However, Airbus has assessed the efficacy of the repairs it has proposed, including by carrying out testing (although this testing was not necessary for Airbus to identify and/or propose appropriate repairs and maintenance actions for the Condition).

20.5. Airbus does not in any event understand how the criticisms of the RCA Memoranda in paragraph 18 are alleged to be specific “*illustrations*” of the alleged missing information in paragraph 17. In fact, those criticisms of the RCA Memoranda appear to be largely or wholly unrelated to paragraph 17.

20.6. Further or alternatively, for the reasons set out in paragraph 21 below, the criticisms of the RCA Memoranda in paragraph 18 are without foundation. Airbus will refer to the RCA Memoranda themselves, both individually and collectively, for their full terms and effect, as well as the further meetings and extensive communications with QTR regarding the work that Airbus has carried out and conclusions it has reached regarding the root cause(s) of the Condition.

21. Further, as to sub-paragraphs 18.1 to 18.5:

21.1. In relation to sub-paragraph 18.1:

21.1.1. As to the first sentence, it is admitted that the memorandum identified that the root cause of spider cracks was the different thermal expansion coefficients between the composite structure and paint system, which led, under thermal cycling and mechanical loads, to the creation of spider cracks in the paint system. The memorandum also set out a number of other contributing factors to this aspect of the Condition.

21.1.2. The second sentence is denied.

21.1.3. The third and fourth sentences are admitted.

- 21.1.4. The fifth sentence is embarrassing for lack of particulars and is in any event denied.
- 21.1.5. As to the sixth sentence, it is denied (if it is alleged), that there was a design defect, or a defect in workmanship or material giving rise to the Condition (as to which see further paragraphs 41 to 44 below). However, it is admitted that the memorandum identified that contributing factors to spider cracks include standard paint weakness at the fastener / skin circumferential interface and paint system brittleness. Save as aforesaid, the sixth sentence is not admitted.
- 21.2. In relation to sub-paragraph 18.2, this memorandum analysed the root cause of the “Primer Cracks Condition” as defined in the SCL, namely miniscule cracks identified after paint stripping at step discontinuities of the livery. Further:
- 21.2.1. In relation to the first sentence, the memorandum sets out clearly that the root causes of these cracks (most of which were miniscule) are the stress peak at the step discontinuities between the liveried and non-liveried areas, combined with the different thermal properties of the basecoat and clearcoat such that *“together with the internal stresses created by the differences in the thermal expansion co-efficient of the primer relative to the underlying composite structure, a crack appears at the paint surface”*. It is specifically denied that this was a merely a hypothesis or that it was asserted without *“any substantiation to prove the theory”*: the memorandum refers in terms to having confirmed the stress concentrations at the step discontinuities through a paint system finite-element model simulation and to thermal shock cycling testing which substantiated the root cause finding set out in the memorandum.
- 21.2.2. The second sentence is denied. The memorandum refers in terms to paint thickness, UV and moisture exposure and concludes that they are aggravating factors for this aspect of the Condition.
- 21.2.3. The third sentence is denied. Paragraphs 4.5 to 4.9 above are repeated.

21.3. In relation to paragraph 18.3:

21.3.1. This memorandum analysed the root cause of the cracking seen around the window frames on MSN 36. In this regard:

- (1) The memorandum noted that cross-sections of two windows made by different manufacturers had confirmed a variability in resin layer thickness. The memorandum also recorded that cracks were observed in resin-rich and resin-poor areas, and that *“these phenomena were replicated and confirmed through lab testing”*.
- (2) The memorandum concluded that *“the root cause of the window frame deterioration seen on MSN 36 is the variability of the brittle resin thickness linked to the manufacturing process. This leads to the creation and propagation of cracks where the resin is either too thick (brittleness) or too thin (insufficient material to sustain the stresses from ECF expansion).”* The cracking arises as a result of thermal loads around the window frame area.

21.3.2. It is admitted that the memorandum does not contain any analysis of the relative strengths, brittleness and stiffness of the materials involved. It is denied (if it is alleged) that Airbus was required to carry out any such analysis to provide a full root cause analysis to QTR in accordance with its contractual obligation under clause 2 of the SCL.

21.3.3. The reference in the fourth sentence to cracks starting in the paint protection system is not understood (and the apparent inconsistency with the first sentence is noted). The evidence available to Airbus indicated that window frame paint cracks originated in the resin used to manufacture the window frames and not in the paint layers.

21.3.4. It is specifically denied that:

- (1) This was not a full root cause analysis which complied with Airbus’ contractual obligations under clause 2 of the SCL; and/or
- (2) In order to comply with those obligations, the memorandum would have had to contain the other information set out in paragraph 18.3.

21.3.5. Save as aforesaid, paragraph 18.3 is not admitted.

21.4. In relation to paragraph 18.4:

21.4.1. This memorandum analysed the root cause of certain marks identified on section 15, section 19 and Door 1 of MSN 36. In this regard:

- (1) The memorandum referred to the type of marks observed and also the conclusions and contents of the memoranda related to the root causes of Spider Cracks and Primer Cracks (see paragraphs 21.1 and 21.2 above).
- (2) The memorandum concluded that thermal shock testing had confirmed that the initiation, length and orientation of the cracks was related to features of the ECF layer, and that lab testing of numerous samples had confirmed that three other factors played an aggravating role in this aspect of the Condition (namely clearcoat and primer thickness, resin composition and basecoat colour).
- (3) The memorandum found that the initial “*crazing cracks*” provide an entrance for moisture, condensation and other fluids that could lead to an oxidation of the ECF and a reduction of the adhesion between the ECF layer and the surrounding resin.

21.4.2. In the premises:

- (1) The first three sentences of paragraph 18.4 are denied.
- (2) The fourth sentence is admitted but is irrelevant.
- (3) In relation to the fifth sentence:
  - (a) It is denied that there is any “*defect*”.
  - (b) The wholly unparticularised references to paint cracks potentially being “*due to*” the “*specification*” or “*the wrong ECF system*” or “*other factors*” or “*potential contamination*” are not understood. Airbus reserves the right to plead further to this allegation upon the provision of proper particulars.
  - (c) In any event:



- (i) the ECF system is and remains the best available overall solution to meet Airbus' design requirements for lightning strike protection on the A350; and
- (ii) there is no evidence that potential contamination of the underlying surface is a cause of paint cracks.

(d) Save as aforesaid, the fifth sentence is not admitted.

(4) The sixth to eighth sentences (concerning the references to ECF oxidation) are admitted but are also irrelevant: the memorandum does not purport to identify ECF oxidation as the root cause of the cracks. Indeed paragraph 18.4 omits to mention that a separate memorandum was prepared to address the root cause of ECF oxidation, involving exposure of samples of ECF to ambient factors, as well as energy-dispersive X-ray spectroscopy analysis of the oxidised area. That memorandum concluded that the ECF was oxidised as a result of ambient exposure, although it could be accelerated by chemical paint stripping (such as that to which MSN 36 had been exposed), and was a result of the other damage to the paint on MSN 36, and not a root cause of that damage.

(5) The ninth sentence is thus based on a false premise. It is in any event denied that the root cause of ECF oxidation was a contaminant to the original application of material on the aircraft.

#### 21.5. In relation to paragraph 18.5:

21.5.1. This memorandum analysed the root cause of "rivet rash" (i.e. the well-known phenomenon of paint peeling from the heads of fasteners, which is seen on many different types of aircraft, including those with both metallic and composite airframes, and not just the A350). The issue of "rivet rash" on the A350 had previously been identified by Airbus, prior to the inspection of MSN 36 in Shannon, and this issue had already been the subject of detailed analysis by Airbus since at least 2018. Airbus' conclusions were set out in the memorandum.

21.5.2. The memorandum referred to laboratory tests and analysis of fastener heads and corresponding paint chips that had been carried out and showed that the paint separated from the fastener head due to:

- (1) a weak adhesive interface between the paint and titanium fastener heads that had undergone sulphuric acid anodising (“SAA”) treatment; and
- (2) paint cracking around the fastener head resulting from micro-movements of the fastener.

21.5.3. The memorandum explained that these factors, combined with exposure to the elements, led to the separation of the paint from the fastener head. The root cause of rivet rash was therefore identified.

21.5.4. Subject to the foregoing:

- (1) The first sentence of paragraph 18.5 is admitted.
- (2) Save as aforesaid, paragraph 18.5 is denied.

21.6. Save as aforesaid, sub-paragraphs 18.1 to 18.5 are denied.

22. Paragraph 19 is denied for the reasons set out above.

23. As to paragraph 20:

23.1. The first sentence is denied for the reasons set out in paragraphs 2 and 5 above.

23.2. Without prejudice to the generality of the foregoing denial:

23.2.1. It is specifically denied that the layers and coatings applied to the CFRP do not “adequately” protect the CFRP (in the case of the ECF layer and paint) and/or the ECF layer (in the case of paint).

23.2.2. Further or alternatively, it is denied (if it is alleged) that the structural integrity of the CFRP on the QTR A350 Fleet has been compromised by the Condition or Non MSN 36 Findings.

23.2.3. Further, and in any event, Airbus has not given any warranty to QTR as to the paint life on the QTR A350 Fleet and Airbus is not otherwise

in breach of contract or liable in respect of the warranties that it gave under the CTAPA for the reasons set out in paragraphs 41 to 44 below.

23.3. In relation to the second sentence:

23.3.1. Airbus has indeed identified the root cause(s) for the different aspects of the Condition on MSN 36 in compliance with its obligation under clause 2 of the SCL. Paragraphs 17 to 21 above are repeated.

23.3.2. It is denied that there is (or must be) a single “*specific interface within the multi-layered system*” which is the alleged “*underlying weak point*” or that Airbus was under any obligation to identify one.

23.3.3. In any event, it is denied that Airbus has failed to comply with its contractual obligation to provide a full root cause analysis to QTR under clause 2 of the SCL for the reasons set out above.

23.4. The third sentence is accordingly denied, as is the implied suggestion therein that the remediation action for the Condition and/or Non MSN 36 Findings set out in the A350 ASR manual and/or as specifically proposed by Airbus in relation to MSN 36 or any other aircraft in the QTR A350 Fleet is somehow inadequate.

23.5. Save as aforesaid paragraph 20 is denied.

24. As to paragraph 21:

24.1. The Airworthiness Assessment Technical Report is admitted and will be referred to for its full terms as necessary. Paragraph 18.2 above is repeated.

24.2. The first two sentences are admitted, save that the conclusion that the Condition did not affect airworthiness of MSN 36 and/or the QTR A350 Fleet is not only Airbus’ “*view*”. This is also the view of EASA and it is correct.

24.3. The third sentence is admitted. However, this was a reference to the fact that, as set out in paragraph 18 above, Airbus was carrying out further investigations into the Condition, which it was not contractually obliged to carry out pursuant to clause 2 of the SCL. The Airworthiness Assessment Technical Report as a whole makes clear that Airbus had already identified the root causes of the Condition (as had previously been communicated to QTR in the RCA Memoranda).

- 24.4. Save as aforesaid, paragraph 21 is denied. Without prejudice to the generality of the foregoing denial, the wholly unparticularised allegation that the Airworthiness Assessment Technical Report “*appears to rely*” on “*incomplete, improperly conducted and unsubstantiated hypothesis*” and/or that the findings or conclusions set out therein are in any way “*unreliable*” is specifically denied.
25. As to paragraph 22:
- 25.1. It is admitted that Airbus sent a team to Qatar between 18 and 22 July 2021 as described more fully in paragraph 18 above. Airbus is unable to plead to the wholly unparticularised allegation that unidentified members of its team “*expressed concern*” about the surface condition of the aircraft that they saw.
- 25.2. It is admitted that the Airworthiness Assessment Technical Report was based on Airbus’ evaluation of the Condition on MSN 36, as well as its knowledge and understanding of the CFRP structure and the ECF system. Airbus’ visit to Qatar in July 2021 had not been completed when the Airworthiness Assessment Technical Report was finalised. However, nothing that emerged from that visit affected Airbus’ assessment of airworthiness and that assessment (with which EASA agrees) applies to the rest of the QTR A350 Fleet and the A350 generally.
- 25.3. Save as aforesaid paragraph 22 is not admitted.
26. As to paragraph 23:
- 26.1. Paragraphs 2 and 5 above are repeated.
- 26.2. Further and in any event, Airbus has completed full root cause analyses in accordance with its obligation under clause 2 of the SCL and has proposed appropriate repairs and maintenance actions for the Condition and/or Non MSN 36 Findings as and when requested by QTR. However, QTR has failed, in accordance with the A350 ASR manual and its continuing airworthiness responsibilities as CAMO, to carry out appropriate repairs and maintenance actions and/or to seek instructions from Airbus (or another approved design organisation) as to the appropriate repairs and maintenance actions.
- 26.3. No admissions are made as to what is meant by a “*permanent*” or “*durable*” repair, or the alleged relevance of the same given that (1) aircraft paint does not

last indefinitely and (2) Airbus has not given a warranty as to paint durability. It is to be expected that “*the protective coating system*” would need periodic repairs and maintenance actions over the life of the aircraft. Without prejudice to the generality of the foregoing, paragraph 12.8 above is repeated.

26.4. Save as aforesaid paragraph 23 is denied. Without prejudice to the generality of the foregoing denial, it is specifically denied that the Condition gives rise to any airworthiness concerns, including as to the structural integrity of the airframe and/or the protection that is provided from lightning strikes or UV exposure.

27. As to paragraph 24:

27.1. In relation to the first sentence, no admissions are made about whether QTR could carry out its own analysis of the root cause of the Condition.

27.2. As to the second sentence, it is admitted that, as manufacturer and DOA holder, Airbus has information and data about the A350 and knowledge and expertise regarding the design and production of the A350 which are not available to others (including QTR) and that, as a result, Airbus is best placed to determine what technical work is necessary or appropriate for a root cause analysis of the Condition, how that work should be carried out and what conclusions can be drawn from that work. The RCA Memoranda are the product of this work and set out Airbus’ findings as to the root cause(s) of the Condition on MSN 36.

27.3. As to the third sentence, it is admitted that Airbus assembles the CFRP structure at various facilities globally. Parts of the CFRP structure are manufactured by third party suppliers to Airbus. Save as aforesaid, the third sentence is denied.

27.4. As to the fourth sentence, it is admitted that Airbus is best placed to review its facilities to determine whether any part of the procedures that were followed could compromise the integrity of the CFRP or ECF or give rise to any defect. However, it is denied that there is any defect (see paragraphs 42 to 44 below) and/or that the integrity of the CFRP or ECF is compromised in any way.

27.5. Save as aforesaid, paragraph 24 is denied.

28. As to paragraph 25:

28.1. It is denied that QTR is entitled to the relief sought or any relief because Airbus has complied with its contractual obligation under clause 2 of the SCL to provide a full root cause analysis for the reasons set out above.

28.2. It is denied, as appears to be alleged, that Airbus was obliged, pursuant to clause 2, to “*identify an action plan to implement permanent corrective actions to remedy the Condition*”. Airbus was obliged to provide “*a Service Bulletin, revised, maintenance/repair instructions and another means as the Seller may deem necessary to correct the condition observed on the A350XWB aircraft*”, to QTR’s reasonable satisfaction. Airbus has complied with that obligation. QTR’s refusal to accept the repairs and maintenance actions proposed by Airbus in relation to the Condition and Non MSN 36 Findings is unreasonable.

28.3. Further or alternatively, even if (which is denied) Airbus did not fully comply with its contractual obligation under clause 2 of the SCL, specific performance is not or is no longer an available remedy or alternatively the Court should not exercise its discretion to order specific performance of that obligation.

**(2) MSN 36**

29. As to paragraph 26:

29.1. It is denied that MSN 36 could not have been returned by QTR to service and/or that it was grounded from 29 November 2020 as a result of the Condition and/or that MSN 36 is unserviceable or unairworthy or continues to be grounded as a result of the Condition. Paragraphs 9 to 12 above are repeated.

29.2. Further, as regards the individual sub-paragraphs of paragraph 26:

29.2.1. Paragraph 26.1 is admitted.

29.2.2. In relation to paragraph 26.2:

(1) It is admitted and averred that Airbus was (and remains) of the view (as is the case) that the damage to MSN 36 (i.e. the Condition) could be addressed relatively easily by implementing repairs and maintenance actions proposed by Airbus and that MSN 36 could in

any event be returned to service. It is denied (if it is alleged) that Airbus only took this view in relation to the Condition “initially”.

- (2) Airbus proposed to carry out appropriate repairs and maintenance actions on MSN 36 in Shannon to address the Condition in December 2020 (as to which see paragraphs 5.12.1 and 11 above).
- (3) However, QTR refused to permit those repairs and maintenance actions to be carried out and QTR instead required a full damage mapping exercise and root cause analysis to be completed by Airbus before permitting them to be carried out on MSN 36.
- (4) It is admitted that Airbus agreed to carry out a full damage mapping exercise to determine the full extent and severity of the Condition, so far as it affected MSN 36, as QTR had required. This damage mapping exercise was not necessary to address the Condition and/or for the repairs and maintenance actions to be completed.
- (5) Airbus has been ready, willing and able to carry out the proposed repairs and maintenance actions to MSN 36 at all times since December 2020. However, they cannot be carried out by Airbus unless and until QTR in its capacity as CAMO holder has agreed to the proposed repairs and maintenance actions and given delegated contractual authority to Airbus to issue the Certificate of Release.
- (6) It is denied (if it is alleged) that there is any inconsistency between Airbus’ view that the Condition could be addressed relatively easily on MSN 36 and its agreement to carry out a damage mapping exercise. It was QTR’s decision to insist on the completion of the damage mapping exercise before any repairs and maintenance actions could be carried out on MSN 36 in relation to the Condition.

29.2.3. Paragraph 26.3 is admitted.

29.2.4. Paragraph 26.4 is denied. Airbus agreed to reposition MSN 36 from Shannon to its facility in Toulouse to accommodate QTR’s requirement, as a matter of commercial preference, that a full damage

mapping exercise and root cause analysis be carried out before any repairs or maintenance actions were carried out on MSN 36. This was QTR's own choice and was not necessitated by the Condition.

29.2.5. In relation to paragraph 26.5:

- (1) The first sentence is admitted.
- (2) The second sentence is not admitted. Airbus was not however required to, and did not, deliver a Flight Conditions Document which it understands would have been needed for a permit to fly to be issued by the QCAA. In any event, it is denied (if it is alleged) that QTR was required to obtain a permit to fly from the QCAA for the repositioning flight from Shannon to Toulouse and/or that any such requirement arose because MSN 36 was not airworthy as a result of the Condition (since, as aforesaid, it was not unairworthy).
- (3) It is admitted that Airbus identified certain limited precautions for the repositioning flight from Shannon to Toulouse including that the flight should be carried out in good weather and should not pass within 50 nautical miles of storm edges. The reason for these precautions was to mitigate the risk of aggravating the damage to MSN 36 due to the stripping and sanding process; those precautions were not required by Airbus for safety-related reasons. It is denied (if it is alleged) that there were any safety implications associated with the repositioning flight or that these precautions were required because MSN 36 was not airworthy as a result of the Condition.
- (4) Save as aforesaid, the third sentence is denied and, in particular, it is specifically denied that the ECF protection was compromised.

29.2.6. Paragraph 26.6 is admitted. Paragraph 29.2.2 above is repeated.

29.2.7. In relation to paragraph 26.7, no admissions are made about the Claimant's awareness, but the mapping of the damage to MSN 36 was completed in March 2021 (not May 2021 as alleged) and in the same month Airbus presented details to QTR of its initial test campaign in the context of its investigation into the Condition on MSN 36.



29.2.8. Paragraph 26.8 is denied. In this regard:

- (1) Airbus has provided QTR with root cause analyses of the Condition and it has identified the root causes of the Condition in accordance with clause 2 of the SCL. Paragraphs 17 to 27 above are repeated.
- (2) In any event, the completion of a root cause analysis and the identification of the root causes of the Condition are not necessary preconditions for identifying appropriate repair or maintenance solutions for the Condition. Airbus has identified the appropriate repair and maintenance actions for the Condition on MSN 36.
- (3) It is denied (if it is alleged) that it was reasonable for QTR to decline to permit the repairs and maintenance actions proposed by Airbus for MSN 36 to be carried out because no root cause analysis had yet been carried out and/or the root causes had not yet been identified and/or (if it be the case) because QTR was not satisfied that the proposed repairs or maintenance actions or repainting would lead to a long-term durable solution to the Condition.
- (4) As to the reference to a “*long-term durable solution*” to the Condition on MSN 36, paragraph 26.3 above is repeated.

29.2.9. In relation to paragraph 26.9:

- (1) It is admitted that Airbus proposed to carry out various repairs and maintenance actions to address the Condition on MSN 36 in or about December 2020 and thereafter that QTR has claimed that the proposed repairs and maintenance actions are not acceptable.
- (2) It is also admitted that the repairs proposed by Airbus in relation to MSN 36 included approximately 900 patch repairs on different areas of the aircraft and that this is a larger number of patches than would typically have been expected on an aircraft over its life. However, the patch repairs proposed by Airbus for MSN 36 cover only a small proportion of the surface area of the aircraft.
- (3) Moreover, as set out in paragraph 11 above:

- (a) the number of patch repairs was significantly increased by the stripping and abrasion process which MSN 36 underwent, contrary to Airbus' recommendations; and/or
  - (b) the number of patch repairs on MSN 36 could be reduced if QTR had not unreasonably refused to increase the allowable damage limits in the A350 ASR manual as Airbus proposed.
- (4) It is denied that the patch repairs were proposed by Airbus for MSN 36 "*as a temporary solution*". The proposed patch repairs are permanent within the meaning of the A350 ASR manual.
- (5) The unparticularised allegation in paragraph 26.9.2 that the proposed patch repairs can cause "*irreversible changes*" to the aircraft is not understood and is in any event denied. Airbus' proposed repairs for MSN 36 would have required only light sanding of the aircraft (as a surface preparation) followed by thermal curing of the patches on to the surface of the aircraft. This process would not have any impact on the structure of the aircraft: it simply replaces the missing or damaged ECF with new ECF.
- (6) It is also denied that the patch repairs would affect the ongoing maintenance of the aircraft and/or limit QTR's ability to repair other damage to the aircraft in accordance with the ASR manual. The unparticularised allegation in paragraph 26.9.3 that the repairs would require QTR to refer more damage to Airbus for assessment and repair instructions is not understood and is in any event denied.
- (7) Further, contrary to what appears to be alleged in paragraph 26.9.4, Airbus is not obliged, under the SCL or otherwise, to identify or propose a repair or maintenance action for the Condition which would prevent the Condition from developing in other areas of MSN 36 or in other aircraft in the QTR A350 Fleet. This would be impossible since, as pleaded in paragraph 12.8 above, the root cause of degradation of paint layers is the different thermal expansion coefficients of the CFRP, the ECF layer and paint that

are used to manufacture the A350. The only possibility therefore is to address the Condition if and when it arises on individual aircraft.

- (8) While it is admitted that Non MSN 36 Findings have been identified on aircraft as a result of visual inspection, it is denied that this means, as alleged in paragraph 26.9.5, that each aircraft is at risk of being grounded for repair at short notice. For the avoidance of doubt, the Condition and Non MSN 36 Findings do not give rise to any airworthiness concerns. Patch repairs can also be performed relatively quickly and typically at the same time as regular scheduled maintenance checks are carried out on the aircraft.
- (9) The allegation in paragraph 26.9.6 that there is no “*assurance*” that it will be “*possible*” or “*safe*” to carry out patch repairs in every place where the Condition presents itself is not understood. For the avoidance of doubt, it is averred that patch repairs can be carried out anywhere on the CFRP airframe. Further, it is denied that there is now any limitation on the relative proximity of the patch repairs proposed by Airbus to be carried out on MSN 36. The repairs do not have any “*structural*” or “*safety*” implications. Continuing airworthiness will be “*assured*” by inspections, repairs and maintenance carried out in accordance with the A350 manuals.
- (10) It is also denied that the patch repairs have been proposed by Airbus to QTR without the benefit of a root cause analysis of the Condition (for the reasons set out above at paragraphs 17 to 27 above). Further, while it is admitted that the patch repairs may not necessarily prevent the Condition from re-occurring in the same area, there is no possible repair solution which will guarantee that the Condition will not re-occur on the same area of the aircraft.
- (11) It is denied that the patch repairs proposed by Airbus would have any material impact on (a) weight or drag, (b) fuel burn, (c) cost of operation, and/or (d) the commercial value of the repaired aircraft.
- (12) Further, as regards paragraph 26.9.9 and the ARC suspension for MSN 36 by the QCAA, Airbus refers to paragraph 30 below. If

(which is not admitted) the QCAA is not satisfied by the repairs proposed by Airbus for MSN 36, its position is not justified.

(13) In the premises, it is denied that a reasonable CAMO in the position of QTR would consider the proposed repairs and maintenance actions for MSN 36 to be unacceptable and/or refuse to permit the proposed repairs and maintenance actions to be carried out. Airbus has complied with its obligation under clause 2 of the SCL.

29.2.10. In relation to paragraph 26.10, it is denied that Airbus has failed to define an appropriate inspection period to identify occurrences of the Condition and/or that Airbus does not understand the root cause of the Condition. Further, no admissions are made as to QTR's alleged beliefs. However, QTR has partially quoted from and mischaracterised the conclusions in the Airworthiness Assessment Technical Report, which in fact concludes: *"No additional inspections are needed beyond what is already regularly scheduled in the existing maintenance manual to detect any of these findings in due time should they occur in-service."* This conclusion applies to the QTR A350 Fleet generally (not just to MSN 36). It is denied that more frequent inspections are required as a result of the Condition than are currently prescribed for the A350.

29.2.11. In relation to paragraph 26.11:

(1) It is admitted that MSN 36 remains at Airbus' facility in Toulouse, that the ARC for MSN 36 has been suspended by the QCAA, and that MSN 36 is not currently being operated by QTR.

(2) Save as aforesaid, paragraph 26.11 is denied. In particular:

(a) MSN 36 is not unserviceable as a result of the Condition.

(b) Further, and in any event, as set out above, Airbus has proposed satisfactory repairs and maintenance actions which would address the Condition on MSN 36 and Airbus has been ready, willing and able to carry out those repairs and maintenance actions at all material times. QTR has unreasonably refused to permit those repairs and maintenance actions to be carried out.

### (3) The ARC suspensions

30. As to paragraph 27:

30.1. It is admitted that the QCAA has suspended the ARCs for the 21 Aircraft in the QTR A350 Fleet identified in the letters pleaded at paragraphs 27.1 to 27.9 (i.e. the Grounded Aircraft), by which QTR was formally notified of the ARC suspensions, and that QTR is and has been unable to operate the Grounded Aircraft while the ARCs remain suspended by the QCAA.

30.2. By way of background to the ARC suspensions:

30.2.1. On 7 December 2020, Mr Llorca Sanz of Airbus wrote to QTR confirming that, on the basis of analysis performed at Shannon and subsequent investigation, Airbus had concluded that there was no structural damage to the CFRP of MSN 36 and that the Condition gave rise to “no safety implications” for MSN 36 or the A350 generally and further that the airworthiness of the aircraft was not affected. This conclusion was confirmed by Mr Llorca Sanz in a letter to QTR dated 29 December 2020 after further investigations had been carried out.

30.2.2. On 23 March 2021, Airbus gave a presentation to QTR which confirmed (among other things) that Airbus investigations had found, and EASA accepted, that there were no safety or airworthiness implications of the Condition for MSN 36 or the QTR A350 Fleet.

30.2.3. On or about 15 April 2021, EASA produced a report of the findings of its independent investigation of the Condition. A copy of this report was provided to QTR and the QCAA. The report stated (inter alia):

*“Based on the reviewed data, the defects on MSN 36 are limited to the paint layers and ECF. There is no evidence of the degradation of the structural function of the composite skin, i.e. crack findings or delamination of the structural CFRP, and no other risks such as EMH from lightning strikes. It is not expected that similar defects on other A350 aircraft would result in a different assessment.”*

30.2.4. Airbus presentations that were given by Mr. Llorca-Sanz to both QTR and the QCAA on 18 April 2021 stated that there was no structural damage to the CFRP on MSN 36, that aircraft airworthiness was

maintained even with partial ECF missing and also that EASA had confirmed and agreed that the damage that had been found on MSN 36 did not give rise to any airworthiness consequence. These conclusions were confirmed by Airbus in its presentation to QTR on 6 May 2021.

30.2.5. However, despite having already been informed by Airbus and EASA that the Condition did not have any impact on the safety or airworthiness of MSN 36 and/or the aircraft affected by the Non MSN 36 Paint Issues, QTR wrote to the QCAA on 26 May 2021 inviting the QCAA to inspect certain aircraft in the QTR A350 Fleet which were said by QTR to be “*the most substantially affected*”. QTR’s letter of 26 May 2021 (“**the 26 May Letter**”) asserted (inter alia) that:

*“[QTR] is concerned that Airbus’ root cause analysis continues and therefore no satisfactory or permanent repair has been proposed to correct the root cause or the impact of the condition. Given the extent and scope of the accelerated surface degradation identified across the A350 fleet, we are concerned with respect to the potential impact on safety and airworthiness on the most substantially affected aircraft.”*

30.2.6. The QCAA then wrote to QTR by a letter dated 14 June 2021 (“**the 14 June Letter**”) stating:

- (1) It had “*taken notice*” of EASA’s “*safety assessment*” in relation to the Condition on MSN 36 (i.e. its report dated 15 April 2021) and that the QCAA understood that, “*based on [EASA’s] independent investigation of the reports provided by [QTR] and the factual data available at Airbus*”, no airworthiness concerns were revealed that would result in the issuance of Mandatory Continuing Airworthiness Information, although EASA had indicated that it would “*monitor the root-cause of the occurrence*” on MSN 36.
- (2) It had also “*taken notice*” of Airbus’ presentation materials in relation to its assessment of the Condition and its root cause.
- (3) The QCAA’s “*verification inspections*” of the affected aircraft (save for MSN 36) had “*confirmed that the surface deterioration on affected aircraft have been validated and found to be disturbing,*

*if not, alarming. The progress of the surface deterioration on some inspected aircraft have been found to be premature and its cause is still undergoing determination by the manufacturer.”*

(4) *“Until to date, it is further to inform you that except as stated above, we have no additional information obtained that would indicate the root-cause of the accelerated surface deterioration and possible damaging effect that it may have to the aircraft structure, including subsequent appropriate measure to prevent the occurrence. We therefore request your cooperation to provide us with information, if any, of the result of the manufacturer determination of the root cause and the availability of appropriate permanent measure, failure of which this Authority may likely suspend the validity of the Certificate of Airworthiness of the affected aircraft to ensure that their safety condition is not compromised by the accelerated surface deterioration.”*

30.3. The purported reasons for the first round of ARC suspensions were given by the QCAA in a letter to QTR dated 17 June 2021 (“**the 17 June Letter**”) as follows:

30.3.1. The QCAA had carried out a “*Fleet Validation Inspection Campaign*” on the Aircraft in the QTR A350 Fleet identified by QTR as having been affected by “*the reported accelerated surface degradation*”.

30.3.2. “*It is confirmed that with the exclusion of [MSN 36] which was located in Toulouse, France at the time of the campaign, we have verified and validated the reported acceleration of the surface degradation on all affected aircraft including the aircraft A7-ALV and A7-ALW. The acceleration of the surface degradation is very much evident and prevalent during our inspections that [QTR] was requested by [the QCAA] to further perform more detailed assessment and inspections on the affected aircraft to determine the severity of the accelerated surface degradation on the airworthiness condition of the affected aircraft and to rectify the findings.*”

- 30.3.3. *“For the time being, the seriousness of the effect of the accelerated surface degradation to the affected aircraft structure is unknown to this Authority.”*
- 30.3.4. *“In view of the absence of the result of the root-cause analysis from the manufacturer and the non-availability of approved data that may be used for permanent rectification of the accelerated surface degradation, it is deeply concerning that the safe condition of the affected aircraft may be compromised.”*
- 30.3.5. *“This condition lowers safety standards and seriously endangers flight safety, a level 1 finding of significant non-compliance with the technical requirements of Annex to QCAR 1003.”*
- 30.3.6. *“As a precautionary measure to prevent an untoward incident or accident that may be caused by the above-mentioned condition and in accordance with the procedure for the Authority, in particular point M.B.903.1 of the Annex to QCAR 1003 as amended, the Airworthiness Review Certificates of the following Airbus A350-941 aircraft affected by accelerated surface degradation are hereby suspended, until further advise.”*

30.4. As to the QCAA’s purported reasons set out in the 17 June Letter:

- 30.4.1. A level 1 finding pursuant to MA 905 of the Annex to QCAR 1003 requires a finding of serious non-compliance with the requirements of Part M which in fact lowers the safety standard and seriously endangers the flight safety. This is to be contrasted with a level 2 finding which is a finding that *may* lower the safety standard and *may* seriously endanger the flight safety. However, the 17 June Letter failed to explain or justify any conclusion that a level 1 finding was appropriate.
- 30.4.2. In particular, the 17 June Letter failed to identify any non-compliance with the requirements of Part M. Further or alternatively, the 17 June Letter failed to identify or explain how or why any such non-compliance was “*serious*” and/or how or why it lowered the safety standard or endangered the flight safety at all (still less “*seriously*”).



- 30.4.3. On the contrary, the 17 June Letter is inconsistent with a level 1 finding in that the ARC suspensions were described therein as a “*precautionary measure*” on the basis that the impact of the Condition and/or Non MSN 36 Findings on the airworthiness of the affected Aircraft was “*unknown*” and the 17 June Letter only goes so far as to speculate, without further explanation or justification, that “*the safe condition of the affected aircraft may be compromised*”.
- 30.4.4. The 17 June Letter does not refer to or address Airbus’ presentations or EASA’s findings (of which both QTR and the QCAA were aware and to which the QCAA had expressly referred in the 14 June Letter).
- 30.4.5. The 17 June Letter merely reproduced the purported concerns of QTR (as expressed by QTR to the QCAA in the 26 May Letter) that Airbus had not completed a root cause analysis for the Condition and that no permanent repair had been proposed, without any explanation of how this might affect airworthiness and/or justify a level 1 finding. Neither in fact affects airworthiness or justifies any level 1 finding.
- 30.4.6. The reference to “*the non-availability of approved data*” in the 17 June Letter is not understood. In this regard, as set out in paragraphs 5.10 to 5.13 above, Airbus (as manufacturer and DOA holder) has identified and proposed to QTR appropriate repair and maintenance actions for the Condition on MSN 36 and for Non MSN 36 Findings on some other aircraft in the QTR A350 Fleet. These are “*repair design solutions*” which have or would become “*approved data*” upon the issuance by Airbus of a Repair & Design Approval Form in respect thereof. Further or alternatively, the QTR A350 Fleet should be repaired and maintained in accordance with the “*approved data*” which are set out in the A350 ASR manual.
- 30.5. The further letters sent by the QCAA to QTR in relation to ARC suspensions, as pleaded in paragraphs 27.2 to 27.9, provided no further purported explanation or justification for the QCAA’s decision to suspend the ARCs for the Aircraft.

30.6. None of these subsequent letters refer to or address the further relevant findings (of which QTR and the QCAA were or ought reasonably to have been aware) in:

30.6.1. The Airworthiness Assessment Technical Report which was sent by Airbus to QTR on 30 July 2021 which concluded (inter alia) that there were no airworthiness issues arising from the Condition in relation to MSN 36 (in particular) or the QTR A350 Fleet (in general), that “*no additional inspections are needed beyond what is already regularly scheduled in the existing maintenance manual to detect any of these findings in due time should they occur in-service*” and also confirmed that there were “*no outstanding actions towards EASA on this matter*”.

30.6.2. A letter from EASA’s Executive Director to the QCAA on 1 October 2021 stating that:

(1) EASA “*could not identify a potential unsafe condition that would affect the safety of the inspected aircraft*”;

(2) EASA was not “*worried with respect to the structural integrity, nor concerned by the required protection against effects of direct lightning*”; and

(3) EASA had “*taken the action to investigate with Airbus the design definition of the painting and production process to understand what needs to be improved to prevent this accelerated degradation, but this is not related to the normal continuing airworthiness process indicated above.*”

30.7. Further, there are other aircraft in the QTR A350 Fleet, which Airbus understands to be affected to some extent by Non MSN 36 Findings, but which have not been grounded by the QCAA and the QCAA continues to permit A350s operated by other airlines to fly into Qatar and to fly through Qatari airspace without additional restrictions. Further, so far as Airbus is aware, no A350s that are owned or operated by airlines other than QTR have been similarly taken out of service and/or grounded as a result of the issues about which QTR is complaining.

30.8. In the premises, it is averred that the QCAA’s decisions to suspend the ARCs for the Grounded Aircraft between June 2021 and November 2021 do not establish

that they are unserviceable or alternatively that they have been grounded as a result of the Condition for the purposes of clause 3.2 of the SCL. As to this:

30.8.1. The QCAA's decisions were not made on the basis that the Grounded Aircraft are in fact unserviceable; or alternatively,

30.8.2. If and insofar as the QCAA's decisions were made on the basis that the Grounded Aircraft are unserviceable, those decisions were manifestly wrong and unreasonable (or alternatively irrational) on the basis of the information available (or the information which was or ought reasonably have been available) to QTR and the QCAA at the time.

30.9. It is therefore to be inferred that (at best):

30.9.1. the QCAA was not provided by QTR with all relevant information regarding the Condition and/or Non MSN 36 Findings; and/or

30.9.2. the QCAA has acquiesced in a request from and/or a perceived wish of QTR that the ARCs for the Grounded Aircraft should be suspended to provide a purported basis to claim AOG compensation from Airbus.

30.10. Save as aforesaid, paragraph 27 is denied.

31. As to paragraph 28:

31.1. It is admitted that QTR observed surface degradation on some of the aircraft in the QTR A350 Fleet and that it reported this to the QCAA, including by the 26 May Letter. It is denied that this surface degradation is or reflects any defect in the aircraft and/or that QTR had or has any genuine concern that this had, has or may have any impact on the safety or airworthiness of the QTR A350 Fleet. Further or alternatively, it is denied that QTR could reasonably have any such concern in light of the information that has been provided to QTR by Airbus and EASA in relation to its investigations and findings in relation to the Condition.

31.2. As to the QCAA's decisions to suspend the ARCs of the Grounded Aircraft between 17 June 2021 and 18 November 2021, paragraph 30 above is repeated.

31.3. Further or alternatively, it is denied that Airbus has failed:

31.3.1. To provide a root cause analysis of the Condition in accordance with clause 2 of the SCL (as to which see paragraphs 17 to 27 above).

31.3.2. To propose satisfactory repairs and maintenance solutions in order to address the Condition and Non MSN 36 Findings (as to which see paragraphs 5.11 to 5.14 and 29.2.8 and 29.2.9 above).

31.4. Save as aforesaid, paragraph 28 is not admitted.

**(4) QTR's claim for AOG compensation**

32. Paragraph 29 is denied. Without prejudice to the generality of the foregoing denial:

32.1. Paragraph 16 above is repeated as to the proper construction of SCL.

32.2. In the premises, QTR is not entitled to AOG compensation pursuant to clause 3.2.1(i) of the SCL by reason of the suspension of the ARCs by the QCAA for the reasons set out in paragraphs 30 and 31 above. In particular:

32.2.1. The Grounded Aircraft are and have been at all material times airworthy and are thus not unserviceable as a result of the Condition.

32.2.2. Further or alternatively, the Grounded Aircraft are not and have not at any material time been grounded as a result of the Condition.

32.2.3. The suspensions of the ARCs for the Grounded Aircraft by the QCAA do not establish for the purposes of clause 3.2.1(i) of the SCL that the Grounded Aircraft are or have been unserviceable and/or grounded as a result of the Condition. As to this:

(1) The QCAA's decisions were not made on the basis that the Grounded Aircraft were unairworthy as a result of the Condition, but rather on the (incorrect) basis that Airbus had not carried out a root cause analysis in relation to the Condition and/or that Airbus had not proposed a permanent rectification of the Condition; and/or

(2) The QCAA's decisions were wrong and unreasonable (or alternatively irrational) and/or based on incomplete information.

- 32.2.4. Further, in circumstances in which it is averred that QTR has acted in breach of the Good Faith Obligation as set out in paragraph 34 below, and pending disclosure, Airbus' position is expressly reserved as to whether QTR and the QCAA have wrongfully colluded or conspired and/or otherwise acted together in bad faith in relation to the ARC suspensions for the Grounded Aircraft with a view to attempting to improve QTR's commercial position against Airbus under the SCL.
- 32.2.5. Further or alternatively, as set out in paragraph 33 below, QTR has failed to take all reasonable steps available to it to mitigate the period that the Grounded Aircraft were grounded. No AOG compensation is therefore payable for any period for which the Grounded Aircraft have been or continue to be grounded as a result of that failure to mitigate.
- 32.3. In any event, QTR has failed to submit a substantiated claim to Airbus for AOG compensation including reasonable technical information in accordance with clause 3.2.3 of the SCL. Further or alternatively, any such claim may only be submitted by QTR at the end of any relevant AOG period. No AOG compensation is therefore due or payable from Airbus to QTR.
- 32.4. Further or alternatively, on 14 February 2022, Airbus sent QTR a notice of termination in relation to the SCL ("**the SCL Termination Notice**") in reliance upon QTR's breaches of the A350 ASPA in relation to the scheduled deliveries for which Airbus tendered MSN 409 and MSN 438 (as to which see paragraphs 49 to 53 below) and QTR's own stated interpretation of clause 17.4 of the CTAPA. If the SCL has been effectively terminated by the SCL Termination Notice, it is averred that no liability of Airbus to QTR for AOG compensation is capable of arising under the terms of the SCL on or after 14 February 2022.
33. It is averred that, in breach of the Mitigation Obligation set out in paragraph 16.2.4 above, QTR has failed to take all reasonable steps available to it to mitigate the period that the Grounded Aircraft were grounded. In this regard:
- 33.1. QTR did not invite Airbus to participate in the QCAA's investigations and inspections concerning the Condition even though Airbus would have been able to provide relevant information and assistance; and/or

33.2. Despite the fact that the QCAA's decisions are manifestly flawed on their face, QTR has apparently taken no steps to challenge the QCAA's decisions and/or to seek to persuade or engage with the QCAA with a view to overturning or limiting the scope or duration of the ARC suspensions for the Grounded Aircraft.

33.3. Further or alternatively:

33.3.1. The letters from the QCAA to QTR informing it of the ARC suspensions noted (inter alia) that QTR was required to contact Airbus "*for the appropriate repair or remedial action*" and that QTR had failed to carry out or complete appropriate repairs or maintenance actions in relation to at least some of the Grounded Aircraft.

33.3.2. QTR has refused and/or failed to carry out the repairs and maintenance actions in accordance with instructions that have been given by Airbus to QTR in relation to the Condition and/or Non MSN 36 Findings.

33.3.3. QTR has failed to carry out the repairs and maintenance actions specified in the A350 ASR manual and/or to seek and implement instructions from Airbus (or another approved design organisation) as to the repairs and maintenance actions to address Non MSN 36 Findings.

33.4. In the premises, QTR has failed to take all reasonable steps to mitigate the period for which any of the Grounded Aircraft remain grounded by carrying out repairs and maintenance actions for the Condition and/or Non MSN 36 Findings.

34. Further or alternatively, it is averred that, in breach of the Good Faith Obligation, QTR has sought to engineer or acquiesce in a situation in which aircraft from the QTR A350 Fleet are or remain grounded on an incorrect and inadequate basis so as to provide it with a purported basis to claim AOG compensation from Airbus under the SCL. In particular, but without limitation, Airbus will rely upon the following facts and matters in support of an inference that QTR is in breach of the Good Faith Obligation:

34.1. As a result of the past and continuing effect of the COVID-19 pandemic on QTR's ability to earn revenue from operating flights, it is in QTR's economic interests for at least part of the QTR A350 Fleet to be grounded, if that enables it to claim AOG compensation from Airbus. In this regard, by way of illustration:

34.1.1. In 2019, QTR operated 38 A350 aircraft for between 480 and 577 flight hours per month; on the basis of November 2021 monthly data, only 2 of the QTR A350 Fleet were operating at above 2019 levels.

34.1.2. On average QTR in fact operated approximately 6,000 fewer flights per month during 2021 than it had been operating in 2019.

(In this regard, QTR is put to strict proof as to whether and, if so, how the terms of any lease agreements relating to the QTR A350 Fleet impact on whether it is in QTR's economic interests for the Grounded Aircraft to remain grounded.)

34.2. QTR wrote to the QCAA by the 26 May Letter requesting an investigation of the airworthiness of the QTR A350 Fleet, despite having previously been assured by both Airbus and EASA that the Condition raised no airworthiness issues.

34.3. QTR failed to invite Airbus to participate in the QCAA's investigations and inspections concerning the Condition and/or Non MSN 36 Findings even though it would have been able to provide relevant information and assistance.

34.4. Despite the fact that the QCAA's decisions are manifestly flawed on their face, QTR has apparently taken no steps to challenge the QCAA's decisions or to seek to persuade or engage with the QCAA with a view to overturning or limiting the scope or duration of the ARC suspensions for the Grounded Aircraft.

34.5. QTR has failed to accept Airbus' proposals for the repair and maintenance of the aircraft so as to address the Condition and/or Non MSN 36 Findings.

34.6. Despite repeated requests by Airbus and its solicitors in correspondence, QTR has failed to provide complete disclosure of the communications between itself and the QCAA relating to the Condition and/or Non MSN 36 Findings.

35. As to paragraph 30:

35.1. The first sentence is admitted. However, for the reasons set out in this Defence, it is denied that AOG compensation was or is due from Airbus to QTR in respect of MSN 36 on the grounds alleged in the letter dated 8 March 2021 or at all.

35.2. The second sentence is denied. The letter dated 8 March 2021 simply asserted that: *"During the paint stripping of the Aircraft at IAC's paint facility in Shannon, certain damage and discrepancies were found (the "Condition"). As a*

*result of the Condition and as you are fully aware, the Aircraft has been AOG since 29 November 2020.*” QTR did not thereby or thereafter provide Airbus with the material required to substantiate its claim pursuant to clause 3.2.3 of the SCL.

36. Save that it is denied that any AOG compensation was or is due from Airbus to QTR in respect of MSN 36 on the grounds alleged or at all, paragraph 31 is admitted.
37. As to paragraphs 32 and 33:
- 37.1. It is admitted that:
- 37.1.1. MSN 36 has not been in operation since November 2020 (save for the repositioning flight on 5 January 2021 from Shannon to Toulouse);
- 37.1.2. MSN 36 has been in Airbus’ possession since 5 January 2021;
- 37.1.3. The QCAA suspended the ARC for MSN 36 from 19 June 2021; and
- 37.1.4. Airbus has refused and continues to refuse to pay AOG compensation to QTR in respect of MSN 36.
- 37.2. It is denied that the alleged or any AOG compensation is due from Airbus to QTR in respect of MSN 36 pursuant to clause 3.2 of the SCL. Without prejudice to the generality of the foregoing denial, it is denied that MSN 36 is or has been at any material time grounded because it is not airworthy as a result of the Condition. Paragraphs 29 and 32 above are repeated.
- 37.3. Further or alternatively, even if MSN 36 was grounded because it was not airworthy as a result of the Condition between 29 November 2020 and 31 December 2020 (which is denied), it is denied that QTR is entitled to AOG compensation for this period (which pre-dates the conclusion of the SCL).
- 37.4. In any event, QTR has failed to submit a substantiated claim to Airbus for AOG compensation including reasonable technical information in accordance with clause 3.2.3 of the SCL and/or no AOG compensation is payable until after the end of any AOG period. No AOG compensation is therefore due or payable.
- 37.5. Further or alternatively, paragraph 32.4 above is repeated.
38. The letters referred to in paragraph 34 are admitted, but it is denied that Airbus is liable to pay the alleged or any AOG compensation for the reasons set out above.



39. It is denied, for the reasons set out above in this Defence, that Airbus is liable to pay QTR the sums referred to in paragraphs 35 to 38, or any sums, by way of AOG compensation or damages. Alternatively even if, which is denied, Airbus would otherwise be liable to pay QTR any AOG Compensation or damages as alleged, Airbus would be entitled to set off the damages due to it by QTR in respect of the loss and damage suffered by Airbus as a result of QTR's breaches of the Mitigation Obligation and/or the Good Faith Obligation as pleaded in more detail in paragraphs 33 to 34 above, including all or part of any liability of Airbus to QTR for AOG compensation or damages, which would extinguish or alternatively substantially reduce such liability.

## **E. THE CTAPA**

### **(1) Warranties**

40. As to paragraph 39:

- 40.1. It is admitted that the Warranties were given by Airbus to QTR under clause 12.1.1 of the CTAPA in relation to the Aircraft and Warranted Parts (as defined in clause 12.1.1) and that they were given as "*at the time of Aircraft Delivery*".
- 40.2. The Warranty given pursuant to clause 12.1.1(iii) of the CTAPA is qualified by the words "*having regard to the state of the art at the date of such design*".
- 40.3. Airbus' case as to the remedies available for alleged breaches of the Warranties is set out in more detail in paragraphs 45 to 48 below.
- 40.4. Save as aforesaid, paragraph 39 is admitted.

### **(2) Alleged breaches of the Warranties**

41. As to paragraph 40:

- 41.1. It is denied that Airbus has failed to provide root cause analyses in relation to the Condition. Paragraphs 17 to 27 above are repeated.
- 41.2. In the premises, it is denied that QTR's failure to provide full and adequate particulars of its allegation that Airbus is in breach of the Warranties is the result of any failure or default on the part of Airbus.

42. As to paragraph 41:

42.1. It is denied that the aircraft in the QTR A350 Fleet exhibit any defects of workmanship, or that they exhibited any such defects “*at the time of Aircraft Delivery*”, in breach of the warranty in clause 12.1.1(ii) of the CTAPA.

42.2. Without prejudice to the generality of the foregoing denial, in relation to the alleged particulars of workmanship defect in sub-paragraphs (a) and (b):

42.2.1. It is admitted that the thickness of the paint layers on some of the A350 aircraft delivered to QTR pursuant to the A350 ASPA was greater than the engineering specification for paint thickness. However, it is denied that this reflects any defect in workmanship. In this regard, it is averred that, on occasion, the aircraft delivered to QTR have been repainted prior to delivery, at QTR’s request and/or to enhance their cosmetic appearance, and that this may have resulted in the paint thickness exceeding the engineering specification. Airbus provides QTR with a production quality report for each A350 aircraft that it delivers which includes details of the average total paint thickness. It is noted that QTR has accepted delivery of a number of A350 aircraft in the knowledge that the paint thickness was outside ‘in service’ tolerance levels.

42.2.2. It is denied that there is any engineering specification for the variability of resin thickness in resin transfer moulded (“**RTM**”) parts used in the aircraft window frames. Further and in any event, it is denied that such variability arises from any defect in workmanship. Variability in resin thickness is an inherent feature of the RTM manufacturing process.

43. As to paragraph 42:

43.1. It is denied that the aircraft in the QTR A350 Fleet exhibit any defects of design, or that they exhibited any such defects “*at the time of Aircraft Delivery*”, in breach of the warranty in clause 12.1.1(iii) of the CTAPA.

43.2. Further or alternatively, it is denied that the Undelivered QTR A350 Fleet “*will exhibit*” any defects of design, whether “*at the time of Aircraft Delivery*” or at all, in breach of the warranty in clause 12.1.1(iii) of the CTAPA. In any event,

it is denied (if it is alleged) that any such alleged hypothetical future breach of warranty is capable of giving rise to any present claim by QTR against Airbus.

- 43.3. Without prejudice to the foregoing denial, it is admitted that the alleged particulars of “*design defects*” in sub-paragraphs (a) – (d) refer to some of the findings in the RCA Memoranda, but it is denied that these are or reflect any design defect “*having regard to the state of the art at the date of such design*”.
- 43.4. In relation to sub-paragraph (a), it is denied that the difference in thermal expansion coefficients between the constituent elements of the airframe and the ECF and paint layers are or reflect any such design defect. Such differences in thermal expansion coefficients are an inherent consequence of manufacturing the airframe from a composite material. Paragraphs 2 and 5 above are repeated.
- 43.5. In relation to sub-paragraph (b), it is denied that the use of RTM parts is or reflects any such design defect. Given their shape it was necessary for these parts to be manufactured using an RTM (or similar) process. Variations in resin thickness are an inherent feature of parts manufactured using such a process.
- 43.6. In relation to sub-paragraph (c), it is denied that the SAA surface treatment is or reflects any such design defect. The SAA surface treatment is a manufacturing process that is applied to titanium fasteners to protect against corrosion. SAA-treated titanium (“**SAA-Ti**”) fasteners have been a worldwide standard in the aeronautical industry for decades. Further and in any event, there is not currently and was not at the time of design of the A350 any realistic alternative to the use of titanium fasteners. SAA-Ti fasteners best meet the design requirements for the A350 (in relation to conductivity and corrosion protection) of all qualified fasteners that are available to Airbus. It is also noted that ‘rivet rash’ has for a long time been a well-known phenomenon on many kinds of aircraft other than the A350 and is not restricted to SAA-Ti fasteners.
- 43.7. In relation to sub-paragraph (d), it is denied that the clearcoat used by Airbus for the A350 is or reflects any such design defect. The clearcoat layer is applied in order to enhance the cosmetic appearance of the A350. It is denied (if it is alleged) that Airbus ought reasonably to have known at the time of design of the A350 that the clearcoat layer was “*too rigid*” or “*too brittle*” and/or that there was any benchmark or standard against which to assess these parameters.

- 43.8. Airbus cannot plead to the wholly unparticularised allegations in subparagraphs (e) and (f) that the paint on the A350 is “*generally incompatible*” with the underlying “*structure*” or that the A350’s “*current design*”, including the selection of (unspecified) materials, “*generally*” gives rise to the Condition.
44. As to paragraph 43:
- 44.1. It is admitted that Airbus has identified potential changes to the design of the A350, including in relation to the specific matters identified in paragraphs 43.1 and 43.2, as part of its continuous improvement approach.
- 44.2. Save as aforesaid paragraph 43 is denied. Without prejudice to the generality of the foregoing denial, while Airbus is investigating various potential alternatives to delay the appearance of ‘rivet rash’, Airbus does not presently intend to replace SAA-Ti fasteners on the A350 with different fasteners.
- 44.3. It is also specifically denied that the identification of possible future improvements support QTR’s case that there is any design defect at all, let alone one which was a defect in design “*having regard to the state of the art at the date of such design*”. The design of any aircraft type is the subject of continuous development and evolution for as long as it is manufactured and later aircraft of the same type may therefore be manufactured to a different design or using different materials to reflect (inter alia) technological advances and developing knowledge about and experience of the aircraft type; accordingly, the fact that changes are suggested or made to the design or materials from time to time does not mean or imply that the original or existing design or materials are defective.
- 44.4. Specifically, as regards Airbus’ intention to replace ECF with PCF, PCF was not an available technological solution at the time of the design of the A350 or the manufacture of the A350 aircraft which have already been manufactured and delivered to QTR and form part of the QTR A350 Fleet. However, as part of its continuous improvement approach, Airbus has been considering the use of PCF instead of ECF as a potential future option for A350s, with a view to further reducing the weight of the A350, since 2016 (i.e. before the Condition was found on MSN 36). It is denied (if it is alleged) that the initial driver for Airbus’ consideration of the potential use of PCF (as an alternative to ECF) on the A350 was the Condition or Non MSN 36 Findings. Even now PCF is only

being rolled out progressively on aircraft in production in relation to certain parts of the A350 design; and ECF is still being used on other aircraft parts.

44.5. As regards Airbus' intention potentially to remove ECF in the window frames:

44.5.1. This potential design change remains under development and Airbus is not yet in a position to introduce it into the A350 design.

44.5.2. The inclusion of ECF in window frames was originally intended to improve their repairability in the event of lightning strikes. However, following a further review of service history and further testing carried out by Airbus since December 2020, Airbus has now concluded that the inclusion of ECF in window frames for this purpose is unnecessary.

44.5.3. The window frames for the A350 would nevertheless continue to be manufactured with the same resin and using the same RTM process as currently, but with the ECF being removed and with a glass or carbon ply being added to act as a crack stopper (but which, for the avoidance of doubt, will not provide protection from lightning strikes).

45. It is denied that QTR has suffered any loss or damage and/or that such loss and damage was caused by any alleged breach of the Warranties and/or that QTR is entitled to claim damages from Airbus in respect of any such loss and damage as alleged in paragraph 44 or at all. Without prejudice to the generality of the foregoing denial:

45.1. Clause 12.1.4.1 of the CTAPA expressly provides that QTR's remedy and Airbus' obligation and liability under clause 12.1.1 is limited "*to the prompt repair, replacement or correction of any Warranted Part which is defective or to the prompt supply of modification kits rectifying the defect, at [Airbus'] expense and option.*"

45.2. Clause 12.5 of the CTAPA expressly provides that:

45.2.1. the warranties, obligations and liabilities of Airbus and remedies of QTR in clause 12 are exclusive and in substitution for, and QTR thereby waived, released and renounced all other warranties, obligations and liabilities of Airbus and rights, claims and remedies of QTR against Airbus, express or implied, arising by law or

otherwise, with respect to any nonconformity or defect in any Aircraft, component, accessory or part thereof; and

45.2.2. Airbus shall have no obligation or liability for loss of use, revenue or profit with respect to any Aircraft, component, equipment, accessory or part thereof or for any other direct, incidental or consequential damages.

45.3. In the premises:

45.3.1. QTR has no remedy under the CTAPA for any breach of the Warranties giving rise to the Condition and/or Non MSN 36 Findings; and/or

45.3.2. QTR does not have any claim against Airbus for damages for breach of the Warranties given under clause 12 in relation to the Condition and/or Non MSN 36 Findings.

46. Further or alternatively:

46.1. Clause 4 of the SCL provided (inter alia) that the intent of the SCL is to provide commitments to QTR on the resolution of the Condition, but that it was not the intent of the SCL to duplicate similar compensation available to QTR under any other agreement between QTR and Airbus.

46.2. Clause 5 of the SCL provided (inter alia) that QTR and Airbus acknowledged the exceptional nature of the commercial gestures in the SCL and that they were not to be construed as a waiver of either party's rights and obligations under the A350 ASPA or the CTAPA with respect to matters other than the resolution of the Condition.

46.3. In the premises, on the correct interpretation of the SCL, it was a Commitment Letter within the meaning of clause 8.2.6 of the CTAPA, which was intended to set out Airbus' and QTR's respective rights and obligations in relation to and pending the resolution of the Condition and any related issues (which, it is averred, would include Non MSN 36 Findings) on the QTR A350 Fleet and the Undelivered QTR A350 Fleet, and/or the SCL thereby supplements and/or varies the parties' rights and obligations under clause 12 of the CTAPA.

- 46.4. In the premises, any claim by QTR for alleged breach of the Warranties under clause 12 of the CTAPA in relation to the Condition and/or Non MSN 36 Findings would be inconsistent with and/or is precluded by the SCL.
47. Further or alternatively:
- 47.1. Clause 12.1.5 provides that a warranty claim by QTR shall only be considered by Airbus if the conditions set out in that clause are first fulfilled.
- 47.2. Clause 12.1.5 requires (inter alia) that:
- 47.2.1. QTR must submit to Airbus proof reasonably satisfactory to Airbus that the claimed defect is due to a matter embraced within clause 12.1 and that such defect has not resulted from any act or omission of QTR, included but not limited to, any failure to operate or maintain the affect Aircraft or part thereof in accordance with the standards set forth or any matter covered in clause 12.1.10; and
- 47.2.2. Airbus must have received a warranty claim as set forth in clause 12.1.6; and clause 12.1.6(v) requires (inter alia) that QTR must file a warranty claim on QTR's form within 90 days after the defect became apparent, containing at least the data specified in that clause.
- 47.3. It is denied (if that be alleged) that QTR has submitted any valid warranty claim so as to fulfil the preconditions to Airbus considering such a claim.
48. Further, and in any event, it is denied that the correct measure of loss on any claim by QTR against Airbus for damages for breach of the Warranties would be the amount of its purported claim against Airbus for compensation under SCL.

**(3) Provisions relating to delivery of Aircraft**

49. As to paragraph 45:
- 49.1. It is denied (if it is alleged) that Airbus' obligation under clause 12.1.4.2 of the CTAPA in relation to undelivered Aircraft arises in the absence of a valid warranty claim pursuant to clause 12.1.5. It is denied that QTR has made a valid warranty claim in relation to the Condition or Non MSN 36 Findings identified on the QTR A350 Fleet. Paragraphs 46 and 47 above are repeated.

- 49.2. In any event it is denied that clause 12.1.4.2 gives QTR any right to reject or to refuse to accept Delivery of any Aircraft in respect of which Airbus has not corrected the relevant defect in accordance with that provision. The only circumstances in which QTR is entitled to reject or refuse to accept Delivery of an Aircraft are those provided for in clauses 8 and 9 of the CTAPA.
- 49.3. Save as aforesaid, paragraph 45 is denied.
50. As to paragraph 46:
- 50.1. Pursuant to clause 9.3 of the CTAPA, an Aircraft shall be deemed to be ready for Delivery upon (*inter alia*) the successful completion of its Technical Acceptance Process in accordance with clause 8.2 of the CTAPA.
- 50.2. Further:
- 50.2.1. QTR is obliged, under clause 9.4.1 of the CTAPA, to send representatives to the Delivery Location to take Delivery of and collect the Aircraft within 7 days after the Aircraft is ready for Delivery.
- 50.2.2. Clause 5.4.1 of the CTAPA provides that the Balance of Aircraft Final Price (which is the Aircraft Final Price less the amount of Predelivery Payments received by Airbus from QTR on or before the Delivery Date) is payable by QTR to Airbus on the Delivery Date for the Aircraft.
- 50.2.3. QTR is also obliged, pursuant to clause 5.4.2 of the CTAPA, to pay the Balance of Aircraft Final Price upon receipt of Airbus' invoice and immediately prior to Delivery of the Aircraft.
- 50.2.4. It was agreed by clause 9.4.2 of the CTAPA that any unreasonable refusal by QTR to take Delivery of and collect the Aircraft would be considered to be late payment pursuant to clause 5.7 of the CTAPA.
- 50.3. As to the Technical Acceptance Process under clause 8 of the CTAPA:
- 50.3.1. Clause 8.2.1 of the CTAPA provides that the purpose of the Technical Acceptance Process is to demonstrate the satisfactory functioning and operation of the Aircraft, all of its equipment and systems in



accordance with the Specification, the CTAPA and the A350 ASPA, and the established Aircraft acceptance procedure proposed by Airbus.

50.3.2. Further:

- (1) Under clause 8.2.2.1 of the CTAPA, it was agreed that, if it is established from the Acceptance Procedure that the Aircraft does not fully comply with the required conditions pursuant to the Acceptance Procedure (i.e. the requirements of clause 8.2.1) or there exists a defect or deficiency in the Aircraft for which a correction method has not been agreed between QTR and Airbus, then Airbus would be entitled to carry out any and all necessary changes, tests, remedies and rectifications and as soon as practicable thereafter to resubmit the Aircraft to such further processing, tests and inspections as to demonstrate to QTR the elimination of the non-compliance, deficiency or defect.
- (2) Clause 8.2.3 of the CTAPA makes provision for the manner in which any changes, remedies or rectifications that are made by Airbus to remedy any non-compliance with the Acceptance Procedure or the Specification would be carried out by Airbus.
- (3) However, under clause 8.2.4 of the CTAPA, it was agreed (*inter alia*) that, if any deficiency or defect or any change proposed by Airbus to remedy any deficiency in the Aircraft is not in compliance with clause 8.2.3 or full compliance with the agreed Specification or the Technical Acceptance Process, QTR would be entitled to receive monetary compensation from Airbus to be reasonably determined by QTR having regard to all the circumstances and discussed in good faith by QTR with Airbus.
- (4) Further, under clause 8.2.6 of the CTAPA, it was agreed that any identified defects that cannot be reasonably rectified by Airbus due to (*inter alia*) the non-availability of identified solutions, prior to Aircraft Delivery would be covered by a Commitment Letter agreed and signed by Airbus and QTR at the end of the Technical

Acceptance Process (subject to QTR's acceptance of the Commitment Letter which was not to be unreasonably withheld).

50.3.3. QTR is obliged under clause 8.3.1 of the CTAPA to deliver to Airbus forthwith a duly signed certificate of acceptance in respect of the Aircraft upon the successful completion of all items of the Technical Acceptance Process in accordance with clause 8.2.1 and all other applicable provisions of the CTAPA and the A350 ASPA.

50.3.4. Clause 8.3.2 of the CTAPA provides that, if QTR fails to deliver the certificate of acceptance as required pursuant to clause 8.3., QTR shall be deemed to be in default of its obligations in relation to the delivery of the certificate of acceptance as though it had without warrant rejected Delivery of the Aircraft when duly tendered to it by Airbus and shall thereafter bear all costs and consequences resulting from such delay in Delivery including, but not limited to, costs of storage, parking and insurance. However, during any such delay, the risk of loss or damage to the Aircraft nevertheless remains at all times with Airbus.

50.3.5. Clause 8.1.7 of the CTAPA also provides that, except in the case of Excusable Delay preventing QTR from attending the Technical Acceptance Process, the failure by QTR to attend the Technical Acceptance Process or to co-operate with Airbus shall entitle Airbus to complete the Technical Acceptance Process in the absence of QTR and in accordance with the provisions of the CTAPA whereupon QTR shall be deemed to have accepted the Technical Acceptance Process in all respects if such tests are reasonably deemed satisfactory by Airbus.

50.4. Save as aforesaid, paragraph 46 is denied.

51. Paragraphs 47 to 49 are denied. As to this:

51.1. There is no design defect. Paragraphs 43 and 44 above are repeated. Accordingly, it is denied that Airbus is obliged to change the design of the A350 in relation to the Undelivered QTR A350 Fleet. If and insofar as QTR intends to rely on clause 12.1.4.2 of the CTAPA, paragraph 49 above is repeated.

51.2. Further and in any event, paragraph 50 above is repeated. In the premises:

51.2.1. The Condition and/or Non MSN 36 Findings (or the possibility of undelivered Aircraft developing aspects of the Condition or Non MSN 36 Findings) does not mean that the Undelivered QTR A350 Fleet cannot be put through and/or successfully complete the Technical Acceptance Process under clause 8 of the CTAPA because:

- (1) The Condition and/or Non MSN 36 Findings do not affect the satisfactory functioning of the Aircraft, its equipment or systems in accordance with the Specification, the CTAPA and the A350 ASPA; and/or
- (2) In light of the SCL, which is a Commitment Letter within the meaning of clause 8.2.6 of the CTAPA, the Condition and/or Non MSN 36 Findings have no relevance to, or bearing on, the successful completion of the Technical Acceptance Process in relation to the Aircraft in the Undelivered QTR A350 Fleet.

51.2.2. QTR is not entitled, as a result of the Condition and/or Non MSN 36 Findings, to refuse to deliver a signed certificate of acceptance pursuant to clause 8.3.1 or to reject or to refuse or fail to accept delivery of the Undelivered QTR A350 Fleet as and when tendered.

52. As to paragraph 50:

52.1. It is admitted that QTR stated in a letter to Airbus dated 2 December 2021 that *“the QCAA will not permit any further A350 Aircraft to be registered on the registry of the State of Qatar until the Condition is properly understood and corrected and the QCAA has satisfied itself that the Aircraft is airworthy.”*

52.2. However, it is not understood on what legal basis the QCAA could have decided not to permit any further A350 aircraft to be registered on the registry for civil aircraft for the State of Qatar. In the premises, no admissions are made as to whether any such alleged decision has actually been taken by the QCAA.

52.3. Further or alternatively, it is denied that there is any proper, reasonable or rational basis on which the QCAA could refuse to permit A350 aircraft to be registered on the registry for civil aircraft for the State of Qatar. In particular,

and without prejudice to the generality of the foregoing denial, the Condition and/or Non MSN 36 Findings do not give rise to any airworthiness issue.

- 52.4. In any event, it is denied that any alleged decision by the QCAA to refuse to permit any further A350 aircraft to be registered in the State of Qatar would mean that QTR would be unable to register such aircraft outside Qatar.
  - 52.5. Further, it is noted that QTR does not allege (correctly) that the QCAA's alleged decision affects its obligations to accept delivery under the A350 ASPA.
  - 52.6. Save as aforesaid, paragraph 50 is not admitted.
53. As to paragraph 51:
- 53.1. The letters referred to in the first sentence are admitted. However, it is denied that the Undelivered QTR A350 Fleet suffers from any design defect which causes the Condition and/or Non MSN 36 Findings or that QTR is entitled to refuse to take delivery of any Aircraft from the Undelivered QTR A350 Fleet.
  - 53.2. In relation to the second sentence, it is admitted that Airbus has sent formal notices to QTR regarding the delivery of a number of Aircraft. In particular, Airbus has sent notices to QTR confirming (as is the case) that the Technical Acceptance Process has been successfully completed in relation to MSN 409 (on 7 December 2021) and in relation to MSN 430 (on 20 December 2021).
  - 53.3. In the premises, QTR has wrongfully and in breach of contract refused or failed:
    - 53.3.1. to deliver to Airbus a duly signed certificate of acceptance for MSN 409 or MSN 430 as required by clause 8.3.1 of the CTAPA (and, accordingly, QTR is deemed by virtue of clause 8.3.2 of the CTAPA to be in default of its obligations in relation to the delivery of the certificate of acceptance as though it had without warrant rejected delivery of MSN 409 and MSN 430 when duly tendered by Airbus);
    - 53.3.2. to pay to Airbus the Balance of Aircraft Final Price for MSN 409 or MSN 430 as required by clause 5.4.2 of the CTAPA; and
    - 53.3.3. to send representatives to the Delivery Location to take Delivery of the Aircraft within 7 days of the Aircraft being ready for delivery as required by clause 9.4.1 of the CTAPA.

53.4. Accordingly, by letters dated 18 January 2022 and 28 January 2022, as a result of QTR's aforesaid breaches of the A350 ASPA, Airbus has terminated the A350 ASPA with respect to the two scheduled aircraft deliveries in respect of which Airbus tendered MSN 409 and MSN 438 to QTR in accordance with its common law rights and/or pursuant to clause 17.3 of the CTAPA.

53.5. The third sentence is denied. As to this:

53.5.1. Airbus has not "*ignored*" QTR's "*concerns*" in relation to the Condition (or Non MSN 36 Findings). As set out above, Airbus has investigated the nature of and potential repairs and maintenance actions for the Condition and Non MSN 36 Findings. However, QTR has mischaracterised the Condition and Non MSN 36 Findings by suggesting incorrectly (inter alia) that they raise airworthiness concerns when it is fully aware of Airbus' and EASA's conclusions that they do not affect airworthiness. That Airbus rejects the validity of QTR's purported "*concerns*" does not mean they have been "*ignored*".

53.5.2. The Condition and/or Non MSN 36 Findings do not prevent Airbus making further deliveries of the Undelivered QTR A350 Fleet for the reasons set out above in this Defence.

53.6. Paragraphs 51.1 and 51.2 are denied for the reasons set out above.

**F. INTEREST**

54. As to paragraph 52, the claim for interest is denied because QTR is not entitled to any principal sum from Airbus on the grounds alleged or at all.

**COUNTERCLAIM**

55. The Defence is repeated herein.

**A. DAMAGES FOR NON-ACCEPTANCE OF AIRCRAFT**

56. By reason of the matters set out above in the Defence (and, in particular, at paragraphs 49 to 53 thereof), in relation to the scheduled deliveries for which Airbus tendered MSN 409 and MSN 430, QTR has wrongfully and in breach of contract refused or failed:

- 56.1. To deliver to Airbus a duly signed certificate of acceptance;
- 56.2. To pay to Airbus the Balance of Aircraft Final Price; and/or
- 56.3. To send representatives to the Delivery Location to take Delivery within 7 days of the Aircraft being ready for delivery.
57. In the premises, by reason of QTR's aforesaid breaches of contract in relation to these two scheduled deliveries, Airbus was entitled to and has terminated the A350 ASPA with respect to those deliveries, by its letters dated 18 January and 28 January 2022.
58. Further, as a result of QTR's aforesaid breaches of contract in relation to these two scheduled deliveries, excluding the cost of buyer furnished equipment procured directly by QTR, Airbus has suffered loss and damage in (1) the amount of the contract price for MSN 409 and MSN 430, after giving credit for advance payments received by Airbus from QTR, less (2) the value of MSN 409 and MSN 430 to Airbus.
59. To date, Airbus has not been able to realise any value from MSN 409 and MSN 430, whether by resale or otherwise. MSN 409 and MSN 430 have been manufactured to QTR's own unique and particular specification. As a result MSN 409 and MSN 430 cannot in practice be resold to any third party in their current condition without Airbus undertaking works to modify the aircraft at substantial further cost. Further and in any event, on 11 February 2022, QTR issued an application for an interim injunction to restrain Airbus from marketing or reselling MSN 409 or MSN 430 to any third party and, on 18 February 2022, Airbus gave an undertaking not to sell MSN 409 or MSN 430 to any third party pending determination of that injunction application.
60. Accordingly, for the purposes of calculating its loss, Airbus does not presently attribute any value to MSN 409 and MSN 430 in its hands. Airbus will give credit for the value (if any) that Airbus realises from MSN 409 and MSN 430 by resale or otherwise.
61. However, without prejudice to the burden of proof on mitigation or avoidance of loss, Airbus' position is expressly reserved as to whether, in the event that MSN 409 and/or MSN 430 are ultimately resold by Airbus, Airbus will nevertheless still have lost two A350 sales that it would have made but for QTR's aforesaid breaches of contract, such that the profit on resale of the aircraft by Airbus will not mitigate or avoid Airbus' losses and/or any costs suffered by Airbus in converting the aircraft from their current state for sale to a third party or loss of margin on the resale(s) are recoverable from QTR.

62. In the interim, and pending any such resale, Airbus claims damages from QTR on the basis set out in paragraphs 58 to 61 above, in an amount in excess of USD 220 million.
63. Further or alternatively, as a result of QTR's aforesaid breaches of contract, Airbus has incurred and continues to incur ongoing costs in relation to the storage, maintenance and insurance of MSN 409 and MSN 430. Airbus will provide particulars of such storage, maintenance and insurance costs when it is able to do so in due course.
64. Further, Airbus claims interest pursuant to section 35A of the Senior Courts Act 1981 on the sums that are due to it at such rate and for such period as the Court thinks fit.

**B. REIMBURSEMENT OF PURCHASE INCENTIVES**

**(1) Credit memoranda made available by Airbus pursuant to LA 12**

65. Under Letter Agreement Number 12 of the A350 ASPA ("LA 12"), "*in consideration of [QTR] firmly purchasing all eighty (80) Aircraft under the terms and conditions described in the [A350 ASPA]*", Airbus agreed to grant certain purchase incentives to QTR. In particular, pursuant to clause 1 of LA 12, Airbus and QTR expressly agreed (inter alia) that, "*upon Delivery of each respective Aircraft*" pursuant to the A350 ASPA, Airbus would make the following "*credit memoranda*" available to QTR:

- 65.1. Aeronautical Fund Credit Memorandum No.1 ("**AF1**") in the sum of USD 460,404 for each A350XWB-800 Aircraft, USD 498,938 for each A350XWB-900 Aircraft, and USD 541,720 for each A350XWB-1000 Aircraft, provided that the aggregate amount of these credit memoranda shall not exceed USD 40 million.

- 65.2. Aeronautical Fund Credit Memorandum No.2 ("**AF2**") in the sum of USD 460,404 for each A350XWB-800 Aircraft, USD 498,938 for each A350XWB-900 Aircraft, and USD 541,720 for each A350XWB-1000 Aircraft, provided that the aggregate amount of these credit memoranda shall not exceed USD 40 million.

- 65.3. Aeronautical Fund Credit Memorandum No. 3 ("**AF3**") in the sum of USD 1,208,562 for each A350XWB-800 Aircraft, USD 1,309,711 for each A350XWB-900 Aircraft, and USD 1,422,016 for each A350XWB-1000

Aircraft, provided that the aggregate amount of these credit memoranda shall not exceed USD 105 million.

66. Further, clause 5 of LA 12 gave QTR the option of being paid the maximum aggregate amount of the AF1, AF2 and AF3 credit memoranda in advance on 15 September 2007, 15 December 2008 and 15 June 2009 respectively (“**the Advance AF Payments**”).
67. In accordance with clause 5 of LA 12, QTR exercised its option to receive the Advance AF Payments on 17 February 2008 (for AF1), 25 January 2009 (for AF2) and on 5 October 2009 (for AF3) and Airbus accordingly paid QTR the following amounts:
  - 67.1. USD 40 million on or about 3 March 2008 in respect of AF1;
  - 67.2. USD 40 million on or about 30 January 2009 in respect of AF2; and
  - 67.3. USD 103,790,818.49 on or about 7 October 2009 and USD 1,209,181.51 on 16 October 2009 in respect of AF3.
68. Clause 6 of LA 12 expressly provides as follows:

*“If, for any reason, [QTR] does not take delivery of one or more of the eighty (80) A350XWB Aircraft [QTR] shall reimburse [Airbus] on demand ... an amount equal to the aggregate of any amounts made available to [QTR] by [Airbus] in respect of ... [AF1, AF2 and AF3], which relate to any A350XWB Aircraft of which [QTR] did not take delivery.”*
69. Clause 6 of LA 12 further expressly provides for contractual interest to be paid by QTR on any sum that is due by way of reimbursement pursuant thereto at a rate of 1 month USD LIBOR (as published in the Financial Times on the due date) plus 3% from the date on which each of the relevant credit memoranda was made available by Airbus to QTR.
70. QTR has not taken delivery of the following A350 aircraft pursuant to the A350 ASPA (“**the Undelivered A350 Aircraft**”):
  - 70.1. Four A350s which were due to be delivered in September 2016, November 2016 (2 aircraft), and December 2016, but which were cancelled by QTR.
  - 70.2. MSN 409; and
  - 70.3. MSN 430.



71. Accordingly, by a letter dated 22 February 2022, Airbus wrote to QTR to demand reimbursement of USD 21,388,676 being the aggregate amount of the AF1, AF2 and AF3 credit memoranda that were made available to QTR which relate to the Undelivered A350 Aircraft with accrued interest.
72. Wrongfully and in breach of contract, QTR has failed to pay this or any amount to Airbus in respect of the reimbursement of the AF1, AF2 and AF3 credit memoranda and this amount remains due and owing from QTR to Airbus. Further or alternatively, Airbus claims damages for breach of contract from QTR in the same amount.
73. Further:
- 73.1. Airbus is entitled to and claims contractual interest on this amount from the date of demand to the date of judgment at the agreed rate of 3.162% per annum, that being 1 month USD LIBOR plus 3% as at 21 February 2022; or alternatively,
- 73.2. Airbus claims interest on this amount pursuant to section 35A of the Senior Courts Act 1981 at such rate and for such period as the Court thinks fit.
- (2) Credit memoranda made available by Airbus pursuant to the A320 ASPA**
74. On or about 12 November 2008, Airbus and QTR entered into an Aircraft Specific Purchase Agreement in respect of the manufacture, sale and delivery 24 A320-200 and A321-200 aircraft (“**the A320 ASPA**”). Further, on or about 13 June 2010, Airbus and QTR entered into Amendment No.1 to the A320 ASPA (“**Amendment 1**”) pursuant to which QTR ordered an additional two A320-200 aircraft on the terms set out therein.
75. Clause 2 of Letter Agreement No.1 of Amendment 1 (“**LA 1**”) expressly provided that:
- “Upon Delivery of each of the two Additional A320 Aircraft, [Airbus] shall make available to [QTR] a credit memorandum (each an “Additional A320 Aircraft Credit Memorandum”) in an amount equal to the Additional A320 Aircraft Final Price.”*
76. The two additional A320-200 aircraft ordered by QTR pursuant to Amendment 1 were delivered by Airbus to QTR on or about 23 November 2012 and 13 December 2012.
77. In accordance with clause 2 of LA 1, Airbus made credit memoranda available to QTR on those dates in the total amount of USD 113,575,537 which were set off by Airbus against the contract price which would otherwise be payable by QTR for the aircraft.

78. Clause 5 of LA 1 expressly provided as follows:

*“It is agreed and understood by both parties that the Amount shall only be earned by [QTR] upon Delivery of the last of the eighty (80) A350XWB Aircraft firmly ordered as per the terms and conditions of the [A350 ASPA].*

*Should any A350XWB Aircraft not be delivered to [QTR] on or before April 2020 (or such other date as may be agreed between [QTR] and [Airbus]) for reasons of [QTR’s] default under the [A350 ASPA], [QTR] shall reimburse the Amount to [Airbus] on a pro rata basis of the undelivered A350 XWB Aircraft...”*

79. Clause 5 of LA 1 further expressly provides for contractual interest to be paid by QTR on any sum that is due by way of reimbursement pursuant thereto at a rate of 1 month USD LIBOR (as published in the Financial Times on the due date) plus 3% from the date on which each of the relevant credit memoranda was made available by Airbus to QTR and ending on the date of reimbursement, which date shall be deemed to be in the Scheduled Delivery Month of the relevant undelivered A350 aircraft.

80. By Amendment No.8 of the A350 ASPA, which was entered into by Airbus and QTR on 19 October 2020, the delivery schedule for under the A350 ASPA was revised so that the last delivery by Airbus to QTR is now due to take place in July 2028 (instead of in April 2020, as was the case when the terms of LA 1 were agreed).

81. As pleaded above, MSN 409 and MSN 430 have not been delivered by Airbus to QTR for reasons of QTR’s default. In the premises, Airbus is entitled to reimbursement of the credit memoranda that Airbus made available to QTR pursuant to LA 1, on a pro rata basis in respect of each of these two undelivered aircraft.

82. Accordingly, by a letter dated 22 February 2022, Airbus wrote to QTR to demand reimbursement in the sum of USD 3,776,756 (being 2/80 of USD 113,575,537 plus interest at USD 1 month LIBOR plus 3% from the dates on which the credit memoranda were made available by Airbus until the scheduled delivery dates of MSN 409 and MSN 430). Wrongfully and in breach of contract, QTR has failed to pay this or any amount to Airbus in respect of the reimbursement of these credit memoranda and this amount therefore remains due and owing from QTR to Airbus. Further or alternatively, Airbus claims damages for breach of contract in the same amount.

83. Further, Airbus claims interest on this amount pursuant to section 35A of the Senior Courts Act 1981 at such rate and for such period as the Court thinks fit.

**AND THE DEFENDANT COUNTERCLAIMS:**

- (1) Damages to be assessed.
- (2) The sum of USD 25,165,432.
- (3) Interest pursuant to contract.
- (4) Interest pursuant to section 35A of the Senior Courts Act 1981.
- (5) Such further or other relief as may be necessary or appropriate.
- (6) Costs.

Airbus' counterclaim is for payment of the sums due from QTR in US Dollars since this is the currency in which the payment obligations under the relevant contracts are denominated.

The rate current in London for the purchase of USD at close of business on 24 February 2022 was USD 1.3428 to GBP sterling and at this rate, the total amount claimed herein exceeds £250,000. This information was obtained from [www.oanda.com](http://www.oanda.com).

**ROSALIND PHELPS QC**

**RUPERT ALLEN**

**STATEMENT OF TRUTH**

The Defendant believes that the facts stated in this Defence and Counterclaim are true. The Defendant understands that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

I am duly authorised by the Defendant to sign this statement.

Signed: 

Full name: **KARL HENNESSEE**

Position: **SENIOR VICE PRESIDENT, HEAD OF LITIGATION, INVESTIGATIONS AND REGULATORY AFFAIRS**

Date: 25 February 2022