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**Datasheet for the decision  
of 18 December 2007**

**Case Number:** T 0359/06 - 3.2.06

**Application Number:** 96935504.9

**Publication Number:** 0859132

**IPC:** F01N 3/20

**Language of the proceedings:** EN

**Title of invention:**

Exhaust emission control apparatus for internal combustion engine

**Patentee:**

Toyota Jidosha Kabushiki Kaisha

**Opponent:**

PEUGEOT CITROEN AUTOMOBILES SA

**Headword:**

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**Relevant legal provisions:**

EPC Art. 123(2), (3), 83  
RPBA Art. 13(1)

**Relevant legal provisions (EPC 1973):**

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**Keyword:**

"Amendments to the appellant's case - not admissible"  
"Request filed during oral proceedings - not admissible"

**Decisions cited:**

T 0409/91, T 0435/91, T 0397/01

**Catchword:**

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Case Number: T 0359/06 - 3.2.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.06  
of 18 December 2007

**Appellant:** Toyota Jidosha Kabushiki Kaisha  
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**Representative:** TBK-Patent  
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**Respondent:** PEUGEOT CITROEN AUTOMOBILES SA  
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F-78943 Vélizy Villacoublay Cedex (FR)

**Representative:** Fernandez, Francis Lionel  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 5 January 2006  
revoking European patent No. 0859132 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** P. Alting Van Geusau  
**Members:** G. Pricolo  
K. Garnett

## Summary of Facts and Submissions

- I. The appeal is from the decision of the Opposition Division posted on 5 January 2006 revoking European patent No. 0 859 132, granted in respect of European patent application No. 96 935 504.9.
- II. Claim 1 as granted reads as follows:
- "1. An exhaust gas purifying system for an internal combustion engine (10,81), comprising: a trapping means for trapping polluting components of the exhaust gas emitted from the internal combustion engine (10,81); a removing means for regeneration said trapping means by removing the polluting component trapped in said trapping means, characterized by a running condition predicting means for predicting the running condition of the vehicle after the present time; an exhaust gas property predicting means for predicting the property of the exhaust gas emitted from the internal combustion engine (10,81) based on the vehicle running condition predicted by said running condition prediction means; a regeneration timing determining means for determining the timing when said trapping means is regenerated by said removal means in accordance with the exhaust gas property predicted by said exhaust gas property predicting means; and a regeneration executing means for executing the regeneration of said trapping means by said removing means when the timing determined by said regeneration timing determining means occurs."
- III. The opposition division considered that the patent in suit disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person

skilled in the art (Article 100(b) EPC). However, the presence in claim 1 as granted of the term "polluting", instead of the term "poisonous" in claim 1 of the application as filed, constituted added subject-matter (Article 100(c) EPC). The opposition division considered that the replacement of the term "polluting" by "poisonous" in claim 1 according to the first and second auxiliary requests of the patent proprietor was allowable under Article 123(3) EPC because it restricted the extent of protection. Indeed, not all polluting components were poisonous but all poisonous components were certainly polluting. However, the first auxiliary request was not allowable because it included granted dependent claims 2 and 6, which also contained added subject-matter. The second auxiliary request was not allowable because the subject-matter of claim 1 was not novel in the light of the teaching of document:

A2: US-A-5319930.

IV. The appellant (patent proprietor) lodged an appeal on 8 March 2006. Payment of the appeal fee was recorded on the same day. With the statement setting out the grounds of appeal, received at the EPO on 15 May 2006, the appellant requested that the decision be set aside and the patent maintained as granted or in amended form (first and second auxiliary requests).

V. In a communication accompanying the summons to oral proceedings pursuant to Article 11(1) of the Rules of Procedure of the Boards of Appeal, the Board expressed doubts concerning the conclusion reached by the Opposition Division in respect of sufficiency of disclosure. Claim 1 as granted generally referred to "a

*running condition predicting means for predicting the running condition of the vehicle after the present time*" and to *"an exhaust gas property"*. In the Board's preliminary view, it appeared that the claimed invention could only be performed (i) if the vehicle running condition was predicted based on information provided by a car navigation system and a vehicle information and communication system receiver and (ii) if the exhaust gas property was either the temperature of the trapping means or the temperature of the exhaust gas, depending on the circumstances, as disclosed in relation to the embodiments of Figs. 1 and 8.

Furthermore, the Board pointed out that it had to be discussed whether the presence in claim 1 of the term "polluting" constituted an inadmissible extension of the disclosure of the application as filed, which exclusively referred to "poisonous" components.

VI. By letter dated 16 November 2007, in reply to the communication of the Board, the appellant filed a new main request and first to third auxiliary requests for maintenance of the patent in amended form.

VII. Oral proceedings, at the end of which the decision of the Board was announced, took place on 18 December 2007.

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed with the letter dated 16 November 2007 alternatively on the basis of the first or second auxiliary requests filed therewith alternatively on the basis of the third auxiliary request filed during the oral proceedings.

The respondent (opponent) requested that the appeal be dismissed.

VIII. In addition to the features of claim 1 as granted, claim 1 according to the appellant's main request includes the following feature:

"... at least one of the car navigation system (141) and a vehicle information and communication system receiver (142) ...".

Claim 1 according to the first auxiliary corresponds to claim 1 according to the main request in which the term "polluting" is replaced by "poisonous".

In claim 1 according to the second auxiliary request, the expression "the exhaust gas property" is replaced by "the temperature of the trapping means in case of a gasoline engine or the temperature of the exhaust gas in case of a diesel engine".

Claim 1 according to the third auxiliary request reads as follows:

"1. An exhaust gas purifying system for a diesel engine (81), comprising: a particulate filter (814) for trapping particulates of the exhaust gas said particulates being emitted from the diesel engine (81); a removing means for generating said particulate filter by removing the particulates trapped in said particulate filter, wherein said removing means is an exhaust gas temperature raising means (810) for raising the exhaust gas temperature for regenerating said particulate filter by burning off particulate trapped

in said particulate filter; characterized by a running condition predicting means comprising a car navigation system (141) and a vehicle information and communication system receiver (142) for predicting the running condition of the vehicle after the present time; an exhaust gas temperature predicting means for predicting the temperature of the exhaust gas emitted from the diesel engine (81) based on the vehicle running condition predicted by said running condition prediction means; a regeneration timing determining means which is an exhaust gas temperature raising timing means for determining the timing when said particulate filter is regenerated by said exhaust gas temperature raising means in accordance with the exhaust gas temperature predicted by said exhaust gas temperature predicting means; and a regeneration executing means for executing the regeneration of said particulate filter by raising the exhaust gas temperature by said exhaust gas temperature raising means when the exhaust gas temperature raising timing determined by said exhaust gas temperature raising time determining means occurs."

*[Note: the term "generating" in the preamble of claim 1 is clearly erroneous and should read "regenerating" as acknowledged by the appellant during oral proceedings]*

IX. The arguments of the appellant in support of its requests can be summarized as follows:

A substance was poisonous for an organism not merely by its nature but depending on the amount applied. A substance was a pollutant, also depending on the amount applied, if it was harmful to human beings, animals, plants, or other organisms as well as the environment.

Since virtually all substances emitted by an internal combustion engine were both poisonous and polluting depending on the amount applied, the terms "polluting" and "poisonous" had an identical meaning for the skilled person in the present context.

The patent in suit disclosed two specific embodiments of the claimed exhaust gas purifying system and therefore disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. To fulfil the requirements of Article 83 EPC it was not necessary to include specific features of the embodiments in the independent claim. The Board's objection in respect of sufficiency of disclosure was in fact related to the requirements of Article 84 EPC, which however did not constitute a ground for opposition.

In the patent in suit the temperature of the exhaust gas and the temperature of the trapping means were given the same meaning and therefore it was clear that each of these temperatures was to be regarded as a property of the exhaust gas.

The claims according to the third auxiliary request were limited to the embodiment of Fig. 8, relating to an exhaust gas purifying system for a diesel engine, and included all the essential features of this embodiment. In particular, it was clear that the essential features of the running condition predicting means were the car navigation system and the vehicle information and communication system. The skilled person would recognize that the other features of the running condition predicting means described in the



embodiment, such as the kind of information relative to the running condition which was predicted, were not essential and accordingly could be left out of the combination of features recited by claim 1.

- X. The respondent submitted that the terms "poisonous" and "pollutant" did not have the same meaning. A substance harmful for an organism by its nature and by its dose was classified as a poison but not necessarily as a pollutant. The term "pollutant" was in fact usually associated with the notion of soiling or degradation. Moreover, it was usual in the present technical field to designate a substance as "poisonous" if it was harmful for the catalyst, even if the substance was not poisonous for living organisms. Therefore, the term "polluting" in claim 1 constituted added subject-matter, and replacing "polluting" with the original wording "poisonous" was not permissible under Article 123(3) EPC because poisonous substances did not form a subclass of the general class of polluting substances. Nor was it permissible under Article 123(3) EPC to replace the term "exhaust gas property" by "the temperature of the trapping means in case of a gasoline engine or the temperature of the exhaust gas in case of a diesel engine" because the temperature of the trapping means was not a property of the exhaust gas.

Claim 1 according to the third auxiliary request included features taken from the description of the particular embodiment according to Fig. 8. However, claim 1 only included some of the features of this embodiment and not the totality of features which were disclosed in combination. In particular, the running condition predicting means included other components in

addition to the car navigation system and the vehicle information and communication system receiver mentioned in claim 1. Moreover, the latter fetched specific items of information which were not recited by claim 1.

## **Reasons for the Decision**

### 1. *Main, first and second auxiliary requests*

1.1 The main request and the first and second auxiliary requests were filed on 16 November 2007, about one month in advance of the date of oral proceedings (18 December 2007). These requests were filed in reaction to the objection of insufficient disclosure raised by the Board in the communication accompanying the summons to oral proceedings. Nevertheless, they constitute an amendment to the appellant's case which may be admitted and considered at the Board's discretion pursuant to Article 13(1) of the Rules of Procedure of the Boards of Appeal (OJ 11/2007).

1.2 The appellant alleged that the skilled person would consider that the meaning of "polluting" in the specific context of claim 1 was identical to that of the term "poisonous" used in the application as filed. The appellant did not file evidence in support of this argument but referred to the definitions of "poisonous" and "pollutant" given by "Wikipedia", which, in particular, mentions Paracelsus's principle that *"...everything is a poison, there is poison in everything; only the dose makes a thing not a poison"*, and cites the German Penal Code (StGB), from which it was said to follow that a specific substance cannot automatically

be assigned to the category of pollutant or be excluded therefrom, in which respect the relative quantity and the environmental circumstances are important. The Board is willing to accept that these definitions may well apply in a general context but they do not contradict the respondent's view, which is shared by the Board, that the terms "pollutant" and "poisonous" are normally used for classifying a substance independently of the dose at which it would cause the harmful effect. Some substances, such as the toxin of *amanita phalloides*, mentioned by the respondent, are indeed classified as poisonous, but not as pollutants. Other substances are sometimes regarded as pollutants (e.g. carbon dioxide) whilst not being regarded as poisonous. Some substances are normally never classified either as poisonous or as polluting, even if they might be either poisonous or polluting or both, depending on the dose (e.g. table salt, which might be poisonous depending on the dose and the circumstances, or pollutant, e.g. for freshwater). Furthermore, the Board accepts the respondent's view that in the present technical field of exhaust gas purifying systems it is usual to designate as "poisonous" substances that are harmful for the system itself (in particular for the catalyst) independently of their effect on organisms or the environment.

The above shows that the area defined by "poisonous component" and the area defined "polluting components" do not have clear boundaries when reference is made to the general common understanding of these terms. Moreover, even considering these terms in the limited context of claim 1, there is no clear basis for coming to the conclusion that they define identical areas.

Accordingly, it is not immediately apparent that the presence of the term "polluting" in claim 1 of the main request instead of the term "poisonous" disclosed in the application as filed does not result in new technical information, contrary to the requirements of Article 123(2) EPC. Analogously, it is not immediately apparent that the replacement of "polluting" by "poisonous" in accordance with the first auxiliary request does not extend the scope of protection, contrary to the requirements of Article 123(3) EPC.

- 1.3 Claim 1 according to the main and first auxiliary requests recites "an exhaust gas property predicting means for predicting the property of the exhaust gas emitted from the internal combustion engine". In the communication annexed to the summons to oral proceedings (see above point V), the Board expressed a preliminary view according to which the invention could not be carried out if the exhaust gas property was something different from the temperature of the trapping means or the temperature of the exhaust gas. The term "exhaust gas property" is indeed very general and clearly not limited to a temperature value, but includes chemical, physical and mechanical properties such as chemical composition, density, viscosity, etc. In fact, as submitted by the respondent, the temperature is normally not regarded as a property of a gas; rather, the properties of a gas are specified for a specific temperature. The appellant replied to the Board's objection essentially by stating that sufficiency of disclosure was to be assessed having regard to the patent as a whole, which disclosed two specific embodiments of the claimed exhaust gas

purifying system, and not only to the general wording of the independent claim. In the present case, however, the reasons for the Board's objection are that the invention as claimed extends to technical subject-matter not made available to the person skilled in the art by the patent in suit (Article 83 EPC):

the patent discloses two isolated examples (embodiments of Figs. 1 and 8), but fails to disclose, taking into account the relevant common general knowledge, any technical concept fit for generalisation, which would enable the skilled person to achieve the envisaged result without undue difficulty within the whole ambit of the claim containing the general definition of exhaust gas property (see e.g. T 409/91; T 435/91). It is noted that it was not contested by the appellant that no information was given about how to perform the claimed invention successfully if the exhaust gas property was something different from a temperature.

- 1.4 In claim 1 according to the second auxiliary request the expression "the exhaust gas property" is replaced by "the temperature of the trapping means in case of a gasoline engine or the temperature of the exhaust gas in case of a diesel engine". Although the Board accepts that the temperature of the trapping means is related to the temperature of the exhaust gas, it is not apparent that these temperatures are the same. In particular, as submitted by the respondent, they might be very different during transitory phases such as at the start of the engine when the trapping means is still cold and the gases are hot. The appellant submitted that in the patent in suit the temperature of the exhaust gas and the temperature of the trapping means were given the same meaning and therefore it was

clear that each of these temperatures was to be regarded as a property of the exhaust gas. However, the passage referred to by the appellant (par. [0008] of the patent in suit) is concerned with the description of the prior art and discloses that the execution of the regeneration operation can be made dependent on the temperature of the absorbent (i.e. the trapping means) or the temperature of the exhaust gas. This merely means that both temperatures can be used for controlling the regeneration operation, not however that they are identical or that the regeneration is performed in the same manner independently of which one of these two temperatures is selected. Accordingly, the amendment in accordance with the second auxiliary request gives rise to an objection under Article 123(3) EPC.

1.5 It follows that the amendments to the appellant's case in accordance with the main, first and second auxiliary requests give rise to a series of plausible objections under Articles 123(2) and (3) and Article 83 EPC. Under these circumstances, the Board decides to exercise its discretion pursuant to Article 13(1) Rules of Procedure of the Boards of Appeal not to admit these requests into the proceedings.

## 2. *Third auxiliary request*

2.1 The third auxiliary request was filed during the oral proceedings, thus at a very late stage of the appeal proceedings. According to the case law of the Boards of Appeal, it is *inter alia* appropriate to exercise the discretion to admit such late filed requests (Article 13(1) RPBA) if the introduced amendments are

clearly allowable and thus can be easily dealt with during oral proceedings by the other parties and by the Board (see e.g. T 397/01, point 1).

2.2 The wording of claim 1 has been extensively amended to restrict the claimed subject-matter to an exhaust gas purifying system for a diesel engine as disclosed in the embodiment of Fig. 8. Several of the amendments introduce wording which is present neither in the claims of the application as filed nor in the claims of the granted patent. This per se already renders it difficult to assess, during the oral proceedings, whether claim 1 meets the requirements of Article 123(2) and (3) EPC.

2.3 More importantly, however, claim 1 has been restricted to a particular embodiment without introducing all the features disclosed in combination in said embodiment. In particular, a car navigation system and a vehicle information and communication system receiver is mentioned in the description of the application as filed in connection with the two embodiments disclosed, the first relating to a gasoline engine (see Fig. 1 and col. 4, line 58 to col. 5, line 2 of the application as published) and the second relating to a diesel engine (see Fig. 8 and col. 9, lines 52 to 55 of the application as published). In both cases the information fetched by the car navigation system and the vehicle information and communication system receiver, and used by the running conditions predicting means, is specific information such as travelling distance, road type, altitude, traffic congestion forecast, traffic control information, etc. (see col. 5, lines 11 to 19 and col. 11, lines 5 to 13 of the

application as filed). Since it is not immediately apparent that this specific information is not functionally interlinked with the other features of the embodiment relating to a diesel engine, and thus can be left out from the wording of claim 1 without contravening Article 123(2) EPC, it cannot be said that the introduced amendments are clearly allowable.

2.4 Therefore, the third auxiliary request is also not admitted into the proceedings.

## **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

M. Patin

P. Alting van Geusau