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**Datasheet for the decision
of 16 July 2021**

Case Number: T 1920/16 - 3.2.05

Application Number: 10706269.7

Publication Number: 2403707

IPC: B29C70/38, B29C70/48, F03D1/06

Language of the proceedings: EN

Title of invention:
Method and manufacturing line for manufacturing wind turbine blades

Patent Proprietor:
LM Glasfiber A/S

Opponents:
Vestas Wind Systems A/S
Siemens Aktiengesellschaft

Relevant legal provisions:
EPC Art. 56, 123(1)
EPC R. 103(4)(a), 116

Keyword:
Main request - admitted in opposition proceedings (confirmed)
Inventive step (yes)

Decisions cited:

G 0007/93, T 0351/12



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Case Number: T 1920/16 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 16 July 2021

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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
16 June 2016 concerning maintenance of the
European Patent No. 2403707 in amended form.**

Composition of the Board:

Chairman P. Lanz
Members: B. Spitzer
 C. Brandt

Summary of Facts and Submissions

I. The patent proprietor (appellant I) and opponent 1 (appellant II) filed respective appeals against the interlocutory decision of the opposition division that European patent No. 2 403 707 ("the patent") as amended with the second auxiliary request filed on 23 March 2016 met the requirements of the EPC.

II. During the opposition proceedings, opponent 1 had raised the grounds for opposition according to Article 100(a) EPC (lack of novelty and lack of inventive step). Opponent 2 had raised the grounds for opposition according to Article 100(a) EPC (lack of inventive step) and Article 100(b) EPC (insufficiency of disclosure).

III. Opponent 2 was a party as of right in the appeal proceedings.

IV. Oral proceedings were held before the board by videoconference on 16 July 2021. As announced, opponent 2 did not attend the oral proceedings. During the oral proceedings the patent proprietor withdrew its appeal.

V. *Requests*

Appellant II (opponent 1) requested that the decision under appeal be set aside and that European patent No. 2 403 707 be revoked.

The respondent (patent proprietor, formerly appellant I) requested that the appeal of appellant II be dismissed (main request) or, alternatively, that the

decision under appeal be set aside and the patent be maintained in amended form on the basis of the claims of the fourth auxiliary request filed with the statement setting out the grounds of appeal dated 14 October 2016.

VI. The documents cited during the appeal proceedings include the following:

D2: EP 2 014 449 A1

D3: Windblatt, The Enercon Magazine, Ed. 04/2001

D4: "Wind Turbines", E. Hau, 2nd edition, Springer, 2006, foreword and chapter 7

D5: DK 2004 00032 U3

D5a: English translation of document D5

D10: "Robotic 'layup' of composite materials", D. Groppe, Assembly Automation, Volume 23, Number 2, 2003, pp. 153-158

D11: "Wind Energy - Benefits to the Community", J. Brown, BVG Associates, 2008

D12: "Automated Data Monitoring System", Strainstall UK Ltd.

D13a: "Composite Material Systems & Processes and Marine Applications", David Champs, M Torres, USA, Product Design and Materials Technology Panel, San Diego, California, 10 May 2006

D13b: Flyer presenting the Product Design and Materials Technology Panel meeting in May 2006

D14: US 2006/042066 A1

D16a: "Årsrapport 2004", Vestas Wind Systems

D16b: Extract of English version of document D16a

VII. Claim 1 according to the main request reads as follows:

"A method for manufacturing wind turbine blades having a composite shell structure comprising a matrix material and a fibre reinforcement material by use of a resin transfer moulding process, characterised in that the method comprises a manufacturing line (30), where wind turbine blades are formed in a number of moulds (40, 50, 60), each of the number of moulds (40, 50, 60) comprising at least one mould part (41, 51, 61) comprising a mould cavity (42, 52, 62), wherein the manufacturing line (30) further comprises a gantry means (35) movable along the manufacturing line (30), the method comprising the following steps:

- a) arranging fibre reinforcement material in the at least one mould cavity (42) of a first mould (40) using the gantry means (35),
- b) moving the gantry means (35) along the manufacturing line (30) to a second mould (50),
- c) supplying curable matrix material into the at least one mould cavity (42) of the first mould (40), while substantially simultaneously arranging fibre reinforcement material in the at least one mould cavity (52) of a second mould (50) using the gantry means (35), wherein

the second mould (50) is arranged in substantially longitudinal extension of the first mould (40) and/or the third mould (60) is arranged in substantially longitudinal extension of the second mould (50)."

VIII. Appellant II argued essentially as follows.

(a) *Main request - admittance during the first-instance proceedings*

The admittance by the opposition division of the late-filed request, submitted by the patent proprietor during the oral proceedings, was challenged because the request could have been filed at an earlier date and because it could reasonably have been expected that claim 13 would be found unallowable.

(b) *Claim 1 of the main request - lack of inventive step starting from document D5*

Starting from document D5 as the closest prior art, the subject-matter of claim 1 differed in that

- there was a second mould,
- the gantry means being moved to the second mould and substantially simultaneously with the supply of matrix material into the mould cavity of the first mould, fibre reinforcing material being arranged in the second mould, using the gantry means, and
- the second mould being arranged in substantially longitudinal extension of the first mould.

The first two distinguishing features contributed to an increased production, as addressed in paragraph [0009] of the patent, and the third one to an increased stiffness and precision of the gantry means, as addressed in paragraphs [0022] and [0023] of the patent. In view of these differences, there were two partial objective technical problems, which were considered as

- providing an increased production, and
- minimising the width of the gantry means.

As these two partial problems were not inter-related, possible inventive merits of the differentiating features had to be assessed separately.

(i) *Obviousness in view of document D3*

Document D3 concerned a new factory in Rothensee, Germany, set up by the wind turbine producer Enercon. It stated that "[a]lmost four times as many rotor blades can soon be produced in Rothensee" (see document D3, page 8, middle column). In view of this increase the skilled person would have considered document D3. From the photo on page 8 of document D3, the skilled person would have learnt to add a further mould in the longitudinal extension of the first mould.

As the use of several gantry means was not excluded in claim 1 of the patent (see paragraph [0009] of the patent), no technical contribution over the prior art was provided by gantry means being moved to the second mould and by simultaneously supplying matrix material into the first mould and arranging fibre reinforcement material in the second mould.

In case the gantry means were considered as being shared between the moulds, it was pointed out that allowing moulds to share a gantry was a well-established principle. Reference was made to document D2, document D4 (see Figure 7.17), document D10 (see Figure 1), document D11 (see pages 10-12), document D12 (see photo on page 2), D13a (see pages 44-48, 52, 58-61), and document D14 (see Figure 7 and paragraph [0044]).

(ii) *Obviousness in view of document D2*

The solution to the first partial objective technical problem would have been obvious in view of document D2. The skilled person would have considered document D2 because it was from a similar technical field. It disclosed a tool and a process for manufacturing long pieces of composite material (see paragraph [0001] of document D2). It concerned the same problem of optimising the process and the use of its tools as well as reducing costs (see paragraphs [0012], [0015] and [0026]).

Increasing production would have been achieved with common sense by adding moulds. Document D2 taught the general principle and solved the above-mentioned problem. The method steps of laying, cutting and hot-forming in document D2 were carried out temporally staggered on two workstations served by one gantry. This solution was not restricted to special method steps or devices. Instead, it was equally applicable to the steps of arranging the fibre reinforcement material and supplying curable matrix material in a set-up with two moulds, as in the patent. Document D2 even mentioned moulds in paragraph [0002]. The fact that the gantry in document D2 straddled both tables was not relevant for the question of inventive step, as this fact was not excluded in the patent. Claim 1 of the patent even included an alternative, in which a first and a second mould were arranged in parallel and a third mould in longitudinal extension. Figure 6 and the corresponding paragraph [0044] of the patent showed a staggered alignment, partly parallel. The important fact was that the gantry means in document D5 as well as in document D2 ran on wheels and could thus be

displaced along the mould or table. By transferring the teaching of document D2 to the manufacturing method of document D5, the skilled person would add a second mould and arrange the fibre reinforcement material in the first mould using the gantry means, move the gantry means to the second mould, and supply matrix material into the first mould while simultaneously arranging fibre reinforcement material in the second mould using the gantry means. The skilled person had two possibilities: to arrange the first and the second mould in either a parallel configuration or in a longitudinal extension.

To solve the second partial objective technical problem the skilled person would have chosen the longitudinal arrangement of the moulds because this option needed fewer modifications with respect to document D5. For a parallel configuration, an increase in the width of the gantry means would have required structural modifications. Moreover, many documents showed a longitudinal arrangement of moulds (see document D3, photo on page 8; document D4, Figure 7.17; document D12, photo on page 2; document D13a, page 46; document D16a, page 34). It was true that document D2 did not mention the problem of gantry stiffness. However, this was a trivial problem and basic knowledge for the skilled person. Wider gantry means were not excluded in the patent. Indeed, paragraph [0043] mentioned web production stations 71, 72, 73, which were preferably juxtaposed to the manufacturing line.

Thus, the subject-matter of claim 1 lacked an inventive step when using document D5 as the starting point.

(c) *Claim 1 of the main request - lack of inventive step starting from document D3*

Document D3 was also a suitable starting point. The person skilled in the art could see a rotor blade production line (see page 8, text on the left side of the photo, and the photo) with a plurality of moulds, an open mould with two halves in the foreground and a closed one in the background on the left-hand side, arranged in substantially longitudinal extension, and one or several gantry means, movable along the manufacturing line. The question of whether there were one or several gantries did not matter as claim 1 of the patent was not limited to one gantry means (see point (b)(i) above). The patent even mentioned, in paragraph [0009], the possibility of several gantries. The question of whether the photo showed the gantry running along the whole factory hall was not relevant either, because factory halls were built per se in such a way that the gantry means could be used along the whole length of the hall. The text below the photo in the middle column supported this: "[A] minimum crane hook height of 6 m and length of 120 m" were required.

The distinguishing features in view of document D3 were

- use of resin transfer moulding
- using a gantry for arranging fibrous reinforcement material in a mould and
- that the gantry means is moved to the second mould, and, substantially simultaneously with the supply of matrix material into the first mould, fibre reinforcement material is arranged in the second mould, using the gantry means.

Vacuum-assisted resin transfer moulding (VARTM) was the dominating processing method for the manufacturing of

wind turbine blades. It was known to generate low volatile organic compounds and to evenly wet out large parts with a controlled amount of resin.

Based on these differences, the partial objective technical problems were formulated as

- generating low volatile organic compounds and evenly wetting out the blade with a controlled amount of resin, and
- increasing production and/or making the process safer.

As document D3 concerned a manufacturing line for wind turbine blades, these being generally manufactured by resin transfer moulding (RTM) or VARTM, the skilled person knew the different process steps and especially the use of resin transfer moulding. In the photo on page 8 of document D3, the closed mould in the background might be in the curing phase, while in the open mould in the foreground a resin was supplied. Thus, temporally staggered manufacturing would have been obvious already from this photo. The use of the gantry means shown in document D3 for lifting heavy objects, and hence for arranging fibre reinforcement material, would have been equally obvious. According to the patent this step was not necessarily carried out using gantry means (see paragraphs [0009] and [0036] of the patent) and, hence, an alternative where the gantry means were merely used for lifting the heavy fibre rolls was covered by claim 1 of the patent.

(i) *Obviousness in view of document D5*

The manufacturing of wind turbine blades by vacuum infusion was, for instance, disclosed in document D5 (see document D5a, page 2, last paragraph). Document D5

also suggested the usefulness of gantry means for arranging fibrous material.

With respect to the feature of simultaneously supplying matrix material into the first mould while arranging fibres in the second mould, it was argued that there was no technical contribution over the prior art since gantry means of claim 1 may include more than one gantry (see item (b)(i) above). Apart from that, the temporally staggered manufacturing was known from document D2.

(ii) *Obviousness in view of document D2*

Considering the use of RTM and the corresponding manufacturing steps as obvious in view of the production line for wind turbine blades of document D3 (see point (c)(i) above), the second partial problem to be solved was to optimise and simplify the manufacturing line of document D3. The skilled person would have considered document D2 (see point (b)(ii) above) and, hence, would have applied a temporally staggered manufacturing as already suggested by document D3 (see item (c)(i) above).

Thus, the subject-matter of claim 1 also lacked an inventive step when using document D3 as the starting point.

IX. The respondent's arguments may be summarised as follows.

(a) *Claim 1 of the main request - inventive step starting from document D5*

Starting from document D5 with the distinguishing features as set out by appellant II, the skilled person would not have arrived at the claimed invention, as neither document D2 nor document D3 disclosed these features. The gist of the invention was the particular temporal sequence of manufacturing steps for manufacturing wind turbine blades.

The two objective technical problems identified by appellant II were synergistic. The distinguishing features not only related to an increase in production and a reduction in the width of the gantry means but also to an optimisation of the whole process with respect to the throughput or the resources (see paragraph [0009] of the patent). The longitudinal arrangement of the moulds enabled the shared use of the gantry means. The higher stiffness of the gantry means was an additional advantage.

(i) *Non-obviousness in view of document D2*

Starting from document D5 the skilled person would not have consulted document D2, the teaching of which was not compatible with that of document D5. Aeronautical parts were smaller and less complex compared to wind turbine blades. Cutting was not suitable for wind turbine blades. Document D2 did not disclose moulds, but flat tables. Moulds were merely mentioned in the background art in paragraph [0002].

Even if the skilled person had considered document D2, this document still did not disclose that the gantry means were moved along the manufacturing line to a second mould. The gantry means in document D2 only moved along the table. In the event of the teachings of documents D5 and D2 being combined, the skilled person would have arranged the moulds side by side using the shared gantry means.

(ii) *Non-obviousness in view of document D3*

A further reference was made by appellant II to document D3, in particular the photo on page 8. The photo did not provide any teaching as to the manufacturing steps. It was not derivable from the photo what was in the background on the left-hand side, how many gantries there were and how these gantries were used. Document D3 disclosed a production plant with a plurality of different manufacturing lines. Even if the photo on page 8 showed first mould halves in the foreground and a second closed mould in the background, there were no indications of any connection between the two sets of mould parts or that they were part of the same manufacturing line. Furthermore, the photo on page 8 showed two gantries that could be moved only along parts of the plant, which meant that each mould set had a separate gantry. It was a mere assumption that the gantry means move along the entire length of the hall. The text below the photo referred to the factory hall having a length of 120 m and not to the reach of the crane.

With respect to the alternative with the third mould, as mentioned in claim 1, this was an embodiment which referred to a dependent claim. As claim 1 did not

mention a third mould this alternative was void. Considering the staggered alignment as shown in Figure 6 of the patent, such an arrangement was still narrower than a side-by-side arrangement. Workstations juxtaposed to the manufacturing line, as mentioned in paragraph [0043], were not excluded. However, it was not claimed that the gantry means have to straddle the workstations and the moulds. Regarding document D13, this document was not directed to the manufacturing of wind turbine blades.

All in all, the skilled person would not have arrived at the claimed invention starting from document D5. The subject-matter of claim 1 thus involved an inventive step.

(b) Claim 1 of the main request - inventive step starting from document D3

Starting from document D3, this prior art did at least not disclose the method steps.

(i) Non-obviousness in view of document D5

As document D5 did not disclose at least two of these features (method step a) and method step c) of claim 1), a combination would not have led to the claimed invention.

(ii) Non-obviousness in view of document D2

Document D2 did not disclose the method steps a) and c) either.

Therefore, the subject-matter of claim 1 also involved

an inventive step starting from document D3.

Reasons for the Decision

1. Main request - admittance during the first-instance proceedings
- 1.1 Appellant II challenged the admittance by the opposition division of the late-filed request, submitted by the patent proprietor during the oral proceedings.
- 1.2 The board notes that it is indisputably at the opposition division's discretion to admit or not to admit late-filed amended claim requests presented for the first time during the oral proceedings (Article 123(1), first sentence, EPC, and Rule 116 EPC). Such discretionary power necessarily implies that the EPO department of first instance has a certain degree of freedom in exercising its power (see G 7/93, OJ EPO 1994, 775). In general, a board of appeal should only overrule the way in which a department of first instance has exercised its discretion when deciding on a particular case if it concludes that it has done so according to the wrong principles or without taking into account the right principles or in an unreasonable way. This principle also applies to first-instance decisions on the admission of late-filed claim amendments. It is generally not the role of a board of appeal to review all the facts and circumstances of the case as if it were in the place of the department of first instance, in order to decide whether it would have exercised such discretion in the same way (see T 351/12).

1.3 In the present case, the patent proprietor filed the second auxiliary request during the oral proceedings before the opposition division. According to the decision under appeal (see point 23.1 of the Reasons), the opposition division took into account that the second auxiliary request was filed late. It came to the conclusion that the amendment in the second auxiliary request consisted in deleting claim 13, which did not introduce subject-matter for which the opponents could not prepare. Hence, the opposition division based its discretionary decision to admit the second auxiliary request into the proceedings on the established principles and did not act in an unreasonable way. Under these circumstances, the board sees no reason to overrule the way in which the department of first instance exercised its discretion under Article 123(1) EPC and Rule 116 EPC.

2. Claim 1 of the main request - inventive step

2.1 Document D5 as the starting point

2.1.1 Document D5 discloses the manufacturing of a wind turbine blade from fibre composite material (see page 2 of the translation D5a, lines 1-2). The blade shell halves are manufactured by vacuum infusion (see page 2, line 26), i.e. vacuum-assisted resin transfer moulding. The parties agree that document D5 is a suitable starting point for assessing inventive step and does not disclose the features of

- a second mould,
- the gantry means being moved to the second mould and substantially simultaneously with the supply of matrix material into the mould cavity of the first mould, fibre reinforcing material being arranged in the second mould, using the gantry means, and

- the second mould being arranged in substantially longitudinal extension of the first mould.

2.1.2 The presence of a second mould has the technical effect that the production output increases, with the temporally staggered method steps requiring fewer resources as the gantry means can be shared between the different moulds. The arrangement of the moulds in a longitudinal extension not only allows the gantry means to be used for both moulds, but also improves precision of the gantry due to a smaller width. These effects are addressed in the patent in paragraphs [0009] and [0022]. As put forward by the respondent, the combination of the distinguishing features contributes to an optimisation of the whole production process.

Thus, the respective objective technical problem is considered as optimising the production process.

2.1.3 Obviousness in view of document D2

Document D2 discloses a method for producing long pieces of composite material by hot-forming (see paragraph [0001]). The board holds the view that the skilled person, seeking to optimise the composite production process of document D5, i.e. to increase throughput or to reduce the number of tools, and thereby reducing costs, would have taken into account the teachings of document D2.

Firstly, although hot-forming and resin transfer moulding are different processes, both processes require a sequence of different steps, such as laying, cutting and hot-forming (see D2, paragraph [0001]) and arranging fibre reinforcement material, supplying curable matrix material and assembling the two mould

halves (see patent, e.g. paragraph [0041]), respectively. Laying seems to be comparable to the arrangement of fibre reinforcement material (see document D2, paragraph [0002]).

Secondly, document D2 is related to the same problem as the patent, i.e. the design of the process steps and the arrangement of the necessary tools in order to reduce costs in the manufacturing process and optimise the use of the tools (see document D2, paragraphs [0012] and [0026]).

Thirdly, in terms of the respondent's argument that, in view of paragraph [0008] of document D2, hot-forming and cutting were not suitable for manufacturing wind turbine blades, the board draws attention to the actual problem to be solved. It points out that this is not to choose an appropriate moulding method (RTM or hot-forming) but to optimise the known method in order to increase efficiency. However, it is noted that in document D2 the workstations consist of tables, whereas, in the patent and in document D5, the workstations are moulds.

The solution disclosed in document D2 resides in the use of two identical tables arranged side by side and the shared use of the laying/cutting head (see paragraphs [0015], [0026]) for both tables. The laying head and the cutting head are supported by means allowing their displacement over said tables (see Figure 1a: 11, 13, 15, 17, 19, and paragraph [0019]). While substantially simultaneously laying and cutting operations are carried out on one of the tables, the hot-forming operation can be carried out on the other table (see paragraph [0026]).

Assuming that the skilled person would have considered transferring this teaching to the different steps of the resin transfer moulding process known from document D5, it would have been obvious to supply curable matrix material into the at least one mould cavity of the first mould, while substantially simultaneously arranging fibre reinforcement material in the at least one mould cavity of a second mould using the gantry means.

However, when combining the teachings of documents D5 and D2, the skilled person would have arranged the moulds in a side-by-side configuration with gantry means straddling both moulds, as suggested in document D2. The claimed solution is different and consists in arranging the second mould in a substantially longitudinal extension of the first mould and moving the gantry means from the first mould to the second mould. Neither document D2 nor document D5 contains any indication which would have pointed the skilled person towards such an arrangement.

- 2.1.4 Appellant II argued that there was a limited number of well-known possibilities for arranging the moulds for sequential manufacturing, namely either in a parallel configuration, as taught by document D2, or in a longitudinal extension. Starting from document D5 the skilled person would have chosen the longitudinal arrangement because it required fewer modifications.

The board does not accept appellant II's conclusion. Even assuming that the longitudinal arrangement could have been derived from common general knowledge, it would have gone against the teaching in document D2 of achieving an increased output by a side-by-side configuration of the workstations. Thus, the skilled

person had no incentive to further modify this solution. Appellant II's argument is based on an *ex post facto* analysis.

- 2.1.5 Regarding the arrangement of the second mould in a longitudinal extension, the board concurs with appellant II that an arrangement of moulds in a longitudinal extension, *per se*, was known in the art. This is shown in the photo on page 8 of document D3, in Figure 7.17 of document D4, in the figure on page 2 of document D12 and in the picture on page 34 of document D16a. Also, the shared use of gantry means, *per se*, was known. Appellant II pointed to the photo on page 8 of document D3, Figure 7.17 of document D4, Figure 1 on page 2 of document D10, the picture on pages 10, 11 and 12 of document D11, the photo on page 2 of document D12 and the picture on page 46 of document D13a.

However, starting from document D5 and combining it with the general teaching of document D2 in order to solve the objective technical problem, the skilled person would not have chosen, without hindsight, an arrangement of the moulds in a substantially longitudinal extension and gantry means moving between a first and a second mould. As already explained above, the skilled person had no incentive to further modify the arrangement achieved when combining the teachings of document D5 and document D2.

- 2.1.6 Thus, the subject-matter of claim 1 was not rendered obvious by a combination of documents D5 and D2 and the common general knowledge.

2.1.7 Obviousness in view of document D3

Document D3 discloses a production line for wind turbine blades. The photo on page 8 shows an open mould with two mould halves in the foreground, a closed mould in the background on the left and gantry means. It is silent as to the method steps a), b) and c) of claim 1 of the patent and discloses neither the individual steps nor the temporally staggered manufacturing. Therefore, a combination of documents D5 and D3 does not reveal the gist of the invention, i.e. the simultaneous manufacturing steps according to step c) of claim 1.

2.1.8 With respect to the feature of simultaneously supplying matrix material into the first mould while arranging fibres in the second mould, appellant II argued that there was no technical contribution over the prior art since gantry means of claim 1 of the patent might include more than one gantry.

The board shares the view that claim 1 of the patent is not limited to a single gantry (see also paragraph [0009]). However, it is explicitly claimed that the gantry means are moved from the first mould to the second mould and it is clear from claim 1 that the (same) gantry means are used for arranging fibre reinforcement material in the first mould and in the second mould. Using shared gantry means has the effect of reducing resources (see paragraph [0009] of the patent).

2.1.9 In case a technical effect was attributed to the temporally staggered manufacturing steps, appellant II argued that such a manufacturing process as reflected

in step c) of claim 1 of the patent could have been derived by the skilled person from the photo on page 8 of document D3. The board disagrees. Even if the closed mould in the background of this photo might be in the curing phase, while a resin was supplied in the open mould in the foreground, the photo does not disclose the simultaneous steps of supplying curable matrix material and arranging fibre reinforcement material as claimed in step c) of claim 1 of the patent.

2.1.10 Thus, the subject-matter of claim 1 was not rendered obvious by a combination of documents D5 and D3 and the common general knowledge.

2.2 Document D3 as the starting point

2.2.1 The board considers document D3 to be a less promising starting point as it discloses a wind turbine production line, but not the manufacturing steps of wind turbine production. However, if starting from document D3, the board concurs with the parties that document D3 at least does not disclose

- the use of resin transfer moulding
- step a) using a gantry for arranging of fibrous reinforcement material in a mould and
- steps b) and c) of claim 1 that the gantry means is moved to the second mould, and substantially simultaneously with the supply of matrix material into the first mould, fibre reinforcement material is arranged in the second mould, using the gantry means (see appellant II's statement setting out the grounds of appeal, paragraph bridging pages 21 and 22).

2.2.2 While the use of resin transfer moulding for manufacturing wind turbine blades was generally known

and could be considered obvious, the remaining distinguishing features have the effect that the production output increases and fewer resources are needed. The board concurs with appellant II that, if starting from document D3, the objective technical problem could be formulated as how to optimise and simplify the manufacturing process.

2.2.3 Obviousness in view of document D5

Although the separate manufacturing steps for wind turbine blades are known from document D5 (see document D5a, page 2, line 26, to page 3, line 15; page 4, lines 16 to 19; page 6, lines 22 to 23 and lines 33 to 34; page 7, line 29, to page 8, line 13), a temporally staggered manufacturing process is not disclosed because document D5 shows only one mould. The skilled person is not given any hints in this regard either.

2.2.4 Concerning appellant II's argument that a temporally staggered manufacturing process could be derived, by the skilled person, from the photo on page 8 of document D3, reference is made to point 2.1.9 above.

2.2.5 Regarding appellant II's objection that the temporally staggered manufacturing did not have any technical effect, reference is made to point 2.1.8 above.

2.2.6 Appellant II further submitted that a temporally staggered manufacturing was known from document D2.

Although the board concurs with appellant II that document D2 discloses a temporally staggered manufacturing method, the skilled person would not have considered document D2 without hindsight if starting

from document D3 and combining it with the teaching of document D5.

Firstly, document D3 shows a longitudinal arrangement of the moulds whilst document D2 discloses a side-by-side arrangement of tables/workstations.

Secondly, in the context of the problem-solution-approach, the combining of more than two documents is not excluded. However, in the present case, the claimed subject-matter is not a mere aggregation of features defining solutions to several independent partial objective technical problems. A combination of documents D3, D5 and D2 would result in an *ex post facto* analysis.

2.2.7 Thus, the skilled person would not have arrived at the claimed invention by a combination of documents D3 and D5 and the common general knowledge.

2.2.8 Obviousness in view of document D2

The board holds the view that, starting from document D3, the skilled person would not have taken into account the teaching of document D2 due to the reasoning elaborated under point 2.2.6 above (see the first reason).

Even if the skilled person would have considered document D2, the distinguishing features as identified under point 2.2.1 above are not disclosed in document D2. Although the use of gantry means for lifting heavy and large objects is generally known, neither document D3 nor document D2 discloses the step of arranging fibre reinforcement material and the steps of simultaneously arranging reinforcing fibres in a first

mould and supplying curable matrix material into a second mould.

2.2.9 Thus, the skilled person would not have arrived at the claimed invention by a combination of documents D3 and D2 and the common general knowledge.

2.3 Conclusion

The subject-matter of claim 1 is not rendered obvious when starting from document D5 or document D3 (Article 56 EPC).

3. Partial reimbursement of the patent proprietor's appeal fee

Due to the patent proprietor's withdrawal of its appeal before the announcement of the decision at the oral proceedings, the appeal fee paid by the patent proprietor is reimbursed at 25% according to Rule 103(4)(a) EPC.

Order

For these reasons it is decided that:

1. The appeal is dismissed.
2. The appeal fee paid by the patent proprietor is reimbursed at 25%.

The Registrar:

The Chairman:



K. Boelicke

P. Lanz

Decision electronically authenticated