

PART I: NEW DOMESTIC LAW

PATENTABILITY

Section 1: Patentable inventions

1.01 The Patents Act 1977 sets out for the first time to codify what is meant by a patentable invention. Previous legislation up to and including the 1949 Act had merely repeated the stipulation, originally set out in the Statute of Monopolies of 1623, that a patent may be granted only for a manner of new manufacture.

[1.02 Deleted]

Section 1(1)

A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say -

- (a) the invention is new;*
- (b) it involves an inventive step;*
- (c) it is capable of industrial application;*
- (d) the grant of a patent for it is not excluded by subsections (2) and (3) below;*

and references in this Act to a patentable invention shall be construed accordingly.

1.03 This provision is an enabling one; it does not require that a patent be granted if the invention fulfils the stipulated conditions, but merely allows it, since there are also conditions to be complied with in respect both of the applicant and the application, these being set out in later sections.

s.125(1) 1.04 "Invention" in this context means that which is specified in a claim. Although the term has a meaning in ordinary speech, in *Biogen Inc v Medeva plc* [1997] RPC 1 Lord Hoffmann declined to attempt to define the term more closely, saying that judges "would be well advised to put on one side their intuitive sense of what constitutes an invention until they have considered the questions of novelty, inventiveness and so forth". It is possible for a specification to contain claims which relate to patentable inventions as well as claims which define inventions which are not patentable or matters which are not inventions. In such a case amendment is necessary, since a patent should be granted only when each claim defines a patentable invention. A claim will generally be held to be bad if anything falling within its scope is not patentable.

1.05 The term "a patentable invention" is defined by setting out four conditions, all of which must be satisfied in order for an invention to qualify for the grant of a patent. The manner in which each of the conditions (a), (b) and (c) is to be assessed is set forth in ss.2, 3 & 4 respectively. Since they are expressed as positive requirements the onus is upon an applicant to demonstrate compliance when faced with a reasonable challenge. The fourth condition involves certain things which, for purposes of the Act, are not to be regarded as inventions (see 1.07-1.32) and certain inventions for which a patent will not be granted (see 1.33-1.40).

s.130(7)
s.91 1.06 The tests set out in s.1(1) and further elaborated in s.1(2)-(4) and ss.2-4 are so framed as to have, as nearly as practicable, the same effects in the UK as the corresponding provisions of the EPC; these are Articles 52-57. (More particularly, EPC aa.52(1) to (3) and 53 correspond to s.1(1) to (4).) Hence, although not binding on the Office, decisions on patentability given by EPO Boards of Appeal are of persuasive value in interpreting ss.1-4 and are often considered by the Patents Court and Court of Appeal when determining patentability - see *Gale's Application*, [1991] RPC 305 where in the Court of Appeal Nicholls LJ said:

"..... it is of the utmost importance that the interpretation given to section 1 of the Act and the interpretation given to Article 52 of the [EPC] should be the same. When interpreting the Act an English court should have due regard to decisions of the Board of Appeal and take them into account, although the English court is not bound by them."

Section 1(2)

It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -

- (a) a discovery, scientific theory or mathematical method;*
- (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;*
- (c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;*
- (d) the presentation of information;*

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

1.07 The effect of this subsection is to derogate from the normal, broad meaning of "invention" for the purposes of the Act by the removal of specified categories. In the main, the exclusions are directed to mental, intellectual, aesthetic or abstract matters, though "a program for a computer" does not entirely fit into these characterisations.

1.08 The phrase "among other things" indicates that the list of excluded matter is not exhaustive, but to date the Courts have only given one example of matter which may also be excluded - see *Lux Traffic Controls Ltd v Pike Signals Ltd and Faronwise Ltd*, [1993] RPC 107 where Aldous J, while allowing claims to apparatus for controlling traffic flows on the basis that the particular apparatus concerned involved a contribution in a non-excluded, technical field, observed that:

"..... s.1(2) of the Act comprises a non-exhaustive catalogue of matters or things which are not patentable. Although not specifically mentioned, I believe a method of controlling traffic as such is not patentable, whether or not it can be said to be a scheme for doing business. The field expressly excluded by the section concerns mere ideas not normally thought to be the proper subject for patents which are concerned with manufacturing."

Thus the exclusion may also apply to other matters which are essentially abstract or intellectual but which do not fall clearly into one of the specified categories specifically listed. In this respect however, it should be noted that, other than by the list of exclusions set out in s.1(2), the Act does not define or specify what constitutes an "invention". Moreover the varying of the terms of s.1(2) is the prerogative of the Secretary of State (see 1.41). While it may therefore be that the Courts might seek to interpret the broad meaning of the term "invention" by reference to the criterion of "manner of new manufacture" as applied under the 1949 and earlier Acts, great caution is necessary in relying on decisions taken under earlier Acts in this regard, not least because the Courts have made it clear that certain aspects of the law on patentability in the earlier Acts have been "swept away", see 0.06. Nevertheless, though they may possibly be of doubtful application in relation to the law to be applied, decisions under earlier Acts can still be useful in establishing the nature of a particular invention, eg whether it is technical rather than purely intellectual or abstract. In the absence of any further guidance from the Courts however, objection should be raised under s.1(2) only when the matter in question either is, or is closely analogous to, one or more of the categories listed in the section, since it is a canon of legal construction that exceptions should be construed narrowly. Consideration should also however be given to whether such abstract or intellectual matters are capable of industrial application as required by section 1(1)(c).

1.09 It is though a mistake, possibly conditioned by thinking in terms of "manner of manufacture", to think that the embodiment of an invention in "hardware" necessarily saves it from exclusion under s.1(2). This was pointed out by the EPO Technical Board of Appeal which said in *IBM/Document abstracting and retrieving* [1990] 1-2 OJEPO 12 (T22/85) (see also 1.27.9), when rejecting an application for a computer system which automatically abstracted and stored documents on the basis that the invention was of a purely intellectual and not a technical nature:

"The foregoing considerations have been made mainly on the basis that the claimed systems and methods would involve a conventional computer controlled by a software program Analogous considerations, however, apply in the case where the control of the computer would be effected by hardware, an option also falling within the scope of the claims, as the choice between the two possibilities is not of an essential nature but is based on technical and economic considerations which bear no relationship to the inventive concept as such."

1.10 On the other hand, the effect of the final passage of s.1(2) is that a matter is not prevented from being treated as an invention merely because some of its integers fall into an excluded category. The EPO Technical Board of Appeal explained this in *Vicom/Computer-related invention* [1987] 1 OJEPO 14 (T208/84) (see also 1.17) where it said that:

"Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that, for its implementation, modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art."

1.11 Thus, it is not the nature of an embodiment which is important, but the nature of the central idea or invention which is embodied. To determine this, the invention claimed should be assessed and construed as a whole to see whether the contribution it makes goes beyond an excluded category. It is clear from the authorities that in doing this, regard must be had to the substance of the invention and not merely the form in which it is claimed - see 1.16, 1.25-1.27.13 and 1.31 below. These general principles are amongst those which have been laid down in a number of judgments and decisions which are referred to in the following paragraphs.

1.12 It is however important to realise that principles laid down by the Courts when considering one of the categories excluded by s.1(2) may well be applicable to others of those categories. In general, the question of whether an invention is excluded should be approached by construing the claimed invention as a whole, without regard for its constituent features or integers, and determining whether the whole invention solves a technical problem, or makes a contribution to the art in a non-excluded field, or whether the invention is, in substance, no more than an excluded item or is merely an excluded item in disguise.

1.13 Any doubt as to whether an invention stands to be excluded under s.1(2) should be resolved on the usual basis, ie on the balance of probabilities (see 18.09).

Discoveries, scientific theories or mathematical methods

1.14 The fact that a known material or article is found to have a hitherto unknown property is a discovery and not an invention. But if the discovery leads to the conclusion that the material can be used for making a particular article or in a particular process, then the article or process could be patentable. For example finding out that a particular known material is able to withstand mechanical shock is a discovery and therefore unpatentable, but a claim to a railway sleeper made of the material would not fall foul of this exclusion, and would be allowable if it passed the tests for novelty and inventive step.

1.15 Similarly, the finding of a new substance or micro-organism occurring freely in nature is a discovery and not an invention, but if (as will generally be the case) it were necessary to isolate and extract it then a process developed for this purpose, and also the material when obtained by this process, could both be patentable. Furthermore if the material had no previously recognised existence, and can be adequately identified without reference to the process by which it is obtained, then it may be patentable *per se*. In its decision in the case of *Genentech Inc's Patent* [1989] RPC 147, the Court of Appeal held that the discovery

of the amino acid sequence for the substance tPA when incorporated into a process for the commercial manufacture of tPA using conventional techniques led to a valid claim. Likewise, in its decision in *Howard Florey Institute of Experimental Physiology* [1995] 6 OJEP 388 (V 08/94) the EPO Opposition Division ruled that because the protein, human H2-relaxin had no previously recognised existence, its chemical characterisation and that of the DNA encoding it, together with the fact that the proprietor had found a use for the protein, meant that both the protein and the DNA were patentable.

1.16 More generally, in *Genentech* the Court of Appeal held in a majority judgment that a patent which claimed the practical application of a discovery did not relate to the discovery as such and patentability was not excluded by s.1(2), even if the practical application might be obvious once the discovery had been made. In saying this the Court was following the principle laid down in *Hickton's Patent Syndicate v Patents & Machine Improvements Co Ltd*, 26 RPC 339 in which Fletcher Moulton and Buckley L JJ rejected as fallacious the view that an idea may be new and original and very meritorious but, unless there is some invention necessary for putting the idea into practice, it is not patentable. Instead, Fletcher Moulton LJ said:

"In my opinion invention may lie in the idea and it may lie in the way in which it is carried out, and it may lie in the combination of the two; but if there is invention in the idea plus the way of carrying it out, then it is good subject matter for letters patent."

Thus it is clear that an invention whose novelty and inventive step reside solely in excluded matter can still be patentable. Hence, it is necessary to consider the contribution made by the invention as a whole without regard for its individual parts and the individual contributions they may make. This point was underlined by comments made by the EPO Technical Board of Appeal in *Koch & Sterzel/X-ray apparatus* Decision [1988] 1-2 OJEP 19 (T26/86) (see also 1.27.6-1.27.7) where it said that:

"The Board holds that an invention must be assessed as a whole. If it makes use of both technical and non-technical means, the use of non-technical means does not detract from the technical character of the overall teaching. The [EPC] does not ask that a patentable invention be exclusively or largely of a technical nature; in other words it does not prohibit the patenting of inventions consisting of a mix of technical and non-technical elements."

1.17 These general principles apply also to scientific theories which are statements about the natural world, reasoned or otherwise, and to mathematical methods. Indeed, they will also apply to all the matters excluded by s.1(2), though some caution is necessary in applying them in all cases, particularly in relation to computer programs - see 1.24.2 below. Thus, scientific theories are themselves not patentable, no matter how radical or revolutionary the insights they provide may be, but if they lead to practical applications, these may well be patentable. Similarly, mathematical methods are not patentable but their application may well be patentable. For example, in *Vicom* (see also 1.10, 1.25-1.25.1, 1.27.4-1.27.7) the EPO Technical Board of Appeal rejected claims to a mathematical method to be performed on a conventional general purpose computer but allowed claims to a method of image processing which used the mathematical method to operate on numbers representing an image. The reasoning was that the image processing performed was a technical process which related to the technical quality of the image and that even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method as such. This might be distinguished from a case decided under the 1949 Act, *Lips' Application*, [1959] RPC 35, which related to a ship's propeller in which the thickness of the blade at any radius was calculated in accordance with a specified formula based upon certain theoretical considerations set out in the specification. This was refused on the ground that the propeller so designed was not distinguishable from propellers designed by known methods, and differed solely in the mental process, as opposed to the physical steps, involved in its production. The essential question would therefore seem to be whether the application of the method in question produces a product or process which is different from the prior art at a technical rather than an intellectual level. Only if it is technically different is it patentable.

Aesthetic creations

1.18 This exclusion applies not only to the subjective or mental aspect of aesthetic creation but also to its physical expression eg in words, painting, sculpture or recorded sound. It is necessary to disregard the form of presentation in a claim and concentrate upon its content in order to identify the novel

contribution to the known art and to determine whether the essential character of this contribution is aesthetic or technical. If an article is distinguished from known articles solely by its design, ornamentation or colour, then it will not be patentable if this has a purely aesthetic function, but if the distinction has a practical effect then this could save it from the exclusion. For example, if a serving tray were characterised solely by the provision of a particular embossed pattern on its surface, then it would fall within the exclusion, but if it were found that this particular pattern had non-slip attributes unexpectedly superior to those normally associated with embossment, this latter characteristic could provide a patentable feature.

1.19 Evidence may be necessary where the advantage conferred by the apparently aesthetic distinction is not apparent in the disclosure. In *ITS Rubber Ltd's Application*, [1979] RPC 318, a claim to a squash ball characterised by its blue colour was allowed (under the 1949 Act) because evidence showed that it had surprisingly enhanced visibility during play. (The Court also observed that an earlier green ball which had the advantage over the conventional black ball that it did not mark the squash court walls could conceivably have been patentable).

1.20 The means of obtaining a purely aesthetic effect may be patentable if it is characterised by technical features, for such as the structure of an article or the steps in a process. For example, a fabric may be provided with an attractive appearance by means of a layered structure not previously used for this purpose, in which case a fabric incorporating such structure might be patentable. Likewise, if it were found that by subjecting certain painted surfaces to a novel controlled thermal treatment a beautiful effect was obtained, then both the method of treatment and articles so produced could be patentable.

Schemes, rules or methods for performing a mental act, playing a game or doing business, or a program for a computer

1.21 Under the previous legislation, schemes or plans were refused as not being "matters of new manufacture". However, s.1(2)(c) excludes a scheme, rule or method only when it is for performing a mental act, playing a game or doing business, and many of the precedent cases are therefore of doubtful relevance, notwithstanding the possible effect of the words "among other things" in the statute - see 1.08 above. Nevertheless, it seems clear that such things as a method of learning a language, of playing chess or teaching reading would continue to be excluded as methods for performing a mental act. Moreover, objection would not necessarily be avoided if the invention were claimed as an apparatus; if in substance what was claimed amounted to no more than an excluded method, it could be excluded as such even if claimed as an apparatus, see 1.28.1. In addition, it is also clear that when considering whether an invention is a method for performing a mental act, it is not relevant whether the act in question is to be performed mentally or in some other way, for example by a computer programmed to follow steps which the human brain would not ordinarily follow. The fact that a method is formulated, and claimed, as a series of steps suitable for use by a computer or some other piece of equipment and not by the human brain is therefore not of itself sufficient to avoid objection - see 1.28.2 and 1.28.3.

1.22 By contrast however, while any invention relating to a game (as an abstract entity defined by its rules) is excluded, the exclusion is not construed as extending to inventions relating to apparatus for playing a game which are patentable if the other requirements of the Act are satisfied. Under the 1949 and earlier Acts, the patentability of board games was determined in accordance with the terms of Official Ruling 1926(A), see appendix to 43 RPC. Thus, where a claim was directed to apparatus for playing a game comprising one or more playing pieces and a board marked in a particular manner substantially as shown in the drawings, the piece(s) being movable in accordance with specified rules, the requirements involved by the prevailing definition of invention were considered to be complied with and the application was subject only to any objection as arose on any other ground, eg lack of novelty. A similar approach is followed with such applications under the 1977 Act.

1.23 Schemes or methods of bookkeeping or carrying out other commercial procedures are excluded as being "for doing business". A scheme for codemarking bank cheques or deposit slips, the marked code then being entered into the computer record of a customer's account and processed to provide a statement of account sub-totalled under separate categories, was refused in *Good News Pty Ltd's Application* (SRIS O/124/84) as being a scheme or method for doing business because the automatic reading of the codemarks was technically conventional so the contribution was solely in the field of accounting.

1.24 However, the expression "doing business" is not restricted to the activities of financial

institutions or service industries but embraces the purely organisational and managerial activities of manufacturing industry. The exclusion could thus apply to a case such as *Quigley's Application*, [1977] FSR 373, which related to a method of producing steel by operating two or more furnaces in a particular way and was held by the Australian Patent Office not to be a manner of manufacture since the contribution to the art was solely a roster for more effective use of manpower. *In Melia's Application* (SRIS O/153/92) the UK Office refused a scheme under which prisoners could exchange all or part of a prison sentence for corporal punishment as a scheme, rule or method for doing business, the business in question being the business of administering punishment (the invention was also held to lack industrial application). Also rejected in UK Office proceedings was an application relating to a system for administering salary linked mortgages. Applications were rejected on these grounds in *Wills' Application* (SRIS O/89/99) relating to the provision of cards to be held by the parents or grand- parents and school so as to provide an immediate source of accurate, up-to-date information in the event that a child goes missing and in *Spedding's Application* (SRIS O/96/99) relating to a method of tax collection involving a delayed inheritance system.

Computer Programs

1.25 The exclusion of programs for computers from patentability has been held to relate principally to the underlying nature of the invention which the claims embody, rather than the exact form of the claims themselves (see also 1.11-1.12). Whether the invention is one which is patentable must be viewed in the context of a number of EPO and UK Court decisions, which indicate that what must be considered is not so much whether an alleged invention is implemented using a program for a computer, but whether it makes any technical contribution to the art. This was expressed in *Vicom* (see 1.10) at paragraph 16 as follows:

"Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art."

1.25.1 It was initially considered that the terms of the exclusion were such that any claims directed to a computer program were not allowable, even if running the program on a computer would cause a technical effect. Furthermore various decisions held that the same restrictions should apply to claims relating to a program on a computer-readable medium such as a floppy disc, as to claims to the program. In *Genentech Inc's Patent* [1989] RPC 147 for example Dillon LJ said at page 240:

"It would be nonsense for the Act to forbid the patenting of a computer program, and yet permit the patenting of a floppy disc containing a computer program, or an ordinary computer when programmed with the program; it can well be said, as it seems to me, that a patent for a computer when programmed or for the disc containing the program is no more than a patent for the program as such."

Exactly the same conclusion was reached by the European Patent Office Board of Appeal in *IBM/Text processing* [1990] EPOR 181 (T65/86):

"Since the only conceivable use for a computer program is the running of it on a computer, the exclusion from patentability of programs for computers would be effectively undermined if it could be circumvented by including in the claim a reference to conventional hardware features, such as a processor, memory, keyboard and display, which, in practice, are indispensable if the program is to be used at all.

Thus, when the Court of Appeal came to consider *Merrill Lynch's Application* [1989] RPC 561, Fox LJ said:

"..... it seems to me to be clear, for the reasons indicated by Dillon LJ, that it cannot be permissible to patent an item excluded by Section 1(2) under the guise of an article which contains that item - that is to say, in the case of a computer program, the patenting of a conventional computer containing that program. Something further is necessary. The nature of that addition is, I think, to be found in the *Vicom* case [see also 1.10, 1.17, 1.25, 1.27.4-1.27.7] where it is stated: "Decisive

is what technical contribution the invention makes to the known art". There must, I think, be some technical advance on the prior art in the form of a new result (eg, a substantial increase in processing speed as in *Vicom*)."

1.25.2 The case-law on this issue however was all concerned with applications where the Court or Board was not able to identify any substantive technical contribution. EPO cases *IBM/Computer program product II* (T 935/97, [1999] RPC 861) and *IBM/Computer program product* (T 1173/97) however related to the treatment of claims to programs for computers where the program when run on a computer would provide a technical effect which is more than would follow merely from the running of any program on a computer and which was such that claims to the computer when programmed had not have been rejected under EPC Article 52(2)(c) under the then existing practice. The Board decided that since claims to a computer system when programmed, or to the equivalent process, were currently acceptable if the running of the program involved a technical contribution, it was not logical to refuse claims to such a program on a carrier, provided the claims properly defined and delimited the program in question. The Board considered that such claims should be patentable because the program has the potential to produce a patentable technical contribution. Indeed the Board went on to say that in its view it should make no difference whether a program was claimed by itself or as a record on a carrier. It did, however, remit the applications in suit to the Examining Divisions for the precise form of acceptable claims to be decided. These decisions did not change in any way the existing practice of the European Patent Office in relation to the subject matter for which patents may be granted but only the nature of claims which will be accepted.

1.25.3 The UK Office reviewed its practice in the light of these decisions and issued a Practice Notice on the subject, which appeared in the Patents and Designs Journal on 5 May 1999 (also [1999] RPC 563), indicating that claims would be accepted to computer programs, either themselves or on a carrier, provided that the program is such that when run on a computer it produces a technical effect which is more than would necessarily follow merely from the running of any program on a computer and which is such that claims to the computer when programmed would not be rejected under section 1(2)(c) under the then existing practice.

1.26 Thus, to analyse an invention involving a computer program it is necessary to decide whether the invention does or does not involve a technical contribution, and given that claims are often couched in terms which tend to obscure the issue, it is always necessary to construe the claims carefully and thoroughly in the light of the subject matter disclosed and the prior art. This was elaborated in *Gale's Application* [1991] RPC 305 at p 315 where Aldous J said:

".... I conclude that the first task of the court is to construe the claim, as that is where the invention is defined. If the claim properly construed is drafted so as to relate to any of the matters disqualified by section 1(2) then the invention is not patentable. If however, the claim is drafted to a process or technique or product and the basis of such process or technique or product is a disqualified matter, the court should go on to consider whether the claimed invention is in fact no more than a claim to an invention for a disqualified matter. It is a question of fact to be decided in each case, but if the claimed invention is more than a claim to an invention for a disqualified matter then it qualifies as a patentable invention.

In deciding that question of fact it is always important to consider whether the claimed invention is part of a process which is to be used in providing a technical result. If it is, then the claim cannot be said to be an invention relating to no more than one of the disqualified matters. Similarly, where a claim is directed to a product, it is important to consider whether the product claimed is a new technical product or merely an ordinary product programmed in a different way as in the latter case the claim is in reality to the program and therefore could not relate to a patentable invention."

1.27 Having regard to this and EPO cases T 935/97 and T 1173/97 discussed above, a claim to a computer program might include a technical effect so that, properly construed, it can be considered to fall outside the exclusion. On the other hand where the claims relate to a method or system, it is still necessary to look more closely at what lies behind the invention, and in particular to look through any "guise" (in Fox LJ's words in *Merrill Lynch*) to the substance in order to determine whether the invention involves an objective "technical advance" or "technical contribution". Only if it does will it be patentable.

1.27.1 In *Gale's Application*, which involved a claim to a Read Only Memory (ROM) containing a program for a computer, Nicholls LJ in rejecting the application said at pages 327 and 328:

"The attraction of Mr. Gale's case lies in the simple approach that ... he has found an improved means of carrying out an everyday function of computers. ... A computer ... will be a better computer when programmed with Mr Gale's instructions. ... But the instructions do not embody a technical process which exists outside the computer. Nor, as I understand the case as presented to us, do the instructions solve a "technical" problem lying within the computer"

1.27.2 A concept which can be useful in deciding whether there is a technical advance is that of considering whether the invention provides a contribution to the art in a non-excluded field. If it does, then it is likely that there is a technical advance.

1.27.3 If the contribution to the art lies in an excluded field, then further consideration must be given to whether the invention overall has a technical effect. In *Hitachi Ltd's Application* [1991] RPC 415, the Office rejected an application relating to a compiler which is a computer program which translates a program written in a high level language, ie a language of a kind which facilitates the writing of programs by human authors, into a form which is directly executable by a computer. The claims related to a method for controlling execution of a source program by a computer and to a method for computer-converting a source program written in a high level language to an object program to be executed by a computer. The hearing officer concluded that the computer which was to run the compiler program was conventional and ran the program in the ordinary way, and that the contribution to the art was the algorithm embodied in the compiler for effecting the intellectual task of modifying the source program. Thus the contribution was in the excluded field of programming. There was no technical advance and the invention amounted to no more than the compiler program as such. The Office has also rejected a number of applications involving computers programmed to translate between two languages, eg English and Japanese, on the basis that the applications related to the field of linguistics which is not a technical field. Accordingly, no technical advance was achieved.

1.27.4 The reference in *Merrill Lynch to Vicom* involving an increase in speed (see 1.25.1) does not mean that an increase in speed of itself is enough. This point was considered in *Options Clearing Corp'n Inc's Application* (unreported) when the hearing officer concluded that *Vicom* was allowable because it produced an advance, namely an increase in speed, in a technical field, namely the technical field of image enhancement, and not simply because of the advance itself. It also follows from this that the mere fact that the data being processed represents an image, or indeed any other real world object, is of itself not necessarily sufficient because the central point to be decided is whether the invention as a whole, when properly construed, involves a technical advance, ie an advance in a technical field.

1.27.5 In *Fujitsu's Application* [1997] RPC 608, a computer was programmed to display and manipulate images of crystalline structures. The images could be rotated under the control of the operator and their scale altered so as to superpose two crystalline structures and form an image of a hybrid, "designer" chemical. Thus the system was a design tool and the operator could choose whether or not to use any depicted structure as a blueprint for a new chemical. The claims related to methods of displaying images, to a method of manufacturing a structure developed in accordance with the method claims, and to apparatus for carrying out the method. The hearing officer rejected the application on the grounds that it was both no more than a program for a computer and no more than a method for performing a mental act. In the Patents Court, Laddie J held that the invention was no more than a method for performing a mental act. However, the application was rejected in the Court of Appeal on the grounds that the invention was no more than a program for a computer, finding no technical contribution to be involved. Aldous LJ agreed that the application disclosed "a new 'tool' for modelling crystal structure combinations which avoids labour and error", but stated that these were just the sort of advantages that are obtained by the use of a computer program. He could not accept that *Vicom* supported an argument that a technical contribution was provided by the processing of real images or structures and pointed out that in this case "The resulting display is the combined structure shown pictorially in a form that would in the past have been produced as a model. The only advance is the computer program which enables the combined structure to be portrayed quicker." He also said:

"...it is and always has been a principle of patent law that mere discoveries or ideas are not patentable, but those discoveries and ideas which have a technical aspect or make a technical

contribution are. Thus the concept that what is needed to make an excluded thing patentable is a technical contribution is not surprising. That was the basis for the decision of the Board in *Vicom*. It has been accepted by this Court and the EPO and has been applied since 1987. It is a concept at the heart of patent law."

1.27.6 *Koch & Sterzel* (see 1.16) involved an X-ray apparatus controlled by a programmed computer which the EPO Technical Board of Appeal held produced a technical effect in the X-ray apparatus. The Board said that:

"..... the X-ray tubes are controlled by the routine so that by establishing a certain parameter priority, optimum exposure is combined with adequate protection against overloading of the X-ray tubes."

The Board also observed that:

"..... if the program controls the operation of a conventional general-purpose computer so as technically to alter its functioning, the unit consisting of program and computer combined may be a patentable invention."

It is therefore clear that a technical effect can be found either internally of the computer where a program causes the computer to operate in a technically different way, or externally of the computer in some apparatus in which, or through which, a technical change is produced.

1.27.7 By contrast, *IBM/Text processing* (T65/86) (see 1.25.1) related to a computer programmed to highlight homophones in an entered text, such as "there" and "their", when the rules of grammar suggested that they had been incorrectly used. The EPO Board held that this was not patentable because it made no contribution in a technical field and contrasted the case with those in *Vicom* and *Koch & Sterzel*. It explained that *Vicom* was patentable:

"..... even though it could be carried out by known hardware suitably programmed, because it makes a contribution in a field not excluded from patentability, namely a more efficient restoration or enhancement of the technical quality of an image. Similarly, in T26/86 [*Koch & Sterzel*] the claimed apparatus is patentable, even though the X-ray apparatus without the computer program was known, because it makes a contribution in a field not excluded from patentability, namely controlling the X-ray tubes so that optimum exposure is obtained with adequate protection against overloading of the X-ray tubes."

1.27.8 *IBM/Data processor network* [1990] 1-2 OJEP 5 (T06/83) concerned a network of data processors connected as nodes by communications links; in a specific example the communications links connect terminals in a banking transaction system and each node has its own program and secure data files. A transaction at one node can be handled at another so that a user of a local program is able to use resources located at remote data processors without needing to know, or to write into the program, the actual location of the resources. The EPO Technical Board of Appeal concluded that the invention was concerned with the internal workings of the processors and the transmission equipment irrespective of the nature of the data and solved a problem "which is essentially technical". They therefore allowed the application to proceed. Although this test for patentability, namely solving a technical problem, differs nominally from that set out in *Merrill Lynch*, the difference appears to be only nominal in that solving a technical problem in a new way is in substance essentially the same as providing a technical advance in the form of a new result.

1.27.9 The question of the technical contribution provided by a programmed computer was also considered in *IBM/Document abstracting and retrieving* (see 1.09) which was concerned with a system arranged automatically to abstract documents to facilitate their subsequent use as a database that may easily be searched. In paragraph 8 of its decision the EPO Technical Board of Appeal observed that:

"..... the mere setting out of the sequence of steps necessary to perform the activity in terms of functions or functional means to be realised with the aid of conventional computer hardware elements does not import any technical considerations and can, therefore, neither lend a technical character to the activity nor to the claimed subject matter as a whole"

This is taken to mean that if an invention is argued to be patentable because it achieves a technical advance within the computer, then the technical effect involved must be over and above any effect present merely as a consequence of the use of functionally defined means of the kind that are to be found in a conventional computer. Thus, it is not sufficient merely for a computer to operate differently at a functional level (not surprisingly since every novel program will cause the computer to operate in a new, functional way).

1.27.10 A similar point was considered in *Wang Laboratories Inc's Application* [1991] RPC 463 (see also 1.28.2-28.3), at page 473. This concerned an "expert system" in which a computer was programmed to "stand in" for a human expert and answer questions and give advice or suggestions. The invention lay in the way in which the "knowledge base" was organised, that is in the way in which information was stored. Aldous J said:

"Claim 21 relates to a "computer system shell" using a conventional computer so programmed that an expert can store his knowledge in a particular way. The applicant submitted that the program containing the system shell combined and co-operated with the computer so as to produce a new machine, namely, a computer which could be used to be programmed with knowledge. ... Thus the applicant submitted that the claim had a technical effect, namely a new machine ready to be used in a novel way.

I cannot accept that submission. The machine, the computer, remains the same even when programmed. The computer and the program do not combine together to produce a new computer. They remain separate and amount to a collocation rather than a combination making a different whole. The contribution is, to my mind, made by the program and no more."

1.27.11 Essentially the same point, though in connection with a technical advance provided externally of the computer, was also considered in the Office in *Motorola Inc's Application* (SRIS O/50/93). This concerned a computer programmed to write a control program for a program controlled process control system. Having indicated that a conventional computer programmed with a first program to write a second computer program was not patentable because there was no technical advance, the hearing officer went on to say that:

"..... the question then is whether a technical advance results from the combination of the method and means used to produce the control program and the conventional process control apparatus into which that control program is loaded. Having looked at this very carefully, I do not see that there can be any technical advance resulting from the combination. The two distinct stages of generating the control program and loading and running that program in a process control apparatus seem to me to be wholly independent. The contribution to the art involved in the generation of the control program relates only to the writing of a program to cause a particular process control apparatus to operate in a required way, and not to the way in which the process control apparatus operates or to the way in which the process is controlled. Similarly, at the technical level the process control apparatus and the way in which it controls the process is essentially unchanged regardless of whether its control program is produced by a team of program writers or by means of the present invention. Thus the two stages seem to me to be a collocation rather than a true combination and as a result, I can see no technical advance in the form of a new result."

Thus, for there to be a technical advance within the computer, the computer and the program must be more than a mere collocation which simply performs a particular job in a conventional technical way and must combine in such a way that the computer operates differently at the technical, as opposed to the purely functional, level. This suggests that it is necessary to look behind the job that the computer is doing at the way the job is being done.

1.27.12 *IBM/Text processing* [1990] 9 OJEP 384 (T38/86) concerned a computer programmed to identify words in an entered text with a reading age higher than a given value, and to offer alternatives to the identified word with reading ages equal to or less than the given value. In rejecting the application, the EPO Technical Board of Appeal indicated that if a claim for an apparatus for carrying out a method does not specify any technical features beyond those already comprised in a claim relating to the method and, furthermore, does not define the apparatus in terms of its physical structure but only in functional terms corresponding to the steps of the method, the claimed apparatus does not contribute anything more to the art than the method, in spite of the fact that the claim is formulated in a different category. In such a case,

if the method is excluded from patentability, so is the apparatus. This is entirely consistent with *Merrill Lynch* which was rejected as a method for doing business even though claimed as a computer system and starkly underlines the principle that an apparently appropriate form of claim is not a sufficient condition for patentability, which depends on the substance of what is claimed.

1.27.13 Although a number of applications involving computers programmed to translate text from one language to another have been refused both by the British Office and by the EPO, in *TL/Natural language understanding system* (T236/91 - unreported) the EPO Technical Appeal Board allowed an application which concerned a computer with a menu based system to enable an operator to make a multi-word input. Each time a word or phrase is entered the computer operated to parse the resulting text entered so far as to determine the linguistic categories that could follow the entered text and to produce a menu of suitable words or phrases for presentation to the operator. When a sentence was complete and had been confirmed by the operator, the computer translated the sentence into a command executable by the computer. In allowing the application the Board held that the invention was not primarily concerned with linguistic operations but rather with allowing an operator using his own natural language to feed information into a computer and to operate the computer and that this is a technical matter.

| *Computer programs and business methods*

1.28 As indicated in 1.25 it is of course also necessary on occasion to consider the position of computers programmed to perform any of the other excluded items. In *Merrill Lynch*, having said that for a conventional computer with a program to be patentable there must be a technical advance in the form of a new result, Fox LJ went on to say:

"Now let it be supposed that claim 1 can be regarded as producing a new result in the form of a technical contribution to the prior art. That result, whatever the technical advance may be, is simply the production of a trading system. It is a data processing system for doing a specific business, that is to say, making a trading market in securities. The end result, therefore, is simply "a method...of doing business", and is excluded by section 1(2)(c). The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further. Claim 1, after all, is directed to "a data processing system for making a trading market". That is simply a method of doing business. A data processing system operating to produce a novel technical result would normally be patentable. But it cannot, it seems to me, be patentable if the result itself is a prohibited item under section 1(2). In the present case it is such a prohibited item."

This has been construed by the Office as meaning that a claim to a conventional computer running a novel program which performs one of the other excluded items is not patentable irrespective of any technical advance on the prior art. This construction has caused some difficulty in that it seems to be saying that the presence of a technical advance is irrelevant whereas, in relation to a computer program, the *Merrill Lynch* judgment specifically says (see 1.25.1) that a technical advance is sufficient to confer patentability. It must however be remembered that here, and in other cases where computers are programmed to perform excluded items, there are two layers of excluded items: there is one (potentially) excluded item (the program) used in the performance of a second, (potentially) excluded item and in such circumstances the two potentially excluded items must be considered quite separately. While the presence of a technical advance might mean that an invention clears both hurdles, it is important to realise that this is not necessarily so since there is no reason why a given invention should not clear the first, program hurdle because it involves a technical advance, and yet still fall at the second hurdle. Thus, any technical advance produced internally of a computer by its program may not be relevant if the programmed computer is claimed in a way which amounts to nothing more than one of the other items excluded by s.1(2). In the same way that a ball point pen claimed in terms of its technical features is patentable, but a method of writing a book is unpatentable even if characterised by the use of the patentable pen, a conventional computer programmed in such a way as to produce a technical advance is patentable while a method of trading securities is unpatentable (as a method for doing business) even if characterised by the use of that programmed computer. In all cases, as before, it is necessary to construe the substance of the claimed invention as a whole and regardless of its constituent parts, even when these include a patentable

programmed computer, and determine whether the whole invention claimed amounts to one of the excluded items, or to something more than that.

1.28.1 *SOHEI/General-purpose management system* [1996] EPOR 253 (T769/92) on the other hand concerned a computer programmed to handle at least two different sorts of management information, specifically including financial and inventory information. There were both apparatus and method claims which the Board considered were indistinguishable for the purposes of deciding whether there was patentable matter. In this case the Board decided that there was patentable matter on the basis that while the claims were restricted to handling financial and inventory information, these restrictions were essentially arbitrary and that what mattered was not the kind of information being processed but that there were two different kinds of information which were input *via* a common "transfer slip" and which were handled separately by the computer. As a consequence it held that the substance of the invention was the provision in a computer system of means for handling files containing different kinds of information in particular, appropriate ways and that this was of a technical nature. The Board went on to state that generalised claims relating to such a system or method would be allowable and that the addition to such a patentable system or method of features which of themselves would be excluded, *viz* those specifically concerning financial or inventory information, did not exclude the resulting invention from being patentable.

| *Computer programs and methods for performing mental acts*

1.28.2 When determining whether an invention amounts to a method for performing a mental act, it should be borne in mind that such methods do not necessarily have to be performed in, or be capable of being performed in, the human mind. A submission to this end was considered in *Wang Laboratories Inc's Application* (see 1.27.10) where Aldous J said:

"The fact that the scheme, rule or method is part of a computer program and is therefore converted into steps which are suitable for use by a person operating the computer does not matter. The method remains a method for performing a mental act, whether a computer is used or not. The method may well be different when a computer is used, but to my mind it still remains a method for performing a mental act, whether or not the computer program adopts steps that would not ordinarily be used by the human mind."

Thus, Aldous J appears to be stating as a general proposition that, in deciding whether a method is a method for performing a mental act, it is not relevant whether the steps of the method are performed by a computer, or are the same as or different from those which would normally have been performed by a human being.

1.28.3 The effect of this was considered in *Raytheon Co's Application* [1993] RPC 427. This case involved a method of, and a system for, classifying or identifying objects by matching the silhouette of an unknown object with those of known objects. A known arrangement was used to produce a digital signal from an image of the unknown object. The signal was processed to extract the silhouette of the unknown object and a novel program was then used to compare the unknown silhouette with a library of known silhouettes, the unknown object being identified as that known object whose silhouette it most closely matches. In rejecting the application on the grounds that it was both a method for performing a mental act and a program for a computer, the Deputy Judge Mr J Jeffs QC followed *Wang* (see 1.27.10, 1.28.2) and said (p 442):

"Mr Jackson then went on to submit that performing a mental act suggests a conscious process: something deliberate that is done in the mind. I am not, however, prepared to read the words in any restrictive sense. What is being done is to carry out a comparison such as is done in the mind in recognising an object but doing it by electronic means."

1.28.4 So, even though the claims were limited to methods performed by a computer, and included steps specifically to that end, the judge held that the claims were to no more than a method for performing a mental act and should be rejected as such.

1.28.5 In opposition proceedings in which the patentability of a system for allocating customers in a queue to free service points was questioned, the EPO Appeal Board decided in *Pettersson/queueing system*

(T1002/92 - unreported) that with one exception all the claimed features were specific, hardware features which were not simply the functional equivalents of the mental steps which would be performed by a human being confronted with the same problem. The Board construed the one feature which did equate with such a mental step not as a step in an unpatentable method but as a computer program controlling the operation of the other hardware features and concluded that all the claimed features were inseparably connected to form a whole which was essentially technical, and therefore patentable.

1.28.6 In *Fujitsu's Application* [1997] RPC 608, having decided that the invention was no more than a program for a computer, the Court of Appeal declined to go on to consider whether the invention was also no more than a method for performing a mental act. However, Aldous LJ said that it was "doubtful" whether the invention was a method for performing a mental act but observed that :

"Methods of performing mental acts, which means methods of the type performed mentally, are unpatentable, unless some concept of technical contribution is present".

1.28.7 The result of this seems to be that in deciding whether or not a claim amounts to an excluded method for performing a mental act, one must consider the whole entity claimed and determine whether the overall process involved has a concrete, technical end result or whether the result is essentially intellectual and of the kind that could be produced mentally by a human.

Computer programs summary

1.29 Thus in summary, when considering the exclusion of software-based inventions, the examiner needs to look beyond the form of the claims and their constituent features to the substance of the invention as a whole. The specification and claims should be read through the eyes of the notional skilled person and with a view to deciding what the claimed invention as a whole, regardless of its constituent parts, is for - what is it doing? In the light of that, the examiner should ask:

1. Is the result essentially intellectual and of the kind that could be produced mentally by a human? If it is then an objection should be raised. If not ask:
2. Does the invention provide a "technical contribution"? If it does not, then an objection should be raised. If it does, then no objection arises.

The large number of patent applications now received by the Office which rely on software-based solutions has brought s.1(2) to the fore. In practice however, the vast majority of those applications will pass the above tests and be allowable.

The presentation of information

1.30 Any manner, means or method of expressing information which is characterised solely by the content of the information is clearly excluded, no matter whether this be visual, audible or tangible and by words, codes, signals, symbols, diagrams or any other mode of representation. The mere fact that physical apparatus may be involved in the presentation will not suffice to avoid the exclusion. An arrangement of buoys so placed that it is possible to determine the position of a vessel by a buoy that it passes, either from the number, colour or device that it bears, the whistle or sound that it emits, or its shape or size or its distance from other buoys, and which was held not to be a manner of new manufacture (*W's Application*, 31 RPC 141) would apparently now be excluded as relating solely to the presentation of information, as would an odometer characterised solely by the provision of, coloured numerals as a lubrication reminder (*AEW's Application*, 41 RPC 529). A claim to a tape cassette of conventional construction but with differentially coloured poles has been held to be excluded on this ground because it encompassed such a cassette where the poles were differentially coloured subsequent to assembly and thus did not serve any function in its assembly or use (*TDK Electronics Co Ltd's Application*, SRIS O/97/83). A gaming machine in which logos or brand or product names were substituted for the conventional symbols normally depicted on the reels of a fruit machine was also found to fall squarely within the exclusion of s.1(2)(d) because the substitution provided no new or technical effect or result (*Ebrahim Shahin's Application* SRIS O/149/95).

1.31 However, the exclusion will not take effect if the contribution to the art is of a technical rather than an intellectual or abstract character. The approach indicated in 1.11-1.12 reflects the judgment of the

Patents Appeal Tribunal in *Rhodes' Application*, [1973] RPC 243. In that case, in deciding that an invention relating to a vehicle speedometer adapted to show "impact speed" was patentable, it was held that:

"It is sometimes useful in assessing whether there has been an invention to consider what the nature of the contribution, if any, of the inventor can be said to be.

"On the information at present available it could be said that this inventor's contribution was the idea that it would be valuable to provide a driver with an instrument which would indicate his "impact speed" coupled with a method of doing this. The invention appears to us to lie not in the information but in the idea of presenting such information and in a way in which this can be done."

Other examples decided under previous legislation and which would apparently not be excluded under s.1(2)(d) are *Cooper's Application*, 19 RPC 53, which related to a newspaper layout designed so that folding the paper did not hinder reading, *Fishburn's Application*, 57 RPC 245 in which an arrangement of printing upon a ticket served a mechanical purpose in that information was not lost when the ticket was torn, and *American Optical Co's Application*, [1958] RPC 40 in which the image produced upon a photographic film was deliberately distorted in a predetermined manner in order to obtain a desired effect when subsequently projected and viewed by means of appropriately modified equipment; in all these cases the invention could be defined in terms of technical features independently of the nature of the information. Variations in the visual significance of printed characters in order to indicate stressing, inflection, vowel duration etc, and thus to assist in voice production by a reading machine or a human reader were considered by the PAT in *Pitman's Application* [1969] RPC 646 as serving a mechanical or functional purpose rather than being solely of an intellectual, literary or artistic nature, and thus to be patentable. However, in *Dixon's Application* [1978] RPC 687, speech instruction means intended to improve speech by conditioning the diaphragm of the speaker and comprising a word drill to be recited by him, the word drill being included in a printed text where horizontal underlining indicated stress and vertical separating lines divided the words into rhythmic groups, were held by the PAT to be distinguished from *Pitman's Application* and not patentable. Further the Patents Court has observed (in *Nelson's Application* [1980] RPC 173) that the *Pitman* case, and particularly that part which postulates the possibility that it might ultimately be found that the functional association between the material as printed and the human speech organs would be sufficient to provide justification for the grant of a patent, must be regarded as being at the extreme limit. In *Nelson*, the Court held that a medium (eg a printed sheet) carrying an instructional message in three parts, that is in pictorial form, in words and in the form of a humorous reinforcement such as a cartoon, was not patentable (under the 1949 Act).

1.32 A claim to a conventional package containing a known product and characterised solely by the instructions on the package will not generally be allowed, since the contribution to the art resides solely in the presentation of information. Several such cases were rejected under the 1949 Act as not being manners of new manufacture, (see *Dow Corning Corporation (Bennett's) Application*, [1974] RPC 235, and *Ciba-Geigy AG (Durr's) Application*, [1977] RPC 83). However, in *Organon Laboratories Limited's Application*, [1970] RPC 574, a claim was allowed to a package containing pills which were of two types and packed in a particular order together with directions for use; the PAT observed that although packages of this kind were known, there was patentable subject matter in a package having these particular pills in this particular order, ie the contribution to the art was more than mere presentation of information.

Section 1(3)

A patent shall not be granted -

- (a) *for an invention the publication or exploitation of which would be generally expected to encourage offensive, immoral or anti-social behaviour;*
- (b) *for any variety of animal or plant or any essentially biological process for the production of animals or plants, not being a micro-biological process or the product of such a process.*

Section 1(4)

For the purposes of subsection (3) above behaviour shall not be regarded as offensive, immoral or anti-social only because it is prohibited by any law in force in the United Kingdom or any part of it.

Offensive, immoral or antisocial behaviour

1.33 The effect of s.1(3)(a) is to prevent the grant of patent rights for inventions which the general public would regard as abhorrent or from which the public need protection. It provides a reasonably objective test which has to be applied to each invention and its particular set of facts and circumstances. Clearly what is to be regarded as offensive, immoral or antisocial behaviour will vary according to changes in social attitudes and on no account ought examiners to allow their own personal and individual beliefs to colour their judgment on this matter. Under s.10 of the 1949 Act, the comptroller had (and for existing applications still has) discretion to refuse any application in respect of an invention the use of which would be contrary to law or morality. Equivalent provisions are still contained in the Registered Designs Act 1949 (s.43(1) - see schedule 4 of the CDP Act), and the decision of Aldous J in the case of *Masterman's Design* [1991] RPC 89 deals with issues broadly corresponding with issues which may arise under s.1(3)(a).

[Only in the clearest cases should examiners invoke this subsection and then only following consultation with their Deputy Director. Any genuine doubt should be exercised in favour of the applicant with an appropriate minute being made on the proceedings sheet.]

1.34 It should be noted that a reasonable expectation that the mere publication of the invention, as distinct from its use, would encourage the stipulated behaviour activates the prohibition. If, however, the specification merely includes matter the publication or exploitation of which would generally be expected to encourage such behaviour, but the invention itself is not open to this objection, then the exclusion does not operate and the situation is dealt with by excision of the offending matter (see 16.34-16.37).

a.53(a)EPC 1.35 The corresponding provision of the EPC (see 1.06) refers to "inventions the publication or exploitation of which would be contrary to "ordre publique" or morality". In the "onco-mouse" case (see 1.37) the EPO Technical Board of Appeal referred back to the Examining Division the question of whether a process for producing genetically manipulated animals and the transgenic animal itself should be regarded as excluded from patentability under a.53(a)EPC. The Board indicated in effect that the possible detrimental effects and risks had to be weighed and balanced against the merits and advantages aimed at. In particular, against the basic interest of mankind to remedy disease had to be set the protection of the environment against the uncontrolled dissemination of unwanted genes and the avoidance of suffering to animals. The Examining Division decided that on balance in that case the benefit to mankind outweighed the other considerations. The decision to grant has been opposed and a final decision on the case is not expected for some time. In the *Relaxin* case (see 1.15) the opponents argued, *inter alia*, that the patenting of human genes means that human life is being patented and that this is intrinsically immoral. The Opposition Division rejected this argument by pointing out that DNA is not "life", but a chemical substance which carries genetic information and can be used as an intermediate in the production of proteins which may be medically useful. In their opinion the patenting of a single human gene had nothing to do with the patenting of life, nor was it true that there was an overwhelming consensus amongst the Contracting States that the patenting of genes was abhorrent.

1.36 Subsection (4) is a rider to subsection 3(a) to make it clear that an act or action prohibited by a law is not to be considered as necessarily the same thing as offensive, immoral or antisocial behaviour. (One reason for this is that a product which could not lawfully be used in the UK may be manufactured lawfully in the UK for export to countries where its use is not illegal). However the existence of a law or regulation may be a material fact to be taken into consideration in determining whether to refuse an application under s.1(3)(a). The nature and probable uses of the invention will need to be considered as well as the exact terms of the prohibition. Thus if the prohibition is directed unconditionally to the very act which the inventor proposes very careful deliberation must be given as to whether to invoke s.1(3)(a). In such cases a useful test is to consider why the prohibition exists. For example it is considered that the Landmines Act 1998 (implementing the Ottawa Convention) was passed because the public in the UK generally now consider the development, manufacture and use of anti-personnel mines to be immoral.

Alternatively in cases in which an invention can be exploited legally albeit in accordance with stringent regulations, it would be very difficult to argue that s.1(3)(a) applies and the application for a patent refused.

Animals, plants, or biological processes

1.37 The exclusion of plant and animal varieties from patentability applies only when they are characterised by purely biological features. An EPO Board of Appeal has allowed claims to plants characterised by the fact that they had been treated by a particular (patentable) process (T49/83 OJEP 3/84) and to hybrid seeds prepared by a patentable process (T320/87 OJEP 3/90). However, in a case relating to herbicide resistant plants (Plant Genetic Systems: T356/93 OJEP 8/95) another EPO Board of Appeal has found that a product claim which embraces within its subject matter "plant varieties" is not patentable. This was against the background that the working examples started from existing varieties and, in the view of the Board, produced varieties, since these were stated to be homozygous for the inserted gene. (Certain plant varieties are capable of protection in the UK under the Plant Varieties and Seeds Act 1964, which is administered by the Plant Variety Rights Office, White House Lane, Huntingdon Road, Cambridge CB3 0LF). The scope of the exclusion of animal varieties has been considered before the EPO in the "onco-mouse" case (T19/90 OJEP 12/90). In that case the claims directed to animals were generically drafted claims to non-human "mammals" and to "rodents". The case was remitted to the Examining Division who found (OJEP 10/92) that although the term "animal variety" was not entirely clear it could be stated with certainty that rodents or even mammals constitute a taxonomic classification unit much higher than species. An "animal variety" is a sub-unit of a species and therefore of even lower ranking than a species and accordingly the subject matter of claims to animals *per se* is not considered to be excluded from patentability.

1.38 The question whether a process is "essentially biological" is one of degree, depending on the extent to which there is technical non-biological intervention during the carrying out of the process, and the border-line is clearly difficult to determine. If such intervention plays a significant part in determining or controlling the result it is desired to achieve, the process would not be "essentially biological" (see T320/87 OJEP 3/90). Thus, a method for producing a new variety of plant or animal which utilised only the selection, mating and subsequent selection of those individuals having identified characteristics, or used similar techniques relying only upon the exploitation of the natural reproductive processes, would be excluded. If, however, a surgical, chemical or irradiative step were introduced into the method and this significantly affected the end result then the method would no longer be essentially biological even though biological processes were involved. Thus a method of treating plants or animals to alter growth patterns, improve properties or promote yield (for example a method of pruning a tree or the administration of active substances or radiation) may avoid exclusion by this subsection (although such a method when applied to animals may fall foul of s.4(2), see 4.08 to 4.23, especially 4.22). The treatment of soil by technical means to suppress or promote the growth of plants is also not excluded from patentability.

1.39 The exclusion does not apply to micro-biological processes or the products thereof, and patents may therefore be obtained not only for processes involving micro-organisms, but also for micro-organisms themselves (as well as inanimate products) when produced by a micro-biological process. "Micro-biological process" should be construed widely as including selective culturing or cross-breeding of micro-organisms including sub micro-organisms and not be restricted to essentially chemical manufacturing processes in which micro-organisms are used. Thus a claim to micro-organisms *per se* may be allowed when they have been obtained by cross-selecting from known micro-organisms, by artificial mutation or by micro-biological reproduction processes in which normal conditions have been altered by human intervention. However, in the Plant Genetic Systems case (see 1.37 above) the Board was of the opinion that a technical process including a microbiological step may not simply be equated to a microbiological process. Following this reasoning a plant variety produced by a technical process including a microbiological step is not patentable whereas a plant variety produced by a process which is judged to be a microbiological process would be. Finding a micro-organism occurring freely in nature is however mere discovery and is therefore unpatentable as such. However, if the micro-organism had no previously recognised existence, and can be adequately defined without reference to the process by which it is obtained, then it may be patentable *per se* (see 1.15).

1.40 Cell lines are treated as micro-organisms for the purposes of the Act and Rules. While on a narrow definition of the term "organism" cell lines would not be regarded as micro-organisms, they can be regarded as falling within the definition given in Collins English Dictionary, which includes any living

animal or plant, bacterium or virus, or anything resembling a living creature in structure or behaviour. (In *Unilever Ltd (Davis's) Application*, [1983] RPC 219, a popular dictionary definition (of the term "therapy") was preferred to a narrow technical definition). For example both micro-organisms and cell lines may be grown in a culture medium and in so doing will increase their numbers by replication. Both are susceptible to genetic engineering techniques and both may also be grown for the economic value of the metabolic by-products they produce during culture. For the production of favoured by-products it is also possible in both cases to provoke mutation and to select appropriate mutant forms and also to maintain these as stable lines in culture collections.

Section 1(5)

The Secretary of State may by order vary the provisions of subsection (2) above for the purpose of maintaining them in conformity with developments in science and technology; and no such order shall be made unless a draft of the order has been laid before, and approved by resolution of, each House of Parliament.

1.41 The white paper "Patent Law Reform" (Cmnd 6000) noted that the patent system "must evolve in response to changing conditions". As intimated in 1.42, this was done under previous legislation by continually re-interpreting the centuries-old definition of invention as "any manner of new manufacture". The present Act controls what is to be regarded as an invention for which a patent monopoly may be granted by means of the definitions set out in the foregoing Subsections. The present subsection gives the necessary measure of flexibility to this control, whilst reserving to Parliament the authority to approve it. This would be at the instigation of the Secretary of State, who would normally take such action following the established consultative processes.

1.42 Prior to the 1977 Act, the courts attempted to keep the interpretation of the expression "manner of new manufacture" in line with developing technology; in *NRDC's Application*, [1961] RPC 134, the High Court of Australia observed that it is a mistake to enquire whether a given process or product is a manner (or kind) of manufacture because this tends to limit one's thinking to the idea of making tangible goods by hand or by machine, because "manufacture" as a word of everyday speech conveys that idea; they stated that "The right question is: "Is this a proper subject of letters patent according to the principles which have been developed for the application of s.6 of the Statute of Monopolies?"..... The purpose of s.6, it must be remembered, was to allow the use of the prerogative to encourage national development in a field which already, in 1623, was seen to be excitingly unpredictable. To attempt to place upon the idea the fetters of an exact verbal formula could never have been sound. It would be unsound to the point of folly to attempt to do so now, when science has made such advances that the concrete applications of the notion which were familiar in 1623 can be seen to provide only the more obvious, not to say the more primitive, illustrations of the broad sweep of the concept".

Section 2: Novelty

2.01 The two questions to be answered in order to determine whether an invention passes the first of the tests for patentability specified in s.1(1) are

- (a) has a particular document or action been disclosed in such a way as to make it part of the state of the art, and
- (b) does the document or action make available the necessary information to destroy the novelty of the invention claimed.

The answer to the second question (ie the test for lack of novelty) will generally be the same as it would have been under previous legislation, (except in regard to non-enabling disclosure (2.10.1-10.2) and prior use (2.27-2.29)), so that precedent cases decided under the 1949 and earlier Acts continue generally to be relevant. On the other hand the definition in the 1977 Act of what constitutes the state of the art, and the derogations from the definition as set out in s.2(2)-(6), are markedly different to what went before. Rule 5 is relevant to this section.

s.130(7) 2.02 S.2 is so framed as to have, as nearly as practicable the same effect in the UK as the corresponding provisions of the EPC, ie Articles 54 and 55, PCT and CPC.

Section 2(1)

An invention shall be taken to be new if it does not form part of the state of the art.

2.03 An invention defined in a claim lacks novelty if the specified combination of features has already been disclosed. Thus, as stated under the 1949 Act in *General Tire & Rubber Company v Firestone Tyre & Rubber Company Limited*, [1972] RPC 457, at pages 485-6:-

"If the prior inventor's publication contains a clear description of, or clear instructions to do or make, something that would infringe the patentee's claim if carried out after the grant of the patentee's patent, the patentee's claim will have been shown to lack the necessary novelty, that is to say, it will have been anticipated. The prior inventor, however, and the patentee may have approached the same device from different starting points and may for this reason, or it may be for other reasons, have so described their devices that it cannot be immediately discerned from a reading of the language which they have respectively used that they have discovered in truth the same device; but if carrying out the directions contained in the prior inventor's publication will inevitably result in something being made or done which, if the patentee's patent were valid, would constitute an infringement of the patentee's claim, this circumstance demonstrates that the patentee's claim has in fact been anticipated".

This so-called infringement test was applied in *Glaverbel SA v British Coal Corporation and anr.* [1995] RPC 255 where it was also held that it is not necessary for the prior art to be equal in practical utility or to disclose the same invention in all respects as the patent in suit.

2.04 It follows that a claim which defines an invention by reference to parameters, for example of a process or a product, is anticipated by a disclosure which when put into practice would necessarily fall within the scope of the claim, even if the disclosure does not refer to these particular parameters. (See also 14.121, 17.41).

2.04.1 In T 303/86 (*CPC Int*) [1993] EPOR 241 the Technical Board of Appeal of the EPO considered anticipation arising from two cook-book recipes of a process for making flavour concentrates from vegetable or animal substances by extraction with fat solvents under pressure in the presence of water. The claim specified certain parameters for the ratio between the vapour pressure of the water in the meat or vegetables and the vapour pressure of the free water. The Board said:

"It is sufficient to destroy the novelty of the claimed process that this process and the known process are identical with respect to the starting material and reaction conditions since processes identical in these features must inevitably yield identical products."

Furthermore, it did not matter that the cook did not realise that he was not only frying a chicken, but also making a "flavour concentrate" in the surplus oil. It was enough, as the Board said, that "some flavour of the fried chicken is extracted into the oil during the frying process even if this is not the desired result of that process."

2.04.2 In *Merrell Dow Pharmaceuticals Inc v HN Norton & Co Ltd* [1996] RPC 76 Lord Hoffmann held that section 2(2) does not confine the state of the art about products to knowledge of their chemical composition. It is the **invention** which must be new and which must therefore not be part of the state of the art. It is therefore part of the state of the art if the information which has been disclosed enables the public to know the product under a description sufficient to work the invention. Thus, in *Merrell Dow*, which centred on a claim to an acid metabolite formed in the liver after administration of terfenadine (itself the subject of an earlier patent), the acid metabolite was held to be anticipated not by prior use (see 2.29) but because it was the inevitable result of carrying out the directions in the earlier terfenadine patent.

2.05 A claim is bad for want of novelty if information about anything falling within its scope has already been disclosed. Thus for example if a claim specifies alternatives, or defines the invention by reference to a range of values (eg of composition, temperature etc), then the invention is not new if one of these alternatives, or if a single example falling within this range, is already known. Thus a specific example is sufficient to destroy the novelty of a claim to the same thing defined generically; for example a disclosure of a metal coil spring anticipates a claim to resilient means. In some (particularly chemical) cases it may be possible to overcome an objection of lack of novelty by means of a disclaimer (see 14.126).

2.06 On the other hand, a generic disclosure does not impugn the novelty of a more specific claim, so that an earlier reference to a metal coil spring cannot be used to attack the novelty of a claim specifying such a spring made of copper. In some cases however the disclosure of a comparatively small and restricted field of possible alternatives might properly be held to be a disclosure of each and every member; for example, "fluid" may be taken to disclose both liquid and gas, if the context warrants it, and a reference to an electric motor may be regarded as disclosing the use of both series- and shunt-wound types. In *Norton Healthcare Ltd v Beecham Group Plc* (SRIS C/62/95) Jacob J held that a prior suggestion of a combination of sodium or potassium clavulanate with amoxycillin or ampicillin trihydrate (four possible combinations only) was a disclosure of each of the combinations. (But see 2.18-2.20).

2.06.1 In *Union Carbide Corp. v BP Chemicals Ltd* [1998] RPC 1 Jacob J held that "the information given by a direction not to do X because it will have adverse consequences is not equivalent to a direction to do X because it has beneficial consequences or does not have the supposed adverse consequences" and so novelty will not be impugned by an earlier disclosure which in effect gives clear directions *not* to do that which is claimed in a later application. He commented that "invention can lie in finding out that that which those in the art thought ought not to be done, ought to be done."

2.07 While it is generally necessary, for a finding of lack of novelty, for all the features of the claim under consideration to have been explicitly disclosed, the teaching implicit in a document may also be taken into account. If a person skilled in the art would conclude that an earlier invention would, as a matter of normal practice, necessarily be performed in a way which would fall within the scope of the claim under consideration, then the matter defined by the claim is not new. For example the disclosure of a control arrangement for the cooling system of an internal combustion engine might not refer to the presence of a radiator or other heat exchanger in the system, but it is common knowledge that there would necessarily be one and so its presence is implied.

2.07.1 Care should be taken when relying on dimensions derived from drawings. It was held by the EPO Board of Appeal in Decision T204/83 (OJEPO 10/85) that although features shown solely in a drawing form part of the state of the art when a skilled person could derive a technical teaching from them without further description, it is not generally possible to derive a technical teaching by measuring dimensions in a diagrammatic representation; and that dimensions under these circumstances do not therefore form part of the state of the art. In the particular case in suit, claims to a venturi of particular

dimensional ratio were found to be novel in the face of a prior document which diagrammatically illustrated a corresponding ratio but without specific identification of the ratio in the description.

2.08 On the other hand, while it may be a common practice for there to be a radiator mounted in front of the engine, this is not necessarily the case and cannot be inferred; if the claim under consideration specifies a radiator so located and the cited document is silent on this point, the question is one of obviousness rather than lack of novelty. The judgment cited in paragraph 2.03 continues:-

"If, on the other hand, the prior publication contains a direction which is capable of being carried out in a manner which would infringe the patentee's claim, but would be at least as likely to be carried out in a way which would not do so, the patentee's claim will not have been anticipated, although it may fail on the ground of obviousness. To anticipate the patentee's claim the prior publication must contain clear and unmistakable directions to do what the patentee claims to have invented: *Flour Oxidizing Co Ltd v Carr & Co Ltd*, ((1908) 25 RPC 428 at p457, line 34, approved in *B T H Co Ltd v Metropolitan Vickers Electrical Co Ltd*, (1928) 45 RPC 1 at p24, line 1). A signpost, however clear, upon the road to the patentee's invention will not suffice. The prior inventor must be clearly shown to have planted his flag at the precise destination before the patentee".

This statement of the law (see also 2.03) in *General Tire* has been applied in proceedings under the 1977 Act, eg by the Patents Court in *Helitune v Stewart Hughes* (SRIS C/82/90) concerning the detection of the degree of unbalance of helicopter rotors.

2.09 In order to determine the teaching implicit in a document it must be construed as at the date of its publication (*Minnesota Mining & Manufacturing Co v Bordina Ltd*, [1973] RPC 491 at page 521).

2.10 In order to demonstrate lack of novelty the anticipatory disclosure must be entirely comprised within a single document. If more than one document is cited, each must stand on its own. The cumulative effect of the disclosures cannot be taken into consideration (*Ammonia's Application*, 49 RPC 409), nor may lack of novelty be established by forming a mosaic of elements taken from several documents (*British Ore Concentration Syndicate Ltd v Mineral Separation Ltd*, 26 RPC 124 at page 147; *Lowndes' Patent*, 45 RPC 48 at page 57); this may be done only when arguing obviousness. However if a cited document refers to a disclosure in another document in such a way as to indicate that this disclosure is intended to be included in that of the cited document, then the two may be read together as though they were a single document.

2.10.1 The Office practice in relation to anticipation by a document disclosing a chemical compound is to assume that the disclosure of the chemical compound is an enabling disclosure of that compound, ie a disclosure which is clear enough and complete enough for it to be performed by a man skilled in the art and thereby citable. The applicants against whose application it is cited can challenge that assumption by argument and/or evidence. If they do, the Office will decide, on the balance of probabilities, whether the disclosure is enabling or not.

2.10.2 The House of Lords discussed the need for "enabling disclosure" in *Asahi Kasei Kogyo KK* [1991] RPC 485. With regard to s.2(2), an invention cannot be said to have been made available to the public merely by a published statement of its existence (unless the method of working is so self-evident as to require no explanation); an enabling disclosure is necessary. The same need applies under s.2(3); it would be illogical for a disclosure which was inadequate for the purposes of s.2(2) to be adequate for those of s.2(3) merely because of a difference in dates bringing it into one field rather than the other. Lord Oliver of Aylmerton said that since s.14(3) requires that the specification discloses the invention in a way which will enable it to be performed by a person skilled in the art (ie it must contain an "enabling disclosure") it follows that a description in an earlier application which contains no enabling disclosure will not "support" the invention so as to enable it, as an invention, to claim priority from the date of that application under s.5(2)(a) (although the description will be entitled to a priority as "matter contained" in the application in suit under s.5(2)(b)). He could not construe s.2(3) as deeming to be part of the state of the art anything more than that matter which is entitled to priority under s.5. However, in considering whether to cite a document in the s.2(3) field, the examiner does not normally have ready access to the priority document and should assume that the disclosure of the potentially citable document is supported

by the priority document and thus entitled to the priority claimed. The applicants against whom it is cited can challenge whether such support is present and whether it is enabling.

CONSTRUCTION OF CLAIMS

(See also 14.111-14.117)

2.11 In general a document will destroy the novelty of a later claim only if it discloses each and every feature specified in that claim. If the claim contains equivalent or additional features, then the question normally becomes one of obviousness. However since the protection conferred may go beyond the literal wording of the claim (see 14.114-14.115), it will on occasion be possible to argue that an earlier disclosure, while not falling within the precise literal words of the claim, nonetheless shows that the invention is not new, since any differences are confined to unessential features.

2.12 A claim to an apparatus for a particular purpose (eg for carrying out the process of another claim) is normally construed as a claim to apparatus suitable for that purpose. The words do not restrict the claim to the apparatus when used in that way (*L'Air Liquide Societe's Application*, 49 RPC 428). Apparatus which otherwise possessed all of the features specified in the claims, but which would be unsuitable for the stated purpose, or which would require modification to enable it to be so used, should not normally be considered anticipating the claim. For example, if a claim refers to "A hook for a crane" this implies particular dimensions and strength in the hook. Therefore a fish-hook could never anticipate the claim, but a hook having the necessary dimensions and strength and possessing all the other features specified in the claim would deprive the claim of novelty whether it was stated to be for use in a crane or not.

2.12.1 Nevertheless, a claim is not limited to an apparatus *per se* if the design of the apparatus is essentially tied to its functionality with some other bit of apparatus. In *BSH Industries Ltd's Patents* [1995] RPC 183 Aldous J did not accept that a claim for "An isolating matching device to enable a heating element of a motor vehicle electrically heatable window to be used as a receiving aerial," was limited to the device and did not include the heating element in the vehicle window. Noting that each type of heating element is likely to have a different impedance, he reasoned that it is not possible to ascertain whether any device takes the invention without considering it in association with a particular heating element in a particular window.

2.13 It is often necessary to look beyond the words of a claim and to consider what it seeks to monopolise and decide whether the wording used imports a technical, as opposed to merely verbal, distinction. For example, the claim referred to in 2.12 would not be saved by directing it to "a crane-hook", since this is in practice no different in scope from "a hook for a crane". However in *Hickman v Andrews*, [1983] RPC 147 at pages 183-7, it was alleged that a claim to a workbench was anticipated by a bookbinder's press. The Court of Appeal found that the press had all the features which had been used to characterise the claimed workbench, which would therefore be anticipated if, as had been argued, the press could serve as a workbench. The Court however, having described a workbench as "a surface of sufficient area to enable one to carry out manual work upon it, said surface being supported at a convenient height, and sufficiently rigidly, having regard to the nature of the relevant work", concluded that the alleged anticipating press "is not a workbench. It is in our view far too small to be regarded as such, but on the contrary it is a vice to be used on a workbench".

2.14 Likewise a claim to a material or composition for a particular purpose is regarded as a claim to the material or composition *per se* (*Adhesive Dry Mounting Co Ltd v Trapp and Co*, 27 RPC 341; *G.E.C's Application*, 60 RPC at page 3). A known product which is *per se* the same as the material or composition defined in the claim, but which is in a form which would render it unsuitable for the stated use, would not deprive the claim of novelty, but if the known product is in a form in which it is in fact suitable for the stated use, though it has never been described for that use, it would deprive the claim of novelty. In *I. G. Farbenindustrie A.G.'s Patents*, 47 RPC at page 322, it was stated that "no man can have a patent merely for ascertaining the properties of a known substance". There is however an exception to this general principle where the claim is to a known substance or composition for use in a surgical, therapeutic or diagnostic method (see 2.43). In contrast to the above general principle, the Enlarged Board of Appeal of the EPO has held in Decisions G 2/88 and G 6/88 (both in OJEP 4/90) that a claim to the use of a known compound for a particular purpose, which is based on a technical effect which is described in the patent, should be interpreted as including that technical effect as a functional technical

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feature, and is accordingly not open to an objection of lack of novelty provided that such technical feature has not previously been made available to the public. In G 2/88 (*Mobil*), the new technical effect was the discovery that the claimed compound previously used in lubricant compositions to inhibit rust had friction reducing properties. A claim to the use of that compound in a composition for reducing friction was held to be novel even though such friction reduction had inherently occurred in its previous use. Similarly, in G 6/88 (*Bayer*), use of certain compounds as a fungicide was held to be novel even though the method of use was identical to a known use of the compound as a plant growth regulator. However, these EPO decisions should not be followed and the existing practice of the Office should continue pending clarification or guidance from the courts. In *Robertet SA/Deodorant compositions* [2000] OJEPO 1 (T 892/94) it was held that a claim to the use of a known substance for a known purpose could not derive novelty from the discovery of a previously unrecognised technical effect underlying that use.

2.15 Nevertheless, a claim to an apparatus or material "when used in" a particular process is construed as a claim confined to the use of the apparatus or material in such a process, and its novelty is therefore destroyed only by a disclosure referring to such use. (If the apparatus or material *per se* is known to be old, this fact should be acknowledged in the specification, in order to ensure that the nature of the invention is presented in its proper perspective).

2.16 Similarly a claim such as "the use of substance X as an insecticide" is regarded as equivalent to a "process" claim of the form "a process of killing insects using substance X" and is not interpreted as directed to the substance X recognisable (eg by further additives) as intended for use of an insecticide. (See also 2.45).

2.17 A claim for a method of using a known apparatus may be regarded as novel provided that the method of use is new. Parker J stated in *Flour Oxidizing Co Ltd v Carr and Co Ltd*, 25 RPC 428 at page 457, "But when the question is solely a question of prior publication, it is not, in my opinion, enough to prove that an apparatus described in an earlier specification could have been used to produce this or that result. It must also be shown that the specification contains clear and unmistakable directions so to use it".

SELECTION INVENTIONS

(See also 3.26 to 3.29.1)

2.18 A prior disclosure in general terms embracing a number of alternatives may amount to no more than a mere suggestion that any of the members, including any specifically exemplified, might be used, and may therefore be regarded as not anticipating a claim to a specific one of the members. An invention so claimed is generally referred to as a "selection" invention and should meet the criteria set out in 3.27. In *Union Carbide Corp v BP Chemicals Ltd* [1998] RPC 1, it was held that a prior disclosure of a range should normally be regarded as disclosing each and every part of that range. However, there might be room for an invention along the lines of a selection invention if there was something special about a later-claimed part of the range.

2.19 An invention is not anticipated by a document which merely points the way which might lead to it. The alleged prior disclosure must clearly indicate that use of the relevant material does result in a product having the advantages predicted for the class (*Du Pont de Nemours & c (Witsiepe's) Application*, [1982] FSR 303; cf also the words of the judgement quoted in 2.08). Thus a particular member of a class of substances is not necessarily taken to be disclosed if the prior document disclosing the broad class merely indicates the inclusion of that particular member, whether by name, formula or starting materials, without any clear indication that the substance has actually been prepared, eg by describing its manufacture or particular properties. In the *Du Pont* case, a document describing a copolymer with a glycol of general formula $\text{HO}(\text{CH}_2)_n\text{OH}$, where n is between 2 and 10, was held not to anticipate a claim to the copolymer with $\text{HO}(\text{CH}_2)_4\text{OH}$, since all the specific examples disclosed in the earlier document used ethylene glycol ($n=2$), and since the claimed copolymer was found to have a rapid hardening rate, making it especially effective in injection moulding and high speed extrusion, a fact not previously known or contemplated in the earlier document, which was concerned with textile fibres having a good affinity for dyes. The document thus merely indicated that the use of one preferred glycol would produce a compound with particular properties, suggesting at the same time that use of any one of the other eight glycols would produce the same result. Although the document stated that the C_3 , C_4 , C_6 and C_{10} glycols were examples which would be used, there was no statement that any of these others had in fact been used, or that the

product resulting therefrom had been found to have any particular advantages. It was therefore open to the applicant to select one of them and discover that the product had valuable properties in a different field. However had the polymer now claimed been specifically disclosed in the earlier document, a discovery that it had some advantage or useful quality not previously recognised would not make it patentable (see also 2.14). Similarly in *Rhône-Poulenc/Ester Production* [1999] EPOR 443 (T427/86) a process wherein a specific pair of compounds were reacted in the presence of a catalyst to form a product was held to be novel over prior art which disclosed the use of reagents and catalyst selected from a list including those specified in the patent in suit. The particular examples in the prior art did not suggest the specified combination, which resulted in a reaction speed significantly greater than could be obtained by following the examples.

2.20 The size of the class from which a member or members have been chosen is not relevant to the question of novelty of a selection invention, although it may be relevant to the question of obviousness (*Du Pont de Nemours & Co (Witsiepe's) Application*, [1982] FSR 303 at page 310), (see also 2.06).

Section 2(2)

The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.

2.21 Matter becomes part of the state of the art on the date it first becomes available to the public, wherever in the world this may be, and in whatever manner or language the disclosure takes place. There is no limit on the age of the disclosure. Matter may be disregarded only in the circumstances specified in s.2(4)-(6) (see 2.37-2.53). As already noted, the definition of material which can be used to demonstrate that an invention is not new or is obvious is different from that effective under the 1949 Act, so that precedent cases should be regarded with caution.

s.125(2) 2.22 It should be borne in mind, when deciding whether or not matter forms part of the state of the art in respect of an invention, that it is the priority date of the invention which is relevant, and not the declared priority date of the application, which may be earlier. Moreover different claims, or different alternatives specified in a single claim, may have different priority dates. (For the practice to be followed during search and substantive examination, see 17.74 and 18.14-18.16).

2.23 In practice the bulk of the matter which needs to be considered consists of documents, such as patent specifications, textbooks or technical journals which have been published in the conventional sense of that term, for example by being on sale or available in libraries.

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s.118(1) 2.24 Publication does not however depend on the degree of dissemination; communication to a single member of the public without inhibiting fetter is enough to amount to making available to the public (*Bristol-Myers Co's Application*, [1969] RPC 146). There is no need even to show that a member of the public has actually seen the document. Any document is regarded as having been published, and thus forms part of the state of the art, if it can be inspected as of right by the public, whether on payment of a fee or not; this includes for example the contents of the "open" part of the file of a UK patent application once the application has been published under s.16. And in *Monsanto (Brignac's) Application*, [1971] RPC 153, it was held that a company had published a document by supplying it to its salesmen, since it had been given to them with no restriction on disclosure; indeed it had been put into their hands with the intention that they should make the information available to the public.

2.25 A date of publication which appears on or in connection with a document is presumed to be the date on which publication actually took place, and any allegation to the contrary must be established by evidence. In *Microsonics Corporation's Applications*, [1984] RPC 29, a cited US patent was granted before, but published after, the date of filing the application in suit. A notice in the US Official Gazette stated that the delay in printing did not affect the availability to the public of the files, which could be inspected from the date of grant. The applicant however alleged that there was a possibility that the files had not in fact been available to the public. It was held that, in view of the notice in the Gazette, the onus was on the applicant to rebut, on the balance of probabilities, the presumption that the file had been

available, and that the evidence adduced (affidavits consisting largely of reports of conversations with staff of the US Patent Office) was mostly hearsay, but even if admissible was not enough to rebut this presumption.

2.26 A document published too late to form part of the state of the art may reproduce or summarise disclosure which is alleged to have taken place before the priority date of the invention. For example the document may be a report of a lecture or a public exhibition. In such a case it should be assumed that the account given is correct both as to subject-matter and as to the date on which disclosure is reported to have taken place, unless reasonable ground for doubting either of these is put forward by the applicant, or there is other good reason for doubting them. Likewise any description of prior disclosure given in the specification in suit should be assumed, at least in the first instance, to be accurate (see 18.67).

PRIOR USE

(For the practice at substantive examination, see 18.24).

2.27 The only matter which becomes part of the state of the art as the result of the use of an invention is that which is thereby made available to the public. (Prior secret use does not therefore invalidate a patent, although the user may have some protection against action for infringement [see s.64]). In *Lux Traffic Controls Ltd v Pile Signals Ltd and Faronwise Ltd*, [1993] RPC 107 Aldous J recognised that what was made available to the public often differed according to whether the public had an article in their possession to handle, measure and test or whether they could merely look at it. Depending on the circumstances a skilled person might be able to determine how an article was constructed and operated or nothing material might be disclosed. If an article or a material is unconditionally supplied to a member of the public, possibly as the result of just a single sale (T482/89 OJEPO 11/92), this is regarded as also making available any information which could be obtained by dismantling or analysing the article or material, even to destruction (G1/92 OJEPO 5/93). Novelty is destroyed by prior use of a product if analysis of the product using available techniques shows the skilled person that it falls within the scope of the claims; beyond that, it is not necessary for complete analysis to be possible (T952/92 OJEPO 11/1995). In *Milliken Denmark AS v Walk Off Mats Ltd and anr* [1996] FSR 292 Jacob J held that the hiring of mats to customers who were free to inspect them amounted to anticipatory prior use even though the mats relied on perforations not visible to the naked eye for their function. While there was no reason to suppose that any customer should have conducted tests which would have revealed the perforations, a skilled person called on to investigate the mats would none the less have discovered them. The knowledge of the perforations would enable the skilled person to perform the invention. It was irrelevant that he would not know of its virtues. Moreover, if the process by which the article or material has been made can be deduced with certainty from such examination, that would also form part of the state of the art. Similarly, if for example a machine is displayed or operated where it can be seen by a member of the public, such as at an exhibition, on the highway, or in a part of a factory to which persons not bound to secrecy are admitted, then all information which a person skilled in the art might be able to glean is regarded as having been disclosed (see T84/83 1979-85 EPOR 796). On the other hand, use of a battery in cars on the highway by employees who were well aware that the design was confidential did not amount to disclosure of the battery (*J Lucas (Batteries) Ltd v Gaedor Ltd*, [1978] RPC 297).

2.28 In considering prior use in *Quantel Ltd v Spaceward Microsystems Ltd* [1990] RPC 83, Falconer J pointed out that the requirements under the 1977 Act are different from those of the 1949 Act as represented by the decision in *Wheatley's Application* [1985] RPC 91 in that "it now requires the prior use, to constitute anticipation, to have made available to the public an enabling disclosure of the invention". Even if the tests which could have been carried out on a product would have had an ambiguous result, in *PCME Ltd v Goyen Controls Co UK Ltd* [1999] FSR 801 Laddie J held that the conclusion that "it is probably A but may be B" was a disclosure and even if it were not sufficiently precise to support anticipation it may well render a patent claim obvious.

2.29 In *Merrell Dow Pharmaceuticals Inc v NH Norton & Co Ltd* [1996] RPC 76 (see also 2.04.2), where lack of novelty arose because a claim for an acid metabolite sought to monopolise the product as metabolised in the liver, Lord Hoffmann held that making matter available to the public requires the communication of information since an invention is a piece of information. He went on to hold that the use of a product makes an invention part of the state of the art only so far as that use makes available the necessary information. Thus acts, which are done without knowledge of the relevant facts but

nevertheless would amount to infringement after the grant of the patent, will not count as anticipations before. In *Merrell Dow* the fact that volunteers in clinical trials had taken terfenadine and therefore had made the acid metabolite in their livers, was held not to constitute anticipation by use. The volunteers had been given terfenadine capsules for the sole purpose of swallowing them; they took them without knowing their composition and produced within themselves a substance, which was not then readily capable of being identified and was only later known to be the acid metabolite. This construction of s.2(2) is supported by *PLG Research Ltd v Ardon International Ltd* [1993] FSR 197, 225 in which Aldous J said:

"Under the 1977 Act, patents may be granted for an invention covering a product that has been put on the market provided the product does not provide an enabling disclosure of the invention claimed. In most cases, prior sale of the product will make available information as to its contents and its method of manufacture, but it is possible to imagine circumstances where that will not happen. In such cases a subsequent patent may be obtained and the only safeguard given to the public is section 64 of the Act."

Merrell Dow was distinguished in *Evans Medical Ltd's Patent* [1998] RPC 517 where a prior art vaccine had been made available to the public such that it would have been possible to analyse it to determine its contents. Actual prior identification of the process or product claimed was not in itself necessary to find a lack of novelty, merely instructions which, if followed, would inevitably result in the use of the claimed process or product.

2.29.1 In cases of alleged prior use, the required standard of proof is the balance of probabilities. In *Colley's Application* [1999] RPC 97 the hearing officer, following *Sekisui/shrinkable sheet* [1998] OJEPO 161 (T 472/92) and *Demmeler Maschinenbau GmbH & Co KG* (T 908/95) held that mere assertion was insufficient: place, time and detail were essential.

Section 2(3)

The state of the art in the case of an invention to which an application for a patent or a patent relates shall be taken also to comprise matter contained in an application for another patent which was published on or after the priority date of that invention, if the following conditions are satisfied, that is to say -

- (a) *that matter was contained in the application for that other patent both as filed and as published; and*
- (b) *the priority date of that matter is earlier than that of the invention.*

2.30 The only kind of document whose contents can form part of the state of the art by virtue of this subsection is an application for a patent, that is, either an application which is made under the Act or one which is treated as such. The field for s.2(3) therefore consists only of the following:-

- (a) applications made under the Act and which have been published under s.16;
- s.128(2) (b) patent specifications published under the 1949 Act;
- s.78(2), (3) (c) applications for European patents (UK) which have been published by the European Patent Office under a.93 EPC (see also (e) below).
- ss.89(1) and 89B(2) (d) international applications for patents (UK) which have been published by WIPO under a.21 PCT and which have entered the national phase (that is, the national fee (if any) has been paid and, if the application is in a foreign language, an English translation has been filed at the Office; see 89A.06.1 and 89B.04);
- s.89(A)(3)(a) |
- s.79(1) (e) international applications for European patents (UK) which have been published by WIPO
- s.79(2) under a.21 PCT and which have entered the regional phase (that is, the national fee has been

paid and, if the application is in a language other than English, German or French, a translation into one of those languages has been filed at the European Patent Office).

[OPTICS can be accessed to discover whether an international application has entered the national or regional phases (see 18.20).]

s.14(7) 2.31 Only the matter contained in the specification (that is, the description, drawings and claims) of an application of the kind referred to in 2.30 can form part of the state of the art by virtue of s.2(3). The abstract contained in such an application does not form part of the state of the art under this subsection, nor does a priority document filed in respect of such an application (although both of these, when published in any way including being made available to public inspection under s.118(1), can form part of the state of the art under s.2(2)).

s.78(5) 2.32 Subject-matter enters the s.2(3) field when the application containing it has been published (and, in the case of an international application, it has also entered the national or regional phase - see 2.30). Once this has occurred, the status of the matter (except in the case of a European application) is not affected by the subsequent fate of the application; the matter remains part of the state of the art even if the application is subsequently withdrawn or is otherwise terminated. A European application which is terminated (or whose UK designation is withdrawn) before publication will, as a consequence, not be treated as an application for a patent under the Act, and will thus not enter the s.2(3) field. Moreover, prior to the CDP Act, the matter in a published European application ceased to be part of the state of the art under s.2(3) if the application (or the UK designation) was subsequently withdrawn (judgment of the Patents Court in *L'Oreal's Application*, [1986] RPC 19) and any citation of such an application became ineffective. Thus an application which was anticipated by a published European application could suddenly cease to be anticipated if the European application was refused, withdrawn etc. This seemingly bizarre effect has been removed by the introduction of an additional subsection (5A) into s.78 of the 1977 Act by paragraph 22 of Schedule 5 to the CDP Act. Subsection (5A) provides that if an application for a European patent (UK) ceases to be treated as a domestic application it nevertheless remains part of the state of the art by virtue of s.2(3) so far as other inventions are concerned. The terms of subsection (5A) are considered to be such that it applies to any published European application (UK) which was not withdrawn, refused, etc before commencement of the provision (ie 7 January 1991).

2.33 Only matter which was present both in the application as filed and as published forms part of the state of the art under s.2(3). If for example the published application contains claims added subsequent to filing, then their subject-matter does not form part of the state of the art under s.2(3). (It is of course in the state of the art under s.2(2), even if the matter is subsequently deleted from the application during substantive examination).

2.34 It should be remembered that it is the priority dates of the matter in the earlier application and of the invention in suit which need to be compared, and not the declared priority dates of the respective applications. Moreover a claim to priority is not established until the requirements of r.6 have been complied with (see 5.04 to 5.13); in particular, even if the application has already been published, a claimed priority date which has subsequently been lost (for example through failure to file a translation in time) must be disregarded when deciding whether the application forms part of the state of the art under s.2(3). (For the practice to be followed at search and examination, see 17.74 and 18.14-18.16). With regard to the need for enabling disclosure, see 2.10.2.

s.3 2.35 In order to decide whether or not an invention is new, matter which is in the state of the art under s.2(3) is considered in exactly the same way as matter in the s.2(2) field (see 2.03-2.20). It cannot however be used to argue obviousness (but see the remarks in 2.07-2.09 on implicit disclosure, and in 2.11 on purposive construction of claims).

s.73(1) 2.36 The comptroller may on his own initiative revoke a patent which has been granted for an invention which, having regard to matter in the s.2(3) field, is not new (see 73.02-73.04).

Section 2(4)

For the purposes of this section the disclosure of matter constituting an invention shall be disregarded in the case of a patent or an application for a patent if occurring later than the beginning of the period of six months immediately preceding the date of filing the application for the patent and either -

- (a) *the disclosure was due to, or made in consequence of, the matter having been obtained unlawfully or in breach of confidence by any person -*
 - (i) *from the inventor or from any other person to whom the matter was made available in confidence by the inventor or who obtained it from the inventor because he or the inventor believed that he was entitled to obtain it; or*
 - (ii) *from any other person to whom the matter was made available in confidence by any person mentioned in sub-paragraph (i) above or in this sub-paragraph or who obtained it from any person so mentioned because he or the person from whom he obtained it believed that he was entitled to obtain it;*
- (b) *the disclosure was made in breach of confidence by any person who obtained the matter in confidence from the inventor or from any other person to whom it was made available, or who obtained it, from the inventor; or*
- (c) *the disclosure was due to, or made in consequence of the inventor displaying the invention at an international exhibition and the applicant states, on filing the application, that the invention has been so displayed and also, within the prescribed period, files written evidence in support of the statement complying with any prescribed conditions.*

Section 2(5)

In this section references to the inventor include references to any proprietor of the invention for the time being.

r.111(5) 2.37 If an applicant wishes an earlier disclosure to be regarded as not forming part of the state of the art, the onus is on him to make out a sufficient *prima facie* case (on the basis of an affidavit or other evidence if necessary) that one of the conditions specified in s.2(4) is satisfied. Moreover the disclosure can be disregarded only if it occurred after a date six months before the filing date (not the priority date) of the application; thus for example, while the protection of this subsection would apply to an application made within six months of display at an international exhibition, it would not apply to a subsequent application claiming priority from that application and filed more than six months after the display. For the purpose of s.2(3), s.2(4) provides for the disregarding of disclosure in patent applications published not only during the six months before the filing date but also on or after the filing date (but of earlier priority than the application in suit). Where the filing date immediately follows an excluded day or a day certified as one on which there is an interruption under r.111(1), see 123.43, the six months period is calculated back from the day following the preceding non-excluded or certified day. The period may also be extended under r.111(6) in particular cases affected by a failure or undue delay in the UK postal services, see also 123.47.

UNLAWFUL OBTAINING: BREACH OF CONFIDENCE

2.38 An allegation that an earlier disclosure was made as a result of unlawful obtaining or breach of confidence must be fully particularised, and the examiner should disregard the disclosure only if he is convinced by the applicant's submissions that, on the balance of probabilities, s.2(4) applies. It may be necessary to ask the applicant to clarify or substantiate his allegation, for example by filing evidence or

a statutory declaration. If the applicant is either unable or unwilling to substantiate his allegation, he should be informed that the objection based on the earlier disclosure is still outstanding and a hearing should be offered. Any person desiring an actual determination of his entitlement may make a reference under section 8 or 37.

- s.118(1) 2.39 Any communication on this subject will be open to public inspection. If the applicant requests under r.94 that the communication be treated as confidential, he should be informed that such treatment would not be justified, having regard to the interests of third parties and that, unless the allegation is withdrawn within one month the communication will be placed on the open file; a hearing may be offered on this point.

INTERNATIONAL EXHIBITIONS

(For procedure, see 17.84, 18.23)

- r.5(1) 2.40 If an applicant wishes disclosure by, or in consequence of, display of the invention at an international exhibition to be regarded as not forming part of the state of the art he must, at the time of filing the application, inform the comptroller in writing of the display. He must also, within four months, file a certificate issued at the exhibition by the authority responsible for the exhibition, stating that the invention was in fact exhibited there. The certificate should also state the opening date of the exhibition and, where the first disclosure of the invention did not take place on the opening date, the date of the first disclosure, and shall be accompanied by an identification of the invention, duly authenticated by the authority. For the requirements in the case of an international application for a patent (UK), see 89A.12.
- r.5(2)
- r.85(3)
- s.130(1) 2.41 Only an exhibition which falls within the terms of the 1928 Convention on International Exhibitions (as modified by the 1951 Protocol) is regarded as an international exhibition. Such an exhibition has to satisfy stringent conditions; for example, it must run for at least three weeks, and invitations to participate must be issued at government level through diplomatic channels. A statement published in the Patents and Designs Journal that an exhibition constitutes an international exhibition within the meaning of the Convention is conclusive evidence of that fact. Regularly held events and trade fairs organised by particular industries are unlikely to qualify.
- r.5(3)
- s.130(2)

[Litigation Section handles public enquiries about international exhibitions (see 17.84).]

Section 2(6)

In the case of an invention consisting of a substance or composition for use in a method of treatment of the human or animal body by surgery or therapy or of diagnosis practised on the human or animal body, the fact that the substance or composition forms part of the state of the art shall not prevent the invention from being taken to be new if the use of the substance or composition in any such method does not form part of the state of the art.

2.42 Section 2(6) has the effect that a known substance or composition may be patented for use in a method of treatment by surgery or therapy or of diagnosis provided that its use in any such method is new ("first medical use"). That is to say, if a known substance or composition not previously used in surgery, therapy or diagnosis is found to be useful in treating, say a human disease, or to obtain a specific "therapeutic" effect (eg analgesic or antibiotic), a patent for the substance or composition for use in therapy (unspecified) may be obtained, ie the claim need not be limited to the specific therapeutic effect; additional claims directed towards more than one specific therapeutic effect may be allowed in the same patent application, provided of course that they are supported by the description. The terms surgery, therapy and diagnosis are discussed in more detail in paragraphs 4.08-4.23.

- s.4(2) 2.43 This is an exception to the general rule (see 2.14) that a claim to a substance or composition for a particular purpose is construed as a claim to the material per se, and that if the invention lies in a new method of using a known material only the new method can be claimed. (Where the new use is a method of surgery, therapy or diagnosis a claim to the method would not be allowable). In a case where the main claims related to a contraceptive composition comprising compounds that were already known as pharmaceuticals, the EPO Technical Board of Appeal, in decisions T303/90 and T401/90 (not

reported), was of the opinion that the composition as claimed could not be considered as novel and the added word "contraceptive" did not change the product claim into a use claim.

2.44 A known substance can only be claimed for use in a method of medical treatment the first time such a use is disclosed. Once the use of the compound in any method of medical treatment has formed part of the state of the art it destroys the novelty of a subsequent claim to a new medical use. The same substance or composition cannot subsequently be patented for use in treating a different disease, whether human or animal, or in obtaining another effect, or in surgery or diagnosis. In *Sopharma S A's Application*, [1983] RPC 195, the hearing officer refused a claim to a particular compound as an agent for the treatment of cancer because an earlier document had already described the compound for use as an anti-inflammatory agent, vaso-dilator and blood plate aggregation inhibitor. He held that the words "any such method" in s.2(6) referred back to "a method of treatment ...", and did not mean "in that method" (ie the method presently disclosed). He also drew support for his interpretation from the wording of a.54(5) EPC, by virtue of s.130(7) (cf paragraph 0.09). See also 2.46.

s.4(2)
s.1(2)(d)

2.45 Similarly, in *Bayer A G (Meyer's) Application*, [1984] RPC 11, the hearing officer refused a claim of the form "Compound X for use in combating medical condition Y", since X had already been disclosed for use in therapy. He also rejected a proposed claim to "Use of compound X in combating Y", since he held that this was equivalent to a claim to "a method of combating medical condition Y using compound X", and thus did not have industrial application. Claims of the form "Commercial package containing as an active pharmaceutical agent compound X together with (or bearing) instructions ..." for treating condition Y were also refused; it was only the content of the instructions which distinguished these claims from the prior art, and this was mere presentation of information and not an invention (see 1.32). See also 2.46.

2.46 A similar conclusion was reached in *John Wyeth and Brother Ltd's Application*, [1985] RPC 545. In that case it was argued on behalf of the applicant that a claim to the use of X in treating Y included procedures which are not practised on the human or animal body but which are of an industrial nature, such as the preparation of the compounds and of compositions containing them and their packaging, including the enclosure of instructions, for the new use; a decision of the German Federal Court of Justice (Bundesgerichtshof), reported at OJEPO 1/84 pages 26-41, was cited in support of this view. The hearing officer rejected a suggestion that he was obliged, because of s.130(7), to follow this decision, and observed that there appeared to be a fundamental difference of approach to the validity of claims, since the German Court seemed to take the view that because a claim includes some patentable matter it should be allowed, whereas under UK law a claim as a whole is regarded as bad if it includes something that is non-patentable. In a judgment ([1985] RPC 545 at page 556) on the *Wyeth* case and *Schering A G's Application*, the Patents Court agreed with the findings of the hearing officer in the *Sopharma* case (see 2.44) and the *Bayer* case (see 2.45) but followed the EPO Enlarged Board of Appeal in allowing claims of the form "the use of substance X for the manufacture of a medicament for a specified new and inventive therapeutic application", see 2.50.

2.47 A claim to a known substance or composition for the first use in surgical, therapeutic and/or diagnostic methods should be in a form such as "Substance or composition X" followed by the indication of the use, for instance "... for use as a medicament", "... for use as an antibiotic", or "... for use in treating disease Y".

2.48 There is no objection to a claim being directed to substance X for use in a medical method in the case where X is novel, whether or not the substance is also claimed per se. However in such a case the "for use in" claim will be construed broadly, in the usual way (see 2.14). It follows that the scope of a "for medical use" claim is uncertain unless there is some indication in the specification whether or not the substance is novel.

2.49 It would appear to follow from the wording "a substance or composition for use in ..." that the protection of s.2(6) is not restricted to a material having biological activity, and that for example a substance used as a carrier or extender for a pharmaceutical would be regarded as novel if it had not previously been used in such a method. As a consequence however, if a substance previously known as an inert carrier for a medicine is subsequently found to have therapeutic properties its use cannot be protected by s.2(6).

2.50 The Enlarged Board of Appeal of the EPO has ruled (Decision Gr 05/83, OJEPO 3/85) that, while a.54(5) EPC precludes a claim to a product per se characterised by a medical application if that product has already been described for another medical use, it is legitimate in principle to allow claims (of what is known as the Swiss form) directed to the use of a substance or composition for the manufacture of a medicament for a specified new and inventive therapeutic application, even if the process of manufacture does not differ from known processes using the same active ingredient. They also decided that a claim to the use of a substance for treatment was regarded as confined to the step of treatment and was thus contrary to a.52(4) EPC. (See also 2.46.) In following the principles of this decision the EPO Technical Board of Appeal has ruled in Decision T290/86 (OJEPO 8/91) that when a prior document and a claimed invention are both concerned with a similar treatment of the human body for the same therapeutic purpose, the claimed invention represents a further medical indication as compared with the prior document if it is based upon a different technical effect which is both new and inventive over the disclosure of the prior document. In the case in question the technical effect considered new was the removal of dental plaque, whereas the prior art only disclosed the depression of tooth enamel solubility in organic acids.

2.51 Section 2(6) is restricted to substances and compositions; apparatus cannot be so protected. Claims have been allowed however under Section 2(6) to compositions having a surface and in the form of an article ie having a shaped form.

2.52 Since cosmetic methods of treatment of the human body are not considered to be therapeutic (see 4.11), a substance or composition for use in a cosmetic method cannot be protected by Section 2(6). The position may be different for surgery, since it appeared from the obiter remarks by J Falconer in *Unilever (Davis's) Application* [1983] RPC 219 that the term "surgery" includes cosmetic surgery.

2.53 To provide evidence of prior use of a substance or composition in therapy, actual disclosure of therapeutic *use* must be found. It is not sufficient for a research paper to disclose experiments which show an activity which would make the substance or composition suitable for use in therapy, or discloses in vitro testing for such a use. The Section requires the use of the substance or composition in a method of therapy to form part of the state of the art. Such disclosures of experiments and tests might of course be used as a basis for an obviousness attack under Section 3.

Section 3: Inventive step

s.130(7) 3.01 This section is concerned with the second of the tests for patentability set out in s.1(1). It is intended to have, as nearly as practicable, the same effect as the corresponding provisions of the EPC, PCT and CPC, ie Article 56 of the EPC.

3.02 The question of whether or not an invention is obvious is a matter which is normally decided on the technical facts of the particular case rather than on any general legal principles, but insofar as any such principles can be derived from decisions given under previous legislation they will generally continue to be relevant. Although the definition of the state of the art against which an invention should be considered has changed, the criteria for determining whether an invention is obvious having regard to given prior art are not thought to be different in any major respect to the tests used in opposition or revocation proceedings under the 1949 Act.

Section 3

An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

3.02.1 What constitutes an inventive step may depend on the nature of the invention. The matter was considered by Lord Hoffmann in *Biogen Inc v Medeva plc* [1997] RPC 1 (at page 34) as follows:

"Whenever anything inventive is done for the first time it is the result of the addition of a new idea to the existing stock of knowledge. Sometimes, it is the idea of using established techniques to do something which no one had previously thought of doing. In that case the inventive idea will be doing the new thing. Sometimes it is finding a way of doing something which people had wanted to do but could not think how. The inventive idea would be the way of achieving the goal. In yet other cases, many people may have a general idea of how they might achieve a goal but not know how to solve a particular problem which stands in their way. If someone devises a way of solving the problem, his inventive step will be that solution, but not the goal itself or the general method of achieving it."

OBJECTIVE TEST

3.03 The test for obviousness should, as far as is possible, be an objective one. The question is whether the invention would have been obvious to a skilled person in the art, and not whether it was or would have been obvious to the inventor or to some other particular worker. It is immaterial whether the invention was the result of independent work and research done without knowledge of the prior art (*Allmanna Svenska Elektriska AB v The Burntisland Shipbuilding Co Ltd*, 69 RPC 63 at page 70). Although evidence of what was in the inventor's mind may be admissible as evidence of the state of the art, it would seldom be otherwise admissible (*The Wellcome Foundation v VR Laboratories (Australia) Pty. Ltd*, [1982] RPC 343). The EPO Board of Appeal has held that the subjective achievement of the inventor is not relevant; the fact that an invention relating to steel refining came, not from the steel industry, but from an applicant who normally deals with other fields of technology is not evidence for the existence of an inventive step (Decisions T36/82, OJEPO 7/83). In the judgment of the Court of Appeal in *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59 (in considering whether claims relating to a sailboard were obvious) it was stated that "the question of whether the alleged invention was obvious has to be answered objectively by reference to whether, at the material time (that is, immediately prior to the priority date), the allegedly inventive step or concept would have been obvious to a skilled addressee" and that "what has to be determined is whether what is now claimed as inventive would have been obvious, not whether it would have appeared commercially worthwhile to exploit it". In *Molnlycke AB v Procter & Gamble Ltd* [1994] RPC 49 the Court of Appeal recognised the usefulness of the analysis formulated in *Windsurfing* but did not consider that it assisted to ask whether the patent discloses something sufficiently inventive to deserve the grant of a monopoly. The criterion for deciding the issue of inventive step as laid down by statute was held to be a wholly objective qualitative and not quantitative test. The Court of Appeal followed *Windsurfing in Hallen Co v Brabantia (UK) Ltd* [1991] RPC 195, observing that "obvious" in s.3 is not directed to whether an advance is "commercially obvious" and stating "We do not

think that the hypothetical technician must also be taken as applying his mind to the commercial consequences which might follow if the step or process in question were found in practice to achieve or assist the objective which he had in view". In *Petra Fischer's Application* [1997] RPC 899 it was held that a diesel cabriolet was obvious even though there may be commercial prejudice against the idea; Jacob J stated that "The patentee in her patent has told the skilled man nothing which he did not know before, to wit, that in the engine space of a basic production model he could put a diesel engine, if he wanted to. Whether it was worth doing that or not is another matter. Whether he thinks it will sell or not, that is another matter." It is also unsound to fasten on the word "step" and to look at the steps which were actually taken by the inventor; this interpretation places too much weight on the choice of the particular word "step" whereas the word used in the French and German texts of the corresponding provisions of the European Patent Convention means "activity" (judgment of Court of Appeal in *Genentech Inc's Patent* [1989] RPC 147 at page 275). It is necessary to ask by what routes it would have been possible for the skilled man to proceed to the goal (ie the invention) from the starting point, considering how obstacles might be overcome or avoided on any such route, not only that followed by the inventor.

3.03.1 Applying *Windsurfing International v Tabur Marine* and *Molnlycke v Proctor & Gamble* Jacob J observed in *Unilever PLC v Chefaro Proprietaries Ltd* [1994] RPC 567 at page 580 that it is the inventive concept of the claim in question which must be considered, not some generalised concept to be derived from the specification as a whole. Different claims can, and generally will, have different inventive concepts. Identifying the inventive concept simply by construing a claim to determine what it covers is too wooden because one does not distinguish between portions which matter and portions which, although limiting the ambit of the claim, do not. It is the essence of the claim that should be identified when considering the inventive concept. In *Raychem Corp.'s Patents* [1998] RPC 31 (upheld on appeal - [1999] RPC 497) the practice of drafting claims in an unnecessarily complicated way was criticised. It was pointed out that a properly drafted claim will state the inventive concept concisely, but it was held that where the claims were prolix and opaque the court should break free of the language and concern itself with what they really meant.

Ex post facto analysis

3.04 The examiner (or any other person) who is considering the question of whether or not an invention is obvious must beware of *ex post facto* analysis. It can be very easy to be misled by a line of reasoning involving taking the solution and working backwards to the problem by a succession of easy steps. In considering a prior publication the examiner must avoid looking at the document under the influence of the application he is examining, and should attempt to place himself in the shoes of the skilled person faced with the problem at hand. This is necessarily an artificial position, since the examiner is presented with the solution (the invention) as well as the problem (or instead of the problem, a pointer to the problem since he in some cases he may be only able to infer this from the description of the invention). In *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59, the Court of Appeal held that the question of obviousness "has to be answered, not by looking with the benefit of hindsight at what is known now and what was known at the priority date and asking whether the former flows naturally and obviously from the latter, but by hypothesizing what would have been obvious at the priority date to a person skilled in the art to which the patent in suit relates". Having identified what, if any, differences exist between the matter cited as being "known or used" and the alleged invention, the question is "whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to the skilled man or whether they require any degree of invention". This approach (see also 3.03 and 3.06) was adopted in *Helitune v Stewart Hughes* (SRIS C/82/90) where Aldous J summarised his task as assuming the mantle of a skilled addressee, possibly a team, who must be deemed to have read the prior art in question with interest; identifying the inventive concept; identifying the differences between the prior art and the invention; and asking whether the difference constituted a step or steps which would have been obvious to the skilled addressee, having no knowledge of the invention, or whether they required a degree of invention.

Standard of certainty

3.05 When a *prima facie* objection of lack of inventive step is contested the matter is determined on the balance of the evidence available, the standard of certainty being the same pre-grant (ex-parte proceedings) as post-grant (inter partes proceedings). (For practice during substantive examination see 18.25-18.36).

THE SKILLED PERSON

3.06 The "person skilled in the art" should be taken to be a workman or technician who is aware of everything in the state of the art and who has the skill to make routine workshop developments but not to exercise inventive ingenuity (see also 14.75). He is assumed to be at least sufficiently interested to address his mind to the subject and to consider the practical application of the information which he is deemed to have (judgment of Court of Appeal in *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59). While recognising this the Court of Appeal in *PLG Research Ltd and anr. v Ardon International Ltd and others* [1995] RPC 287 held that knowing a piece of prior art is one thing but appreciating its significance to the solution to the problem in hand was another. Whitford J had similarly warned in *Sandoz Ltd (Frei's Application)* [1976] RPC 449 against too ready an assumption that the significance of existing published material in relation to the problem dealt with would necessarily be apparent to the hypothetical skilled man. The skilled man should not be expected to try all combinations unless he has a problem in mind and particular combinations might assist him in solving it; he is not to be expected to take steps or try processes which he would not regard as worthwhile as a possible means of achieving or assisting in practice the objective which he has in view (judgment of the Court of Appeal in *Hallen Co v Brabantia (UK) Ltd* [1991] RPC 195, see also 3.03).

3.07 With a prospective solution in mind he might need to seek advice from an expert in another field, the person skilled in the art may thus be regarded as a team combining the knowledge of both arts. In *Tetra Molectric Ltd v Japan Imports Ltd*, [1976] RPC 547, the Court of Appeal held that a claim to a smoker's lighter using piezoelectric ignition was obvious. Since the possibility of using piezoelectricity in a lighter would have occurred to the industry, a skilled lighter manufacturer, himself not an expert in piezoelectricity, could reasonably be expected to seek advice from those who were. If such experts had been consulted, they would have advised that the suggestion was definitely worth trying, and they could have solved such problems as arose. The hypothetical skilled man in this case was therefore a team which included persons skilled in piezoelectricity, and not simply persons engaged in the lighter industry. (See also 3.17, 3.25).

3.08 This approach may not always be appropriate. In *Mutoh Industry Ltd's Application*, [1984] RPC 35, the hearing officer held that a drawing board employing magnetic bearings was obvious, since it was reasonable for the drawing-board man concerned with the problem of reducing friction to consult a bearings expert. The Patents Court however allowed an appeal, finding that users of the known device were not struggling to overcome a problem which inhibited their activities, nor were manufacturers failing to put the known device on the market because it was not sufficiently friction-free; there was therefore no reason for the manufacturer or user to look for outside assistance. In *ABT Hardware Ltd's Application* (SRIS O/36/87), the hearing officer distinguished the circumstances from those in *Mutoh* and held the invention to be obvious. It was concerned with the use in a letterplate of a known type of magnet comprising an elastomer loaded with ferrite powder to hold a flap in sealing engagement with a frame over an opening in the frame. There were specific problems associated with prior magnetic letterplates which could arguably have led the applicants to seek specialist advice, and the general availability and widespread use of the magnets in question might also reasonably be expected to have led the applicants naturally to consider their adoption in letterplates, with or without consultation of specialists.

THE STATE OF THE ART

3.09 The state of the art for the purposes of deciding whether an invention is obvious is defined by s.2(2); that is, it includes everything which has been made available to the public, anywhere in the world, before the priority date of the invention (see further 2.21-2.29). Matter which forms part of the state of the art by virtue of s.2(3) is specifically excluded from consideration.

3.10 While it is not possible to combine the disclosure of a given document with other matter to demonstrate lack of novelty (see 2.10), in order to argue that an inventive step is lacking it is permitted to combine any of the prior art, whether published documents, instances of prior use or common knowledge. However, although a single disclosure however remote, of the whole invention will destroy novelty, in order to establish that a combination of teachings from the prior art shows an invention to be obvious, it must be likely that the skilled person would have considered those teachings together (see 3.14).

3.11 In determining this when the solution to a problem is given by a document there are two main considerations (i) whether the skilled person could reasonably be expected to find the document in conducting a diligent search for material relevant to the problem in hand (see 3.07, 3.17) and (ii) whether, if he had found the document, he would have given it serious consideration. So far as (ii) is concerned, relevant factors may be the age of the document (see 3.12) and whether, if it is one of a large number, there was any reason why the skilled person should have selected it (see 3.26). The examiner should take into account passages which lead away from the applicant's invention as well as those that lead toward it. It is relevant in looking at a prior document to consider whether the matter of interest to the obviousness question constitutes a principal feature of the prior document or whether it is mentioned merely as a detail in the performance of an entirely different concept, without any recommendation to the reader such as would encourage him to use it in different circumstances.

3.12 In *Inge Brugger and others v Medic-Aid Ltd* (to be reported) Laddie J held that the age of the prior art should play a part in meeting an obviousness attack only when it was likely and reasonable that the development had not been made earlier because people looking for a way round an existing problem did not see this as the answer. If it is likely that in the real world no one was looking for an answer, the fact that none was found says nothing about whether the answer proposed in the patent under attack was obvious (see also 3.23). An old specification, which teaches specifically the solution of the problem which an invention seeks to overcome so that the skilled man should readily appreciate its significance, can form a good basis for an obviousness objection (*Jamesigns (Leeds) Limited's Application* [1983] RPC 68). A further example of a circumstance in which a lack of inventive step objection based on an old document could be sustained is a case where the modification of the older invention could not have been affected before recent technological advances, such as the development of a new material, had been made. Documents which have resulted in practical application or which are acknowledged as well known are also likely to have greater force.

Combining documents

3.13 There is no simple rule as to whether information from different documents, or from different parts of a single document, can properly be combined as a "mosaic" to provide a case that an invention is obvious. The greater the number of documents which must be so combined to reach the invention, the more likely on the whole that there is an inventive step, but regard must be paid to the nature of the features which are combined. The combination of a series of known features, each playing its usual part in the final entity, is often simply a matter of design or mere collocation, and not of invention.

3.14 Two extremes that are sometimes put forward are (a) that no two documents may be combined to make a mosaic unless at least one is well known, and (b) that all the information in any set of documents can be combined provided they are all in the same art. Neither of these extremes is acceptable as a general principle but of the two the second is likely more often to reflect the true situation. In *Dow Chemical Company (Mildner's Patent)*, [1973] RPC 804, Whitford J indicated that in order to establish obviousness in such a case it is necessary to be able to conclude that the documents are ones which the seeker after information would come across and would consider together.

3.15 In deciding whether or not it is obvious to combine the disclosure in two or more documents, the following considerations are likely to be relevant:-

- (a) How the nature and the contents of the documents influence whether the person skilled in the art would combine them. For example where the disclosed features seem at first sight to have an inherent incompatibility or where one document has a tendency to lead from the mosaic, this would be a pointer towards the combinations being inventive (see 3.28).
- (b) Whether the documents came from the same technical field or from neighbouring or remote technical fields (see 3.06 and 3.17).
- (c) The presence of references in one document to another.
- (d) The amount of selection required to isolate the separate disclosures from the surrounding documentary material.

- (e) Whether the contents of one document are so well known that the skilled man would always have them in mind in reading other documents (see 3.16).
- (f) The age of the documents (see 3.12).

3.16 If the invention can be produced by combining the teaching of one document with common general knowledge or with standard practice in the art, then even if the inventor has not conceived it nor the applicant presented it in such terms, there is a strong presumption that such a combination would be obvious to the skilled person. Diplock L J stated in *Johns-Manville Corporation's Patent* [1967] RPC 479 that, in assessing obviousness, "both the superintending examiner and the P A T are entitled to and do make use of their own knowledge and experience of the relevant scientific and technical background to the subject matter of the alleged invention".

3.17 Where the documents are from different technical fields the question is whether the problem would have prompted search in those fields. In *Dow Chemical Company (Mildner's) Patent* [1973] RPC 804, an invention residing in an electrical cable in which a plastics jacket was securely bonded to a metal shield using a specified copolymer was held to be obvious in the light of one document disclosing all the features of the cable but not mentioning the adhesive copolymer, and other documents disclosing the copolymer. Although these latter documents did not refer to cable manufacture, they did refer to the copolymer as having high moisture resistance and being suitable for bonding plastics to metal, both essential properties in adhesives for use in cables. It was therefore reasonable to expect the skilled person concerned with the problem of adhering plastics to metal in cables to have found and considered these documents. The Technical Board of Appeal of the EPO has considered it reasonable to expect a person skilled in the art, unable to fulfil a need in the relevant field, to look for suitable parallels in a neighbouring field so closely related that he would take developments therein into account, or in the broader general field in which the same or similar problems extensively arise and of which he must be expected to be aware (Decision T 176/84, OJEPO 2/86).

ASSESSING OBVIOUSNESS

3.18 The question is therefore, does the invention make available to the person skilled in the art something that he would not reach by normal exercise of his skill? If so, the inventor has made a contribution to the art which provides the consideration justifying the grant of a patent. The contribution must be of a technical nature. This is not to say that it must be technically complex; simplicity does not count against an invention and may indeed point to its being non-obvious. But there is no invention in appreciating commercial features, for example in realising that there is a market for a new product, however surprising this may be.

3.19 A number of issues should be considered in determining whether a development is obvious or not. In *Haberman v Jackal* [1999] FSR 685 (at 699 to 701), Laddie J considered the following non-exhaustive list of relevant questions:

- (a) What was the problem which the patented development addressed?
- (b) How long had that problem existed?
- (c) How significant was the problem seen to be?
- (d) How widely known was the problem and how many were likely to be seeking a solution?
- (e) What prior art would have been likely to be known to all or most of those who would have been expected to be involved in finding a solution?
- (f) What other solutions were put forward in the period leading up to the publication of the patentee's development?
- (g) To what extent were there factors which would have held back the exploitation of the solution even if it was technically obvious?

- (h) How well had the patentee's development been received?
- (i) To what extent could it be shown that the whole or much of the commercial success was due to the technical merits of the development?

3.20 The answer to the first question may be apparent from the specification. For example, the description may contain an account of the prior art and/or the problem to be solved, or the main claim may be in the two-part form, in which a preamble specifying a set of features known in combination in the prior art is followed by a characterising portion setting out the new features. The applicant is however not obliged to do this, nor does a reader of the specification have to accept the applicant's assessment of the invention. A matter which requires invention when tackled from one starting point may be commonplace when started from a different disclosure or with a different known problem in mind. The applicant may for example have presented his invention as a combination of features A, B, C, D which he admits are known in combination, with a further feature E which it would undoubtedly be inventive to add to the acknowledged combination. It may be however that a prior document discloses the combination of features A and E, and that the addition of the remaining features B, C, D is then the most natural way of completing the disclosure in the prior document.

3.21 The fact that no-one has followed a particular path before does not of course dispose of an objection of obviousness, otherwise any invention which was new would automatically be inventive. However the reasons why this has not been done before may well be important. If the inventor has solved a long-standing problem by using in a conventional way materials or techniques which have only recently become available, then this is not inventive. Nor is it inventive to respond to a change in economic circumstances; for example if a product has not been made from a particular material or by a particular process for reason of cost, and the material or process becomes cheaper or the market value of the product increases, it is not inventive to take advantage of this. And if a newly-arisen problem is solved by the use of available resources in an obvious way, then there is no inventive step (unless the inventor has been the first to identify the problem). But if the inventor has solved a long-recognised problem by means which others could have used but did not, then there may be an inventive step (*Minnesota Mining and Manufacturing Co v Rennicks (UK) Ltd* [1992] RPC 331). In *Chiron Corp v Organon Teknika Ltd* [1994] FSR 202 a claim to a polypeptide comprising an antigenic determinant of the hepatitis C virus was found to be non-obvious because despite the attempts of numerous research groups over a 10 year period to identify the agent responsible for Non-A, Non-B Hepatitis (latterly named Hepatitis C), the patentees succeeded in a unique fashion by adopting a known technique which would not have been obvious to try in the circumstances.

3.22 Just as an invention will lack novelty if the claim to it would re-monopolise something already disclosed (the so-called "post-infringement test" - see 2.03), likewise it will be regarded as obvious if a claim to it would inhibit the rights of a skilled workman to carry out routine modifications of what is already in the public domain. Just as the notion behind anticipation is that it would be wrong to enable the patentee to prevent a man from doing what he has lawfully done before the patent was granted, that behind obviousness is that it would be wrong to prevent a man from doing something which is merely an obvious extension of what he has been doing or of what was known in the art before the priority date of the patent granted (judgment of Court of Appeal in *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59 at page 77). In *Philips (Bosgra's) Application*, [1974] RPC 241 the applicants proposed to amend a claim (which had been held obvious) to a method of producing a vaccine in order to specify the use of certain emulsifying agents. The hearing officer held that the amended claim was not obvious since, although these emulsifying agents were well known, it was not certain that a notional research group would be directly led as a matter of course to try these particular agents. On appeal however, Whitford J ruled that this was not the correct question; although the skilled person would not necessarily be led directly to try these materials, they were obvious in the sense that they were lying in the road (*ob via*) for the worker to use, and it was wrong that he should be stopped by a monopoly from doing so. Moreover, just as it has been established that to impugn novelty, prior enabling disclosure is required, so a claim to a product will only be obvious if not only the idea of the product is obvious but also a way of producing the product is obvious (*Boehringer Mannheim GmbH v Genzyme Ltd* [1993] FSR 716).

Fulfilling a need

3.23 Evidence that an invention fulfils a long-felt want and has been commercially successful may

be taken into account in assessing obviousness (see for example *Hickman v Andrews*, [1983] RPC 147 and *PLG Research Ltd v Ardon International Ltd*, [1993] FSR 197). Aldous J held in *Optical Coating Laboratory Inc. and anr. v Pilkington P.E. Ltd. and anr.* [1995] RPC 145 at page 166 that while it is always important to consider why a possibly inventive step had not been suggested before, without evidence of a long-felt want or unsuccessful attempts to solve a particular problem, any evidence as to novelty, years of delay in developing the prior art and an advantage stemming from the invention carries no weight. Moreover the commercial success of the invention may be attributable to factors achieved independently of the invention, such as the quality or price of the product, or to superior marketing. In *Haberman v Jackal* (see 3.19) the development was a small and simple change to a "trainer cup" to make it leakproof. The new product achieved large success despite small advertising budgets and "unconsidered aesthetics" in its original version. The materials for the design had long been readily available and the advantages were immediately apparent once it was thought of. In this context, the commercial success was held to demonstrate that the invention itself fulfilled a significant long-felt want and that if the development had been obvious it would have been found by others earlier. In *Tetra Molectric Ltd v Japan Imports Ltd*, [1976] RPC 547 on the other hand, it was held that the commercial success of a cigarette lighter was due in large part to hammer mechanisms developed since the date of the invention; although claim 1 covered lighters which had enjoyed commercial success, it also covered lighters which could never do so, and no features which might ensure success were recited.

Advantages of the invention

3.24 Where a variation from published matter proposed by the applicant has no advantages, or is even disadvantageous, although it can be argued that the resulting inferior procedure is not obvious in the sense that no skilled man would regard it as obvious to do something inferior, the application should nevertheless, if the variation is one whose possibility a skilled man would appreciate, be refused on the ground that there is no inventive step. Such a view was taken by the Technical Board of Appeal of the EPO in Decision T119/82, OJEPO 5/84, see particularly paragraph 16. The position is of course different if the applicant has discovered that a variation thought to be disadvantageous is in fact not so, or if from a large number of variants which would have been regarded as no more than feasible alternatives with no advantages, the applicant has selected a variant with an unexpected advantage.

Obvious to try

3.25 Where a skilled worker in a particular field could be expected to know of a use of material to achieve a certain result in that field, an invention which is concerned with the use of that material to achieve the same result in a part of that field which had not been previously disclosed is obvious if a person versed in the art would assess the likelihood of success sufficient to warrant a trial. In *Johns-Manville Corporations Patent*, [1967] RPC 479 at page 494, the invention was concerned with the use of particular flocculating agents in asbestos cement manufacturing. It was held that, filtration processes being common to many industries, two cited documents, although addressed primarily to the mining and paper industries respectively, were likely to be read by those concerned with the asbestos cement industry, and that such readers would have realised that here was a newly-introduced flocculating agent which it was well worth trying out in their filtration process. In *Inge Brugger and others v Medic-Aid Ltd* [1996] RPC 655 Laddie J held that if a particular route is an obvious one to try, it is not rendered any less obvious from a technical point of view merely because there are a number, and perhaps a large number, of other obvious routes as well. Similarly in *Bristol-Myers Squibb Co v Baker Norton Pharmaceuticals Inc* [1999] RPC 253, Jacob J held that an effect which was revealed by following the obvious course of action did not make the action non-obvious. It was wrong to ask whether you would have predicted the effect.

Selection

(See also 2.18-2.20)

3.26 However although there is no inventive step if it is clear from the prior art that taking that step is likely to lead to success, there may be invention if that is only one of many courses possible, and there is no reason to infer from the prior art that this one is more likely than the others to be profitable. In *Bayer AG (Baatz's) European Application* [1982] RPC 321, carbonless copying paper was characterised by microcapsules made of a particular polymer, which was already known for forming coatings on textiles, leather, wool and metal. Even if these were thought to be neighbouring fields, there was no reason to

expect that improved results would be obtained by the use of this material (as the results of comparative experiments showed they were), and thus it was not obvious to select it from the enormous number possible. And in *Olin Mathieson Chemical Corporation v Biorex Laboratories Ltd*, [1970] RPC 157 at page 192, it was held not to be obvious that a useful drug would be obtained by substituting - CF3 for - CL in a known drug, given the large amount of prior material, leading in a number of different directions, which was before the skilled person at the date of the invention.

3.27 A "selection" invention should meet the criteria laid down in *IG Farbenindustrie AG's Patent*, 47 RPC 289 at pages 322-3, namely

- (1) the selection must be based on some substantial advantage gained or some substantial disadvantage avoided,
- (2) substantially all the selected members must possess the advantage in question, and
- (3) the selection must be in respect of a quality of special character which can fairly be said to be peculiar to the selected group; this is not necessarily nullified if it transpires that some other members of the class from which the selection is made have this quality, but the claim may be invalid if it is found that the quality is common to many other members in addition to those selected.

It is not impossible for the class to be a notional one rather than an actually or wholly existing one (judgment of the Court of Appeal in *Hallen Co v Brabantia (UK) Ltd* [1991] RPC 195, see also 3.30).

3.28 The advantage relied upon to justify a selection invention should be clearly disclosed if it would not otherwise be apparent to a person skilled in the art. If there is no statement of advantage in the specification at the time of filing it may not normally be added later (see 76.14), although such a statement (which will of course be open to public inspection) may be filed and may be taken into account.

s.118

3.29 Although the size of the class from which a member or members have been chosen is not relevant to the question of novelty of a selection invention, it may be relevant to the question of obviousness (*Du Pont de Nemours & c (Witsiepe's) Application*, [1982] FSR 303 at page 310). In the *Du Pont* case, the relevance of a document describing a composition with a general formula to a claim to a particular composition falling within that formula was considered, see 2.19.

3.29.1 The technical significance of the parameters by which the product or process is selected should be considered. Where unusual parameters are used in a claim it may be difficult to prove whether or not the prior art would have inevitably exhibited those parameters, but in *Raychem Corp.'s Patents* [1998] RPC 31 it was held (at pp.46-47) that "although it may not be obvious, in the common use of that word, to limit a claim by reference to some particular meaningless and arbitrary parameter, that had nothing to do with patentability. Patents are not given for skill in inventing technically meaningless parameters." If a product or process with obviously desirable characteristics happens to fall within the limits of such claims then they cover what is obvious and will thus be invalid.

Additional advantage not inventive

3.30 Although the discovery of an unexpected advantage may point to a step not being obvious if it was only one of many steps which could have been tried (see 3.26) or if it was one taken counter to accepted views (see 3.31), if the prior art leads directly to the step then it is not made inventive by any additional advantage obtained. In *Inventa AG's Application*, [1956] RPC 45, the use for spinning nylon of a process which had been disclosed (before the introduction of nylon) for spinning artificial filaments in general was held to be obvious, and not to be saved by an additional advantage, since no further modification of the process was required to secure this advantage. And in *Union Carbide Corporation (Hostettler's) Application*, [1972] RPC 601 at page 609, Whitford J observed (obiter) that "if in fact the step taken was an obvious step, it remains an obvious step however astonishing the result of taking it may be". An added benefit, however great, will not found a valid patent if the claimed innovation is obvious for another purpose (judgment of the Court of Appeal in *Hallen Co v Brabantia (UK) Ltd* [1991] RPC 195). In *Hallen*, it was held to be obvious to coat a corkscrew of self-pulling type with PTFE to facilitate its penetration into a cork; the claimed invention was not saved by the non-obvious additional advantage of

facilitating extraction of the cork from the bottle (although it might have been saved as a selection patent if the specification had contained clear assertions that the corkscrew in question turned the use of PTFE to special advantage over other corkscrews in the extraction stage, thus overcoming a problem of all previous self-pullers).

Overcoming a technical prejudice

3.31 An invention may be regarded as non-obvious if it goes against the generally accepted views and practices in the art. For example if persons skilled in the art would regard certain materials or techniques as unsuitable for a particular purpose, then if the inventor has found that this prejudice is not well-founded, then he has made an inventive contribution to the art. Likewise the omission of a step hitherto thought to be necessary may constitute an inventive step. It must however be clear that the technical prejudice which the applicant claims to have overcome did in fact exist, and that it was not justified. There is no invention in merely tolerating the disadvantages which have deterred others. For example if an inexpensive plastics material is thought unsuitable for making tools because it is not durable, there is no invention in using it to make a cheap screwdriver intended only for light work and accepting that it will have only a short life.

3.32 Some of these points may be illustrated by a hypothetical example. Suppose that it has been stated for years in textbooks that a particular class of chemical reaction carried out under elevated pressure, gives poor yields, and an inventor now claims the synthesis of a particular compound by such a process. If all he has done is take advantage of the high price commanded by the product, or the cheapness of the starting materials, and has decided to accept the disadvantage of low yield, then that is not inventive; it is an obvious response to prevailing economic circumstances. On the other hand, if the inventor has discovered that good yields can be obtained by the use of still higher pressures, a fact not suggested in the prior art, then that would be inventive. But if higher yields would be expected at difficult-to-obtain pressures, and the inventor has merely taken advantage of new techniques making such pressures more available, then that is not inventive. Finally, if the inventor has discovered that the standard accepted views on the low yields, while being normally true for this reaction, are not in fact true for this particular compound, then there is inventive step in the choice of this process.

Section 4: Industrial application

s.130(7) 4.01 This section relates to the third of the tests for patentability set out in s.1(1). It is so framed to have, as nearly as practicable, the same effect in the UK as the corresponding provisions of the EPC, PCT and CPC, ie Articles 52(4) and 57 of the EPC.

Section 4(1)

Subject to subsection (2) below, an invention shall be taken to be capable of industrial application if it can be made or used in any kind of industry, including agriculture.

4.02 "Industry" should be understood in its broad sense as including any useful and practical, as distinct from intellectual or aesthetic, activity (apart from those medical methods which are specifically stated in s.4(2) not to constitute industrial application - see 4.08-4.23). It does not necessarily imply the use of a machine or the manufacture of a product, and covers such things as a process for dispersing fog or a process for converting energy from one form to another. In *Chiron Corp v Murex Diagnostics Ltd and other* [1996] RPC 535 (page 607) the Court of Appeal held that the requirement that the invention can be made or used "in any kind of industry" so as to be "capable of industrial application" carries the connotation of trade or manufacture in its widest sense and whether or not for profit. The Court went on to hold that industry does not exist in that sense to make or use that which is useless for any known purpose. Many of the matters which are excluded as lacking industrial application would have been rejected under previous laws as not being manners of manufacture, and in fact the views of the High Court of Australia in *NRDC's Application*, [1961] RPC 134, give a good guide to the meaning to be attributed to industrial application; there must be a product, but this need not be an article or substance, but must be something in which a new and useful effect, be it creation or alteration, may be observed. It may for example be a building, a tract or stratum of land, an explosion or an electrical oscillation, but it must be useful in practical affairs. A method of eradicating weeds was held to give rise to a product (an improved crop) because this was an artificially created state of affairs; moreover it was one whose significance was economic.

4.03 In many cases, if an invention is excluded under section 4(1), it will also be excluded under s.1(2) (see 1.07-1.32) as was the case in *Melia's Application* (SRIS O/153/92), where an application relating to a scheme for exchanging all or part of a prison sentence for corporal punishment was held to lack industrial applicability and also to be a method for doing business. It should be remembered however that, even though they will frequently give the same answer, the two tests are separate and independent.

4.04 Pieces of the human or animal body to be used in transplants are objected to under s.4(1) as not being capable of industrial application unless there is some clearly technical treatment of the material.

4.05 Processes or articles alleged to operate in a manner which is clearly contrary to well-established physical laws, such as perpetual motion machines, are regarded as not having industrial application as was held in *Paez's Application* (SRIS O/176/83) and *Webb's Application* (SRIS O/84/88). An alternative or additional objection may be that the specification is not complete enough to allow the invention to be performed (s.14(3) - see 14.79), cf *NEWMAN/Perpetual motion* (EPO decision T 5/86). This may be particularly appropriate if the claims do not refer to the intended function or purpose of the invention, for example if a "flying gyroscope" is claimed merely as an article having a particular specified construction. Regardless of whether objection arises under s.4(1) or s.14(3), the procedure set out in 17.97 should be followed at the search stage.

4.06 Methods of testing are generally regarded as capable of industrial application if the test is applicable to the improvement or control of a product, apparatus or process which itself is capable of industrial application. It is therefore advisable to indicate the purpose of the test if this is not otherwise apparent (see 14.82). In particular, the use of animals for test purposes in industry, eg for testing industrial products or for monitoring water or air pollution, may be patentable.

s.1(3)(b) 4.07 Although "industry" includes agriculture, a process used in agriculture will not be patentable if it is a method of surgery, therapy or diagnosis practised on animals (4.08-4.23) nor if it is an essentially biological process for the production of animals or plants (see 1.37-1.40).

Section 4(2)

An invention of a method of treatment of the human or animal body by surgery or therapy or of diagnosis practised on the human or animal body shall not be taken to be capable of industrial application.

4.08 Surgical processes and processes for the prevention and cure of disease in humans were regarded as not being manners of manufacture under the 1949 Act and hence were unpatentable. It is not thought that much change of practice was brought about in this respect by the 1977 Act, so that decisions given under earlier legislation are often relevant except where clearly contrary to the 1977 Act. However the present Act extends this prohibition to such processes practised on animals. In *Unilever Limited (Davis') Application*, [1983] RPC 219, the Patents Court rejected suggestions that the law should be presumed not to have changed in this respect (the old law having been "swept away", see 0.06), or that the word "therapy" in s.4(2) could have different meanings in relation to the treatment of humans or animals.

4.09 In the same decision the Court held that the term "therapy" included the prevention as well as the treatment or cure of disease. Although some medical dictionaries cited pointed towards a narrow interpretation of the term, other works of reference, including non-specialist dictionaries, indicated a more general meaning; this was preferred, following the principle that words in statutes dealing with matters relating to the general public are presumed to be used in their popular, rather than their narrowly legal or technical, sense. This interpretation is also consistent with the view expressed (under the 1949 Act) in *Schering AG's Application*, [1971] RPC 337, that the prohibition applied to methods for preventing or curing disease. It was held however, in the *Schering* case, that a method of chemical contraception did not fall within that prohibition; by the same token such a method would not be regarded as therapy. The prohibition does apply if a method of chemical contraception is associated with a therapeutic method by means of combined delivery system. This was decided by the EPO Technical Board of Appeal in *The General Hospital Corporation's Application T820/92 (OJEPO 3/95)* in which certain steroids were used in conjunction with a main contraceptive ingredient to alleviate health problems caused by that ingredient. The EPO Board of Appeal in another case, *T74/93 (OJEPO headnote 4/95)*, whilst emphasising that a method of contraception is not excluded *per se* from patentability nevertheless made clear that in each specific case the invention must meet the requirement of industrial applicability.

4.10 It appears that any medical treatment of a disease, ailment, injury or disability, ie anything that is wrong with a patient and for which he would consult a doctor, as well as prophylactic treatments such as vaccination and inoculation, is to be regarded as therapy. The same considerations apply for animals as for human patients, so that for example prophylaxis and immunotherapy in animals are regarded as therapy.

4.10.1 In *Bristol-Myers Squibb v Baker Norton Pharmaceuticals Inc* [1999] RPC 253, Jacob J held that the exception should be construed narrowly; the claim in that case was held to relate to the manufacture of medicines to be used in a treatment rather than to the treatment itself and consequently was not considered to be incapable of industrial application. However methods of therapy carried out on materials temporarily removed from the body, for example when blood is circulated through an apparatus while remaining in living communication with the body, are not patentable (cf *Calmic Engineering Co Ltd's Application*, [1973] RPC 684).

4.10.2 In *Ciba-Geigy AG's Application* (SRIS O/30/85), objection was raised under section 4(2) to certain claims for a method of controlling parasitic helminths (worms which may develop in the animal body, for example, in the intestinal tract of animals such as sheep) by the use of a particular (novel and inventive) anthelmintic composition. The hearing officer considered that such an infestation was a disease requiring medical treatment of the animal and that such treatment, whether curative or preventative, constituted therapy practised on the animal body and consequently held that the claims in question were not allowable under section 4(2).

4.10.3 Section 4(2) excludes only treatment by surgery or therapy, and it follows that other methods of treatment of live human beings or animals, eg treatment of a sheep in order to promote growth, to improve the quality of mutton or to increase the yield of wool, are patentable provided that (as would probably be the case) such methods are of a technical, and not essentially biological, character. Where the method set out in the claim is in itself wholly patentable, for example, a method for increasing weight-gain

in animals by the addition of substances such as antibiotics to their feedstuffs, no amendment is required even though it is known that the substance has therapeutic activity and that the method of administration is the normal method of administering medicines to animals. The invention is regarded as being characterised by the declared result, and, provided the claim is restricted to a result that does not offend Section 4(2), the alternative possibly therapeutic effect can be regarded as a bonus which does not have to be specifically disclaimed even if the specification discloses that the substance possesses therapeutic activity. Methods of treating humans permitted by Patent Appeal Tribunal decisions under the 1949 Act are, in general, still patentable. Nevertheless, when considering such methods, even if they are not excluded as therapy, surgery or diagnosis by Section 4(2), it is always pertinent to consider whether they would constitute industrial application within its widest sense as indicated in 4.02 above.

4.11 Application of substances to the body for purely cosmetic purposes is not therapy. In allowing claims to a process for improving the strength and elasticity of human hair and finger nails, the High Court of Australia observed that, while a process for the treatment of the human body as a means of curing or preventing a disease or other disorder was not patentable, "Those who apply chemical preparations to the skin to prevent sunburn in climates which enjoy sunshine and moderate air temperatures can scarcely be regarded either as, in a relevant sense, treating their bodies or as undergoing treatment. On the other hand, the application to the skin of an ointment designed and effective to remove keratoges from the skin would be an instance of medical treatment. To be treatment in the relevant sense, it seems to me that the purpose of the application to the body whether of a substance or a process must be the arrest or cure of a disease or diseased condition or the correction of some malfunction or the amelioration of some incapacity or disability" (*Joos v Commissioner of Patents*, [1973] RPC 59).

4.12 In *Oral Health Products Inc (Halstead's) Application*, [1977] RPC 612, claims to a method of removing dental plaque and/or caries were refused, as was a claim to a method of cleaning teeth which embraced both curative and cosmetic effects. This decision has been followed under the 1977 Act in *ICI Ltd's Application* No 7827383 (SRIS O/73/82), where a claim was refused to a method of cleaning teeth which removed both plaque and stains; it was argued that when applied to perfectly healthy teeth the method was purely cosmetic, but the hearing officer observed that practically all medical treatments which are preventative in nature (such as vaccination) must at times be applied to people who would have remained healthy anyway, but they remained medical treatments. It was held in *Lee Pharmaceuticals' Applications*, [1978] RPC 51, that since one of the results of sealing pits and fissures in teeth was to prevent the onset of dental decay, the purpose of the treatment was therapeutic rather than cosmetic.

4.13 Dictionary definitions of "diagnosis" clearly point to it being essentially concerned with identifying problems. The questions to be asked therefore, in order to determine whether a method constitutes diagnosis for the purposes of the Act, are

- (a) does the method, unaided by other tests, indicate whether or not a person (or animal) is suffering from a medical disorder, and
- (b) does the method identify the disorder where it is found to be present.

If both of these questions can be answered in the affirmative, the method is diagnosis and is not patentable. If however the results of a method must be used in conjunction with the results of other tests in order to determine the presence or absence of, or to identify, a disorder then the method is not excluded by s.4(2). For example a method of computer tomography which was capable of locating a lump in the body but not of determining whether or not it was malignant would not constitute a method of diagnosis. This is consistent with the decision (under the 1949 Act) in *Bio-Digital Science Inc's Application*, [1973] RPC 668, where a claim to a method of mass screening of patients, which merely identified those patients who should be given further tests, was allowed.

4.13.1 Methods of diagnosis performed on tissues or fluids which have been permanently removed from the body are not excluded. "Body" should be taken to mean living body, and a method practised on a dead body, for example in order to determine the cause of death, would not be excluded.

4.14 It is not possible to be definitive in delineating the borderline between what is allowable and what is not and there are bound to be difficulties in applying the principle to specific cases. Nevertheless, three situations can usefully be considered:

- (a) If the claims are stated to relate to a method of diagnosis or if it is immediately apparent that the claims are effectively directed towards such a method, then objection should be raised, probably leading to refusal or deletion of the offending claims.
- (b) In the case of an application having claims which encompass both diagnostic and non-diagnostic methods, no objection should be raised if there is no disclosure of diagnostic methods in the specification. However, when both diagnostic and non-diagnostic aspects have been disclosed, objection should be raised but this could be met by deletion of the offending part of the description or by the insertion of an appropriate disclaimer.
- (c) if the invention is not claimed as a method of diagnosis and it is not immediately evident from the body of the specification that the method is essentially diagnostic, no objection should be raised.

4.15 Surgery is defined as the treatment of disease or injury by operation or manipulation (SOED, Stedman, MacNalty). It is not limited to cutting the body but includes manipulation such as the setting of broken bones or relocating dislocated joints (sometimes called "closed surgery"), and also dental surgery. In general, any operation on the body which required the skill and knowledge of a surgeon would be regarded as surgery (see also 4.17).

4.16 In *Unilever Limited (Davis') Application*, [1983] RPC 219 (see also 4.08, 4.09), Falconer J observed that any method of surgical treatment, whether curative, prophylactic or cosmetic, is not patentable. This view, which was obiter, was cited by the hearing officer in *Occidental Petroleum Corporation's Application* (SRIS O/35/84) in refusing to allow claims to a method of implanting an embryo transplant from a donor mammal into the uterus of a recipient mammal, since the method would necessarily have to be carried out by a surgeon or veterinary surgeon.

4.17 It may often be helpful, in deciding whether or not a method is excluded under s.4(2), to consider who would in practice carry out the method. The apparent purpose of s.4(2) is to prevent a medical practitioner being inhibited by legal monopolies. Thus for example bone setting is regarded as surgery, while applying a plaster cast is not, since the former is carried out by a doctor, the latter by a technician. And in *Upjohn Co (Kirton's) Application*, [1976] RPC 324, the hearing officer observed that abortion in humans, in contradistinction to contraception, necessarily involved a registered medical practitioner. (See also 4.18).

4.18 Once it has been decided, in the way indicated in the preceding paragraphs, that a method constitutes surgery, therapy or diagnosis practised on the human or animal body, it is necessarily non-patentable. For example, methods of abortion, induction of labour, control of oestrus or menstrual regulation are always therapy, irrespective of the reason for the treatment. The fact that abortion or induction of labour may be carried out for social reasons, or that these or other methods may be practised on animals for reasons of agricultural economies, does not save them from exclusion.

4.19 Claims objected to under Section 4(2) are often in the form "A method (or process) for treating medical or veterinary condition Y by", but other forms of claim are also objected to such as "The use of substance (or composition) X in treating medical condition Y by" and "A compound (or composition) X when used in the treatment of medical condition Y by".

4.20 Patents may, however, be obtained for surgical, therapeutic or diagnostic instruments or apparatus intended for use in such methods. Also the manufacture of prostheses or artificial limbs and taking measurements therefor on the human body are patentable. In addition, non-diagnostic tests on human or animal bodies should be regarded as inventions susceptible of industrial application if the criterion set out in 4.06 is met.

4.21 [moved to 4.10.1, 4.10.2 and 4.13.1]

4.22 [moved to 4.10.3]

4.23 If a claim is capable of embracing both excluded and non-excluded methods, but only non-excluded methods have been disclosed, there is no objection. However when both excluded and non-excluded methods have been disclosed, amendment will generally be necessary, for example by deletion of the offending description or by disclaiming the excluded methods. Any form of disclaimer is allowed which removes the objection and leaves the scope of the monopoly remaining clear (see 14.127). While in *ICI (Richardson's) Application* [1981] FSR 609 a claim which included a disclaimer employing the wording of the Act was disallowed since it left the scope of what was being claimed unclear, there is no objection in principle to any other form of disclaimer, provided always that the scope of the monopoly remaining is clear, and there is support in the description for the invention claimed. If however it is not possible in practice to distinguish between the excluded and non-excluded performance of the methods (for example a method of applying a compound to animals in order to control parasites, may be therapy if the pests killed had burrowed into the skin of the animal but not if they were merely on the surface) the claim may be allowed to proceed and its interpretation be left to the Courts.

Section 4(3)

Subsection (2) above shall not prevent a product consisting of a substance or composition being treated as capable of industrial application merely because it is invented for use in any such method.

4.24 This subsection is for the avoidance of doubt; the exclusions of s.4(2) apply only to methods and not to materials to be used in such methods.

Section 5: Priority date

s.130(7) 5.01 This section is intended to have, as nearly as practicable, the same effect as the corresponding provisions of the EPC, PCT and CPC. Articles 87 and 88 of the EPC and Article 8 of the PCT appear to generally correspond to s.5. Relevant requirements are prescribed in r.6. The principles of the section derive from Article 4 of the Paris Convention for the Protection of Industrial Property.

s.125(2) 5.02 The present law concerning priority dates differs in a number of important respects from the position under the 1949 Act. Instead of a priority date being assigned to each claim, a priority date may now be attributed to each invention (so that it is possible for different inventions embraced by a single claim to have different priority dates), and also to any matter disclosed but not claimed. (The effect of this can be seen under s.2(3), where the priority date of an invention in suit is compared with the priority date of matter contained in the cited document). No distinction is made between claiming priority from an earlier UK application and claiming it from an application made elsewhere. Nor is it necessary for the earlier application to be one for protection of the same invention as the application in suit. However the test for determining whether an invention is supported by matter disclosed in an earlier application is thought to be substantially the same as the test for deciding (under the 1949 Act) whether a claim was fairly based on the matter disclosed in an application from which priority was claimed, so that precedent cases on this point continue to be relevant.

Section 5(1)

For the purposes of this Act the priority date of an invention to which an application for a patent relates and also of any matter (whether or not the same as the invention) contained in any such application is, except as provided by the following provisions of this Act, the date of filing the application.

5.03 The priority date of all matter (whether claimed or not) in an application is, *prima facie*, the date of filing of the application. The onus is therefore on an applicant who wishes to claim an earlier priority date to comply with the specified conditions (see 5.04).

Section 5(2)

If in or in connection with an application for a patent (the application in suit) a declaration is made, whether by the applicant or any predecessor in title of his, complying with the relevant requirements of rules and specifying one or more earlier relevant applications for the purposes of this section made by the applicant or a predecessor in title of his and each having a date of filing during the period of twelve months immediately preceding the date of filing the application in suit, then -

- (a) *if an invention to which the application in suit relates is supported by matter disclosed in the earlier relevant application or applications, the priority date of that invention shall instead of being the date of filing the application in suit be the date of filing the relevant application in which that matter was disclosed or, if it was disclosed in more than one relevant application, the earliest of them;*
- (b) *the priority date of any matter contained in the application in suit which was also disclosed in the earlier relevant application or applications shall be the date of filing the relevant application in which that matter was disclosed or, if it was disclosed in more than one relevant application, the earliest of them.*

5.04 If the date of filing of an earlier application is to be treated as the priority date of some or all of the matter in an application in suit, the following conditions must be met:-

- (a) a declaration must be made, complying with the "relevant requirements" as set out in r.6 (see 5.07-5.13);
- (b) the earlier application must have a date of filing not more than twelve months earlier than that of the application in suit (see 5.18);
- (c) the earlier application must have been made by the same applicant as the application in suit or by his predecessor in title (see 5.19); and
- (d) it must be a "relevant application" (see 5.30).

The earlier application must also be one which is not disregarded under the provisions of s.5(3) (see 5.27-5.28). However so long as it has a filing date, the outcome of the earlier application is not relevant, and it may serve to establish a priority date even if it is subsequently withdrawn or refused.

5.05 The priority date conferred by an earlier application cannot be earlier than the date on which it was filed, even if the authority with which it was filed has allowed it to be antedated, for example to the date on which it was shown at an exhibition (*La Soudure Electrique Autogene SA's Application*, 56 RPC 218).

5.06 Priority may be claimed from any number of earlier applications. So long as they are all "relevant applications" (see 5.30) there is no requirement that they should have been filed under the same national law or international agreement. However it should be remembered that the periods for complying with r.6 (see 5.08-5.12) are measured from the date of the earliest declared application (see 5.16), and that all necessary documents should be supplied within this period.

RELEVANT REQUIREMENTS

The Declaration

- r.6(1) 5.07 The declaration must be made at the time of filing the application in suit, and must state the date of filing of the earlier application and the country in or for which it was made. Normally the declaration will be made by completing Part 6 of Form 1/77. Omission of all or part of the declaration cannot be rectified later by amendment (although deletion is allowed - see 19.11); it may be possible to rectify it by corrections (see 117.19). It is advisable also to give the file number of the earlier application at this stage if it is available, so that the application is uniquely identified, although this information may be added later (see 5.08).

Priority documents

Certified copies

- r.6(2) 5.08 The file number of the priority application must be supplied within sixteen months (extendible in accordance with r.110(3) and (4) to (6), see 123.34-41) of the declared priority date. Moreover, except in the circumstances referred to in paragraph 5.09, a copy of the earlier application, either certified by the authority with which it was filed or otherwise verified to the satisfaction of the comptroller, should also be
- r.26(1) supplied within this period. Where the application claims an earlier date of filing, these conditions should be complied with at the time of filing (or later in accordance with an extension under r.110(3) or (4) to (6), see 123.34-41) if the sixteen month period has already expired (but see 5.09); in the case of a divisional
- r.26(3) application the sixteen month period is automatically extended if that period has been extended in respect of the earlier application. Failure to comply with these conditions within the prescribed period cannot be rectified under s.117 (*Klein Schanzlin & Becker AG's Application* [1985] RPC 241, see 117.01).
- r.6(3) 5.09 However, if an application specified in the declaration is an application for a patent under the Act, an international application for a patent which was filed at the Patent Office, or any other application of which a copy has been filed pursuant to a declaration of priority in respect of another application under the Act, then any necessary certified copy is prepared in the Office. If the application in suit is a divisional application it should be accompanied by Form 23/77 requesting that such a copy be prepared; otherwise the applicant should file this form when requested to do so (see 17.25). If the earlier application has been

withdrawn or treated as withdrawn, documents may be transferred to serve as priority documents for the application in suit (see 17.24). Moreover a divisional application may be accompanied by a request on Form 23/77 that a certified copy be prepared in the Office even when the priority application was not one filed at the Office, since a copy will be on the file of the parent application.

- r.6(5) 5.10 Where the application in suit is an international application for a patent (UK), the requirements referred to in 5.07 and 5.08 are regarded as having been complied with to the extent that the requirements of r.4.10(a) and (b), subject to rules 26bis.1 and 26bis.2(b), and of rule 17.1 of the PCT have been fulfilled.
- r.6(4) (A copy of the priority documents is supplied to the Office by the International Bureau). Likewise if the application is one converted from a European application under s.81, these conditions are treated as having been met to the extent that r.38(1)-(3) of the EPC have been complied with.

Translations

- r.6(6) 5.11 Where a declared application is in a language other than English, then either:
- (a) a translation into English verified to the satisfaction of the comptroller (see 5.13); or
 - (b) a declaration to the effect that the application in suit is a complete translation into English of the priority application,

must be filed before the patent is granted or within such other period as the comptroller may specify in a particular case. If the specification is a complete translation together with minor additions then a declaration may be acceptable, but this should also clearly identify those additions. However if for any reason the comptroller considers the filing of a declaration under subparagraph (b) to be inappropriate in a particular case, the comptroller may require the applicant to file a verified translation. See 18.85 for the procedure when the translation is outstanding when the application is otherwise in order for grant.

[5.12 Deleted]

5.13 A translation should be verified to the satisfaction of the comptroller as corresponding to the original text. This condition is regarded as having been met if the translation is accompanied by a certificate signed by a translator who accepts responsibility for the accuracy of the translation. An acceptable form of certificate is:-

I (name and address of translator) hereby declare that I am the translator of the documents attached (or listed) and certify that the following is a true translation to the best of my knowledge and belief.

- r.113(6) Where the translation is not accompanied by the foreign-language document the certificate should clearly identify the document. The comptroller has the power to refuse to accept a translation which in his opinion is inaccurate, whereupon a fresh verified translation must be furnished.

Loss of priority

5.14 If any of the requirements of r.6 is not met in respect of an application declared for priority purposes, then the declaration is invalid in respect of that application and any rights which would have derived from it are lost. If (but only if) preparations for publication have not yet been completed, the declared priority date may be affected (see 5.16).

DECLARED PRIORITY DATE

- s.130(1) 5.15 "Priority date", as used in the Act, is defined in s.130(1) as "the date determined as such under section 5", and is a property ascribed to the invention(s) and other matter contained in an application but not to the application itself. Instead the term "declared priority date" of an application is defined (in r.2); this date confers no rights, but serves only as a "marker" from which various time limits are measured. It may be noted that while the contents of an application may have several priority dates (one of which may be the filing date), an application can only have one declared priority date, and may have none (in which case prescribed periods are measured from the filing date).

r.2

5.16 In the case of an application made under the Act, "declared priority date" means the date of filing of the earliest relevant application specified in a declaration made for the purposes of s.5 where the date has not been lost or abandoned, or the declaration withdrawn, before the completion of preparations for publication. Thus for example if a certified copy of the (or the earliest) declared application is not supplied within the prescribed period (see 5.08), then not only is the priority date claimed from that application lost, but also, since the application in suit will necessarily not yet have been sent for publication, that date will cease to be the declared priority date; its place is taken by the next earliest declared application or, where there is none, the filing date, and time limits and dates, including the date when publication is due, are reckoned from this new date. On the other hand, if a translation is not filed within the prescribed period (see 5.11-5.12), then although this will result in a loss of priority date, if (as will generally be the case) this takes place after completion of preparations for publication, the declared priority date is unchanged.

5.17 Similarly, the declared priority date of an international application is the earliest priority date which has not been lost or abandoned under the provisions of the PCT, ie before entering the national phase (see 89A.04). And in the case of a converted European application it is the earliest priority date still extant when the comptroller directs under s.81 that it be treated as an application under the Act.

PERIOD FOR CLAIMING PRIORITY

r.111(3) &
(4)

5.18 In accordance with Article 4C of the Paris Convention, priority may be claimed from an earlier application only if the application in suit has a date of filing not more than twelve months later than that of the earlier application. However if this period expires on an excluded day or on a day which is certified as one on which there was an interruption under r.111(1), see 123.43, then the period is extended to include the first following day which is not excluded or certified. The period may also be extended under r.111(6) in particular cases affected by a failure or undue delay in the UK postal services, see also 123.46. In no other circumstances may the twelve months period be altered.

THE APPLICANT

5.19 For priority to be claimed, the person making the application in suit must be the same person who made the earlier application or must be his successor in title. Where there are several applicants on one or both applications it is sufficient if the two applications have an applicant in common. Otherwise the applicant for the application in suit must have acquired from the earlier applicant the right to be granted a patent, for example by virtue of employment or by assignment. It does not matter if the original applicant retains some rights in the earlier application - he may for instance have assigned the rights to some only of the matter contained in that application, or have assigned only the right to apply in certain countries - so long as he has transferred to the present applicant the right to be granted a patent on the application in suit. In order for the declaration of priority to be valid at the time it is made, ie at the time of filing the application in suit, the transfer must already have taken place.

PRIORITY DATE OF INVENTION OR OTHER MATTER

5.20 The test for deciding whether an invention is supported by matter disclosed in an earlier application is basically the same as that for deciding whether a claim of a specification is supported by the description (see 14.142-14.156).

5.21 As Article 4H of the Paris Convention makes clear, it is not necessary that the invention be found in the claims of the earlier application. But the earlier application must disclose (see 5.23) the particular combination of features which make up the invention and also provide an enabling disclosure of that invention (*Asahi Kasei Kogyo KK* [1991] RPC 485). In *Biogen Inc v Medeva Plc* [1997] RPC 1 it was confirmed that the same test for sufficiency of disclosure applies whether directed to an earlier application for determining whether a claim is entitled to a priority date or to the description of the application or patent in suit under sections 14(3) and 14(5)(c). In *Evans Medical Ltd's Patent* [1998] RPC 517, Laddie J held that what is important is what the document teaches, not how the contents got there, saying "if an inventor through clever foresight or lucky guess work describes something which works and how to do it, his disclosure is enabling". The criteria to be applied are therefore similar to those used to decide whether a claim is anticipated by the disclosure of an earlier document (see 2.03-2.20). In particular, if a priority document is silent about any essential element for which a patent is sought, the right

to priority cannot generally be established. Nevertheless, where a technical feature included in the claims of an application as filed is a specific embodiment of a more general feature in a priority document, then such claims are entitled to priority from that document provided that such technical feature does not change the essential character of the invention disclosed in the priority document (T73/88 OJEPO 10/92). Furthermore in *Biogen/Human beta-interferon* [1999] EPOR 451 (T207/94) it was held that priority could be claimed from a disclosure which taught how to construct three plasmids claimed, where the isolation of the other variants claimed would have been quite feasible given the existing state of the art, notwithstanding that this would involve a non-negligible amount of work. It does not necessarily follow, however, that if a claim in a priority document is broad enough to cover a particular specific technical feature, it discloses that feature for the purpose of claiming priority. The disclosure of the priority document as a whole, as read by a skilled person, must be considered (T409/90 OJEPO 5/93).

s.125(2) 5.22 The priority date of a feature or combination of features is the date of the earliest application whose disclosure supports that feature or combination and if different ways of putting an invention into practice were disclosed at different dates, they will have different priority dates, even if they are covered by a single claim.

s.130(3) 5.23 In order to determine whether there is support for an invention or other matter everything claimed or disclosed (other than by way of disclaimer or acknowledgement of prior art) in the earlier application may be taken into account. Support may not however be derived by combining the teaching of separate applications unless one of them contains directions to do so.

5.24 A feature which would necessarily be present when the teaching of the earlier application is put into practice may be treated as having been disclosed by implication (cf 2.07). In *Letraset Ltd v Rexel Ltd*, [1974] RPC 175 at pages 195-7, a claim which included the feature that adhesion between indicia and a carrier sheet was breakable by local stretching of the sheet was held to be fairly based on a provisional specification which was silent on this feature, since it was in fact something which could be shown to happen when the material described in the provisional specification was made and used.

[5.25 Not used]

EXAMINATION OF CLAIM TO PRIORITY

r.28(2) 5.26 The formalities examiner must determine during the preliminary examination whether the requirements of r.6(1) and (2) have been met and whether any priority date claimed is more than twelve months before the filing date of the application in suit; any other discrepancies noticed in the declaration or the priority documents should be reported at this stage (see 17.18-17.22). In general no comment should be made on the content of the earlier application, except that the applicant should be informed if it is so different from the application in suit that it appears likely that he has declared and/or filed the wrong earlier application. The question of whether the invention is supported by matter disclosed in the earlier application should be considered only when this is necessary in order to determine whether or not a given document forms part of the state of the art (see 18.15-18.17).

Section 5(3)

Where an invention or other matter contained in the application in suit was also disclosed in two earlier relevant applications filed by the same applicant as in the case of the application in suit or a predecessor in title of his and the second of those relevant applications was specified in or in connection with the application in suit, the second of those relevant applications shall, so far as concerns that invention or matter, be disregarded unless -

- (a) it was filed in or in respect of the same country as the first; and*
- (b) not later than the date of filing the second, the first (whether or not so specified) was unconditionally withdrawn, or was abandoned or refused, without -*

- (i) *having been made available to the public (whether in the United Kingdom or elsewhere);*
- (ii) *leaving any rights outstanding; and*
- (iii) *having served to establish a priority date in relation to another application, wherever made.*

5.27 Subsection (3) derives from Article 4C(4) of the Paris Convention. Where any matter in the application in suit was also disclosed in two (or more) earlier applications, an effective claim to priority in respect of that matter can be made only from the earliest of these applications (although of course one of the other earlier applications may confer a priority date on other matter in the application in suit which was not disclosed in the earliest application), unless the conditions of s.5(3) are met. If both (or all) of these earlier applications have been validly declared, the disclosure of the common matter in the second or other applications does not affect the claim to priority for this matter arising from the earliest application. If however the earliest application was not declared, or not validly declared (for example because it was filed more than twelve months before the filing date of the application in suit) then the priority date of the invention or other matter in the application in suit which was also disclosed in that earliest application will be the filing date of the application in suit, unless the specified conditions are fulfilled.

5.28 Once therefore matter has been disclosed in a first "relevant application" (see 5.30) anywhere in the world, priority for that matter can be claimed from a subsequent (ie second) application by the same applicant only if

- (a) the second application was filed in or for the same country as the first application, and
- (b) not later than the date of filing of the second application, the first was unconditionally terminated without having been published, leaving any rights outstanding, or having been used for priority purposes for any other application whatsoever.

If the first application has been published, then not only will the application in suit (ie a third and even later application) be unable to claim priority for the matter in question, but also that matter will form part of the state of the art.

Section 5(4)

The foregoing provisions of this section shall apply for determining the priority date of an invention for which a patent has been granted as they apply for determining the priority date of an invention to which an application for that patent relates.

5.29 The priority date of an invention in a specification is therefore determined in the same way regardless of whether the specification forms part of an application or of a granted patent.

Section 5(5)

In this section "relevant application" means any of the following applications which has a date of filing, namely -

- (a) *an application for a patent under this Act;*
- (b) *an application in or for a convention country (specified under section 90 below) for protection in respect of an invention or an application which, in accordance with the law of a convention country or a treaty or international convention to which a convention country is a party, is equivalent to such an application.*

- 5.30 Priority may be claimed only from a "relevant application", which must be either
- ss.78,89 (a) an application for a patent under the Act, including a European or International application designating the UK or
- (b) an application for protection for an invention which was filed either under the laws of a convention country (see 90.02-90.03) or under the PCT or EPC (designating a country other than the UK) or some other international agreement to which a convention country is a party.
- s.5(6) Any member of the World Trade Organisation (other than the UK) is automatically treated as a convention country without the need for an Order to be made to that effect.

s.130(7) What constitutes "protection for an invention" is not specified in the Act; however s.5 is intended to have the same effect as the corresponding provisions of the EPC, and it appears likely that the term is restricted to the kinds of application referred to in a.87(1) EPC, which allows priority to be claimed only from an application for a patent, for the registration of a utility model (eg German Gebrauchsmuster), for a utility certificate or for an inventor's certificate. During pre-grant proceedings in the Office no objection should be raised to a claim to priority based on a US provisional patent application (notice in Official Journal (Patents), 31 January 1996). Such a provisional application is valid in the USA as a priority document for a subsequent patent application and expires after one year. It cannot itself mature into, or be converted into, a US patent application. This practice as it relates to US provisionals will have to be reviewed if doubt were to be cast upon it in any proceedings before the courts or the comptroller. An application for a registered design is not a relevant application (*Agfa-Gevaert AG's Application*, [1982] RPC 441).

Section 5(6)

References in subsection (5) above to a convention country include references to a country, other than the United Kingdom, which is a member of the World Trade Organisation.

5.31 Section 5(6) was added by the Patents and Trade Marks (World Trade Organisation) Regulations 1999 with effect from 29 July 1999 and requires WTO member countries to be treated as a convention country irrespective of whether an Order has been made under section 90.

Section 6: Disclosure of matter, etc, between earlier and later applications

Section 6(1)

It is hereby declared for the avoidance of doubt that where an application (the application in suit) is made for a patent and a declaration is made in accordance with section 5(2) above in or in connection with that application specifying an earlier relevant application, the application in suit and any patent granted in pursuance of it shall not be invalidated by reason only of relevant intervening acts.

Section 6(2)

In this section -

"relevant application" has the same meaning as in section 5 above; and

"relevant intervening acts" means acts done in relation to matter disclosed in an earlier relevant application between the dates of the earlier relevant application and the application in suit, as for example, filing another application for the invention for which the earlier relevant application was made, making information available to the public about that invention or that matter or working that invention, but disregarding any application, or the disclosure to the public of matter contained in any application, which is itself to be disregarded for the purposes of section 5(3) above.

6.01 This is an avoidance of doubt section and is based on the wording of Arts. 4A and 4B of the Paris Convention. The section confirms the provisions of ss.2, 3 and 5 that if an invention in an application in suit is entitled for priority to the filing date of an earlier application specified in a declaration of priority under s.5(2) then any disclosure or use of matter contained in that earlier application on or after the filing date of the earlier application cannot invalidate a claim to that invention.

6.02 In *Beloit Technologies Inc v Valmet Paper Machinery Inc* [1995] RPC 705 Jacob J held that s.6(1) does not carve out from the state of the art matter made available to the public in the priority interval just because that matter is in the priority document. Thus, an invention which is not entitled to the priority date of an earlier application can be invalidated by the disclosure or use, between the filing dates of the earlier application and the application in suit, of matter contained in the earlier application. This is in contrast to s.52 of the Patents Act 1949 which did provide such protection (*International Paint Co Ltd's Application* [1982] RPC 247) and continues to apply in relation to 1949 Act patents and applications.

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6.03 In his judgment in *Beloit Technologies* Jacob J reached the same general conclusions as the Enlarged Board of Appeal (G3/93 OJEP 1-2/1995) which considered the implications of a document published during the priority period, the technical content of which corresponds to that of the priority document, and concluded that the published document constitutes prior art citable against the application claiming priority from the priority document to the extent that such priority is not validly claimed. This also applies if a claim to priority is invalid due to the fact that the priority document and the subsequent application do not concern the same invention because the application claims subject matter not disclosed in the priority document.

