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D E C I S I O N
of 18 March 1999

Case Number: T 0095/97 - 3.2.1

Application Number: 89311312.6

Publication Number: 0384071

IPC: B60T 8/00

Language of the proceedings: EN

Title of invention:

Method and apparatus for increasing the service life of
aircraft multiple disc brakes

Patentee:

Aircraft Braking Systems Corporation

Opponent:

Dunlop Limited

Headword:

-

Relevant legal provisions:

EPC Art. 54(3)

Keyword:

"Alleged implicit disclosure - no"
"Novelty (yes)"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0095/97 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 18 March 1999

Appellant: Dunlop Limited
(Opponent) Silvertown House
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London SW1P 2PL (GB)

Representative: Badger, John Raymond
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Respondent: Aircraft Braking Systems Corporation
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Representative: Spall, Christopher John
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 25 November 1996
rejecting the opposition filed against European
patent No. 0 384 071 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: F. A. Gumbel

Members: P. Alting van Geusau
V. Di Cerbo

Summary of Facts and Submissions

I. The mention of the grant of European patent No. 0 384 071 in respect of European patent application No. 89 311 312.6, filed on 1 November 1989 and claiming priority of the applications US 380324 and US 312994, filed on 17 July 1989 and 21 February 1989, respectively, in the United States of America, was published on 19 January 1994.

The independent claims 1 and 9 of the patent read as follows:

"1. A brake system (10; 30) for aircraft, comprising:
first and second sets of brakes (12; 42)
associated with respective sets of wheels (1-8; 34-40)
of the aircraft;

operator controlled brake actuation means (22;
32) interconnected with said first and second sets of
brakes (12; 42) for allowing an operator to regulate
application and release of brake pressure at said
brakes;

wheel speed sensing means (20; 46) associated
with said wheels (1-8; 34-40) for producing a wheel
speed signal indicative of instantaneous speed of the
aircraft; and

brake selection means (20-26; K1-K3)
interconnected between said first and second sets of
brakes (12; 42) and said wheel speed sensing means (20,
46) for enabling said first set of brakes and
inhibiting said second set of brakes when said speed of
the aircraft is below a first predetermined threshold
speed, whereby timing means (78) are interconnected
with said wheel speed sensing means (20; 46) and brake

selection means (20-26; K1-K3), said timing means (78) being actuated by said wheel speed sensing means (20; 46) when said speed of the aircraft is below said threshold speed, said timing means (78) controlling said brake selection means (20-26; K1-K3) to enable said first set of brakes and to inhibit said second set of brakes when said speed of the aircraft is below said threshold speed for a predetermined period of time."

"9. A brake system (10; 30) for aircraft, comprising:

 first and second sets of brakes (12; 42)

associated with respective sets of wheels (1-8; 34-40) of the aircraft;

 operator controlled brake actuation means (22; 32) interconnected with said first and second sets of brakes (12; 42) for allowing an operator to regulate application and release of brake pressure at said brakes;

 wheel speed sensing means (20; 46) associated with said wheels (1-8; 34-40) for producing a wheel speed signal indicative of instantaneous speed of the aircraft; and

 brake selection means (20-26; K1-K3) interconnected between said first and second sets of brakes (12; 42) and said wheel speed sensing means (20, 46) for enabling said first set of brakes and inhibiting said second set of brakes when said speed of the aircraft is below a first predetermined threshold speed, wherein said brakes have associated brake valves (44) for application and release of brake pressure, said operator controlled actuation means (22; 32) being interconnected with said brake valves (44) for controlling a metering of brake pressure from said brake valves (44) to said brakes (12; 42); and antiskid

control means (48-52) interposed between said brake valves (44) and said brakes (12; 42) for selectively controlling application of brake pressure to said brakes (12; 42) from said brake valves (44) as a function of braking activity of the associated wheels."

II. Notice of opposition was filed on 14 October 1994 on the grounds of Article 100(a), (b) and (c) EPC. In respect of an alleged lack of novelty of the subject-matter of claim 9 the opposition was in particular supported by the document:

A1: EP-A-0 329 373.

III. By a decision announced at oral proceedings held on 30 October 1996 and posted on 25 November 1996 the Opposition Division rejected the opposition.

Since only the lack of novelty of the subject-matter of claim 9 had been substantiated in writing and orally during the oral proceedings the further grounds of opposition mentioned in the notice of opposition did not have to be considered by the Opposition Division.

The Opposition Division was of the opinion that document A1, which constituted an Article 54(3) EPC document and could only be considered in so far as novelty of the subject-matter of claim 9 was concerned, neither explicitly nor implicitly disclosed the presence of anti-skid means.

IV. On 23 January 1997 a notice of appeal was lodged against that decision together with payment of the appeal fee.

In its statement of grounds of appeal, filed on 4 April 1996, the appellant essentially argued that lack of novelty of the subject-matter of claim 9 was apparent to the skilled person when taking account of the implicit disclosures of document A1.

- V. In a communication issued in preparation for oral proceedings, the Board held that, since the opposition and the present appeal were substantiated only in respect of lack of novelty of the subject-matter of claim 9, it could restrict itself to investigating whether claim 9 defined novel subject-matter.

The Board further pointed out that an alleged disclosure could only be considered "implicit" if it was immediately apparent to the skilled person that nothing else other than the implicit feature formed part of the subject-matter disclosed. In this respect the evidence presented in the present case by the Appellant did not appear sufficient to substantiate such implicit disclosure.

- VI. A statutory declaration by the representative of the appellant, Mr J. R. Badger, together with exhibits A and B, and a statutory declaration by Mr Alan Tibbats with attached Exhibits A to F were filed on 18 February 1999 and 3 March 1999, respectively.

- VII. Oral proceedings were held on 18 March 1999.

- VIII. In support of its request for revocation of the patent due to lack of novelty of the subject-matter of claim 9, the appellant essentially relied upon the following submissions:

It was implicit to a person skilled in the art of aircraft braking systems that an anti-skid control was intended in A1. Whilst in principle it was not impossible for the selective braking disclosed in A1 to be used without anti-skid, that merely reflected a theoretical possibility, because, in practice, for an aircraft of a size having a number of brakes sufficient to allow for use of selective braking and in particular for larger aircraft having carbon-disc brakes for which selective braking was particularly advantageous, the provision of anti-skid was implicitly understood by a person skilled in the art to be an essential requirement. In this respect also the further evidence recently submitted, showed that in conventional larger aircraft anti-skid braking control was exclusively applied.

Furthermore, document A1 itself also clearly suggested to the skilled person that anti-skid braking was envisaged. In column 3, lines 27 to 31 reference was made to individual control of each of the electro hydraulic valves by an electronic control unit 50 whilst the electronic control unit received input from multiple wheel speed transducers. Individual control of the brakes on the basis of its wheel speed clearly implied anti-skid control because for selective braking one wheel speed transducer only would suffice.

The Opposition Division had concluded that the single difference between the brake system defined in claim 9 and that known from A1 was the presence of anti-skid control means. The brake system of claim 9 lacked novelty since the anti-skid control means were implicit to the skilled person when taking into account the full

context of the system disclosed in A1.

- XI. The respondent requested rejection of the appeal and its arguments may be summarised as follows:

It was accepted that aircraft have conventionally been fitted with anti-skid braking systems. However, such a fact did not support the argument that it was implicit, from a consideration of A1, for this known aircraft braking system to necessarily include anti-skid control. An alleged disclosure might only be considered "implicit" if it was apparent to the skilled person that nothing other than the alleged implicit feature formed part of the subject-matter disclosed. Since anti-skid was not necessary for the functioning of the selective braking in A1, and since A1 did not give the slightest hint that the electro-hydraulic valves in this known selective braking system acted as anti-skid valves, the appellant's submissions failed to provide convincing evidence that document A1 directly and unambiguously disclosed that feature. For these reasons the brake system in accordance with claim 9 should be considered novel and consequently the appeal should be rejected.

Reasons for the Decision

1. The appeal is admissible.
2. *Procedural considerations*
 - 2.1 Rule 55(c) in conjunction with Rule 56(1) EPC requires

that every ground of opposition alleged in the notice of opposition be supported by "facts, evidence and arguments" within the nine-month opposition period. Since only lack of novelty of the subject-matter of claim 9 of the patent in suit has been substantiated, the other grounds of opposition under Article 100 EPC crossed in the boxes on the EPO Form 2300.1 (sheet for the notice of opposition) must be disregarded. They did not in fact play any role during the opposition and appeal proceedings.

2.2 Only lack of novelty under Article 100(a) EPC of the subject-matter of claim 9 of the patent in suit was substantiated in relation to a prior art document to be considered under Article 54(3) EPC. Hence the Board sees no reason to go any further than investigating whether claim 9 defines novel subject-matter vis-à-vis that document.

2.3 These conclusions have not been contested by the appellant.

3. *Novelty of the subject-matter of claim 9*

3.1 The Opposition Division established that the priorities relied upon by the present patent and the earlier European patent application A1 were validly claimed. The Board has come to the same conclusion and therefore document A1 is deemed to be comprised in the state of the art for the consideration of novelty under the provisions of Article 54(3) EPC for the contracting states DE, FR, GB and IT, which it designates in common with the contested patent.

- 3.2 The Board and the parties are in agreement that document A1 explicitly discloses all the features of claim 9 with the exception of the last full sentence relating to the antiskid control means.
- 3.3 In accordance with the established case law of the Boards of appeal, a prior art document anticipates the novelty of claimed subject-matter if the claimed subject-matter is directly and unambiguously derivable from that document, including any features implicit to a person skilled in the art. However, an alleged disclosure can only be considered "implicit" if it is immediately apparent to the skilled person that nothing other than the alleged implicit feature formed part of the subject-matter disclosed.
- 3.4 Considering whether A1 implicitly discloses the incorporation of anti-skid control means in the selective aircraft braking system disclosed in A1, it is to be noted that this known aircraft braking system clearly is operable without anti-skid control means. Therefore it cannot be maintained that the anti-skid control is an absolutely necessary feature of the brake system disclosed in A1.

The appellant submitted during the oral proceedings that the inclusion of anti-skid control was self-evident to the skilled person for the reason that the system was intended for larger aircraft, normally having anti-lock control braking. In particular for an aircraft of the size having a number of brakes sufficient to allow for use of the selective braking disclosed in A1, and more particularly for larger aircraft having carbon disc brakes for which selective

braking was particularly advantageous, the provision of anti-skid would be seen by the person skilled in the art to be a notorious requirement.

- 3.5 It is not disputed that most larger aircraft have anti-skid control means and in so far the additional documents, filed before the date of oral proceedings (see point VI) as proof of this fact, do not have to be considered in detail for their relevance in this respect.

The disclosure of A1 essentially relates to disabling of a number of brakes during taxiing which is unrelated to anti-skid considerations. Independent claim 1, which defines the invention disclosed in A1 in its broadest terms, also does not limit the invention to any particular braking system control, to particular brake disc material or to a particular size of the aircraft. Since there is no perceivable technical reason following from the aircraft braking system disclosed in A1 to include of necessity anti-skid control, the skilled person did not have any reason for being positively prejudiced in the direction of anti-skid control when interpreting the invention disclosed in A1.

In this respect attention can also be drawn to the patent in suit in which the invention claimed in its broadest form (claim 1) does not mention anti-skid braking control. The inclusion of an anti-lock control means is claimed in preferred embodiments (claims 5 and 6).

- 3.6 The appellant specifically referred to the text in

column 3, lines 27 to 31 of A1, which in its opinion clearly hinted at the inclusion of anti-skid control in the system disclosed in A1 because of the reference to individual control and multiple wheel speed transducers, obviously relating to wheel speed sensing of each separate wheel. Moreover, A1 further referred to the inclusion of various conventional system components (column 3, lines 20 to 26).

The Board cannot accept this conclusion. Considering the passage in the description of A1 in more detail, it is stated that the individual control of each of the hydraulic valves for the wheel brakes is provided by an electronic control unit and that the unit receives input from the pilot's brake pedal transducers, wheel speed transducers and the brake temperature sensors. In the context of the aircraft braking system for selectively disabling a brake or brakes (see claim 1 of A1), individual control of the hydraulic valves for the wheel brakes is not necessarily linked to anti-skid control because for selectively disabling a brake or brakes individual control of the valves for the brakes may be applied to select the brake or brakes to be disabled.

Furthermore, it cannot be inferred from the disclosure of A1 that each wheel has a wheel speed transducer. In order to measure the speed of an aircraft, in particular when the aircraft is not moving in a straight line, multiple wheel speed sensors could be used to determine the speed of the aircraft in a more reliable manner than would be possible when the speed was determined on the basis of one single speed sensor.

In as far as it is mentioned in the description of A1 that various conventional system components can be provided (column 3, lines 20 to 26) this cannot in itself be considered to suggest a requirement or necessity for an anti-skid control. In the Board's opinion, such a statement merely indicates that the system disclosed in A1 is a self-contained system that can be used together with the conventional system components.

3.7 Therefore the Board comes to the conclusion that the evidence and arguments presented by the appellant for substantiation of the allegation that the inclusion of anti-skid control means in the system disclosed in A1 is implicit does not fulfill the condition that nothing else other than the alleged implicit feature formed part of the subject-matter disclosed. The subject-matter of claim 9 of the patent in suit is therefore deemed novel with regard to the disclosure of document A1.

3.8 The other documents cited in the opposition proceedings and opposition-appeal proceedings were used for interpretation of the disclosure of A1 in an attempt to prove the point of implicit disclosure raised by the appellant. None of these document was presented as evidence of lack of novelty of the subject matter of claim 9 or indeed is suitable to put its novelty in doubt.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

S. Fabiani

F. Gumbel