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**Datasheet for the decision
of 30 June 2009**

Case Number: T 1944/07 - 3.2.01

Application Number: 98203015.7

Publication Number: 0901962

IPC: B64D 11/00

Language of the proceedings: EN

Title of invention:

Escape systems for aircraft overhead rest areas

Patentee:

The Boeing Company

Opponent:

AIRBUS SAS et al.

Headword:

-

Relevant legal provisions:

RPBA Art. 12(4)

Relevant legal provisions (EPC 1973):

EPC 54, 56, 114(2)

Keyword:

"Novelty (yes)"

"Inventive step (yes)"

"Late submitted material - cited on appeal - admitted (no)"

Decisions cited:

T 0176/84

Catchword:

-



Case Number: T 1944/07 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 30 June 2009

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Decision under appeal:

Decision of the Opposition Division of the European Patent Office posted 1 October 2007 rejecting the opposition filed against European patent No. 0901962 pursuant to Article 102(2) EPC 1973.

Composition of the Board:

Chairman: S. Crane
Members: J. Osborne
G. Weiss

Summary of Facts and Submissions

I. The appeal is directed against the decision posted 1 October 2007 rejecting an opposition against European patent No. 0 901 962.

II. The patent had been opposed on the basis that the subject-matter of claim 1 was not new or did not involve an inventive step.

III. The following state of the art filed during the opposition procedure played a role also during the appeal:

M3: DE-C-26 10 429;

M4: DE-C-42 23 320;

M7: DE-C-244 094.

The following state of the art was introduced by the appellant during the appeal procedure:

M11: US-A-2 990 148;

M14: US-A-3 438 601;

M15: US-A-3 144 224.

IV. At oral proceedings held on 30 June 2009 the appellant requested that the decision under appeal be set aside and the patent revoked. The respondent requested that the appeal be dismissed (main request) or in the alternative that the decision under appeal be set aside

and the patent maintained in amended form on the basis of claims according to first to eighth auxiliary requests filed with a letter of 10 August 2007.

- V. Claim 1 according to the main request (as granted) reads:

"An emergency escape system in an aircraft having a main passenger cabin (14) and an overhead rest area (36) above the main passenger cabin in the crown of the aircraft above the ceiling (28) for the main passenger cabin, said escape system comprising an exit slide (96,104) accessible from the overhead rest area, said exit slide having an under surface forming a portion of the ceiling for the main passenger cabin and being movable between a closed position forming a continuation of the remainder of the ceiling of the main passenger cabin and a downward shifted open position providing egress from the overhead rest area to the main passenger cabin."

Claims 2 to 11 specify further features of the escape system.

- VI. The appellant's submissions as relevant to the present decision and in respect of the main request may be summarised as follows:

As regards the filing of M14 and M15 first during the appeal procedure, the wording "in an aircraft" in claim 1 allows two interpretations and the opposition was based on the broader one. M14 and M15 were filed in response to the board's provisional opinion that the wording is to be interpreted more narrowly. Whilst in

M14 the upper and lower levels of the aircraft are not explicitly disclosed as accommodating passengers, they are suitable for that purpose. Similarly, the upper area in M15 would be suitable for accommodating passengers and the steps do not exclude their use as a slide. M11 was merely found to be more relevant than the documents already on file in opposition.

The subject-matter of present claim 1 is anticipated by the disclosure of M4. In particular, M4 discloses in figure 7 upper and lower passenger levels and stairs connecting them. The stairs may be pivoted into a raised position in which the underside forms a continuation of the ceiling. The treads of the steps are rotatable relative to the stringers. There is no disclosure that the treads are able to rotate only when the stairs are in the raised position and when they are rotated with the stairs in the lower position they may form a slide between the two levels. Although the stairs are intended to be raised in an emergency they are suitable for use in such a way that all features of present claim 1 would be present.

Even if M4 were found not to fully anticipate the subject-matter of claim 1 the skilled person when seeking additional emergency exits would readily appreciate that the treads could be pivoted to form a slide when the stairs are in the lowered position, thereby arriving at the subject-matter of claim 1 without exercising inventive effort. FAA regulations require emergency exits and slides are particularly appropriate for people with restricted mobility. It is important to appreciate that an emergency exit is no more than an exit which may be used in an emergency.

In the alternative, the subject-matter of claim 1 would be obvious when beginning from either M4 or the prior art acknowledged in paragraph [0004] of the patent specification and taking into account the teaching of M3. In accordance with decision T 176/84 the skilled person will consider state of the art in neighbouring technical fields. M3 relates to the problem of emergency evacuation from one level to another in a building by means of a slide being compact in dimensions and is in a technical field which neighbours on the present one. Indeed, prior art acknowledged in M3 includes a document in which an escape slide is mounted on a vehicle. In M3 the slide forms a continuation of the underside of the door and this feature when transferred to either M4 or the state of the art according to paragraph [0004] of the patent specification would result in the presently claimed feature of the continuation of the ceiling.

In the further alternative, when the skilled person beginning from M4 determines that the stairs are insufficient for use as an emergency exit he would find a solution in M7 which teaches that a set of steps may be provided with pivoting treads in order to provide a slide for transporting heavy items from an upper level.

VII. The respondent's rebuttal was essentially the following:

Claim 1 specifies more than a slide suitable for use in an aircraft. It specifies a complete emergency escape system having certain features including a slide which forms a continuation of the cabin ceiling. M11, on the other hand, relates to an external staircase whilst

both M14 and M15 have neither a slide nor a lower cabin ceiling which might be continuable.

M4 does not anticipate the subject-matter of claim 1 because it discloses neither an upper rest area nor an emergency exit system comprising a slide. Indeed, it teaches that the stairs should be pivoted upwards in an emergency, thereby preventing egress from the upper level.

The subject-matter of claim 1 is an emergency escape system which provides escape from an upper rest area and in which the slide itself provides a continuation of the ceiling of the main cabin. M4 does not disclose an emergency exit system, the stairs do not connect a main cabin and an upper rest area and there is no continuation of the ceiling of the main cabin. Moreover, the stairs serve to provide access in both directions so that the skilled person would not consider them as forming a slide. The subject-matter of claim 1 has the technical effect of providing a weight efficient, compact system. The appellant's arguments rely on hindsight and are contrary to the teaching of M4 in which the stairs are evidently additional to other, presumably conventional emergency exits. The skilled person following the teaching of M4 but wishing to provide an emergency exit from the upper level would simply use the stairs.

The skilled person beginning from either M4 or the state of the art acknowledged in the patent specification would not turn to M3 for a solution. The teaching of M3 relates to buildings and provides a large device which has three positions including one

parallel to a vertical wall. Such a technical field in which weight and size are unimportant cannot be regarded as a neighbouring one, even for a large aircraft, and particularly not for the interior. Moreover, in as far as in M3 figure 4 the slide is separate from the flap 14 the slide does not form the continuation of the wall. If the flap were to be considered as the slide then it would not be accessible from the upper level. If the flap were to be left out of consideration there would be no teaching to form a continuation of a surface.

M7 also does not help in arguing that the subject-matter of claim 1 would be obvious. It relates to a device which is not pivotable and is from a technical field which the skilled person working in aircraft would not consider.

Reasons for the Decision

1. Regulations require that rest areas be provided for aircraft crew members on long haul flights. In order to minimise the economic penalty of providing such rest areas they may be provided in the crown of the aircraft, above the passenger cabin. The patent relates to a system for emergency exit from such an upper level of accommodation into the passenger cabin. The system comprises a slide the undersurface of which when the slide is raised forms a continuation of the ceiling in the passenger cabin, whereby the one component fulfils two functions.

Late filed evidence

2. In accordance with Article 12(4) RPBA everything presented by an appellant in its notice of appeal and statement of grounds of appeal is to be taken into account "without prejudice to the power of the Board to hold inadmissible ... evidence which could have been presented ... in first instance proceedings" All of M11, M14 and M15 were filed by the appellant as evidence relevant to claim 1 according to the main request and therefore in its form as granted. Although the appellant argues that M14, M15 were filed in response to an interpretation of claim 1 by the board, it is clear from the opposition procedure that the appellant had been aware of the possibility to interpret the claim in different ways and therefore could have filed M14, M15 already in the first instance proceedings. The appellant offers no excuse for the late filing of M11. The board finds all of M11, M14 and M15 *prima facie* of no relevance and under these circumstances it exercises its discretion and disregards them (Article 114(2) EPC 1973).

Main request

Interpretation of claim 1

3. Claim 1 specifies "an emergency escape system in an aircraft ... said escape system comprising an exit slide ...". The appellant argues with reference to the Guidelines that this wording is unclear and permits the claim to be interpreted as defining a slide merely suitable for emergency use in an aircraft whereby further features in the claim are not limiting. However,

the wording of the claim must be considered as a whole and the entire remainder of the claim specifies either features of the aircraft or a relationship between the slide and those features. In the board's judgement the subject-matter of claim 1 clearly is a combination of at least those features of an aircraft which are mentioned in the claim, namely a main passenger cabin having a ceiling and an overhead rest area above the cabin, and an escape slide accessible from the rest area, having an undersurface forming a portion of the ceiling and being movable between a closed position in which it forms a continuation of the ceiling and an open position in which it provides egress from the rest area to the cabin. The section of the Guidelines to which the appellant refers (C-III, 4.15 in the version of December 2007) advises examiners to avoid the formulation used in present claim 1 but gives no guidance relevant to the correct interpretation of the present claim.

Novelty

4. M4 relates to stairs which permit access between an upper and a lower deck in an aircraft. The description acknowledges that such devices were already known but suffered the disadvantage that they caused an obstruction such that they could not be provided in the region of an emergency exit from the lower deck. The solution according to the embodiment of figure 7 of M4 is a staircase which is pivotably connected at its upper end to the ceiling of the lower deck. In the event of an emergency the staircase is pivoted upwards in order to render the lower deck free of obstruction. An additional feature is that the treads (numbered 2 to

7) of the staircase may be pivoted relative to the stringers into a second position in such a way that when the stairs are in the raised position they form a closure to prevent passage of smoke.

4.1 The appellant argues that the stairs when in their lowered position but with the treads in their second position would form a slide providing an emergency escape from the upper to the lower deck. However, contrary to the assertions of the appellant M4 does not clearly and unambiguously disclose the possibility of the treads being in their second position when the stairs are in their lowered position. The actual disclosure is that when the stairs have been raised the treads may be pivoted into their second position (column 3, lines 47 to 51). As to whether the treads may remain or be placed in their second position when the stairs are in their lowered position M4 is silent. The appellant argues that since figure 7 illustrates the stairs in their lowered position and shows arrows which signify the pivoting of the treads into their second position, there is a disclosure of the combination of those two positions. Such an interpretation goes beyond the actual disclosure, however, because there is nothing which explicitly teaches that possibility.

4.2 The appellant also argues that the treads when in their second position with the stairs raised would form a continuation of the ceiling. However, it is clearly visible in figure 7 that the underside of the treads would be placed higher than the ceiling to an extent which cannot be considered as satisfying the claimed requirement of "forming a continuation of the ceiling".

4.3 A further difference between the subject-matter of present claim 1 and the embodiment of M4 figure 7 resides in the implications of the designation 'emergency escape system'. Clearly, for any previously known system to anticipate the subject-matter of claim 1 it must be either explicitly or implicitly suited to be used for escaping in an emergency. The explicit disclosure of M4 in this respect is the opposite, however, namely that in an emergency the stairs would be moved into their upper position to ensure that the lower deck is free of encumbrance detrimental to an emergency evacuation and to permit closure of the access opening by additionally pivoting the treads to prevent the passage of smoke. Although the appellant reasons that the system of M4 figure 7 nevertheless could be used for an emergency escape, the perceived relevance of that reasoning relies on the appellant's own interpretation of claim 1 which, as set out under point 3 above, the board does not accept. Moreover, the upper and lower decks are not disclosed as a rest area and a main cabin respectively.

4.4 On the basis of the foregoing the board concludes that the subject-matter of claim 1 is new with respect to M4.

Inventive step

5. The appellant's first attack on inventive step is based on the knowledge and ability of the skilled person when presented with the disclosure of M4 as closest state of the art. It reasons that the skilled person faced with the problem of providing emergency evacuation measures to satisfy regulations would realise that the stairs of

M4 could be used as an emergency exit slide. However, the teaching of M4 is that the stairs would be moved into their upward position in the event of an emergency evacuation, thereby implying that evacuation from the upper deck would be by other, presumably conventional means. Under these circumstances it seems that the problem as defined by the appellant would not arise and the skilled person would not be looking to provide an emergency escape route from the upper deck to the lower. Furthermore, the problem addressed by M4, to avoid obstruction in the region of emergency exits on the lower deck, implicitly requires that the stairs cannot be used as an emergency escape means and the appellant's reasoning runs contrary to the teaching of M4. Moreover, if the skilled person were nevertheless to attempt to use the stairs as an emergency escape means he would receive no motivation from M4 to provide a slide, particularly as the pivoting stairs having treads numbered 2 to 7 are only one part of a flight of steps including further ones numbered 8 to 11 which are not illustrated as being pivotable. Furthermore, even if the skilled person were to create a slide from the treads the undersurface still would not form a continuation of the cabin ceiling. The board therefore finds that the subject-matter of claim 1 is not rendered obvious by a combination of M4 and the knowledge and ability of the skilled person.

6. A second approach by the appellant is a combination of closest state of the art according to M4 with the teaching of M3 which relates to emergency escape systems for the outside of a building, whereby the appellant argues with reference to decision T 176/84 (OJ EPO 1986, 50) that the skilled person would combine

documents in neighbouring technical fields. In a modification of this approach the appellant considers the closest state of the art to be that acknowledged in the patent specification (paragraph [0004]), namely bunks in non-seating areas over cabin monuments such as galley areas.

- 6.1 M3 addresses the problem that previously known emergency escape systems for buildings required balconies or similar onto which the escape elements could be mounted. The solution was to provide a slide arrangement which mounts on a door which in the closed position is parallel to the wall and which pivots into a horizontal position from which the slide is deployed. In the board's judgement the skilled person faced with the problem of improving emergency escape arrangements in M4 would not consider M3 because it is *prima facie* not relevant. Firstly it relates to external emergency escape systems for buildings, not such a system in the interior of an aircraft where space and weight play a much greater role than on the exterior of a building. Secondly, the problem addressed by M3 does not exist in the teaching of M4. In this respect the board notes that according to the headnote of T 176/84 (*supra*): "The state of the art to be considered when examining for inventive step includes ... the state of any relevant art in neighbouring fields and/or a broader general field of which the specific field is part, that is to say any field in which the same problem or one similar to it arises and of which the person skilled in the art of the specific field must be expected to be aware." T 176/84 (*supra*) therefore does not support the notion that M3 would be in a neighbouring technical field and the skilled person beginning with state of the art

according to M4 would not consider it. Even if he were to do so it would not lead him to the subject-matter of present claim 1 because in each embodiment according to M3 a flap 14 is provided in addition to the slide. Application of that teaching to M4 would fail to provide the feature that the slide comprises an undersurface forming a portion of the ceiling of the cabin. The same conclusions are reached when considering the alternative state of the art acknowledged in the patent specification.

- 6.2 The board concludes from the foregoing that the subject-matter of claim 1 is not rendered obvious by the teaching of M3 in combination with either of the alternative closest states of the art chosen by the appellant.

7. In a further approach the appellant considers the subject-matter of claim 1 to be rendered obvious by a combination of the teaching of M7 with the closest state of the art according to M4. M7 relates to stairs having treads which are pivotable by a hand-operated linkage between the conventional horizontal position and a lowered position in which the treads form a continuous surface in order to ease the movement of heavy objects between the floors connected by the stairs. As already set out under point 5 above, the skilled person beginning with M4 has no cause to provide an emergency escape system between the two levels and particularly not by modifying the stairs which according to M4 are moved into a non-operative position in the case of an emergency. For that reason he would not go in search of an arrangement permitting the stairs to be converted into a slide. Even if he

were to combine the teachings of M4 and M7 he still would not arrive at the feature that the slide comprises an undersurface which in the upper position forms a continuation of the cabin ceiling. This feature is not present in M4 and does not result from M7 in which the stairs themselves are not movable. Indeed, the teaching of M7 extends no further than the provision of a mechanism for operating pivoting treads already present in the stairs of M4. Also the combination of M4 and M7 therefore fails to render the subject-matter of claim 1 obvious.

8. Since claims 2 to 11 contain all features of claim 1 the above conclusions regarding novelty and inventive step are equally applicable to those claims. Consideration of the auxiliary requests therefore is unnecessary.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Vottner

S. Crane