



Europäisches Patentamt
Beschwerdekammern

European Patent Office
Boards of Appeal

Office européen des brevets
Chambres de recours

Veröffentlichung im Amtsblatt	Ja/Nein
Publication in the Official Journal	Yes/No
Publication au Journal Officiel	Oui/Non

17

Aktenzeichen / Case Number / N° du recours : T 225/84

Anmeldenummer / Filing No / N° de la demande : 81 200 708.6

Veröffentlichungs-Nr. / Publication No / N° de la publication : 042653

Bezeichnung der Erfindung: Electric command spoiler device
 Title of invention:
 Titre de l'invention :

Klassifikation / Classification / Classement : B 64 C 13/50

ENTSCHEIDUNG / DECISION
 vom / of / du 16 July 1986

Anmelder / Applicant / Demandeur : The Boeing Company

Patentinhaber / Proprietor of the patent /
 Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56
 "Inventive step"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 225 /84

DECISION
of the Technical Board of Appeal 3.2.1
of 16 July 1986

Appellant : The Boeing Company
P.O. Box 3707
Seattle
USA - Washington 98124

Representative : Hoijtink, Reinoud
Octrooibureau Arnold & Siedsma
1 Sweelinckplein
NL-2517 GK Den Haag

Decision under appeal : Decision of Examining Division 070 of the European Patent Office dated 18.05.84 refusing European patent application No 81 200 708.6 pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : M. Huttner
Member : M. Liscourt
Member : P. Ford

Summary of Facts and Submissions

I European patent application No. 81 200 708.6 filed on 22 June 1981 and published on 30 December 1981 (publication No. 0042 653) was refused by a decision of the Examining Division of the European Patent Office dated 18 May 1984. The decision was based on Claim 1, received on 28 December 1983, and Claims 2 to 6, received on 7 September 1983.

The reasons given for the refusal were that the subject-matter of Claim 1 did not involve an inventive step and that the problem stated in the description was misleading and therefore did not meet the requirements of Rule 27(1) EPC.

The lack of inventive step was asserted having regard to the following document:

"Aircraft Engineering" Volume 35, 1963, pages 273-278 (Document D1) and general knowledge of the skilled person.

II On 10 July 1984 the appellants lodged an appeal against the decision. The appeal fee was duly paid and the statement of grounds was received on 23 August 1984.

A new main claim accompanying the statement of grounds has been filed.

The appellants argued that the skilled man, confronted with the problem of overcoming the disadvantages of a device such as the one described in D1 would not have come to the solution adopted in the device according to Claim 1.

III As a result of objections raised by the Board of Appeal during the procedure before the Board, the appellants submitted with a letter dated 3 June 1986 a new Claim 1 together with proposals for corresponding amendments to the

description. They requested that the impugned decision be set aside and a European Patent be granted on the basis of the presently effective documents. The effective Claim 1 reads as follows:

"Electric command spoiler device for use in an aircraft wherein a plurality of spoilers are deployed for both aircraft roll and speed brake operation, comprising

- a plurality of electric responsive spoiler actuators, each actuator responding to a control signal to actuate an associated spoiler to a predetermined deflection between its fully retracted and fully deployed positions;
- roll command means for producing a roll command signal representative of commanded roll upon a deflection of the roll command means;
- logic control means responsive to said roll command signals for producing actuator command signals, said logic control means including means for coupling each of said command signals to at least one of said associated spoiler actuators;
- at least two spoilers on each wing, each spoiler being independently controlled by an individual actuator;
- flap position transducer means for producing a signal representative of the aircraft's flap position;

characterised by

- a. speedbrake command means for producing a speedbrake command signal representative of a command speedbrake condition,
- b. logic control means responsive also to said speedbrake command signal and said flap position transducer produced signal for producing an individual predetermined actuator command signal for each actuator, such that the spoiler deployment in response to the roll command signal produces a predetermined roll response of the aircraft."

- IV For the original claims and description, reference should be made to publication 0 042 653.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. The question whether the description satisfies the requirements of Rule 27(1) EPC does not need to be answered since the introductory part of the description has been satisfactorily rewritten in order to disclose the problem which is solved by the device of Claim 1.
3. After examination of the citations covered by the search report, the Board is satisfied that none of them discloses electric command spoiler device including all the features stated in Claim 1.

Since this has never been disputed, there is no need for detailed substantiation of this matter. Therefore the device as set forth in Claim 1 is novel (Article 54 EPC).

4. The precharacterising portion of the new amended independent Claim 1 comprises only features also disclosed in combination in the closest prior art as demonstrated in "Aircraft Engineering", Vol. 35, No. 9, 1963 London, "Flying controls and automatic landing", pages 275 to 278. (D1).
5. In the mechanism known from D1, all the spoiler sections of one wing are actuated together and furthermore the position of the spoilers is, outside a deadzone, directly dependent on the position of the command levers i.e. speed brake and aileron.

6. According to the present application, it has been noticed that devices such as the one described in D1 suffer from the fact that, because of aerodynamic influences on the different parts of the wing, there is no predetermined relationship between the aircraft rolling moment produced by the differential operation of the spoilers and ailerons on both wings and rotation of the control wheel.
7. The solution of the problem underlying the application is based on the idea of obtaining a predetermined relationship in the aircraft rolling response with respect to control deflection.
8. It has to be considered if the device which is the subject-matter of Claim 1 involves an inventive step.
 - 8.1 Although the drawbacks of the command devices of the state of the art were apparent, none of the cited documents mentions that this situation could be remedied nor do they give any indication as to the problem the invention attempts to solve.
 - 8.2 As a consequence, none of the cited documents gives any indication of a way in which the problem would be solved and more importantly, the perception of the problem has to be considered as being the main contribution to inventive merits of the solution claimed.
 - 8.3 It follows therefore, that the way it could be solved is also not suggested by any document either and the idea of obtaining a predetermined relationship between the aircraft rolling movement produced and the differential operation of the spoilers and ailerons on both wings and rotation of the control wheel by feeding a speed brake command signal to the control means is the main step towards the solution.

- 8.4 As soon as the solution has been exposed, it falls within the normal considerations of the man skilled in the art to arrange and set the logic control means in order to obtain that a predetermined roll command signal produces a predetermined roll response and the detail of the means for obtaining this result do not need to be introduced in the main claim.
9. For the reasons exposed above in points 8.2 and 8.3 the device which is subject-matter of Claim 1 shows the required inventive step.
10. Claims 2 to 7 are also allowable because they cannot be faulted either on formal or substantive grounds.

Order

For these reasons it is decided that:

1. The decision of the Examining Division of the European Patent Office dated 18.05.84 is set aside.
2. The case is remitted to the first instance with the order to grant a European patent on the basis of the following documents:

Claims 1 to 7 received on 03.06.86

Description pages 1 and 2 received on 03.06.86

Description page 2 received on 28.12.83 (lines 1 to 8 deleted)