

OPINION UNDER SECTION 74A

Patent	EP(UK) 1429935
Proprietor(s)	Mr Roy Tansley
Exclusive Licensee	
Requester	Mr Roy Tansley, on 7 March 2007
Observer(s)	Zytek Group
Date Opinion issued	5 June 2007

The Request

1. The Requester, who is the managing director of Pro-Shift Technologies Limited (“Pro-Shift”), asks for an Opinion on whether the Patent is infringed by the Zytek Electronically Assisted Gearshift System (hereafter referred to as the Zytek EGS) produced by Zytek Systems Limited (“Zytek”).
2. Submitted with the Request was a document setting out MrTansley’s view on the infringement question. The document comprises an introduction which asserts that the Zytek EGS is “almost identical in design and operation” to Pro-Shift system protected by the Patent, an account of the origins and components of the Pro-Shift system, and an account of the Zytek EGS. The document is accompanied by supporting documentation including a Pro-Shift publicity leaflet and six further pages of information concerning the Zytek EGS some at least of which appears to have been derived from Zytek’s own websites.

Observations

3. Observations have been filed by Zytek. They are in two sections dealing with the Patent and with the Request, respectively. The first section includes “*references to other relevant patents that show the invention cannot be considered novel*” which I cannot address here because the Request is not made in respect of validity. I shall refer to the Observations concerning infringement in due course in the following discussion.

Observations in reply

4. Observations in reply have been filed by the Requester. I shall refer to them where appropriate in the course of the following discussion.

The law

5. Section 60(1) states that:

“Subject to the provisions of this section, a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say –

- (a) where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;*
- (b) where the invention is process...*
- (c) where the invention is process...”*

and Section 60(2) states that :

“Subject to the following provisions of this section, a person (other than the proprietor of the patent) also infringes a patent for an invention if while the patent is in force and without the consent of the proprietor, he supplies or offers to supply in the United Kingdom a person other than a licensee or other person entitled to work the invention with any of the means, relating to an essential element of the invention, for putting the invention into effect when he knows, or it is obvious to a reasonable person in the circumstances, that those means are suitable for putting, and are intended to put, the invention into effect in the United Kingdom.”

The documents

6. The Request includes a “history” section which states that:

- (a) “The EGS was “first publicly used by Zytek on the 04S sportscar at the 2004 Monza 1000Km race”;*
- (b) “Zytek then went on to announce the launch of the system on their website later that year (08/06/2004);*
- (c) “Following successful applications of the system they won a contract to supply every car in the A1 Grand Prix Championship in 2005” ;*
- (d) “Zytek have recently won another large contract for Acura ALMS LMP2 cars which is worth a great deal of money. (10/08/06)”, and*
- (e) “The Zytek EGS System is now being used on a great number of vehicles and continues to grow both in the UK and abroad.”*

7. Events (a), (b) and (c) occurred before the date of grant of the Patent (moreover event (a) was not, of course, in the UK) and I have no evidence that event (d) involved any relevant act relating to the Zytek EGS in the UK since ALMS is the American Le Mans Series. I can take from (e) above, however, that the Requester believes that the Zytek EGS was used, or is being used, in the UK after the date of grant of the Patent and I note that

Zytek in their Observations do not deny this.

8. The documents I have before me concerning the technical features of the Zytek EGS include an account, in Part C of the Request, of the Zytek EGS which is referred to by the Requester as “Zyteks Description of their EGS Gearshift System”. The source is cited as:

<http://www.zytekgroup.co.uk/news/zyteknewsview.php?nid=32>” and is given a date of “08/06/04” which lies between the dates of filing and grant of the Patent.

9. The Request also includes a document dated 4 April 2005 (ie before the date of grant of the Patent) that is headed: “*Zytek to supply revolutionary Electric Gearshift System for the new A1 Grand Prix series*” and includes some technical details and a further document headed: “Four downshifts in less than a second from the new Zytek gearshift system” that is dated 9 June 2004 and includes further technical details and a photograph of the hardware.

10. Although the documents in the Request are dated before the date of grant of the Patent I note that Zytek in their Observations do not say that the Zytek EGS in use since that date is different in any material way from that described in the documents.

11. Thus I consider it reasonable to proceed on the understanding that if the documents show that EGS system has all the features required by one or more claims of the Patent it follows that infringement has occurred or is still occurring.

The Patent

12. The Patent was granted on 22 March 2006 and relates to a gearshift mechanism for sequentially geared vehicles such as motorcycles, kit cars and karts. A solenoid assembly is energized by switch apparatus, eg a pair of handlebar-mounted switches, to actuate a linkage connectable to the gearshift lever to perform upward or downward gear shifts. The Patent explains, for example, that: “*When the gearshift mechanism of the invention is fitted to a motorcycle, movement of the solenoid plunger in response to operation of the solenoid assembly enables the gearshift mechanism to effectively replace human operation of the gearshift pedal.*”

13. The Patent gives three consequences of providing a motorcycle with such a mechanism, namely (a) the motorcycle can be ridden by a disabled person who is unable to operate a conventional motorcycle gearshift pedal, (b) gearshifts may be made on tight bends where the lean angle of the motorcycle would preclude a foot-operated shift and (c) the inherent quickness of operation of the gearshift mechanism makes it well suited to racing applications.

14. The Patent has two independent claims, 1 and 16. Claim 1 is directed to a gearshift mechanism *per se* while claim 16 is directed to a motorcycle having a gearshift mechanism. There is nothing in the Request to show or

suggest that the Zytek EGS has been applied to *motorcycle* gearshift mechanisms and Zytek themselves say in their Observations that their system is “Not used on motorcycles”. Thus I do not think that I need to consider claim 16 further.

15. Claim 1 is as follows with the format (and the typographical error) being preserved):

“A gearshift mechanism for a sequentially geared vehicle comprising:

a solenoid assembly (12, 14);

a solenoid plunger (18);

a switch apparatus (30, 32), having first and second switching positions, operably connected to said solenoid assembly; and

a linkage (22, 26), secured to said solenoid plunger, that is connectable to a gearshift lever (28) of the engine of a said vehicle,

wherein:

said solenoid assembly (12, 14) operates on actuation of said switch apparatus (30, 32) to its first switching position causing movement of said solenoid plunger in a first direction along the axis of said solenoid assembly; and

said solenoid assembly (12, 14) operates on actuation of said switch apparatus (30, 32) to its second switching position causing movement of said solenoid plunger in the opposite direction along the axis of said solenoid assembly,

characterised in that *the gearshift mechanism further comprises a cut-out timer (36) operably connected to said switch apparatus (30, 32) so that said cut-out timer (36) temporarily prevents combustion in said vehicle engine on actuation of said switch apparatus (30, 32) to its first switching position, and a delay timer (46) operably connected between said first switching position and said power cut-out timer (36) which delay timer (46) causes activation of the cut-out timer (36) to be delayed for a predetermined length of time after actuation of the switch apparatus (30, 32).”*

Discussion

16. I shall take the general approach of going through claim 1 of the Patent feature-by-feature and seeing what evidence there is before me that the Zytek EGS possesses those features. If the Zytek EGS does not have all the features required by claim 1 there is no infringement of the Patent.

17. In construing the claim I shall be following the most up-to-date authority on claim construction, viz. Hoffman LJ in *Kirin-Amgen and others v Hoechst Marion Roussel Limited and others* [2005] RPC 9. Following that authority, I must put a purposive construction on claim 1, interpret it in the light of the description and drawings as instructed by section 125(1) and take account of the Protocol to Article 69 of the EPC. To put it much more simply, I must

decide what a person skilled in the art would have understood the patentee to have used the language of the claim to mean. I consider that for present purposes the “person skilled in the art” is a technician with very good background technical knowledge in the field of vehicle transmissions, particularly semi-automatic sequential gearshift systems.

18. The opening part of claim 1 is (omitting the reference numbers):

“A gearshift mechanism for a sequentially geared vehicle comprising: a solenoid assembly; a solenoid plunger; a switch apparatus having first and second switching positions, operably connected to said solenoid assembly; and a linkage secured to said solenoid plunger, that is connectable to a gearshift lever of the engine of a said vehicle...”

There is no doubt that the Zytek EGS is a gearshift mechanism for a sequentially geared vehicle and that it comprises a solenoid assembly, a switch apparatus having first and second switching positions, operably connected to the solenoid assembly, and a linkage actuated by the solenoid that is connectable to a gearshift lever. I shall now address the only areas of possible doubt concerning the opening part of claim 1:-

(a) There is no explicit mention of a “plunger” in the description of the Zytek EGS but I consider that the skilled person would probably have understood the patentee to have used the term “plunger” to mean just some sort of armature, an armature being an essential feature of any electromechanical solenoid actuator. I take this view because the only passage of description in the Patent concerning the “plunger” is in paragraph 52: *“A solenoid plunger 18 is located within the solenoids 12, 14 and is connected, at one end thereof, to the first end 20 of a connecting rod 22. The solenoid plunger 18 is made from a magnetic material.”* and because the plunger (18) shown in figure 2 does not appear to have any special features.

(b) The Observer says that: *“Zytek EGS actuates a gearshift lever on the gearbox and not on the engine”* but in his Observations in Reply, the Requester says: *“The function of the gearlever remains constant irrespective of its location so this has no relevance”* and I am inclined to agree with the latter view. I consider that a skilled person would have understood the patentee’s phrase: *“a gearshift lever of the engine”* to have been somewhat infelicitous and loose (perhaps thinking of the unitary nature of the engine and the gearbox typical of a motorcycle) and not to be taken literally because the skilled person would have known that gearshifts can be accomplished only in a gearbox.

19. Thus I am content on the balance of probabilities that the Zytek EGS has all the features required by the opening part of claim 1 of the Patent.

20. The middle part of claim 1 is (again omitting the reference numbers):

“...wherein: said solenoid assembly operates on actuation of said switch apparatus to its first switching position causing movement of said solenoid

plunger in a first direction along the axis of said solenoid assembly; and said solenoid assembly operates on actuation of said switch apparatus to its second switching position causing movement of said solenoid plunger in the opposite direction along the axis of said solenoid assembly,...

21. Given what I have said about the first part of claim 1 in relation to the Zytec EGS, it follows that this part of the claim is also satisfied by the Zytec EGS since it would be expected that the armature moves in respective opposite directions when the up and down paddle switches are actuated, in order to operate the sequential gearshift mechanism. The documents accompanying the Request (eg "Zytecs Description of their EGS Gearshift System" in Part C) confirm that the Zytec EGS shifts both up and down.

22. The final part of claim 1 is (again omitting the reference numbers):

"...characterised in that the gearshift mechanism further comprises a cut-out timer operably connected to said switch apparatus so that said cut-out timer temporarily prevents combustion in said vehicle engine on actuation of said switch apparatus to its first switching position, and a delay timer operably connected between said first switching position and said power cut-out timer which delay timer causes activation of the cut-out timer to be delayed for a predetermined length of time after actuation of the switch apparatus."

23. In the embodiments described in the Patent, the cut-out timer "temporarily prevents combustion" by acting on the ignition but *"It is to be understood that the cut-out timer could also comprise a fuel cut-out timer connected to a fuel injection feed, for example."* (paragraph 56).

24. Having read very carefully the documentation accompanying the Request, I can find little concerning features of the Zytec EGS that could equate to the "cut-out timer" and the "delay timer" required by the last part of claim 1 of the Patent.

25. In part A of the Request, the Requester says: *"It is also believed that both systems provide full throttle, clutchless Upshifting via the use of an ignition interrupt system and also using pre-delay timers to manage the start time of the solenoid which is expressly mentioned in the Pro-Shift Patent."*

26. This belief is repeated in Part C of the Request as follows: *"It is believed that the EGS GCU uses both an ignition interrupt and a pre-delay timer, both of which are expressly mentioned in the Pro-Shift Electronic Gearshift Patent."* ("GCU" stands for "gearshift control unit")

27. The information (the author or source of which is unclear) on the Zytec EGS in Part F of the Request contains the following: *"The driver does not need to operate the clutch, except for starting and stopping and when selecting neutral and reverse gear. The EGS offers down change protection which eliminates the possibility of engine over-revs, and it also has the additional benefit of 40 millisecond gear changes (about the same time as it takes to blink) and up to four downshifts in less than a second which*

considerably increases the life span of the gears and dog rings.”

28. The feature of “*down change protection which eliminates the possibility of engine over-revs*” which is said to be present in the Zytec EGS does suggest to me, if true, that some kind of engine cut-out may be employed but this is not disclosed explicitly. Furthermore, I cannot find anything to even suggest that the Zytec EGS has anything like the “delay timer” required by claim 1.

29. The presence of a “cut-out” feature but the lack of a “delay timer” for the cut-out in the Zytec EGS are both acknowledged by Zytec Limited in their plain comment in section 2 of their Observations that: “*Cut-out is not timer based on the Zytec EGS*” and in section 3 that: “*The Zytec EGS does not delay the ignition cut after enabling the solenoid*”.

30. In response to the statement in the Observations that: “*Actuation duration of the solenoid apparatus is not timer based on the Zytec EGS*”, the Requester says that: “*A capacitor discharge time will determine the solenoid actuation duration and this is a controllable variable, which constitutes a timer.*” Even if the latter point is well made, it does not without further evidence address the key issue of the presence or absence of a delay timer which “*causes activation of the cut-out timer to be delayed for a predetermined length of time after actuation of the switch apparatus*”.

31. I find that the expressions by the Requester of supposition or belief that the Zytec EGS includes a “delay timer”, and his explanation as to how a “delay timer” function might arise in the Zytec EGS, insufficiently convincing to persuade me that it does indeed operate in this way. Thus I do not find any evidence in the papers in front of me that the Zytec EGS has a “delay timer” as required by claim 1 of the Patent. It seems to me that a skilled person could have examined and tested the Zytec EGS using appropriate equipment and could have come to a conclusion as to the presence or absence of a “delay timer”; however, as noted in paragraph 3C of the Request, the Requester admits that: “*As there is no access to a full EGS system the description is based on information obtained through press articles and information released to the public by Zytec*”.

32. Thus I find, on the basis of the information that has been put before me, that the Zytec EGS has not been shown to satisfy claim 1 of the Patent. It follows that I need not address claims 2-15 which are dependent from claim 1. I have already established that the Zytec EGS does not satisfy claim 16, the only other independent claim, which has no appendant claims.

Opinion

33. I conclude that, from the papers in front of me, the Patent has not been shown to be infringed.

Application for review

34. Under section 74B and rule 77H the proprietor may within three months of the date of issue of this opinion apply to the comptroller for a review of the opinion.

35. Under rule 77H(5) such an application for review may be made by the proprietor only on the grounds that by reason of its interpretation of the specification of the patent the opinion wrongly concluded that a particular act would not constitute an infringement of the patent.

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting this opinion and filing observations have chosen to put before the UK- IPO.

John Twin
Examiner