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Datasheet for the decision of 10 November 2017

Case Number: T 0643/15 - 3.2.01

Application Number: 06847437.8

Publication Number: 1971520

IPC: B64C3/00

Language of the proceedings: EN

Title of invention:
AIRCRAFT WING COMPOSED OF COMPOSITE AND METAL PANELS

Patent Proprietor:
The Boeing Company

Opponent:
Airbus Operations Limited(GB) / AIRBUS SAS(FR) / Airbus Operations SAS(FR) / Airbus Operations GmbH (DE) / Airbus Operations SL(ES)

Headword:

Relevant legal provisions:
EPC Art. 54, 56, 111(1)

Keyword:

novelty (yes)
inventive step (yes)
remittal to the department of first instance (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0643/15 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 10 November 2017

Appellant: (Patent Proprietor)	The Boeing Company 100 North Riverside Plaza Chicago, IL 60606-1596 (US)
Representative:	Witte, Weller & Partner Patentanwälte mbB Postfach 10 54 62 70047 Stuttgart (DE)
Respondent: (Opponent)	Airbus Operations Limited(GB) / AIRBUS SAS(FR) / Airbus Operations SAS(FR) / Airbus Operations GmbH (DE) / Airbus Operations SL(ES) New Filton House Filton Bristol BS99 7AR (GB)
Representative:	Worthington, Richard Easton Withers & Rogers LLP 4 More London Riverside London SE1 2AU (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 9 February 2015 revoking European patent No. 1971520 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	C. Narcisi
	P. de Heij

Summary of Facts and Submissions

I. European Patent No. 1 971 520 was revoked by the decision of the Opposition Division posted on 9 February 2015. An appeal was lodged by the Patentee against the decision on 25 March 2015 and the appeal fee was paid. The statement of grounds of appeal was filed on 9 June 2015.

II. Oral proceedings were held on 10 November 2017. The Appellant (Patentee) requested that the decision be set aside and that the patent be maintained as granted (main request) or, alternatively, that the patent be maintained in amended form according to auxiliary requests 1 to 5 (as filed on 9 June 2015) or to auxiliary requests 6, 7 (as filed on 9 October 2017). The Opponent (Respondent) requested in its written submissions that the appeal be dismissed for the reasons set out in its statements in the opposition proceedings and did not provide further arguments for upholding the appealed decision. The Respondent was not represented at the oral proceedings, thus relying only on its written case. The Board had been previously advised with letter dated 16 October 2017.

III. Granted claim 1 (according to the text constituting the basis of the decision to grant pursuant to Rule 71a (1) EPC and Article 97(1) EPC, which is the authentic text and legally binding version of claim 1) reads as follows:

"A wing assembly (100) for use on an aircraft (300) comprising:
a support structure (110) having a first end portion adapted to be coupled to the aircraft (300);

an upper panel assembly (102), and a pair of upper spar chords (104) extending in a spanwise direction, said upper panel assembly and each of said upper spar chords being mutually connected and formed from a metal material, the upper panel assembly (102) being coupled to the support structure (110);
a lower panel assembly (112) and a pair of lower spar chords (114) extending in a spanwise direction, said lower panel assembly and each of said lower spar chords being mutually connected and formed from a composite material, the lower panel assembly (112) being coupled to the support structure (110), and
a pair of interface portions (120), situated at opposing chordwise ends of the support structure (110), each interface portion (120) coupling one of the upper spar chords (104) to the corresponding lower spar chord (114)."

IV. The Appellant's submissions may be summarized as follows:

The subject-matter of claim 1 is new over A3 (WO-A2-2005/110842), for A3 does not disclose the feature reading "said upper panel assembly and each of said upper spar chords being mutually connected and formed from a metal material" (hereinafter designated as feature (i)). Indeed, according to A3 the upper panel assembly is formed from a composite material (A3, page 8, lines 7-29), including e.g. metal as a reinforcement material, but it is not exclusively formed from metal, as implied by contrast by feature (i), given the wording "formed from" being essentially equivalent to the wording "made of" or "consisting of". In addition, interpreting the wording "formed from a metal material" in such broad terms as to encompass metallic composite materials (as disclosed in A3) would be contrary to the

general teaching of the contested patent (patent specification hereinafter designated as EP-B) and would be at odds with the established principle of case law that a patent has to be construed by a mind willing to understand.

The subject-matter of claim 1 is inventive over document A2 (US-A-4 749 155) in view of A1 (US-A-5 806 798). The object of the invention (as may be inferred from paragraphs [0001] to [0003] in EP-B) is to obtain an improved wing having reduced weight and costs, and a smaller number of components. A2 does not deal with optimization of weight and costs. A2 teaches a new concept of connecting composite wing skins to composite wing stiffeners by co-curing. A2 does not disclose any support structure to which the panels need to be connected in order to connect the panels to the aircraft. Even on the assumption that the skilled person would combine A2 and A1, this combination would not directly lead to the claimed subject-matter. Indeed, the upper panel assembly being part of the wing assembly of A2 consists of several components (see figures; e.g. outer skin 6, plurality of channels 12) and no reason was given as to why the skilled person would replace the complete upper panel assembly and the upper spar chords, all made of composite material (according to A2), with corresponding components all made of metal. Thus, if in particular the upper spar chords were made of metal too, the aircraft's weight would thereby be increased, and apparently without any valid reason or necessity.

Remittal to the first instance department is requested, to discuss the issues of Article 100(c) EPC, in the event that the Board should decide that the subject-

matter of claim 1 of any of the pending requests is new and inventive.

V. The Respondent's arguments, as far as in essence endorsed in the appealed decision, may be summarized as follows:

The subject-matter of claim 1 lacks novelty over A3. A3 discloses a wing assembly having all the features of claim 1 and in particular disclosing said disputed feature (i). The upper panel assembly and the upper spar chords according to claim 1 are formed from a metal material, thus not precluding that they are formed from a metallic composite material. According to A3 (page 8, lines 7-29) the upper panel assembly and the upper spar chords are made of a composite material including a reinforcement material, e.g. a metal, and a matrix material, e.g. a thermoplastic or thermoset resin. Thus A3 discloses, as implied and encompassed by claim 1, that the upper panel assembly and the upper spar chords are formed from a metallic composite material. Undisputedly, the lower panel assembly and the lower spar chords are formed from a composite material (see A3, page 8, above cited passages), as required by claim 1. Thus, in conclusion all the features of claim 1 are known from A3.

The subject-matter of claim 1 is not inventive over A2 in view of A1. A2 does not disclose aforementioned feature (i). Starting from A2 the skilled person would face the objective technical problem of optimising an aircraft wing assembly to provide weight reductions and cost efficiencies. A solution to this technical problem is to be found in A1, which proposes choosing metal material for those parts of the wing assembly predominantly subjected to compression stress (i.e.

upper panel) and composite material for those parts of the wing mainly subjected to tension stress (lower panel) (A1, col. 2, lines 8-17; col. 2, lines 40-46; col. 3, lines 20-35). The skilled person would retain A1 and apply its technical teaching to the aircraft wing assembly of A2, thereby arriving in an obvious manner at mentioned feature (i), whilst keeping using the composite material for the lower panel assembly and the lower spar chords, as disclosed in A2.

The Respondent sees no need to remit the case to the first instance department to discuss the issues related to Article 100(c) EPC.

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 is new over A3, for the aforementioned feature (i) (i.e. "said upper panel assembly and each of said upper spar chords being mutually connected and formed from a metal material") is not known from A3 (Article 54 EPC). The Board takes the view that the term "formed from a metal material" (in the given context of claim 1) cannot be construed as encompassing metallic composite materials as alleged by the Respondent. For the purpose of assessing novelty and inventive step, the terms of the claim should be given their broadest meaning, at least insofar as a technically sound and sensible interpretation is thereby obtained. Nevertheless, the claim's construction should not be incompatible or be at odds with the general teaching of the invention as

resulting from the overall disclosure in the patent specification (EP-B). In the present case it is explicitly stated in (or clearly derivable from) several passages in EP-B that the invention relates to "aircraft wings having both composite and metal panels" (paragraphs [0001], [0002], [0003], [0004], [0005], [0012]). In paragraph [0005] it is further specified that the wing assembly includes an "upper panel ... formed from a metal material" and a "lower panel ... formed from a composite material", wherein the metal material is stated to be "aluminium, titanium or any other suitable material", and the composite material is stated to be "a carbon fiber reinforced plastic (CFRP) material or other suitable composite material". It ensues from these quotations that the terms "composite material" and "metal material" are used in EP-B as constituting opposed and mutually exclusive alternatives, in agreement with the general teaching of the invention, i.e. to reduce weight (employing specific composite materials where appropriate) and save costs (by replacing composite material panels primarily subjected to compression load with metal panels having better compression performance (EP-B, [0002], [0013])). For these reasons, bearing in mind that a patent should be construed by a mind willing to understand, it would run contrary to the teaching of the invention to construe the term "formed from a metal material" as encompassing metallic composite materials.

3. The subject-matter of claim 1 is not rendered obvious for the skilled person by prior art A2 and A1. The skilled person, starting from A2 and aiming at reducing costs while optimizing weight and compression load performance, would retain A1, which proposes manufacturing the wing's upper panel from metal (e.g.

aluminium, titanium; see upper shell 6, figure 2, column 3, lines 20-30) and the lower panel from a composite material (column 3, lines 30-36). However, even on the assumption that the skilled person would combine A2 and A1, this would not directly lead to the subject-matter of claim 1, for A1 does not disclose or suggest forming the upper spar chords from metal too (see feature (i)). Moreover, the person skilled in the art would not obviously or necessarily form the upper spar chords from metal, compression loads affecting primarily and mainly the upper shell or upper panel assembly (see A1, upper panel 6; column 3, lines 25-27) and, like tensile loads, being anyway effectively countered by the wing's support structure, which is usually made of metal. Also, depending on the composite material used for the upper spar chords, a weight reduction is usually advantageously obtained as compared to upper spar chords made of metal (even though at greater costs). For these reasons the Board considers that the Respondent has not provided convincing arguments that for the skilled person feature (i) (including upper spar chords made of metal) would result in an obvious manner from the combination of A2 and A1 (Article 56 EPC).

4. The Board decided to remit the case to the department of first instance for further prosecution (Article 111(1) EPC). The appealed decision is exclusively based on the Opponent's objections under Article 54 EPC and Article 56 EPC, the ground of opposition under Article 100(c) (as submitted by the Opponent during opposition proceedings) having not been considered. This ground of opposition was not discussed by the Appellant during written appeal proceedings either, the Appellant having concentrated in its submissions on the confutation of the reasoning in the appealed decision, seeking a

review of the decision. Consequently, it was deemed not to be appropriate to start a new debate on a completely different issue during oral proceedings at a very late stage in appeal proceedings.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chairman:

N. Schneider G. Pricolo

Decision electronically authenticated