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Datasheet for the decision of 31 January 2020

Case Number: T 1508/17 - 3.2.01

Application Number: 10786579.2

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Language of the proceedings: EN

Title of invention:
WINGTIP AND SPONSON INTERACTION ON AN AMPHIBIOUS AIRCRAFT

Applicant:
Icon Aircraft, Inc.

Headword:

Relevant legal provisions:
EPC Art. 84, 54, 111(1)
RPBA 2020 Art. 11

Keyword:
Claims - clarity (yes)
Novelty - (yes)
Appeal decision - remittal to the department of first instance (yes)

Decisions cited:

Catchword:

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Case Number: T 1508/17 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 31 January 2020

Appellant: (Applicant)	Icon Aircraft, Inc. 12511 Beatrice Street Los Angeles, CA 90066 (US)
Representative:	Hanna Moore + Curley Garryard House 25/26 Earlsfort Terrace Dublin 2, D02 PX51 (IE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 2 February 2017 refusing European patent application No. 10786579.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	H. Geuss
Members:	J. J. de Acha González
	P. Guntz

Summary of Facts and Submissions

I. The appeal of the applicant lies against the decision of the Examining Division to refuse the above mentioned European patent application based on the international application published under the international publication number WO 2010/144280 A1.

II. In its decision the Examining Division held that claims 1, 3 and 7 of the sole request did not meet the requirements of Article 84 EPC. In an *obiter dictum* (see point 4 of the decision) the Examining Division noted that the subject-matter of claim 1 appeared not to involve an inventive step (Article 56 EPC) in view of the following document together with common general knowledge of the skilled person:

D1: "Icon Aircraft Successfully Completes Water Test for A5" by Icon Aircraft, and dated 28.05.2009 (retrieved from the Internet on 03.09.2013 under http://www.troyleedesigns.com/news/icon-aircraft - successfully-completes-water-test-for-a5).

III. In a communication pursuant to Article 15(1) RPBA 2007 (Rules of Procedure of the Boards of Appeal OJ EPO 2007, 536) annexed to the summons to oral proceedings dated 26 September 2019 the Board presented its preliminary view of the case. In particular, it pointed that claims 1, 3 and 7 of the request underlying the contested decision were clear (Article 84 EPC) under the condition that feature d5 (see below under point VII) is a consequence of the previous features of claim 1, especially of the type of planing surface described earlier-on therein. However, it seemed that the

subject-matter of claim 1 lacked novelty in view of D1 (Article 54 EPC).

IV. Oral proceedings were held before the Board on 31 January 2020.

V. The appellant requested to set aside the decision of the Examining Division and to grant a patent according to the documents underlying the contested decision as a main request and in the alternative, to grant a patent according to the auxiliary requests 1 and 2 filed with the statement of grounds of appeal.

Should the Board not be in a position to identify distinguishing features that render one of the claim sets both novel and inventive the applicant requested remittal to the department of first instance.

VI. Claim 1 of the main request reads as follows:

"1. An amphibious aircraft (100) comprising a lateral stability system, the amphibious aircraft having a high wing structure comprising a first wing and a second wing, each of the first wing and second wing comprising an aileron (410, 420) and a fuselage, a combination of the high wing and fuselage providing an effective dihedral effect during flight, the lateral stability system comprising:

a first and second buoyancy structure (310, 315) respectively laterally displaced and extending from each side of the fuselage; and

a wingtip system associated with each wing of the amphibious aircraft and including for each wing an anhedral orientated wingtip (325) that possesses a hydrodynamic planing surface (475) provided on a lower portion of the wingtip and orientated towards a surface

of the water such that as the aircraft rolls about its longitudinal axis due to lateral instability the wingtip in the direction of the roll makes contact with the water and wherein the lateral stability system is configured such that:

in a static situation buoyant properties of the wingtip alone will supplement lateral stability provided by the buoyancy structure;

as the aircraft is in motion a planing effect of the planing surface makes contact with the water to produce a righting force substantially perpendicular to the surface of the water and opposite to the experienced lateral instability, the righting force increasing with increased immersion of the planing surface (475) within the water while at the same time preventing the buoyancy structures from becoming submerged so as to allow an acceleration of the aircraft until the ailerons can produce a sufficient lifting force to control lateral stability and enable the wingtip to right itself without the use of the hydrodynamic planing surface of the wingtip (325)."

Dependent claims 3 and 7 of the main request read as follows:

"3. The aircraft of claim 1 or 2 wherein the anhedral wingtip (325) comprises a tip dihedral orientation, the tip dihedral orientation configured such that upon interaction with a water surface (320) the hydrodynamic planing surface (475) is substantially parallel with the water surface (320)." and

"4. The aircraft of any of claims 1 to 3 wherein responsive to the hydrodynamic planing surface (475) making contact with the surface of water (320) during motion of the amphibious aircraft (100), the

hydrodynamic planing surface (475) produces a righting force (350) that increases with respect to speed and an increase in immersion of the planing surface substantially perpendicular to the surface of water (320).".

The wording of the claims according to the auxiliary requests 1 and 2 is irrelevant for the present decision.

VII. The submissions made by the appellant can be summarized as follows:

Claims 1, 3 and 7 of the main request are clear to the skilled person (Article 84 EPC). The view of the Board in its communication is approved regarding clarity of claims 1, 3 and 7 of the main request, and in particular, it is shared that feature **d5** (see below) is a consequence of the previous features of claim 1, especially of the type of planing surface described earlier-on in the claim.

The subject-matter of claim 1 of the main request is new in view of D1 because this documents fails to disclose the following features of claim 1 (numbering as used by the appellant):

a4: a combination of the high wing and fuselage providing an effective dihedral effect during flight;

c: and including for each wing an anhedral orientated wingtip;

c2: (an hydrodynamic planing surface) provided on a lower portion of the wingtip and orientated towards a surface of the water;

d1: in a static situation, buoyant properties of the

wingtip alone will supplement lateral stability provided by the buoyancy structure;

d2: as the aircraft is in motion, a planing effect of the planing surface makes contact with the water to produce a righting force (350) substantially perpendicular to the surface of the water and opposite to the experienced lateral instability;

d4: the righting force (350) increasing with increased immersion of the planing surface (475) within the water; and

d5: while at the same time preventing the buoyancy structures from becoming submerged so as to allow an acceleration of the aircraft until the ailerons can produce a sufficient lifting force to control lateral stability and enable the wingtip to right itself without the use of the hydrodynamic planing surface of the wingtip (325).

Reasons for the Decision

1. Main request - clarity

1.1 Claims 1, 3 and 7 of the main request are clear (Article 84 EPC).

1.2 In its decision the Opposition Division considered features **d4** and **d5** of claim 1 as being formulated exclusively in the form of a result to be achieved without determining the technical features required to obtain the result claimed. Consequently, claim 1 was in their view not clear.

1.2.1 According to the application as originally filed (reference is made in the following to the published international application when citing passages of the application as originally filed) the invention prevents the submersion of the sponsons (i.e. the wingtip system) and the buoyancy structures in order to increase lateral stability of the aircraft and render turns possible even with cross winds (see paragraphs [0007], [0032] and [0033] of the published application as originally filed). This problem is solved by providing a planing surface in the wingtip that provides a hydrodynamic planing effect (see [0009], [0010], [0033], [0035] of the published application as originally filed). Consequently, the features in the last paragraph of claim 1 merely describe the effect of the planing surfaces and the problem of avoiding submersion of the buoyancy structures, which are just a consequence of the hydrodynamic planing surface of the wingtip defined further up in the claim.
The appellant itself explicitly acknowledged during oral proceedings that this technical effect was present due to the planing effect of the hydrodynamic planing surfaces of the wingtips as defined earlier on in the claim with regard to feature **d5**.
It is further noted, that an hydrodynamic planing surface provides a planing effect, which per definition produces a righting force substantially perpendicular to the surface of the water.
As regards feature **d4**, a righting force increasing with increased immersion of the planing surface is an inherent property to a planing surface that provides a planing effect. Thus the Board does not see any deficiency in view of clarity with respect to features d4 and d5.

1.3 The Opposition Division further saw dependent claims 3 and 7 as not fulfilling the requirements of Article 84 EPC because the feature "the hydrodynamic planing surface (475) is substantially parallel with the water surface (320)" was not clear due to the fact that a surface strictly parallel to the water cannot produce hydrodynamic forces. Some inclination of the surface with respect to water is necessary.

However, as acknowledged by the appellant, a positive angle of incidence of the wingtip planing surface with respect to the water surface is implicit to a hydrodynamic planing surface in its planing condition. Consequently, claims 3 and 7 do not foresee a surface strictly parallel to the water in a planing condition bearing in mind the other features of the claims. A parallel planing surface is thus excluded from those claims because it can not provide the planing effect. Accordingly, the objected feature in claims 3 and 7 is also not binding.

2. Main request - novelty in view of D1

2.1 The subject-matter of claim 1 according to the main request is new in view of D1 (Article 54 EPC).

2.2 Specifically, the aircraft according to D1 fails only to disclose directly and unambiguously feature **d1** of claim 1.

In its *obiter dictum* the Opposition Division was of the opinion that feature **d1** was disclosed in paragraph 5 on page 1 of D1 since the additional hydrostatic stability in extreme crosswind conditions provided by the planing wingtips were seen as buoyant properties of the wingtip (see point 4.1.3 of the contested decision).

Firstly, it has to be stated that D1 does not disclose explicitly buoyant properties of the wingtip.

Secondly, for an implicit disclosure it is not sufficient that a skilled person would *probably* take the non explicitly disclosed feature under consideration within the explicitly disclosed context.

In the underlying case it is merely disclosed in paragraph 5 that "The A5 also has specially designed planing wingtips that provide additional hydrostatic stability in extreme crosswind conditions while also acting as effective hydrodynamic planing surfaces should a wingtip contact the water in extreme or inadvertent conditions." (highlight by the Board).

Thus, in order to affirm that the wingtips according to D1 are provided with buoyant properties (as defined in d1)) it is necessary to ensure that there is no real alternative to the feature under consideration.

As pointed out by the appellant, this passage does not necessarily mean that the wingtips have buoyant properties, since it is not excluded from its wording that it is just the interaction of the crosswinds itself with the wingtips that contributes to the hydrostatic stability of the aircraft when the aircraft is not moving with respect to the water and the wingtips are not yet in contact with the water. D1 is silent on how exactly this additional hydrostatic stability of the aircraft is provided by the wingtips in extreme crosswind conditions; thus, a buoyant property of the wingtip is neither implicitly nor explicitly disclosed.

2.3 The other differences alleged by the appellant, namely features **a4**, **c**, **c2**, **d2**, **d4** and **d5**, are disclosed in D1.

2.3.1 The appellant defends that in D1 there is no explicit disclosure of **a4**. However, as pointed by the Opposition Division in its decision, an effective dihedral effect during flight occurs in any high wing aircraft with a fuselage. This is also acknowledged in the application itself (see paragraph [0030] of the application as originally filed). Consequently, feature **a4** is implicitly disclosed in D1 since the aircraft is a high wing aircraft with a fuselage.

2.3.2 Figure 1 shows undoubtfully that the orientation of the trailing edge of the red wingtip is anhedral (feature **c**). The appellant merely states that figure 1 is not enough clear to ascertain that the anhedral orientation is directly and unambiguously disclosed. The Board does not agree.

2.3.3 D1 discloses further effective hydrodynamic planing surfaces in the wingtip in case a wingtip contacts the water in extreme or inadvertent conditions (see paragraph 5 on page 1). The appellant is of the view that, since the surfaces are neither described not shown in D1 it cannot be directly and unambiguously said that they are provided on a lower portion of the wingtip and orientated towards a surface of the water (feature **c2**). Furthermore, it appears that according to figure 1 of D1 the planing surfaces are provided on the side of the wingtip and oriented laterally.

The Board disagrees. The planing surfaces on the wingtip can only be provided on the lower portion of the wingtip and oriented towards the surface of the water, because the wingtip in the direction of the roll

makes contact with the water as the aircraft rolls about its longitudinal axis. In that position the surfaces of the wingtip in contact with the water behave as planing surfaces since they are able to skim the surface of the water without being immersed in the water. Consequently, D1 discloses hydrodynamic planing surfaces on the wingtips, orientated towards a surface of the water (feature **c2**), which provide the effects of features **d2**, **d4** and **d5** as per definition of a planing effect when being in contact with the surface of the water when the aircraft rolls (see clarity above).

At this point it is noted that feature **d2** is also a consequence of the hydrodynamic planing surfaces of the wingtips of D1, since the planing effect of the planing surfaces when they make contact with the water as in figure 1 of D1 provide a righting hydrodynamic force substantially perpendicular to the surface of the water and opposite to the lateral instability (in figure 1 the instability induced by the pilot with the ailerons of the wings).

The same is true with respect to feature d4 as it is an inherent property of a planing surface that its righting force increases with increased immersion of the planing surface within the water as long as the speed is sufficient to keep the object planing.

With respect to the appellant's line of argument it is noted that for concluding that a certain feature is disclosed in D1 it is sufficient that the described effect (cf. features d2, d4) occurs to some extent. It is not necessary that the effect according to d2 or d4 is particularly large or occurs over a particularly wide range.

3. Remittal to the Examining Division

3.1 In the present case, the Examining Division refused the application on the sole reason of lack of clarity for claims 1, 3 and 7 (Article 84 EPC) and did not consider the other requirements of the EPC, albeit an *obiter dictum* formulated for inventive step in view of D1 together with common general knowledge.
It follows from the above that the sole ground for the refusal set out in the decision under appeal is not justified. For this sole reason the decision under appeal must be set aside. Further, the Board sees as the sole difference of the subject-matter of claim 1 with respect to D1 feature **d1**. In contrast, the Opposition Division in its *obiter dictum* saw that it differed only in feature **d5**.

3.2 Under Article 111(1) EPC the Board of Appeal may either decide on the appeal or remit the case to the department which was responsible for the decision appealed.

3.3 Under Article 11 RPBA 2020 (Rules of Procedure of the Boards of Appeal OJ EPO 2019, A63) the Board may remit the case to the department whose decision was appealed if there are special reasons for doing so.

3.4 The Board holds that such special reasons are apparent in the present case because the Examining Division has not taken an appealable decision on other requirements of the EPC than those of Article 84 EPC. As recalled in Article 12(2) RPBA 2020, the primary object of the appeal proceedings is to review the decision under appeal in a judicial manner. This principle would not be respected if the Board were to conduct a complete examination of the application, especially with further

state of the art documents which have not been yet considered by the Examining Division. Consequently, in the present case, Article 11 RPBA 2020 does not entail that the Board should carry out a full examination of the application for compliance with the other requirements of the EPC, in particular novelty in view of the other evidence considered by the Examining Division and inventive step for which no decision of the first instance exists yet.

3.5 The Board, at present, is not in a position to clearly identify distinguishing features that render one of the claim sets both novel and inventive.

3.6 Under these circumstances, the Board considers it appropriate to allow the appellant's request for remittal of the case to the Examining Division.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside

2. The case is remitted to the Examining Division for further prosecution.

The Registrar: The Chairman:

D. Magliano H. Geuss

Decision electronically authenticated