NOTE

**UMC Electronics v. United States:** Should Reduction to Practice be a Requirement of the On Sale Bar?*

Under the "on sale" bar of section 102(b) of the Patent Act, the Patent and Trademark Office (PTO) may not issue patents for inventions that have been placed "on sale in this country, more than one year prior to the date of the application for patent in the United States . . . ." If the PTO does issue a patent for an invention that was on sale more than one year prior to the application date, courts may declare the patent invalid if it is subsequently challenged.

For the invention to be found on sale within the meaning of section 102(b), the challenger must show that the invention was in an advanced stage of development at the time of the offer for sale; a bare offer to sell is insufficient to invoke the bar. Until recently, courts have required that the invention be

* Though not required by A Uniform System of Citation (The "Bluebook"), this Note includes parallel cites to the United States Patent Quarterly for the convenience of the reader.

1. 35 U.S.C. § 102(b) (1987). This Note will use the terms "on sale bar," "the bar," and "section 102(b) on sale bar" interchangeably to refer to the provision of 35 U.S.C. § 102(b) that prohibits inventors from patenting inventions that have been placed on sale in the United States more than one year before the inventor has filed a patent application. See infra note 2.

2. 35 U.S.C. § 102(b) (1987). The pertinent text of section 102(b) is as follows:

   A person shall be entitled to a patent unless —

   ....

   (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States


reduced to practice at the time the offer for sale was made.\(^5\) Reduction to practice means not only that the invention has been physically embodied in some form, but also that the invention has been shown to work for its intended purpose.\(^6\) Thus, an invention was not placed on sale within the meaning of section 102(b) until it had been embodied in physical form, shown to work for its intended purpose, and offered for sale.

However, in *UMC Electronics v. United States*,\(^7\) the Court of Appeals for the Federal Circuit (CAFC) held that a reduction to practice was not a per se requirement of the on sale bar.\(^8\) According to the *UMC* court, the technical requisite of a reduction to practice may frustrate the policies underlying the on sale bar.\(^9\) Therefore, instead of requiring the challenger to show a reduction to practice, the *UMC* court held that future courts should consider, in light of the policies underlying the bar,\(^10\) all of the circumstances surrounding the sale or offer to sell, including the stage of development and nature of the invention sold.\(^11\) The *UMC* majority further held that an invention has been placed on sale within the meaning of sec-

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5. Great N. Corp. v. Davis Core & Pad Co., 782 F.2d 159, 165, 228 U.S.P.Q. (BNA) 356, 358 (Fed. Cir. 1986). *See also Shatterproof Glass*, 758 F.2d at 623, 225 U.S.P.Q. at 640 ("[T]he invention must have been sufficiently tested to demonstrate that it will work for its intended purposes."). *See also* 1 P. Rosenberg, Patent Law Fundamentals § 7.07 (2d ed. 1986) [hereinafter Rosenberg]. *But see Western Marine*, 764 F.2d at 844, 226 U.S.P.Q. at 337 ("It is not difficult to conceive of a situation where, because the commercial benefits outside the allowed time have been great, the technical requisite of . . . a physical embodiment . . . would defeat the statutory policy. . . .") (quoting Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd., 731 F.2d 831, 837, 221 U.S.P.Q. (BNA) 561, 565 (Fed. Cir. 1984) (dicta)). One commentator who is critical of the reduction to practice requirement of the on sale bar has noted that "all the cases found have held that an invention can be 'on sale' so as to commence the running of the one-year grace period only after the claimed invention has been actually reduced to practice." 1 I. Kayton, Patent Practice 4-15 (1985) (citing CCPA cases), *cited in* UMC Electronics v. United States, 816 F.2d 647, 659 n.4, 2 U.S.P.Q.2d (BNA) 1465, 1474 n.4 (dissent Smith) (Fed. Cir. 1987), cert. denied, 108 S. Ct. 748 (1988).


8. *UMC*, 816 F.2d at 656, 2 U.S.P.Q.2d at 1471.

9. Id. at 653, 2 U.S.P.Q.2d at 1469 (quoting Western Marine, 764 F.2d at 844, 226 U.S.P.Q.2d at 337). For a discussion of the policies underlying the on sale bar, *see infra* text accompanying note 31.

10. *See infra* text accompanying notes 31-45.

11. *UMC*, 816 F.2d at 656, 2 U.S.P.Q.2d at 1471.
tion 102(b) when the inventor's commercial activities conflict with the policies underlying the bar.12

I. INTRODUCTION

This Note asserts that the UMC court’s “all circumstances” test13 cannot be consistently applied and does not satisfy the policies underlying the bar.14 Therefore, a test is proposed that distinguishes between an offer to sell an invention and the actual sale of an invention.15 The proposed test suggests that if the invention is sold before the critical date, it has been placed on sale within the meaning of section 102(b).16 However, if the invention is merely offered for sale, it must have been reduced to practice at the time of the offer before the on sale bar may be applied.17 Such a test would be more consistently applied and better satisfies the policies underlying the on sale bar than the UMC majority’s all circumstances test.18

In developing the test, this Note will first explain the policies that underly the on sale bar and review the past application of the bar.19 Second, the UMC case will be examined and its facts and holding explained.20 Third, the panel majority’s conclusion that a reduction to practice has not been, and should not be, a requirement of the on sale bar will be analyzed.21 Fourth, the problems of applying the UMC all circumstances test will be illustrated.22 Fifth, this Note will question whether the UMC decision satisfies the policies underlying the on sale bar.23 Finally, a proposed test will be presented and applied to hypothetical situations to illustrate its application.24

12. Id. at 657, 2 U.S.P.Q.2d at 1472. See also the discussion in Garrett, supra note 7, at 588-89.
13. In his dissent, Judge Smith referred to the panel majority’s test as “the ‘all circumstances’ rule.” 816 F.2d at 664, 2 U.S.P.Q.2d at 1478.
14. See infra text accompanying notes 146-62.
15. See infra text accompanying notes 167-73.
16. See infra text accompanying note 171.
17. See infra text accompanying note 172.
18. See infra text accompanying note 175.
19. See infra text accompanying notes 25-80.
20. See infra text accompanying notes 81-125.
21. See infra text accompanying notes 126-45.
22. See infra text accompanying notes 146-51.
23. See infra text accompanying notes 152-62.
24. See infra text accompanying notes 163-75.
II. BACKGROUND

The purpose of this section is to give the reader an understanding of the on sale bar as it relates to patent law. With this relationship in mind, this section will next discuss the four policies that have been identified as underlying the on sale bar. Finally, this section will summarize the various doctrines used to apply the on sale bar in the past and describe the state of the law immediately prior to the UMC decision.

A. The On Sale Bar And Its Underlying Policies

The Constitution empowers Congress to "promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries."25 To effectuate this constitutional provision, Congress enacted the Patent Act,26 which gives patent owners the right to exclude others from using the patented inventions for a period of seventeen years.28 Before the Patent and Trademark Office (PTO) will issue a valid patent, however, the invention must meet the requirements set forth in the Patent Act.29

The section 102(b) on sale bar is a requirement of the Patent Act that is procedural in nature; it limits the period of time for filing a valid patent claim.30 This time limit furthers four policy considerations, which are as follows: 1) To prevent detrimental public reliance on ideas that the public believes are freely available to all; 2) to prevent the inventor from commercially exploiting the patented invention beyond the seventeen-year statutory period; 3) to give the inventor a grace period in which to determine whether to file for a patent; and 4) to encourage prompt and widespread disclosure of inventions.31

27. Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225, 229, reh'g denied, 376 U.S. 973 (1964) ("[Patents] are meant to encourage invention by rewarding the inventor with the right . . . to exclude others from the use of his invention."). The right to exclude others may also be referred to as the grant of a statutory monopoly. Id.
28. 35 U.S.C. § 154. The patent system, in addition to fostering and rewarding invention by awarding exclusive monopolies, stimulates further invention by promoting disclosure of inventions. Further, through the use of strict requirements, the patent system assures that "ideas in the public domain remain there for the free use of the public." Aronson v. Quick Point Pencil Co., 440 U.S. 257, 262 (1978).
30. See supra note 1. See also infra text accompanying note 149.
A brief discussion of each of these four policy considerations follows.

The first policy underlying the on sale bar is to prevent detrimental public reliance on ideas that the public believes are freely available to all.\(^{32}\) When an unpatented product is sold to a member of the public, the public may assume that the idea is free to use. Relying on this assumption, members of the public may attempt to make, use, or sell the idea in the form of a competing product. If a patent issues for the invention after a member of the public has spent time and money on manufacturing a competing product, that time and money has been wasted. This is because the patent gives the patent holder the right to prevent the competitor from selling the competing product if it infringes the patent.\(^{33}\) Under section 102(b), the inventor must file for patent protection within a year after selling the invention or lose the right to patent the invention. The statute limits the amount of time that the invention is exposed to the public without patent protection.\(^{34}\) Thus, the on sale bar limits the waste that could occur should the public rely to its detriment on the free availability of unpatented products that have been sold or placed on sale.

The second justification for the on sale bar is that it prevents commercial exploitation of inventions beyond the seventeen-year period\(^ {35} \) set by Congress in the Patent Act.\(^ {36}\) Without the bar, inventors could commercially exploit their inventions for more than a year and then patent the invention and exclude their competitors from the market. For example, an inventor could market an invention for three years and...

\(^{32}\) Id. § 154.

\(^{33}\) See supra note 27 and accompanying text.

\(^{34}\) When an invention covered by a patent is sold in the form of a product, the patent owner must mark the product with the term "patent" or "pat." and the number of the patent or he or she will forfeit damages. 35 U.S.C. § 287. Such marking notifies the public that it may not make, use, or sell products embodying the patented invention without the patent owner's permission. Similarly, when an inventor applies for a patent, he or she may mark products sold embodying the invention with the terms "patent applied for" or "patent pending." Thus, members of the public are warned that they will be forced to stop making, using, or selling the invention if a patent later issues.

\(^{35}\) 35 U.S.C. §§ 283-84. See also supra note 27 and accompanying text.

then apply for a patent. When the patent issues, the inventor is guaranteed a seventeen-year monopoly on the rights to the invention. The original three-year period, plus the statutorily guaranteed seventeen-year period, would effectively give the inventor exclusive use of the invention for twenty years. By preventing the PTO from issuing a valid patent after the invention had been sold or on sale for more than one year, the on sale bar prevents the inventor from thus extending patent protection beyond the seventeen-year period.

In contrast to the previous policies, the third policy underlying the on sale bar favors the inventor. Congress gave the inventor one year after the sale or offer for sale of the invention to decide whether the invention was worth the expense of obtaining a patent. If, after a year, the inventor decides that the commercial prospects of the invention do not justify the expense of obtaining a patent, the inventor may choose not to patent the invention; the inventor thereby saves the time and money required by the patent application process. In addition, even if the inventor decides almost immediately after the sale that a patent would be worthwhile, it may take some time for the inventor and his or her patent counsel to complete a satisfactory patent application. Thus, because the patent application procedure may be protracted and expensive, Congress gave the inventor a one-year grace period in which to determine whether to file for patent protection.

The final policy underlying the on sale bar is the policy of

37. The phrase "patent issues" is often used as a shorthand method of stating that the PTO issued a patent for a claimed invention.

38. However, since it gives the inventor a one-year grace period after sales activity, § 102(b), in effect, allows the inventor to extend the monopoly period for one year. Cf. Gould, 579 F.2d at 580, 198 U.S.P.Q. at 164 (Congress was concerned with encouraging inventors to "prevent the commercial exploitation of an invention as a trade secret for more than one year.").


42. S. REP. No. 338, 24th Cong., 1st Sess. 6 (1836). In its report, Congress stated that "[o]ne-year is believed to be a very fair period to all concerned." Id. The fact that Congress provided a grace period at all indicates that this period is perhaps the primary purpose underlying the bar because by its very nature, such a grace period undermines the other policies underlying the bar.
promoting prompt disclosure of inventions. In an effort to stimulate further innovation and permit the public to practice the invention after the patent has expired, the Patent Act requires full disclosure of the invention before a valid patent will issue. Section 102(b) furthers this policy by denning patent protection if the invention is not disclosed in a patent application within one year after sales to the public. The threat of a loss of potentially valuable patent rights encourages the inventor to disclose the invention to the PTO, and therefore the public, at an early date. Thus, the on sale bar promotes prompt disclosure of inventions to the PTO.

B. Application of the On Sale Bar

Under section 102(b), an offer to sell the invention more than one year prior to the date of application for the patent will preclude the inventor from obtaining a valid patent. However, a bare offer to sell has never been considered sufficient to invoke the bar; the courts also consider the circumstances surrounding the offer.

In determining which circumstances are sufficient to invoke the bar, the courts look to the invention’s stage of development at the time that the offer was made. For

43. Gould, 579 F.2d at 580, 198 U.S.P.Q. at 164. See also New Guidelines, supra note 31, at 733-34.
45. 35 U.S.C. §§ 112-14 (1987). Disclosure of the invention stimulates further invention and permits public practice of the invention because disclosure requires the inventor to describe his or her invention in detail. From this detailed description, which is available to the public, other inventors may be stimulated to create inventions based on the patented invention.
46. See supra note 2 and accompanying text.
48. To understand the application of the on sale bar, one must understand the inventive process, which is the factual setting in which the bar will be applied. Generally, the inventive process may be described as follows. The inventor first conceives the idea that will become the invention. Next, the inventor attempts to embody his or her idea in a working prototype. The inventor then experiments with the working prototype to determine whether the prototype will work as the inventor originally conceptualized. When the inventor is satisfied that the prototype will work as originally conceived, he or she applies for a patent. Finally, when the PTO decides that the invention is patentable, a patent issues for the invention. See also In re Yarn Processing Patent Validity Litig., 498 F.2d 271, 275, 183 U.S.P.Q. (BNA) 65 (5th Cir. 1974) (the court articulates a four phase model that includes the following: (1) conception; (2) attempts to embody idea in a working prototype; (3) experiments to determine fitness for intended purpose; and (4) efforts to secure a patent).
example, in *Shatterproof Glass Corp. v. Libby-Owens Ford Co.*,\(^5^0\) the CAFC upheld an instruction to the jury that the bar does not apply unless the invention has been shown to be commercially useful for the purpose intended.\(^5^1\) Because the jury found that the process claimed\(^5^2\) in the patent had not functioned for its intended purpose before the critical date, Shatterproof’s activities were insufficient to invoke the bar.\(^5^3\) Therefore, even though there was an offer to sell products made by the claimed process, the selling activities alone did not invoke the bar because the invention was insufficiently developed at the time of the offer.

As illustrated by *Shatterproof*, the important question when applying the on sale bar is: At what point is the invention sufficiently developed such that, coupled with an offer to sell, the inventor’s commercial activities invoke the on sale bar?

One answer to this question is provided by the “on hand” doctrine.\(^5^4\) The on hand doctrine invokes the on sale bar very late in the inventive process, requiring that “a device incorporating the invention must have existed in its ordinary or contemplated usable form, and must have been on hand and ready for delivery more than one year prior to the patent application filing date.”\(^5^5\) To illustrate, in *B.F. Sturtevant v. Massachusetts*

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49. *Shatterproof Glass*, 758 F.2d at 623, 225 U.S.P.Q. at 640 (invention must be “functional” at the time of the offer to sell); *Great N.*, 782 F.2d 159, 165, 228 U.S.P.Q. (BNA) 356, 358 (requiring that the invention be shown to “work for its intended purpose”); *Western Marine*, 764 F.2d at 845, 226 U.S.P.Q. (BNA) at 338 (sonar system “complete” before the critical date).


51. *Id.* at 623, 225 U.S.P.Q. at 640.

52. Pursuant to 35 U.S.C. § 112, the patent applicant must give a written specification of the invention which (1) contains a written description of the invention, describing the invention in full, clear, and concise terms, from which a person of ordinary skill in the art to which it pertains may make and use the invention; and (2) concludes with one or more claims particularly pointing out and distinctly claiming the subject matter of the invention.


Hair and Felt Co., the patent in question was for a custom-made fan. The First Circuit held that "[t]he critical date, then, is not the date when the first Hagan fan was ordered but the date when the order for it was filled. . . ." The court found that the fan was not on sale until it was "completed, delivered, and accepted."

The on hand doctrine has been rejected by many courts applying the on sale bar. In Timely Products Corp. v. Arron, the Second Circuit developed an alternate test for applying the on sale bar which required that 1) the complete invention claimed must be anticipated by, or obvious in view of, the thing offered for sale; 2) the invention must be operable and commercially marketable at the time of the sale or offer for sale; and 3) there must be a definite sale or offer for sale, which is primarily for profit rather than for experimental purposes. The court held that, under the second requirement, an invention is commercially marketable when it has been reduced to practice.

To illustrate the application of the Timely Products test,

56. 124 F.2d 95 (1st Cir. 1941).
57. Id. at 97.
58. Id.
59. Id. (quoting 1 WALKER ON PATENTS § 85 (Deller's ed.)).
62. Anticipation requires the presence, in a single prior art reference, of every element of the claimed invention. Great N. Corp. v. Davis Core & Pad, Inc., 782 F.2d 159, 165, 228 U.S.P.Q. (BNA) 356, 358 (Fed. Cir. 1986). The test for anticipation is essentially the same as that for infringement. See CHISUM, supra note 6, at § 3.02[1] ("That which will infringe, if later, will anticipate, if earlier.") (quoting Knapp v. Morss, 150 U.S. 221 (1893)). Thus, in the context of the on sale bar, the device offered for sale anticipates the claimed device when the invention offered for sale identically discloses every element of the claimed device.
63. 35 U.S.C. § 103 (1987). This section states in pertinent part that "[a] patent may not be obtained though the invention is not identically disclosed . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." See also Graham v. John Deere Co., 383 U.S. 1 (1966). In the context of the on sale bar, the invention offered for sale is the prior art over which the claimed invention must be non-obvious.
64. Timely Products, 523 F.2d at 302, 187 U.S.P.Q. at 267-68.
65. Id.
consider *Barmag Barmer Maschinenfabrik v. Murata Machinery, Ltd.*\(^{66}\) Barmag, the owner of the challenged patent, had built a machine for processing filament yarn.\(^{67}\) The invention claimed in the patent was fully anticipated by a machine constructed in March, 1975, satisfying the first requirement of the *Timely Products* test.\(^{68}\) Further, the machine was reduced to practice at the time of the offer to sell, which satisfied the second element of the test.\(^{69}\) Finally, the machine had been offered for sale, for profit, on June 13, 1975, prior to the critical date of June 30, 1975, satisfying the third element of the test.\(^{70}\) Accordingly, Barmag's activities satisfied all of the elements of the *Timely Products* test, and the patent was held invalid because the invention had been on sale within the meaning of section 102(b).\(^{71}\)

However, in *Barmag*, the CAFC declined to adopt the *Timely Products* reduction to practice requirement in all cases, stating in dicta that "[i]t is not difficult to conceive of a situation where, because commercial benefits outside the allowed time have been great, the technical requisite . . . of a physical embodiment, particularly for a simple product, would defeat the statutory policy . . . ."\(^{72}\)

While not applying the *Timely Products* test per se, other recent CAFC decisions were based on the premise that a reduction to practice was a requirement of the on sale bar. *Great Northern Corp. v. Davis Core & Pad*\(^{73}\) and *Shatterproof Glass v. Libbey-Owens Ford*\(^{74}\) both held patents valid on the assumption that a reduction to practice—the critical element of the *Timely Products* test—was a requirement of the on sale bar.\(^{75}\)

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\(^{67}\) 71 Id. at 833, 221 U.S.P.Q. at 563.

\(^{68}\) 72 Id. at 834, 221 U.S.P.Q. at 563.

\(^{69}\) 73 Id. at 834, 221 U.S.P.Q. at 564.

\(^{70}\) 74 Id.

\(^{71}\) 75 Id. at 840, 221 U.S.P.Q. at 568.

\(^{72}\) 76 Id. at 837, 221 U.S.P.Q. at 565.

\(^{73}\) 77 782 F.2d 159, 228 U.S.P.Q. (BNA) 356 (Fed. Cir. 1986).

\(^{74}\) 78 758 F.2d 613, 225 U.S.P.Q. (BNA) 634 (1985). *See also supra* note 50 and accompanying text.

\(^{75}\) In discussing whether reduction to practice was a requirement of the on sale bar, the *UMC* court cited *Great Northern*, *Shatterproof Glass*, and *In re Dybel*, 524 F.2d 1393, 187 U.S.P.Q. (BNA) 593 (C.C.P.A. 1975), as cases that appeared to be based on the assumption that a reduction to practice is a requirement of the on sale bar. *UMC*, 816 F.2d 647, 654, 2 U.S.P.Q.2d (BNA) 1465, 1469-70. However, in *Dybel*, the court noted that "for an invention of the type involved here to be 'on sale,' it must be complete at
In *Great Northern*, the patent was for a polystyrene foam support for shipping rolls of web material. Great Northern tested the foam support by shipping it to a web material manufacturer before the critical date. In finding the patent valid and infringed, Judge Rich wrote that "[t]he district court concluded, correctly we hold, that the invention was not reduced to practice until after [the critical date], and, therefore, the testing prior to that date did not constitute a section 102(b) bar." 

In *Shatterproof Glass*, the CAFC declined to apply the bar even though, prior to the critical date, the patentee had constructed and begun product testing at a facility that produced glass panels according to the patented process. Glass panels manufactured during the testing period were not marketable, and the court found that the process had not worked for its intended purpose, i.e., had not been reduced to practice prior to the critical date.

Thus, prior to *UMC*, the CAFC had required that the invention be at a stage in the inventive process where it has been shown to be marketable at the time of the offer to sell before applying the on sale bar. For proof that an invention is marketable, *Barmag, Great Northern*, and *Shatterproof* all required the challenger to show that the invention had been reduced to practice at the time of the offer to sell. However, because it concluded that the reduction to practice requisite of a physical embodiment may frustrate the policies underlying the bar, the *Barmag* court indicated that a technical reduction to practice may not be required if those policies are defeated.

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76. *Great N.*, 782 F.2d at 159, 161, 228 U.S.P.Q. at 357.
77. *Id.* at 164, 228 U.S.P.Q. at 358.
78. *Id.* at 165, 228 U.S.P.Q. at 358.
80. *Id.* at 623, 225 U.S.P.Q. at 640.
III. The Facts and Holding of UMC Electronics Co. v. United States

This section will begin by relating the facts of UMC Electronics v. United States and the trial court's decision holding the subject patent valid. Next, the section will summarize the CAFC's decision reversing the trial court's holding of validity, with particular emphasis being placed on the rule of law that the court developed for applying the on sale bar.

A. The Facts and the Claims Court Decision

UMC Electronics, as Weaver's assignee, brought an action against the United States for infringement of U.S. Patent No. 3,643,513 (the Weaver patent).81 The Weaver patent disclosed an aviation counting accelerometer (ACA).82 The inventor, Weaver, had designed the ACA described in this patent in an effort to secure a Navy contract for UMC, but the contract was instead awarded to UMC's competitor, Systron-Donner Corporation.83 UMC alleged that the Systron-Donner ACA infringed the claims of the Weaver patent and sought compensation from the Navy due to the Navy's use of the ACA provided by Systron-Donner.84

The government defended on the grounds85 that the Weaver patent was invalid because the invention described therein had been on sale for more than one year prior to the date on which the patent application was filed.86 The patent application was filed on August 1, 1968.87 Thus, the critical date for the purposes of the on sale bar was August 1, 1967; that is, the government was required to show that UMC's actions prior to August 1, 1967, with respect to the ACA described in the Weaver patent, satisfied the requirements of the on sale bar.

81. UMC, 816 F.2d at 648, 2 U.S.P.Q.2d at 1465.
82. Id. at 649, 2 U.S.P.Q.2d at 1465-66. An ACA is a device mounted on an aircraft that measures and records acceleration loading on the aircraft. Records of acceleration can indicate an aircraft's remaining useful life and show the need for structural overhaul or rotation to less demanding service. Id.
83. Id. at 650, 2 U.S.P.Q.2d at 1466.
84. UMC, 816 F.2d at 650, 2 U.S.P.Q. at 1467.
85. The government also defended on the grounds that the Systron-Donner ACA did not infringe upon the UMC ACA; that the Weaver patent was anticipated by the prior art; that the Weaver patent was obvious in view of the prior art; and that Weaver failed to describe the best mode of operation. UMC, 8 Cl. Ct. 604 (1984).
86. Id. at 611-12.
87. Id. at 606.
It was not controverted that on July 27, 1967, four days prior to the critical date, UMC submitted a proposal to the Navy to supply it with the ACA that was later claimed in the Weaver patent.\(^8\) Further, it was undisputed that Weaver had conducted tests to his satisfaction on the only part of his invention that had not been embodied in the prior art.\(^9\) However, the trial court found that a prototype built in May of 1967 did not embody independent claim 1\(^10\) of the Weaver patent and, thus, no physical embodiment of the invention had existed prior to the critical date.\(^11\) Despite finding that no physical embodiment of the Weaver patent existed prior to the critical date, the Claims Court nevertheless concluded that the Weaver patent had been reduced to practice by its May, 1967, prototype.\(^12\)

To determine whether the Weaver patent had been on sale

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\(^8\) *UMC*, 816 F.2d at 650, 2 U.S.P.Q.2d at 1466.

\(^9\) *Id.* at 650, 2 U.S.P.Q.2d at 1466, 1472. The Weaver patent taught an ACA basically comprised of (1) an analog transducer for transferring the mechanical force of the aircraft's acceleration into an electrical signal; (2) a filter for eliminating transient accelerations from the electrical signal; and (3) a means for timing the accelerations and recording those accelerations that persisted for a predetermined time. *UMC*, 8 Ct. Ct. at 608-15. The prior art disclosed essentially the same ACA, but the prior art used a mechanical transducer. *Id.* at 615. Further, the analog transducer that Weaver used was known, but had not been used in the art of designing ACA's, at the time that Weaver designed the invention described in the Weaver patent.

\(^10\) A claim is a statement at the end of the specification in a patent application that specifies the limits and bounds of the invention that the inventor is claiming as his or her own. For general discussions of claims, see Chisum, *supra* note 6, at §§ 8.01-.02, Rosenberg, *supra* note 5, at § 14.01, and John L. Landis, Mechanics of Patent Claim Drafting (1974). For Weaver's claims, see *UMC*, 816 F.2d at 649, 2 U.S.P.Q.2d at 1465-66.

\(^11\) *Id.* at 651, 2 U.S.P.Q.2d at 1468. Because an invention must physically exist in order to be reduced to practice, the Claims Court's finding of reduction to practice apparently contradicts its finding that Weaver had not embodied his invention in physical form. However, the trial court's finding that no physical embodiment of the invention existed was made during its analysis of the element of the Timely Products test which requires that the claimed invention be embodied in, or obvious in view of, the invention offered for sale. In determining whether the claimed invention was obvious in view of the thing offered for sale, the court looked to the prototype of Weaver's ACA as the thing that had been offered for sale. As the claimed invention was not obvious in view of the prototype, the court concluded that the Weaver patent was not invalid under the Timely Products test. However, the court erred by considering the prototype as the thing offered for sale. The ACA offered for sale was the device described in UMC's offer to the Navy. Thus, under the Timely Products test, the Claims Court should have asked first whether the invention offered for sale had been reduced to practice by the prototype of the ACA, and second, whether the claimed invention was obvious in view of the thing offered for sale. See infra notes 133-45 and accompanying text.

\(^12\) *UMC*, 8 Ct. Ct. at 620.
within the meaning of section 102(b) of the Patent Act, the Claims Court used the three-part Timely Products test as adopted by the United States Court of Customs and Patent Appeals (CCPA)\textsuperscript{93} in In Re Corcoran.\textsuperscript{94} In applying this test, the Claims Court found that UMC's offer to sell was for profit, and not for experimental purposes, and that the subject of the Weaver patent had been reduced to practice, thereby satisfying the second and third requirements of the Timely Products test.\textsuperscript{95}

For its first requirement, however, the Timely Products test required a patent's challenger to show that the complete invention claimed must have been embodied in, or obvious in view of, the thing offered for sale.\textsuperscript{96} Since the prototype built in May 1967 did not embody Weaver's claim 1, the trial court found that the Weaver patent was not obvious in view of its prototype.\textsuperscript{97} Accordingly, the Claims Court concluded that this requirement of the test was not met and that the Weaver patent was not invalid under the section 102(b) on sale bar.\textsuperscript{98}

B. The CAFC Decision

Weaver appealed the Claims Court's subsequent finding of no infringement, and the government cross-appealed to have the Weaver patent declared invalid.\textsuperscript{99} On the second issue, the CAFC concluded that the Claims Court erred as a matter of law and reversed the lower court's finding that the Weaver

\textsuperscript{93} The CCPA was a predecessor court of the CAFC. See infra note 131.
\textsuperscript{95} UMC, 8 Cl. Ct. at 620-21. However, before applying the first part of the Timely Products test, the Claims Court further noted that, in reviewing a lower court's application of the test, the CAFC in Barmag refused to condition the on sale bar upon the existence of a physical embodiment in all cases. Barmag, 731 F.2d 831, 836-37, 221 U.S.P.Q. (BNA) 561, 565. See also text accompanying note 72. The Claims Court, construing this reservation, found that UMC had reaped no commercial benefits outside the statutory period. UMC, 8 Cl. Ct. at 620. Thus, the court looked for a reduction to practice before it applied the bar.
\textsuperscript{96} Timely Products, 523 F.2d 288, 302, 187 U.S.P.Q. (BNA) 257, 267.
\textsuperscript{97} UMC, 8 Cl. Ct. at 621.
\textsuperscript{98} Id. After finding the Weaver patent valid, the Claims Court went on to find that the Weaver patent was not infringed because the government did not make use of the device covered by the Weaver patent. Id. at 627. Accordingly, the Claims Court dismissed the complaint and denied UMC recovery for its infringement claim. Id.
\textsuperscript{99} UMC, 816 F.2d at 650, 2 U.S.P.Q.2d at 1467.
patent was valid.  

Because reduction to practice requires that the invention exist in physical form, the CAFC first noted the inconsistency of the Claims Court's concurrent findings that the Weaver patent was not embodied in physical form but was reduced to practice. Therefore, the court found that the Weaver patent could not have been reduced to practice prior to the critical date.

Under the Timely Products test, a finding of no reduction to practice would have ended the inquiry, because an invention that is not reduced to practice cannot be commercially marketable as required by the test. However, the UMC court then re-examined its precedent and found that a "reduction to practice of the claimed invention has not been . . . an absolute requirement of the on sale bar" and addressed the question of whether a reduction to practice should be a requirement of the bar.

In answering this question, the court first noted that some courts applying the bar, in an effort to circumvent the reduction to practice requirement, had looked to whether the invention had been "sufficiently" reduced to practice for the purposes of the on sale bar. The majority noted that a "sufficiently" reduced to practice requirement would have deleterious effects on priority determinations in interference contests.

100. id. As a preliminary matter, however, the CAFC noted the inconsistency in the Claims Court's finding that the invention taught by the Weaver patent had been reduced to practice without a physical embodiment and concluded that the lower court had erred in holding that there had been a reduction to practice. Id. at 651-52, 2 U.S.P.Q.2d at 1468.
102. id.
103. id. at 656, 2 U.S.P.Q.2d at 1471.
104. id. at 652-56, 2 U.S.P.Q.2d at 1468-71.
105. In Dart Indus. v. E. I. Du Pont De Nemours and Co., 489 F.2d 1359, 1365, 179 U.S.P.Q. (BNA) 392, 396 (7th Cir. 1973), the case cited by the UMC court, the Seventh Circuit found that the product sold had been "sufficiently reduced to practice to avoid the [other] reference." However, the Dart court went on to note that the product "achieved commercial success in the form in which it was sold." Id. Thus while it used the phrase "sufficiently reduced to practice," the product was probably reduced to practice at the time of the offer to sell.
106. UMC, 816 F.2d at 654-55, 2 U.S.P.Q.2d at 1470.
107. For example, in the interference context, where two inventors are vying for a patent on the basis of who reduced the invention to practice first, it has been noted that "[t]here [can be] no degrees of reduction to practice; either one has or has not occurred." Wolter v. Belicka, 409 F.2d 255, 262, 161 U.S.P.Q. (BNA) 335, 340 (C.C.P.A. 1969) (Rich, J., dissenting).
Therefore, the court held that the desirability of maintaining a consistent definition of reduction to practice in other areas of patent law militated in favor of abandoning reduction to practice as a per se requirement of the on sale bar.\textsuperscript{108}

More importantly, the panel majority next interpreted the sections 102(b)/103 bar,\textsuperscript{109} as discussed by the CCPA in \textit{In re Foster},\textsuperscript{110} as suggesting that a reduction to practice was inherently inconsistent with the section 103 obviousness determination.\textsuperscript{111} The panel majority stated:

Implicit in the operation of a sections 102(b)/103 bar is the \textit{absence} of a reduction to practice of the \textit{claimed invention} as a requirement for the bar to operate. The invention, i.e., as claimed with all elements, is not the subject of the sale. If it were, section 103 would not be involved. With respect to non-claimed subject matter of the sale in a sections 102(b)/103 situation, it is meaningless to speak of "reduction to practice" of what was sold. "Reduction to practice" relates only to the precise invention expressed in a claim. Thus, the second requirement of \textit{Timely Products}, reduction to practice of the claimed invention, is inherently inconsistent with the first requirement under which the bar is applicable if the claimed invention is merely "obvious in view of the thing offered for sale."\textsuperscript{112}

In effect, the court found that since an invention offered for sale becomes part of the prior art, and an invention need not be reduced to practice to be obvious in view of the prior art, then the claimed invention need not be reduced to practice.

Since the court found that adoption of a reduction to practice requirement was inherently inconsistent with the non-obviousness requirement of section 103 and may create precedent that would adversely affect priority determinations, it concluded that a reduction to practice should not be an absolute requirement of the on sale bar.

Having abandoned reduction to practice as anything but an analytical tool,\textsuperscript{113} the court declined "to formulate a standard

\textsuperscript{108} \textit{UMC}, 816 F.2d at 656, 2 U.S.P.Q.2d at 1471. \textit{But see infra} text accompanying notes 129-32.

\textsuperscript{109} See \textit{supra} note 63 for the pertinent text of 35 U.S.C. § 103.


\textsuperscript{111} \textit{UMC}, 816 F.2d at 656, 2 U.S.P.Q.2d at 1471.

\textsuperscript{112} \textit{id.}

\textsuperscript{113} \textit{id.} The panel majority stated that "a reduction to practice of the claimed invention 'may, of course, lighten the burden of the party asserting the bar.'" \textit{id.}
for determining when something less than a complete embodiment of the invention will suffice under the on sale bar.”114 Instead, the court held that “all of the circumstances surrounding the sale or offer to sell, including the stage of development of the invention and the nature of the invention, must be considered and weighed against the policies underlying section 102(b).”115

Although it declined to formulate a precise set of requirements like the requirements set out by the Timely Products court, the UMC court pointed out minimum requirements and burdens of proof. First, the court held that the challenger has the burden of showing “a definite sale or offer to sell more than one year before the application for the subject patent....”116 Second, the challenger must show “that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art.”117 Third, once the challenger has established these two criteria, the UMC court held that the burden shifts to the patent holder “to come forward with an explanation of the circumstances surrounding what would otherwise appear to be a commercialization [of the patented subject matter] outside the grace period.”118

Applying these rules of law to the uncontested facts, the CAFC found that UMC had offered to sell the claimed invention prior to the critical date.119 The court then found that the device offered for sale was the same as that described in the Weaver patent.120 From these facts the CAFC found evidence


114. Id. at 657, 2 U.S.P.Q.2d at 1472. For a different analysis of the UMC court's holding, see Garret, supra note 7, at 586-89.

115. UMC, 816 F.2d at 656, 2 U.S.P.Q.2d at 1471-72. The court formulated the "all circumstances" test.

116. Id. at 656, 2 U.S.P.Q.2d at 1472.

117. Id. These two criteria do not substantially depart from the requirements of Timely Products. The UMC court's requirement of a sale or offer to sell is implicit in the first and third requirements of the Timely Products test. In addition, both UMC and Timely Products require that the identity of the invention offered for sale be established as that of the claimed invention. UMC states this identity requirement using the terms "fully anticipated" and "obvious," UMC, 816 F.2d at 656, 2 U.S.P.Q.2d at 1472, while Timely Products requires that the claimed invention be "embodied in" (anticipation) or "obvious in view of" the invention offered for sale, Timely Products, 523 F.2d at 302, 187 U.S.P.Q. at 267.

118. UMC, 816 F.2d at 656, 2 U.S.P.Q.2d at 1472.

119. Id. at 657, 2 U.S.P.Q.2d at 1472.

120. Id.
of "an attempt to commercialize the invention of the [Weaver] patent . . . and thereby to expand the grace period in contravention of the policies underlying the statute." The court then looked to UMC to explain the commercial activities that occurred prior to the critical date.

The court dismissed UMC's argument that it had not reduced the invention to practice as "purely technical." The court, after looking at "all of the circumstances surrounding the sale," found that the "substantial embodiment" of the invention, Weaver's subjective belief that the device would work, and the extent of Weaver's contribution to the art were evidence that the invention was sufficiently developed for the purpose of applying the on sale bar. Coupled with this advanced stage of development, the commercial activities of UMC were sufficient for the panel majority to find that the invention covered by the Weaver patent was on sale within the meaning of section 102(b).

IV. CRITICISM OF THE CAFC'S ANALYSIS

This section gives an overview of the criticism of the CAFC's approach to arriving at its decision in UMC. The section will begin with Judge Smith's argument that a reduction to practice requirement was clearly part of the precedent binding the CAFC. Next, this section illustrates other flaws in the panel majority's reasoning that undermine its conclusion that reduction to practice should not be a requirement of the on sale bar.

In his dissent, Judge Smith severely criticized the approach that the panel majority took in concluding that a reduction to practice was not, and should not be, a prerequisite for applying the on sale bar. In particular, Judge Smith strongly objected to the conclusion that prior decisions had not addressed whether reduction to practice was a requirement for application of the on sale bar. In his opinion, "[o]ur past decisions have consistently held . . . that a device must be in existence and shown to work for its intended purpose (the classical definition of reduction to practice) before the on sale bar can

121. Id.
122. Id.
123. Id.
124. Id.
125. Id.
126. Id. at 658-65, 2 U.S.P.Q.2d at 1473-79.
apply."\textsuperscript{127} This precedent, Judge Smith argued, "was being allowed to slip silently into the backwaters of the law simply by ignoring it."\textsuperscript{128}

Beyond its conclusion that reduction to practice had not been a requirement of the on sale bar, the panel majority also concluded that a reduction to practice should not be a requirement of the bar.\textsuperscript{129} The court, noting that other courts had used a "sufficiently" reduced to practice standard, expressed concern about the adverse effects of a relaxed reduction to practice standard in priority determinations.\textsuperscript{130}

However, this Note argues that fear of a relaxed reduction to practice requirement is not a compelling reason for abandoning reduction to practice as a prerequisite in on sale bar cases. Consistent appellate court decisions in cases applying the on sale bar would alleviate this concern. The CAFC, being the sole appellate court for patent appeals,\textsuperscript{131} is in a position to ensure that the standard is not relaxed. Hence, the panel majority's argument does not militate against adoption of reduction to practice for applying section 102(b) as much as it militates in favor of the CAFC maintaining a consistent reduction to practice standard in all types of cases.\textsuperscript{132}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{127} \textit{Id.} at 658, 2 U.S.P.Q.2d at 1473. The most disturbing aspect of the panel majority's conclusion that reduction to practice was not a requirement of the on sale bar was that the conclusion allowed the panel to rule on whether such should be a requirement of the on sale bar without the entire court sitting en banc. \textit{See} South Corp. v. United States, 690 F.2d 1368, 1370 n.2, 215 U.S.P.Q. (BNA) 657, 658 n.2 (1982). In any event, this Note does not dispute whether the court was bound by precedent to adhere to a reduction to practice requirement, opting instead to concentrate on whether the reduction to practice \textit{should} be a requirement of the bar.

\item \textsuperscript{128} \textit{UMC}, 816 F.2d at 658, 2 U.S.P.Q.2d at 1473.

\item \textsuperscript{129} \textit{See supra} text accompanying notes 109-11.

\item \textsuperscript{130} \textit{See supra} text accompanying notes 105-08.

\item \textsuperscript{131} The CAFC was formed in a merger between the United States Court of Claims and the Court of Customs and Patent Appeals and has sole appellate jurisdiction over patent cases. \textit{In} South Corp. v. United States, 690 F.2d 1368, 1370, the CAFC adopted the precedent of its predecessor courts. \textit{See also} Petrowitz, \textit{Federal Court Reform: The Federal Courts Improvement Act of 1982—And Beyond}, 32 AM. U. L. REV. (1983).

\item \textsuperscript{132} In addition, abandoning the requirement of a physical embodiment in on sale bar cases may have the unintended effect of creating greater uncertainty in interference law. In \textit{UMC}, the court has, in effect, held that an invention can be shown to work for its intended purpose without a physical embodiment. From this premise, attorneys in priority contests may argue that the issue should not be whether the invention was in existence, but whether it has been shown to work as intended—that physical embodiment is a mere technicality. Thus, contrary to its wishes, the panel majority's holding could conceivably create greater uncertainty in the area of interference law.
\end{itemize}
\end{footnotesize}
The second reason that the court gave for not adopting a reduction to practice as a requirement of the on sale bar is that reduction to practice is inherently inconsistent with the concept that the claimed invention need only be obvious in view of the thing offered for sale.\textsuperscript{133} The court based its conclusion on the premise that an invention that has not been reduced to practice may become prior art merely by being offered for sale.\textsuperscript{134} From this premise, it is logical to conclude that the claimed invention need not be reduced to practice, because a claimed invention does not have to be reduced to be obvious in view of the prior art. However, this premise assumes what the court was trying to prove—that an invention need not be reduced to practice to be on sale within the meaning of section 102(b). Thus, the court addressed the wrong question when determining if a reduction to practice should be a requirement of the on sale bar. Instead of asking if the claimed invention need be reduced to practice, the court should ask if the invention offered for sale need be reduced to practice.

An analysis of the sections 102(b)/103 bar illustrates that a requirement of reduction to practice of the invention offered for sale is not inconsistent with a requirement that the claimed invention be obvious in view of the thing offered for sale. The sections 102(b)/103 bar is based on the assumption that it does not matter how the public comes into possession of the invention.\textsuperscript{135} Whether it be by public use, sale, prior patent, or publication, once the invention is in public possession, the invention is prior art over which the claimed invention must be non-obvious.\textsuperscript{136} It follows that section 102(b) and the section 103 non-obviousness requirement work together to prevent inventors from circumventing the on sale bar when the claimed invention is not completely anticipated by the invention offered for sale.\textsuperscript{137} Thus, if the invention offered for sale does not completely disclose the claimed invention, section 103

\textsuperscript{133} See supra text accompanying notes 109-10.

\textsuperscript{134} See supra text accompanying note 111.


\textsuperscript{136} Id.; In re Corcoran, 640 F.2d 1331, 1334, 208 U.S.P.Q. (BNA) 867, 870 (C.C.P.A. 1981).

\textsuperscript{137} See Foster, 343 F.2d at 988, 145 U.S.P.Q. (BNA) at 173. In Foster the CCPA stated that "[t]here appears to be no dispute about the operation of this statute in the 'complete anticipation' situations but the contention seems to be that 102(b) has no applicability where the invention is not completely disclosed. . . . [W]e are convinced that this contention is contrary to the policy consideration . . . ." Id.
requires the additional elements of the invention to be non-obvious in view of the invention offered for sale, which has become part of the prior art by virtue of its sale.

The CCPA's application of the sections 102(b)/103 bar in *In Re Corcoran*\(^{138}\) illustrates the necessity of reduction to practice of the invention offered for sale. In *Corcoran*, the Patent and Trademark Office Board of Appeals found that Corcoran had made a detailed offer for sale of pre-slit window shade material, accompanied by samples.\(^{139}\) The sample of shade material was evidence that the invention offered for sale had been reduced to practice when Corcoran made the offer. On appeal, Judge Rich, writing for the majority, held that the shade material had been offered for sale under the requirements of the *Timely Products* test, and was thus not patentable under section 102(b).\(^{140}\) Therefore, the invention offered for sale, the shade material, became part of the prior art over which the claimed invention must be patentable.\(^{141}\) Corcoran's claims were primarily for the window shade material, but also included supports for the material and tabs to indicate where the material had been slit.\(^{142}\) The supports and tabs were obvious in view of the shade material that had become part of the prior art under section 102(b). Therefore, the claimed invention, even containing additional elements, was not patentable under section 103.\(^{143}\)

The premise of the *In re Corcoran* court's section 103 analysis was that the shade material had been offered for sale under 102(b) and had become part of the prior art as a result. If the shade material had not been reduced to practice at the time it was offered for sale, it is unlikely that the court would have found it on sale within the meaning of section 102(b).\(^{144}\) Since the shade material would not have been on sale, it would not have become prior art over which the invention with tabs and supports needed to be patentable under section 103. Thus, a reduction to practice of the invention offered for sale was

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139. *Id.* at 1332, 208 U.S.P.Q. at 868.
140. *Id.* at 1333-34, 208 U.S.P.Q. at 870.
141. *Id.*
142. *Id.* at 1332, 208 U.S.P.Q. at 868-69.
143. *Id.* at 1334, 208 U.S.P.Q. at 870.
144. The court did not expressly base its decision on a finding of reduction to practice, but it found all of the elements of the *Timely Products* test satisfied, including the requirement of reduction to practice. *Id.*
essential to finding the claimed invention obvious.\textsuperscript{145}

Accordingly, while the differences between the claimed invention and the invention offered for sale need not be reduced to practice, the invention offered for sale does need to be reduced to practice under the sections 102(b)/103 analysis. Therefore, contrary to the CAFC's conclusion, the two \textit{Timely Products} requirements of reduction to practice of the invention offered for sale and obviousness are not inherently inconsistent. Thus, section 103 does not preclude the adoption of reduction to practice as an element of the section 102(b) on sale bar.

In summary, the panel majority's reasons for concluding that a reduction to practice was not, and should not be, a requirement of the on sale bar are unconvincing.

\section*{V. Criticism of the "All Circumstances" Test}

This section illustrates some of the practical problems inherent in the panel majority's all circumstances test.

First, the decision does not provide, and the panel majority expressly refused to give, lower courts firm standards for determining when less than a complete embodiment of the invention will invoke the on sale bar.\textsuperscript{146} The decision is based on factors that do not translate into a standard that may be easily applied to other fact situations.\textsuperscript{147} Accordingly, future courts are left to determine on an ad hoc basis when an invention is sufficiently embodied for purposes of the on sale bar.\textsuperscript{148}

\textsuperscript{145} For another more recent application of the sections 102(b)/103 bar, see Baker Oil Tools, Inc. v. Geo Vann, Inc., 828 F.2d 1558, 1561-64, 4 U.S.P.Q.2d (BNA) 1210, 1213-15 (Fed. Cir. 1988). In \textit{Baker Oil}, the court stated that "[i]f a device was in public use or on sale before the critical date, then the device becomes a reference under § 103 against the claimed invention." \textit{Id.}

\textsuperscript{146} \textit{UMC}, 816 F.2d at 657, 2 U.S.P.Q.2d at 1472.

\textsuperscript{147} As explained in the text accompanying infra note 152, the factor of commercial activities does not help future courts apply the on sale bar because commercial activities, under the \textit{UMC} court's analysis, will be present in every case. The "extent to which Weaver had developed his invention" provides no guidance as it is a conclusory statement that is applicable only to the facts of \textit{UMC}. "Weaver's subjective opinion that his invention would work" will not enable future courts to discern when an invention has been placed on sale because most inventors believe that their invention will eventually work; if they did not, they would not attempt to reduce the invention to practice. And finally, "the extent of Weaver's addition to prior art" merely reintroduces a requirement similar to the non-obviousness requirement of § 103 by requiring courts to again compare the invention with the prior art.

\textsuperscript{148} One commentator has likened the CAFC's analysis of the on sale bar in \textit{UMC} to the Supreme Court's analysis of 35 U.S.C. § 103 in Graham v. John Deere, 383 U.S. 1 (1966). \textit{See} Garrett, supra note 7, at 587-88. The comparison is apt, but it is not clear...
Second, the on sale bar is in the nature of a statute of limitations. Judge Smith stated in his dissent in *UMC* that, "[a]s in statutes of limitations generally, the start of a statutory bar must be reasonably clear at the time it occurs. . . . The long history of section 102(b), which effects the irretrievable loss of a valuable right, shows judicial and congressional recognition of the need for reasonable certainty." Because the all circumstances test does not provide firm standards for its application, it does not provide the certainty required to start the grace period running. Thus, the all circumstances test allows neither the inventor whose right is at risk, nor the courts that must apply the bar, to discern with accuracy the commencement, and thus the expiration, of the statutory period.

VI. POLICY CONSIDERATIONS

As applied in *UMC*, the all circumstances test undermines or frustrates the policies undergirding the section 102(b) on sale bar for several reasons.

First, the court's reasons for concluding that *UMC*’s activities violated the policy against commercial exploitation undermine the policy as a tool for applying the on sale bar. The panel majority concluded that UMC's offer to sell evidenced an "attempt to commercializ[e]" Weaver's invention. This conclusion hinges on the court's definition of commercial exploitation. Implicitly, the court defined commercial exploitation as an offer to sell an invention for profit. This definition of commercial exploitation is so broad that it eviscer-

149. *See in re* Foster, 343 F.2d 980, 987-88, 145 U.S.P.Q. (BNA) 166, 173 (C.C.P.A. 1965), *cert. denied*, 383 U.S. 966 (1966). Judge Almond compared the on sale bar to a statute of limitations, which begins when the invention becomes available to the public through the categories of disclosure enumerated in § 102(b). *Id.*


152. *See supra* text accompanying notes 36-38.

ates commercial exploitation as a tool for applying the on sale bar because, at a minimum, all patent holders whose patents are challenged under the on sale bar have placed their inventions on sale.\textsuperscript{154} Thus, the panel majority's reasoning has made violation of the policy against prolonged commercial exploitation inevitable in every case in which the on sale issue is raised.

Instead of defining commercial exploitation as an offer to sell for profit, courts should require actual commercial exploitation of the invention before finding the policy violated.\textsuperscript{155} Actual commercial exploitation would require a sale or a contract for sale.\textsuperscript{156} If the facts show that the inventor profited from the invention, then he or she has clearly violated the policy against prolonged commercial exploitation.\textsuperscript{157} If the inventor has not profited from the invention, then the policy has not been violated.

Briefly then, the panel majority's implicit definition of commercial exploitation is too broad, and courts should instead define commercial exploitation as the actual commercial exploitation of the invention, which requires an actual sale or contract for sale of the invention claimed in the challenged patent.

The second policy ill-served by the all circumstances test is the policy of giving the inventor a grace period in which to decide whether to file for a patent.\textsuperscript{158} In 1939, when it reduced

\begin{footnotes}
\footnote{154}{Almost any activity with an invention is motivated by profit, because the inventor is motivated by the economic incentive of patent protection. See supra note 27.}

\footnote{155}{A line of cases has held that "mere existence of a sales contract is insufficient to establish a placing on sale" within the meaning of § 102(b). See National Business Sys. v. AM Int'l, 743 F.2d 1227, 1237, 223 U.S.P.Q. (BNA) 1011, 1019, (Fed. Cir. 1984) and cases cited therein. To the extent that these cases hold that an invention is not on sale even though it is the subject of a valid contract for sale, these cases should be overruled as being contrary to the policy against prolonged commercial exploitation of the invention. However, to the extent that they state that a court should examine the details of the sales contract to make sure that the contract is not executory and is for the device claimed in the disputed patent, these holdings merely state a truism that does not affect the rule developed later in this Note. See In re Dybel, 524 F.2d 1393, 187 U.S.P.Q. (BNA) 593 (C.C.P.A. 1975) (executory contract for sale insufficient where there was no evidence that the purchaser knew how the invention would perform).}

\footnote{156}{See infra text accompanying note 171.}

\footnote{157}{Cf. Western Marine Elec. Co. v. Furuno Elec. Co., 764 F.2d 840, 226 U.S.P.Q. (BNA) 334 (Fed. Cir. 1985) (a sonar system was sold for profit prior to the critical date).}

\footnote{158}{See supra text accompanying notes 31, 40-42.}
\end{footnotes}
the grace period from two years to one year,\textsuperscript{159} Congress reiterated that the law "thus permits an inventor, after his invention is fully completed, to make the invention known to the public for a period of two [changed to one] years before filing his application for patent."\textsuperscript{160} Thus, Congress' intent was to give the inventor one year after the invention was "fully completed" to "make his mind up whether or not to file an application for patent."\textsuperscript{161}

However, even when the inventor is satisfied with the invention as conceived, an invention that has never been built will nevertheless require substantial work before it is "fully completed."\textsuperscript{162} To find, as did the UMC panel majority, that less than a physical embodiment of an invention is sufficient for the invention to be "fully completed" does not realistically allow the inventor to evaluate the commercial prospects of the invention. A better approach is to start the one-year grace period only after the invention has been built and shown to work for its intended purpose; only then may an inventor realistically evaluate the invention's economic prospects.

Accordingly, because the purpose of the grace period is satisfied only after the invention has been reduced to practice, the panel majority's test undermines the policy of giving the inventor a grace period in which to decide whether to file for patent protection.

\textsuperscript{159} Congress reduced the grace period because "under present conditions 2 years appears unduly long and operates as a handicap to industry." S. REP. NO. 876, 76th Cong., 1st Sess. 1-2 (1939); H.R. REP. NO. 961, 76th Cong., 1st Sess. 1-2.


\textsuperscript{161} S. REP. NO. 338, 24th Cong., 1st Sess. 6 (1836). See also supra note 39.

\textsuperscript{162} In In re Dybel, 524 F.2d 1393, 1400, 187 U.S.P.Q (BNA) 593, 598 (C.C.P.A. 1975), the CCPA noted that to be on sale an invention "must be complete at least to such an extent that the purchaser knows how it will perform." The court correctly emphasized that the completeness of the invention reflects the seriousness of the parties to the sale. An invention that is only partially complete is unlikely to receive serious consideration from a prospective buyer. In Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd., 731 F.2d 831, 837, 221 U.S.P.Q. (BNA) 561, 565 (Fed. Cir. 1984), the CAFC noted that another element of the calculus for determining whether an invention has been placed on sale is the type of product to be sold. The court noted that "simple" products may not need be reduced to practice, presumably because the inventor of a simple product may know that the product is commercially marketable without a reduction to practice. \textit{Id. See also In Re Dybel}, 524 F.2d at 1400, 187 U.S.P.Q. at 598 ("an invention of the type involved here . . .").
VII. SUGGESTED MINIMUM REQUIREMENTS OF THE ON SALE BAR

The following section first states the goals of a test for applying the section 102(b) on sale bar. Next, it suggests a test to be used by courts applying the bar in the future. Finally, it applies this test to a variety of factual situations to illustrate how the test works and how it satisfies the policies underlying the bar.

A test for applying the on sale bar should accomplish three goals. First, the test should accommodate the policies that underly the on sale bar. It must ensure that inventors are not allowed to commercially exploit their inventions beyond the statutory period, prevent the public from relying to its detriment on inventions already publically disclosed, and encourage prompt filing of patent applications. At the same time it should guarantee inventors the grace period mandated by Congress.

Second, the proposed test should allow courts to be consistent in applying the on sale bar, but still retain the flexibility necessary for applying the test to a wide variety of factual situations. To be consistently applied, the test must allow both the court and the inventor to determine objectively when the one-year grace period begins.

Third, the proposed test should be in accord with binding precedent.

This Note proposes the following test:

1. The burden shall be on the challenger to show that, more than one year prior to the date when the inventor filed the patent application, the inventor offered for sale an invention that either
   a) fully anticipated the invention later claimed in the

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163. See supra text accompanying notes 31-45.
164. See supra text accompanying notes 146-51. See also UMC, 816 F.2d 647, 653, 2 U.S.P.Q.2d (BNA) 1465, 1469 ("Rigid standards are especially unsuited to the on sale provision where the policies underlying the bar, in effect, define it"), and cases cited therein.
165. See supra note 148.
166. See supra text accompanying notes 126-27.
patent,\textsuperscript{169} or
\begin{itemize}
\item[b)] made obvious the invention later claimed in the patent by the addition of the invention offered for sale to the prior art.\textsuperscript{170}
\end{itemize}

2. Next, the burden remains on the challenger to prove that either
\begin{itemize}
\item[a)] the offer was accepted such that the invention offered for sale was sold or was the subject of a valid contract for sale,\textsuperscript{171} or
\item[b)] the invention had been reduced to practice when the invention was offered for sale.\textsuperscript{172}
\end{itemize}

3. If the challenger proves these first two requirements, the burden shifts to the patent holder to show that the sale or offer for sale was for experimental purposes.\textsuperscript{173}

To illustrate how this test is to be applied, consider the following hypothetical. On June 1, 1988, an inventor conceives and clearly documents a new idea for a lightweight, high-powered pump. Shortly thereafter the inventor becomes aware of a need for such a pump in the aircraft industry. Consequently, on June 15, 1988, before the pump has been embodied in physical form, the inventor makes a firm offer\textsuperscript{174} to sell the pump, for profit, to an aircraft manufacturer. The firm offer expires on July 1, 1988.

First, assume that the aircraft manufacturer does not accept the offer because the inventor cannot prove that the pump will work as specified. Under the proposed test, the pump would not be on sale because neither condition of part 2

\begin{itemize}
\item[169.] \textit{In re Corcoran}, 640 F.2d 1331, 1334, 208 U.S.P.Q. (BNA) 867, 870; \textit{UMC Elecs.}, 816 F.2d 647, 656, 2 U.S.P.Q.2d (BNA) 1465, 1472. \textit{See also supra} note 62.
\item[171.] Robbins Co. v. Lawrence Mfg., 482 F.2d 426, 428, 178 U.S.P.Q. (BNA) 577, 579 (9th Cir. 1973); \textit{Western Marine Elec. Co. v. Fururo Elec. Co.}, 764 F.2d 840, 845, 226 U.S.P.Q. (BNA) 334, 338; \textit{Gould Inc. v. United States}, 579 F.2d 571, 579, 198 U.S.P.Q. (BNA) 156, 164 (Ct. Cl. 1978). In each of these cases, the offer for sale was accepted.
\item[173.] \textit{See, e.g., In re Dybel}, 524 F.2d at 1399-401, 187 U.S.P.Q. at 597-99.
\item[174.] \textit{See U.C.C. § 2-205} (1987), which states that "[a]n offer . . . to sell goods . . . which by its terms gives assurance that it will be held open is not revocable, for lack of consideration, during the time stated or if no time is stated for a reasonable time . . . ."
\end{itemize}
has been satisfied: the offer for sale was not accepted, and the pump was not reduced to practice.

Next, assume that, after further consideration, the airline manufacturer decides to accept the offer and does so on June 25, 1988. Since the offer for sale was accepted and the parties formed a valid contract for sale, the one-year grace period begins under part 2(a) of the proposed test, and the inventor must file for patent protection before June 25, 1989.

Now assume that the offer was not accepted, but that the inventor reduced the pump to practice on June 25, 1988. Since the firm offer is still open, the invention was reduced to practice while the pump was being offered for sale. Therefore, under part 2(b) of the proposed test, the pump has been placed on sale and the inventor must file for patent protection before June 25, 1989.

If the inventor does not reduce the pump to practice until August 1, 1988, however, the later reduction to practice does not transform the June 15 offer to sell into a placing "on sale" within the meaning of section 102(b). Under part 2(b) of the proposed test, the invention must be reduced to practice at the time of the offer to sell, and in this case the offer to sell expired prior to the reduction to practice.

Now assume that the pump was reduced to practice prior to June 15, 1988, the date on which the inventor offered the pump for sale. Clearly, under the proposed test the pump offered for sale must be patented prior to June 15, 1989, because it had been reduced to practice and offered for sale on June 15, 1988. Assume further that the inventor did not file the patent application until June 30, 1989, but that the inventor made improvements in the pump's design after June 30, 1988, that made the claimed pump different from the pump offered for sale. The question then becomes whether the inventor may patent the claimed invention because it differs from the invention offered for sale.

Under the section 102(b)/103 bar, the original pump offered for sale on June 15, 1988, becomes part of the prior art. Therefore, under part 1(b) of the proposed test, if the claimed pump is obvious in view of the pump offered for sale, then the claimed pump is not patentable. This is so regardless of whether the improvements to the pump were ever reduced to practice. If, however, the claimed pump is not obvious in view
of the pump offered for sale, the improvements on the pump offered for sale are patentable.

There are three final situations that must be covered by the proposed test. The first is when a complex invention is comprised of several sub-systems. For example, the invention incorporates three sub-systems, two of which are part of the prior art, and the third of which has been tested to the inventor's satisfaction. Under part 2 of the proposed test, if the offer to sell is not accepted, the invention cannot be placed on sale until the invention has been reduced to practice by the integration of the three sub-systems.

The next situation is when the invention is a device that is so simple that there is no question whether it will work as intended. For example, consider a design patent for a doll, which has been rendered in an accurate drawing. Under part 2 of the proposed test, the doll would not be on sale until it is reduced to practice, which requires that the doll exist in physical form. The proposed test does not provide an exception to the reduction to practice requirement for simple inventions. Courts will be unable consistently to determine when an invention is simple enough not to require a reduction to practice.

Further, to provide such an exception would only shift the uncertainty of determining whether an invention has been placed on sale to the question of when an invention is so simple that reduction to practice is not necessary. Thus, the suggested test does not provide an exception to the reduction to practice requirement for simple inventions because such an exception provides for disparate treatment of inventors and introduces uncertainty into the test's application.

Finally, consider a situation where the inventor offers to sell a device that has not yet been conceived. For example, an aircraft manufacturer contracts to sell an aircraft, which is still in development, to be delivered five years from the date of the contract. From the performance specifications, it is clear that the aircraft must include a pump of new design superior to that of the art at the time of the contract. If the aircraft manufacturer designs and builds such a pump, will the contract for sale preclude the aircraft manufacturer from obtaining patent protection for the pump?

Under part 1 of the test, the offer to sell must be of an invention that anticipates or makes obvious the later claimed
invention. In the hypothetical, the offer to sell is not an offer to sell any invention that meets the requirements of part 1 of the test. Clearly, the aircraft manufacturer will deliver a new pump in five years. However, the contract for sale insufficiently defines the pump for the purposes of part 1 of the test. Because the pump has not been conceived at the time of the contract for sale, no invention exists that can anticipate or render obvious the claimed invention.

Accordingly, under part 2(b), the grace period will not begin until the aircraft manufacturer reduces the pump to practice. Further, at that point, the parameters of the invention are sufficiently defined for the purposes of part 1 of the test, and failing to disclose the invention to the PTO could contravene the policies of prohibiting detrimental public reliance and encouraging prompt disclosure of inventions. Thus, the contract for sale and the subsequent reduction to practice start the one-year grace period, and the manufacturer must file the patent application within one year from the date of reduction to practice.175

As illustrated by its application to the above hypotheticals, the proposed test accomplishes the three goals of a test applying the on sale bar.

First, the test satisfies each of the policies underlying the on sale bar. Part 2(a) of the test precludes the inventor from commercially exploiting the pump beyond the statutory period by finding the pump on sale when the inventor entered into a contract for sale. Part 2(b) ensures that, when members of the public could come into possession of the pump because it has been reduced to practice, they will not rely to their detriment beyond the one-year grace period. Part 2(b) also promotes prompt disclosure by forcing the inventor to file within one year after the completed pump has been shown to work as intended, but also ensures that the inventor has a chance to evaluate the commercial prospects of his pump for the one-year grace period set by Congress. Finally, part 2(b) gives the inventor and his or her patent counsel sufficient time to submit a complete patent application to the PTO.

175. The realities of the marketplace may require sellers to enter into contracts many years before a product is to be sold. See generally Shatterproof Glass, 758 F.2d at 621, 225 U.S.P.Q. at 639 ("architectural glass for construction projects is normally ordered months or years in advance"). Section 102(b) should not be used to frustrate the course of legitimate business practices.
Second, courts will be able to consistently and predictably apply the proposed test. Under part 2(b), both courts and patent counsel will know that the grace period began when the inventor reduced the pump to practice. Since there is a well-established body of law for determining when an invention has been reduced to practice, the concerned parties will know with certainty when the grace period began. Furthermore, under part 2(a), the courts will be able to easily identify the starting of the grace period by the contract for sale between the inventor and the aircraft manufacturer. Hence, under either requirement, the starting of the grace period will be certain.

Finally, the proposed test is consistent with precedent. It refines the *Timely Products* test, which has been repeatedly applied. The only difference is that part 2(a) allows a court to find that the invention was on sale without a reduction to practice if the inventor directly profited from the invention prior to the reduction to practice.

**VIII. Conclusion**

The on sale bar precludes issuance of valid patents on inventions that have been on sale in this country for more than one year. The bar is designed to further four policy considerations. When applying the on sale bar, the courts have rejected the on hand doctrine in favor of a test that requires only that the challenger show that the invention was reduced to practice at the time of the offer to sell. In *UMC*, the CAFC rejected the requirement of a reduction to practice and instead adopted a test that required the courts to consider all of the circumstances surrounding the offer to sell the invention when deciding whether to apply the bar.

In his dissent in *UMC*, Judge Smith concluded that the court was bound by precedent to require a reduction to practice before applying the bar. Even if precedent did not require a reduction to practice, however, the reasons given by the panel majority did not support its conclusion that a reduction to practice should not be a requirement of the on sale bar.

Finally, the application of the all circumstances test will be problematical because the *UMC* court did not give a standard by which courts can determine when less than a reduction to practice is sufficient to invoke the bar. Also, the all circumstances test does not advance the policies underlying the on sale bar.
Accordingly, this Note proposes a test that requires a showing of reduction to practice unless the inventor has actually commercially exploited the invention. This test provides the certainty required by a statutory provision that acts, essentially, like a statute of limitations. Further, it more fully satisfies Congress' express intent to provide inventors with a time period within which to decide to file for patent protection.

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