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**Datasheet for the decision  
of 12 May 2021**

**Case Number:** T 1625/15 - 3.2.03

**Application Number:** 06795301.8

**Publication Number:** 1920211

**IPC:** F41H7/04

**Language of the proceedings:** EN

**Title of invention:**

ARMORED VEHICLE

**Patent Proprietor:**

General Dynamics European Land Systems -  
Mowag GmbH

**Opponent:**

Krauss-Maffei Wegmann GmbH & Co. KG

**Headword:**

**Relevant legal provisions:**

EPC Art. 54, 56

EPC R. 103(1)(a)

RPBA Art. 13

**Keyword:**

Novelty - (yes)

Inventive step - (no)

Late-filed auxiliary requests - admitted (no)

Reimbursement of appeal fee (no)

**Decisions cited:**

**Catchword:**



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Case Number: T 1625/15 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 12 May 2021**

**Appellant:** Krauss-Maffei Wegmann GmbH & Co. KG  
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**Representative:** Feder Walter Ebert  
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**Respondent:** General Dynamics European Land Systems -  
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**Decision under appeal:** **Decision of the Opposition Division of the  
European Patent Office posted on 19 June 2015  
rejecting the opposition filed against European  
patent No. 1920211 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

**Chairman** C. Herberhold  
**Members:** C. Donnelly  
D. Prietzel-Funk

## **Summary of Facts and Submissions**

- I. The present appeal was lodged by the opponent (the "appellant") against the decision of the opposition division rejecting the opposition against European Patent No. EP-B-1 920 211.
- II. The following documents cited by the appellant in their grounds of appeal are relevant to the present decision:
- D2: EP 0 828 134 A2  
D3: DE 1 974 0103 A1  
D4: EP 0 937 959 A1
- III. By letter dated 18 January 2016 the patent-proprietor (the "respondent") set out its response to the grounds of appeal.
- IV. In a communication dated 11 October 2019 pursuant to Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), annexed to the summons to oral proceedings, the Board informed the parties of its provisional opinion.
- V. After several postponements, oral proceedings were finally held by video-conference on 12 May 2021 with the consent of both parties. The presentation and withdrawal of requests is detailed in the minutes of the oral proceedings. At the end of the debate the parties confirmed the following requests:

The appellant requested that:

- the decision under appeal be set aside and that the patent be revoked;

- the appeal fee be reimbursed.

The respondent requested that the appeal be dismissed, or auxiliarily that the patent be maintained in amended form on the basis of the claims of auxiliary requests 1 or 2 submitted during the oral proceedings before the Board.

VI. The following feature analysis of claim 1 as granted was referred to by the parties:

"Armored vehicle with

**A** a pan-shaped subshell (4) including wheel area walls (2, 3) on the side and

**B** a top shell (5) connected to this enclosing the occupants' area,

**C** whereby an inner floor plate (7) is fixed with distance above the floor area (6) of the subshell (4),

**D** the inner floor plate (7) comprising a border (9,10)

**D.1** running parallel to the side walls (11,12) of the subshell (4),

**D.2** through which it is connected in shear-resistant manner

**characterized in that**

**E** several bracing elements (13-15; 23-25; 29-32) rigidly connect the inner floor plate (7) with the floor area (6) of the subshell (4),

**F** so that the inner floor plate (7) with the floor area (6) of the subshell (4) forms a bending resistant floor structure, integrated in the vehicle, in cross-section according to the type of the upper flange and lower flange of a transverse beam."

Claim 1 according to the first auxiliary request adds the features of claim 2 as granted, i.e. that:

"... the bracing elements (13-15; 23-25; 29-32) are hollow bodies, whose outer surfaces form a shearretistant [sic] connection with the inner surface of the subshell (4) on one hand, and with the lower side of the inner floor plate (7) on the other."

Claim 1 according to the second auxiliary request adds the features of claims 2 and 4 as granted, i.e. additionally to claim 1 of auxiliary request 1 it defines that:

"....the bracing elements (13-15; 23-25; 29-32) are connected with one another through rivets or bolts (22) and also with the adjacent surfaces of the inner floor plate (7) and the subshell (4)."

*VII. Appellant's submissions*

Claim 1 as granted is not new with respect to D4 or at least does not involve an inventive step in view of D4 in combination with either the skilled person's general knowledge or D2 or D3.

Auxiliary requests 1 and 2 submitted by the respondent during the oral proceedings before the Board should not be admitted into the appeal proceedings.

Furthermore, the opposition division committed a substantial procedural violation in basing its decision on grounds which had not appeared to be of any relevance during the oral proceedings and to which the appellant thus had not been able to provide comments. Therefore, the appeal fee should be reimbursed.

*VIII. Respondent's submissions*

The floor of the vehicle according to D4 is designed to withstand loads from above and not the explosive force of a mine coming from underneath. Since there is also no description of the inner floor plate being connected in a shear-resistant manner in the vehicle, D4 does at least not disclose features D, D1, D2, E and F. Thus, the subject-matter of claim 1 as granted is new and also inventive.

Auxiliary requests 1 and 2 should be admitted into the proceedings since they are based on granted claims and were filed at the earliest opportunity after it became apparent that the Board intended to decide that claim 1 as granted did not involve an inventive step.

## **Reasons for the Decision**

1. *Claim 1 as granted, Novelty with respect to D4*
- 1.1 The board agrees with the opposition division that the expression "pan-shaped" has no specific accepted meaning in the art and must be interpreted in its broadest sense such that it includes the "box-shaped" subshell disclosed in D4.
- 1.2 The Board does further not accept the respondent's submission that since the description of the patent at column 3, lines 3 - 9, specifies that "... the inner floor plate 7 is connected at its borders via one-piece border flanges 9,10 with the upward aligned side walls 11,12 of the subshell 4 ...", the skilled person would understand that the border flanges must be present in the claim.
- 1.3 Leaving aside the fact that the term "borders" is sufficiently clear such that there is no need to consult the description, the skilled person would on the contrary in any case, understand from this passage of the description that the border flanges are additional to the borders of the inner floor plate. Further, the claim fails to specify in what plane the border is "running parallel to the side walls (11,12) of the subshell (4)". This could be either in a vertical or horizontal direction.
- 1.4 Since the cover walls 15b of D4 must comprise a border and this border is shown as being connected to the vehicle side-wall (see e.g. Figures 3c and 4c), it is evident that it also runs parallel to these.



- 1.5 It is also implicit that, in a military vehicle intended for off-road use and combat action, all components will be securely fixed to the chassis to prevent them flying free and effectively forming projectiles which could injure the crew during driving or when under attack. In particular, it is unrealistic to suggest that the cover walls 15b are merely laid upon the dividing walls 15a and would not move just because of their weight.
  
- 1.6 Further, the skilled person would understand that the stated aim of reinforcing the floor structure (see column 4, lines 6 to 7 of D4) would only be effectively achieved when the dividing walls 15a are rigidly attached to the hull floor and cover plate in order to form a conventional torsion box construction (as also suggested by the schematic representation of figure 4c).
  
- 1.7 The respondent's suggestion that even if the dividing walls 15a were connected to the floor area of the subshell floor and cover plates, they would not form a bending resistant floor structure according to feature F is not convincing since the dividing wall 15a forms the web of a transverse beam in which the cover plates and the hull floor form the upper and lower flanges.
  
- 1.8 However, that being said, the board agrees with the respondent that D4 does not explicitly disclose exactly how the floor structure of the rear crew accommodation compartment is connected to the hull. Although the term "shear resistant" can be interpreted broadly it is not devoid of any meaning and does imply some restriction of the type of connection which goes beyond simply holding the floor plates in place to prevent them shifting during driving over rough ground.

1.9 In view of this D4 is considered to disclose an:

armored vehicle with a pan-shaped subshell (rear section of hull - see figure 3c) including wheel area walls (see figures 1a and 1b) on the side and a top shell (2) connected to this enclosing the occupants' area (see figure 3c), whereby an inner floor plate (cover wall 15b) is fixed with distance above the floor area of the subshell, the inner floor plate (15b) comprising a border running parallel to the side walls (13) of the subshell, through which it is connected

and wherein

several bracing elements (15a) rigidly connect the inner floor plate (15) with the floor area of the subshell, so that the inner floor plate with the floor area of the subshell forms a bending resistant floor structure, integrated in the vehicle, in cross-section according to the type of the upper flange and lower flange of a transverse beam (see Figures 3c and 4c and point 1.7 above).

1.10 The subject-matter of claim 1 as granted differs from this known construction in that the inner floor plate is connected in shear-resistant manner to the side walls of the subshell.

Thus, the subject-matter of claim 1 as granted is new.

2. *Claim 1 as granted, Inventive step*

2.1 The above distinguishing feature provides the technical effect of reinforcing the inner floor and hull bottom structure. Therefore, the objective technical problem can be taken to be that mentioned in the patent (see

paragraph [0005]) as being one of improving protection against mine blast.

- 2.2 Faced with this problem, the skilled person would ensure that the connection between the inner floor plate borders and the side walls of sub-shell was sufficiently strong, not only to hold the floor-plates in place (which could be achieved by tack welding for example or simple mechanical fasteners), but also to strengthen the vehicle against mine attack by improving the integrity of the torsion box created between the hull bottom, the side walls and the inner floor-plates, to enable blast energy transfer from the hull floor to the side walls so that it can be dissipated through the whole vehicle.
- 2.3 Such a shear-resistant connection could be achieved by conventional welding techniques generally used in the construction of the military vehicles, such as a standard full-length fillet weld. Although the necessity for providing shear resistant connections enabling energy dissipation over the whole vehicle to improve mine blast protection is considered to be part of the skilled persons knowledge it is also explicitly mentioned in D3 (see column 5, lines 25 to 29, lines 45 to 50 and column 6, lines 29 to 34).
- 2.4 Therefore, starting out from the vehicle disclosed in D4 the skilled person would not need to exercise any inventive skill in order to solve the above problem by providing a shear resistant connection between the borders of the inner floor plates and the side walls of the subshell.

2.5 In conclusion, the subject-matter of claim 1 as granted does not meet the requirements of Article 56 EPC since it does not involve an inventive step.

3. *Admissibility of auxiliary requests 1 and 2*

3.1 Auxiliary requests 1 and 2 were filed by the respondent *in extremis* during the oral proceedings after the Board had announced its conclusion that the subject-matter of claim 1 as granted at least did not involve an inventive step.

3.2 The respondent argued that the late submission was justified because it only became apparent to them during the oral proceedings that the Board intended to decide that the subject-matter of claim 1 as granted at least did not involve an inventive step. Therefore, the requests were filed at the earliest opportunity in reaction to this. The right to be heard required to give the respondent the opportunity to react to unforeseeable developments during the oral proceedings, such as the Boards interpretation of a shear-resistant connection not necessarily having border flanges. Furthermore, since the subject-matter of claim 1 of auxiliary request 1 was simply a combination of granted claims 1 and 2 and that of auxiliary request 2 a combination of granted claims 1, 2 and 4, the Board and the appellant could be reasonably expected to deal with them.

3.3 Since the initial summons to attend oral proceedings was issued before the new Rules of Procedure of the Boards of Appeal (RPBA) entered into force on 1 January 2020, the provisions of Article 13 RPBA 2007 still apply in this case.

Article 13, paragraphs (1) and (3) RPBA 2007 reads:

"(1) Any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted at the Board's discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject matter submitted, the current state of the proceedings and the need for procedural economy.

(3) Amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the other party or parties cannot reasonably be expected to deal with without adjournment of the oral proceedings."

3.4 Whilst the subject matter of claim 1 of both requests is indeed a combination of granted claims this does not necessarily mean that it is not complex and can be easily dealt with. In particular, the subject-matter of granted claim 2 introduces entirely new technical aspects of the bracing elements which have never been discussed in the proceedings up to this point and which take the debate on inventive step off in a different direction. Clearly the state of the proceedings is very advanced and leaves little time for the appellant or the Board to appreciate all the ramifications of the new claims without adjournment or remittal which would be prejudicial to procedural economy.

3.5 With respect to the allegedly surprising interpretation of the feature "connected in a shear-resistant manner" by the Board, reference is made to the respondent's submission dated 27 January 2020, page 5, second paragraph, where exactly this point is addressed-, without, however, any submission of auxiliary requests as a fall-back position. Consequently, the discussion

and respective interpretation of the feature at the oral proceedings cannot be seen as a surprising development justifying the extremely late submission of auxiliary requests 1 and 2.

3.6 For these reasons the auxiliary requests 1 and 2 submitted during the oral proceedings before the Board are not admitted.

4. *Alleged substantial procedural violation*

4.1 What the appellant considers to be a substantial procedural violation is essentially an allegation that the opposition division did not apply the correct principles when assessing inventive step by the problem-solution approach. Whether this is the case is not a matter of procedural law, but rather of substantive law.

4.2 The appellant further argued that at the oral proceedings in opposition the proprietor had only provided very general arguments with respect to the opponents' inventive step attacks being allegedly hindsight based, and that the Opposition division failed to indicate during the proceedings the relevant detailed arguments on which it did then base its decision, such that the opponent was deprived of its right to be heard.

However, uncontestedly, the question whether or not the opponents' lines of attack were based on hindsight was discussed during the proceedings (see appeal grounds, page 33 first paragraph, and decision II.3.2). The evaluation of an alleged hindsight implies the question whether the person skilled in the art had an incentive to look for a solution to a particular

objective technical problem, which prior art he/she would consult, and whether a known solution not only could but also would be applied. It is in this context that the opponent had the opportunity to comment on the grounds on which the decision is based. Contrary to the opponents' arguments in point IV of the statement of grounds, it thus cannot be considered surprising that these issues are dealt with in the decision. There is - also considering the duty of the deciding body to remain neutral - no requirement of a deciding body to provide the parties in advance with every foreseeable details of its final decision.

To conclude, the decision is directly related to the arguments put forward by the proprietor and based on grounds or evidence on which the appellant had the opportunity to comment.

4.3 Therefore, the opposition division did not infringe the appellant's right to be heard and a substantial procedural violation has not taken place.

4.4 Since a substantial procedural violation has not been made by the opposition division there is no reason to order reimbursement of the appeal fee (R. 103(1)a EPC).

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.
3. The request for reimbursement of the appeal fee is rejected.

The Registrar:

The Chairman:



D. Hampe

C. Herberhold

Decision electronically authenticated