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**D E C I S I O N**  
of 29 November 1995

**Case Number:** T 0562/94 - 3.5.2

**Application Number:** 87906129.9

**Publication Number:** 0287585

**IPC:** F41G 5/08

**Language of the proceedings:** EN

**Title of invention:**  
Gun fire control system

**Patentee:**  
Hughes Aircraft Company

**Opponent:**  
Hollandse Signaalapparaten B.V.

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 107, 56

**Keyword:**  
"Opponent not adversely affected; agreement to amended patent"  
"Inventive step - yes"

**Decisions cited:**  
G 0001/86, G 0009/91, G 0010/91, G 0009/92, J 0012/85,  
T 0156/90, T 0234/86

**Catchword:**  
-



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Case Number: T 0562/94 - 3.5.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.2  
of 29 November 1995

**Appellant I:**  
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**Appellant II:**  
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**Representative:** -

**Decision under appeal:** Interlocutory decision of the Opposition Division  
of the European Patent Office posted 1 July 1994  
concerning maintenance of European patent  
No. 0 287 585 in amended form.

**Composition of the Board:**

**Chairman:** W. J. L. Wheeler  
**Members:** R. G. O'Connell  
G. Davies

## Summary of Facts and Submissions

I. Both the proprietor of European patent No. 0 287 585 and the opponent to its grant filed appeals against the interlocutory decision of the opposition division refusing the requests of the proprietor that the patent be maintained unamended or alternatively that the patent be maintained as amended in accordance with a first auxiliary request, but concluding that the patent as amended in accordance with the second auxiliary request of the proprietor and the invention to which it related met the requirements of the EPC. At the close of the first instance proceedings the opponent, while requesting revocation on grounds of lack of inventive step of the patent as granted and maintaining opposition on grounds of lack of inventive step to grant of a patent as amended in accordance with the first auxiliary request of the proprietor, withdrew its opposition to grant of a patent as amended in accordance with the second auxiliary request of the proprietor.

II. The patent as granted has ten claims. Claim 1 is worded as follows:

"1. A gun fire control system for directing a launcher (12) of a projectile at a target (16), comprising:

- means (54, 62) for commanding a firing of said projectile;

- means (32, 36, 48, 50, 56, 58, 60, 64-68) for directing said launcher towards said target (16), said launcher being pivotally supported about a first axis and a second axis;

- motor means (32, 36) for positioning said launcher;

- optical sighting and ranging means (24, 26, 28, 30) having an orientation locked to an orientation of said launcher for outputting target coordinate signals; wherein

- said directing means (32, 36, 48, 50, 56, 58, 60, 64-68) includes predicting means (84) responsive to the target coordinate signals of said sighting and ranging means (24, 26, 28, 30) for predicting a future track of said target (16), and offsetting means (82) responsive to a firing command of said commanding means (54, 62) for offsetting said launcher relative to a sight line to said target (16) for interception of said target (16) by a projectile fired from said launcher; and

- said directing means (32, 36, 48, 50, 56, 58, 60, 64-84) includes means (64) responsive to the firing command of said commanding means (54, 62) for disconnecting said sighting and ranging means (24, 26, 28, 30) from said predicting means (84) during an offsetting of said launcher, said offsetting being based on target track obtained prior to the firing command;

characterized by

- gyro means (38, 40) locked to said launcher (12) for providing rate signals designating rates of rotation of said launcher about said first axis and said second axis; and

- said offsetting means (82) develops further rate signals combined with said rate signals of said gyro means (38, 40) for driving said motor means (32, 36) during an offsetting of said launcher (12)."

Claims 2 to 10 are dependent on claim 1.

III. The following documents cited in support of the opposition remain relevant to the present appeal:

D1: US-A-3 766 826,

D2: US-A-3 575 085.

IV. Oral proceedings were held before the board on 29 November 1995.

V. On the issue of the admissibility of the appeal of the opponent, the latter *qua* appellant argued essentially as follows:

Earlier decisions of the EPO Boards of Appeal on the interpretation of EPC Article 107, first sentence, should be re-evaluated in the light of G 1/86 (OJ EPO 1987, 447), which required all parties to proceedings to be treated equally, and in the light of G 9/91 (OJ EPO 1993, 408) and G 10/91 (OJ EPO 1993, 420), which emphasised the adversarial nature of opposition proceedings, the need for the deciding body to adopt a neutral position and the limits of the investigative power of the opposition division once an opposition had been withdrawn; and particularly in view of G 9/92 (OJ EPO 1994, 875), published after the first instance oral proceedings in the present case, which imposed a severe restriction on the relief available to a party who was not also an appellant.

Given that, at the end of the first instance proceedings, the parties had reached an agreement that the patent should be maintained in amended form in accordance with the proprietor's second auxiliary request, the opposition division was no longer obliged or empowered to decide that the amended patent met the requirements of the EPC. In order to comply with

Rule 68(2) EPC the opposition division should have issued a declaratory decision without reasons as to the merits, to the effect that, the parties having reached an agreement, the opposition no longer existed; neither party would have been adversely affected and neither party would have had a right of appeal. The inappropriate decision actually issued by the opposition division did not comply with Rule 68(2), since absent opposition there was no basis for reasoning that the patent met the requirements of the EPC; hence the decision involved a substantial procedural violation.

A ruling by the board that, in the present case where the parties had reached agreement, only the proprietor had a right of appeal, the opponent being limited to respondent status with the resultant negative consequences following from G 9/92 would encourage stubborn behaviour on the part of opponents in future.

VI. On this issue of admissibility of the opponent's appeal, the proprietor *qua* respondent argued essentially as follows:

The opponent admitted that in the first instance oral proceedings the opposition had been withdrawn as far as the proprietor's second auxiliary request was concerned. In these circumstances it was not open to the opponent to now file an appeal since it was clearly not adversely affected by the decision of the opposition division, given that the opponent had consented to it.

VII. On the merits of the appeal of the proprietor, the latter *qua* appellant argued essentially as follows:

Starting from the agreed closest prior art D1, which corresponded to the preamble of claim 1, i.e. a gun having a rigid coupling between sight and gun and having

an offsetting phase in which the gun was moved to an offset position relative to a target sight line prior to firing with resultant loss of sight of the target, the problem addressed by the opposed patent was to stabilise the gun, when it was mounted on a moving vehicle e.g. a tank; cf. paragraph bridging columns 2 and 3 of the patent, and to do this in a way which was both simple and compatible with the need for an offsetting phase.

It was only on the basis of an ex post facto analysis that one could argue that the skilled person would seek to combine the teaching of D2 with that of D1 to solve the problem, but even if he did consider D2 he would not be led to combine the teachings of the two documents in a way which lead him to arrive at the solution specified in claim 1. D2 described a system which was radically different from the D1 system; D2 taught a squinting system in which the gun and the sight were driven independently, with the sight being permanently directed to the target and the gun being permanently angularly offset by the lead angle in order to allow immediate firing at any time. In D2 there was no necessity to take care individually of gyro signals during certain periods of time, because the gyro signals could be applied permanently as the firing operation was not subdivided into sighting/offsetting phases as was the case in D1 and in the opposed patent.

The opponent had, with knowledge of the claimed solution and otherwise without plausible motivation, combined selected features of D1 with selected features of D2 to arrive at most (but not all) features of claim 1, without taking into account the way in which these selected features were embedded in their respective different "aim-off" and "squint" systems. Most important of all, the opponent had failed to show how the skilled person would arrive at the second characterising feature

- "said offsetting means (82) develops further rate signals combined with said rate signals of said gyro means (38, 40) for driving said motor means (32, 36) during an offsetting of said launcher (12)". Such rate signals were **not** developed by the offsetting means of D1 and there was a fortiori no suggestion in either D1 or D2 that such rate signals should be combined with gyro (38,40) rate signals as specified in claim 1. In fact this manner of developing the offset drive signals was a very simple and effective way of taking platform inertial movement into account during the offsetting ("aim-off") step which was not suggested in any way in the prior art.

It was important to appreciate that the patented invention was not exhausted by the concept of simply applying gyro stabilisation to the aim-off non-mobile platform system known from D1. As was acknowledged in the patent at column 3, lines 9 to 20, gyro stabilisation of vehicle-mounted guns per se was well known so that no inventive step would be involved in employing gyro stabilisation to solve the obvious problem of vehicle movement when a gun of the D1 kind was mounted on a vehicle. This part of claim 1 could be arrived at by the skilled person by combining D1 with any one of a large number of documents. What was not obvious was the particular manner in which the gyro stabilisation was implemented as specified by the second characterising feature of claim 1, and this was not derivable by combining D1 with D2 nor any other available prior art document.

Since the impugned decision had adopted the incorrect reasoning of the opponent it was not well-founded and should be set aside.



VIII. On the merits of the proprietor's appeal, the opponent *qua* respondent argued essentially as follows:

A gun fire control system as specified in claim 1 of the opposed patent was easily obtained by combining D1 with D2. The features specified in the prior art portion of claim 1 were known from D1, the undisputed closest prior art. The characterising portion comprised two features; (A) the incorporation of gyro means, (B) the combination during the offsetting of the launcher, of the offset signals with the rate signals from the gyros to produce further rate signals which were fed to the gun motors. D2 (column 6, lines 2 to 5 and 69 to 73) disclosed clearly the use of gyros to stabilize the gun in different phases of operation, tracking and aim-off; in particular the gyros provided the signal to calculate the lead angle and the offset values. D2 thus disclosed nearly all the features of granted claim 1, including its characterising part, which could improve the prior art gun fire control system operable from a stationary or moving platform or vehicle. It followed that it was obvious for a skilled person to introduce the gyros of D2 into the system of D1 and to arrive at a control system according to claim 1. The latter therefore lacked inventive step.

The fact that the introduction of gyro means per se lacked inventive step was supported by the originally filed PCT application of the opposed patent. On page 2, line 29 to page 3, line 1 it was stated that "in the frequently encountered case wherein the gun is stabilised, rate gyroscopes used in gun stabilisation systems may be employed as elevation and lateral sensors to control the position of gun line and sight line." This sentence was suppressed in the granted patent specification, obviously because it would derogate from the inventiveness of the granted patent.

Once the gyro means was introduced for stabilising during normal tracking it would be non-obvious not to use it during offsetting as well; thus the second characterising feature of claim 1 was trivial.

The contention of the proprietor that the gun system of D2 was an entirely different design as compared with the system of D1 and that in D2 the operation was not divided into sighting/offsetting phases so that there was no necessity to take care individually of gyro signals during respective periods of time was not convincing. It would be going too far to conclude that it was not possible to combine the disclosure of D1 and D2, because a skilled person could still learn from D2 how to implement gyros in the gun system of D1. In particular he would use the teaching of Figure 4 of D2 (cf. column 6, lines 32 to 35) which showed that measured rates of rate gyros 160 were fed back to azimuth and elevation motors 106. Thus a feedback loop in azimuth and elevation of rate movements with respect to an earth-fixed axis system was obtained, which was precisely the same as the system used in the opposed patent. It followed again that such a system had gyro means 160 locked to said launcher 100 (D1) for providing rate signals designating rates of rotation of said launcher about the first and second axis, and the offsetting means 19, 20, 21 (D1) developed further signals combined with said rate signals of said gyro means, for driving said motor means 1, 2 (D1) during offsetting of said launcher. Admittedly D1 did not explicitly mention rate signals being developed in the offsetting means but from general control theory stability considerations it was a reasonable assumption that rate signals were involved in a fast control system of the kind which the opposed patent and D1 dealt with.

In this way the skilled person would be led to incorporate the teaching of D2 in D1 and thus arrive at the subject-matter of claim 1 of the opposed patent without an inventive step being involved.

- IX. The proprietor requested *qua* respondent that the opponent's appeal be declared inadmissible and *qua* **appellant** that the decision under appeal be set aside and the patent be maintained unamended.
- X. The opponent requested *qua* appellant that the decision under appeal be set aside and that the European patent No. 0 287 585 be revoked or alternatively *qua* respondent that the proprietor's appeal be dismissed.

### Reasons for the Decision

1. *Admissibility of the opponent's appeal*
- 1.1 EPC Article 107, first sentence, provides that any party to proceedings adversely affected by a decision may appeal. Hence the board has to decide whether the opponent is adversely affected by the appealed decision within the meaning of that provision as interpreted by the jurisprudence of the boards of appeal.
- 1.2 It is not disputed that the request of the opponent at the close of the first instance proceedings was that the main request and the first auxiliary request of the proprietor be refused; there was no request that the second auxiliary request of the proprietor be refused. Indeed the minutes of the first instance oral proceedings record that the opponent's representative expressly withdrew the opposition insofar as this second auxiliary request was concerned.

1.3 Since the decision which the opponent now appeals from was to refuse the main and first auxiliary requests of the proprietor and to grant the second auxiliary request of the latter, it effectively granted the opponent's request in full. In the judgement of the board the opponent was therefore not adversely affected by the decision under appeal within the meaning of EPC Article 107. In coming to this conclusion the board follows decisions T 156/90 of 9 September 1991, unpublished in the OJ EPO, and J 12/85 (OJ EPO 1986, 155), it being considered that the reasoning under point 3 of the reasons for the decision J 12/85 applies also to the case in which a decision to maintain a patent in amended form is consistent with what the opponent has requested.

1.4 The opponent's argument that the fact that its final request at the first instance proceedings was formulated prior to publication of decision G 9/92 should cause the board to find its appeal admissible is not convincing. The question whether a party is adversely affected by a decision has to be answered objectively without regard to the consequences of that finding for the parties concerned. The objective determination entails comparison of the appellant's final requests in the first instance proceedings with the appealed decision; neither the motivation for these requests nor their consequences for the appellant in further proceedings have any relevance in this determination.

1.5 The opponent's argument that the opposition division made an inappropriate decision; that following withdrawal of the opposition to the patent in amended form in accordance with the proprietor's second auxiliary request the opposition division no longer had the duty or the power to decide that the patent

satisfied the requirements of the EPC finds no support in decisions G 9/91 and G 10/91; cf. G 9/91, point 11 of the reasons.

Although the impugned decision does not give full and explicit formal reasons it is interpreted by the board as clearly implying that the opposition division, having noted the withdrawal of the opposition in respect of the proprietor's second auxiliary request, and having regard to the available prior art, concluded that the patent as amended in accordance with the proprietor's second auxiliary request satisfied prima facie the requirements of the EPC. In the judgement of the board the opposition division fulfilled its obligations both under Article 102 and under Rule 68(2) EPC in the reasons given in the appealed decision.

- 1.6 The board does not agree with the opponent's interpretation of the principle of equal treatment of the parties as expressed in decision G 1/86. At point 13 of the reasons of that decision this fundamental principle is cited as "similar situations shall not be treated differently unless differentiation is objectively justified". In the present case the objective difference between the situations of the parties is that the opponent's request was granted in full, whereas both the proprietor's main request and first auxiliary request were refused. There was no agreement between the parties on the second auxiliary request in the sense of the proprietor withdrawing his higher ranking requests. Hence the proprietor was adversely affected (cf. T 234/86, OJ EPO 1989, 79 at point 5.8 of the reasons), but the opponent was not (cf. point 1.3 above).

1.7 In the opinion of the board, for the reasons given above the appeal of the opponent does not comply with Article 107 EPC, first sentence, and it has to be rejected as inadmissible in accordance with Rule 65(1) EPC.

2. *Admissibility of the proprietor's appeal*

2.1 The proprietor's appeal is admissible (cf. point 1.6 above).

3. *Inventive step*

3.1 The main issue to be decided in the proprietor's appeal is whether the subject-matter of claim 1 of the opposed patent involves an inventive step within the meaning of Article 56 EPC.

3.2 On this issue the board essentially approves and adopts the argumentation of the proprietor; cf. point VII above.

3.3 In the opinion of the board, even if it is conceded that the person skilled in the art, seeking to solve the obvious problem of stabilisation which arises when an aim-off gun system as known from the closest prior art D1 is mounted on a vehicle, might consult D2, he would not be led to implement the system of gyro stabilisation taught therein by developing rate signals in the offsetting means of D1 to be combined with the stabilising gyro rate signals of D2 for driving the motor means during offsetting of the launcher, as specified in the second characterising feature of claim 1. The opponent's contention that D1 implicitly discloses rate signals developed in the offsetting means

is not convincing; nor has the opponent been able to point to any part of this document which makes a suggestion in this direction.

- 3.4 The board therefore concludes that the respondent opponent has not shown that the gun fire control system of claim 1 is obvious having regard to the cited prior art.
4. In the view of the board, the unamended patent and the invention to which it relates meet the requirements of the EPC.

**Order**

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

1. The appeal of the opponent is rejected as inadmissible.
2. The decision under appeal is set aside.
3. The patent is maintained unamended.

The Registrar:



M. Kienl

The Chairman:



W. J. L. Wheeler

