HOW GOOD IS GOOD ENOUGH?[1]

By

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and

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Introduction

We all know that, to constitute an actual reduction to practice ("ARP"), a prototype, test run, etc. need not be in condition for commercial exploitation.[4] At the other extreme, we all know that, to constitute an ARP, a prototype, test run, etc. cannot be a failure.[5] However, in real life, the prototype, test run, etc. that one is considering putting forward as an ARP is usually somewhere between those two extremes. That is, it worked--sort of. The question then becomes: How good is good enough to constitute an ARP?

What the Federal Circuit Did in DSL Dynamic Sciences v. Union Switch & Signal

A good starting place for a discussion of this issue is Judge Rich's opinion in DSL Dynamic Sciences Ltd. v. Union Switch & Signal, Inc., 928 F.2d 1122, 18 USPQ2d 1152 (Fed. Cir. 1991).[6] That was an appeal in a 35 USC 146 quasi-de novo civil action to review the decision of the Board of Patent Appeals and Interferences ("BPAI") in a patent-application interference. DSL's assignor (Schmid) was the patentee and the senior party. Union Switch's assignor (Blosnick) was the applicant and the junior party. The invention defined by the sole count was a "coupler mount assembly" used to attach equipment to a railway car coupler. Schmid stood on its September 1983 filing date, and Blosnick relied on an asserted ARP that had taken place in May 1983 on a caboose. (The relevance of the fact that the asserted ARP had taken place on a caboose will be explained below.)

During the 35 USC 146 action, DSL "argued that the tests were not performed in the intended environment of a coupler mount assembly, and therefore were not sufficient to establish reduction to practice."[7] In support of its argument, DSL proffered two categories of evidence.

First, DSL proffered the testimony of an expert witness to the effect (1) "that the purpose of the equipment supported by a coupler mount assembly is to obviate the need for a caboose at the end of a train ... "[8]; (2) "that, therefore, the coupler mount assemblies of the count would never in reality be attached to a caboose, but generally would be attached to the coupler *of a freight car*"[9]; (3) "that the suspension system is much better on a caboose, which is intended to carry passengers, than that on a freight car"[10]; and (4) "that consequently while the devices tested by Union Switch in May of 1983 performed satisfactorily when attached to cabooses, those devices would have failed if attached to a freight car."[11]

Second, DSL proffered the testimony of an employee of a railroad company that had subsequently bought coupler mount assemblies within the scope of the count from Union Switch to the effect that those assemblies had failed and that "major modifications of those assemblies were required before they were found suitable for use."[12]

The district court excluded both categories of evidence proffered by DSL on grounds not relevant here and entered judgment for Union Switch. On appeal, the Federal Circuit affirmed--but did so by holding that, even if that evidence had been introduced, Union Switch would still have won.

The Federal Circuit's starting point was its holding that "The issue of reduction to practice is a question of law which this court reviews de novo."[13] It then turned to each category of evidence proffered by DSL.

With respect to the use-on-a-caboose versus use-on-a-freight-car issue, the court first offered a useful tutorial on when simulations can constitute ARPs:

> It is true, as DSL points out, that proof of actual reduction to practice requires a showing that "the embodiment relied upon as evidence of priority actually worked for its intended purpose." *Newkirk v. Lulejian,* 825 F.2d 1581, 1582, 3 USPQ2d 1793, 1794 (Fed. Cir. 1987). This is so even if the "intended purpose" is not explicitly set forth in the counts of the interference. *See, e.g., Elmore v. Schmitt*, 278 F.2d 510, 125 USPQ 653 (CCPA 1960); *Burns v. Curtis*, 172 F.2d 588, 80 USPQ 587 (CCPA 1949). On the other hand, tests performed outside the intended environment can be sufficient to show reduction to practice if the testing conditions are sufficiently similar to those of the intended environment. *Tomecek v. Stimpson,* 513 F.2d 614, 618, 185 USPQ 235, 239 (CCPA 1975).[14]

The court apparently agreed with DSL that the tests relied on by Union Switch were "outside the intended environment." However, it held that they adequately simulated the intended environment because "The report for Test No. 4 indicates that the 'vibration equipment showed shocks of over 15 G's,' but that the coupler mount assembly still operated successfully."[15] It explained that that test was an ARP because a report authored by the inventor Schmid indicated that "a coupler mount assembly must be able to withstand 'continuous shock and vibration at low frequencies and high amplitude with peak loads to 20 g' ."[16] Thus, the answer to the key question of how good is good enough in this case was that peak loads of “over 15 G's” (but, apparently, not much over 15 G’s) were "close enough" to peak loads of 20 g's. Specifically, the court said that:

> We are of the opinion that Union Switch's train tests, which applied forces "in excess of 15 G's," sufficiently approximated the condition of "loads to 20 g" which Schmid indicates a coupler mount assembly must withstand on a non-cushioned rail car such as a freight car.[17]

As for the proffered evidence to the effect that the commercial devices subsequently sold by Union Switch did not work satisfactorily in their intended (and actual) environment of use, the court conceded that “some cases have held that events occurring after an alleged actual reduction to practice can call into question whether reduction to practice had in fact occurred."[18]

However, the court relied on the maxim that "there is ... no requirement that an invention, when tested, be in a commercially satisfactory stage of development in order to reduce the invention to practice."[19] In light of the maxim, it held that "A failure of several commercial devices allegedly made according to the Blosnick application long after the reduction to practice is insufficient to convince us that a device. meeting the limitations of the count, was not adequately tested to establish a reduction to practice."[20]

DSL v. Union Dynamics Does Not Establish a Bright-Line Rule

Although the Federal Circuit held in DSL v. Union Dynamics that testing under conditions that approximated the conditions of actual use to a level of 75% (15/20) was sufficient in the case of Union Switch's coupler mount assembly, it should not be presumed that 75% is a special threshold with broad application in the testing of other inventions. Rather, the level at which the testing conditions must approximate the conditions of actual use in order for the test to constitute an ARP is determined based on the type and complexity of the technology at issue. "[T]he testing requirement depends on the particular facts of each case, with the court guided by a common sense approach in weighing the sufficiency of the testing." Scott v. Finney, 34 F.3d 1058, 1061, 32 USPQ2d 1115, 1118 (Fed. Cir. 1994).[21] The law in this area has been summarized as follows:

> A certain amount of "common sense" must be applied in determining the extent of testing required. Depending on its nature, the invention may be tested under actual conditions of use, or may be tested under "bench" or laboratory conditions which fully duplicate each and every condition of actual use, or in some cases, may be tested under laboratory conditions which do not duplicate all of the conditions of actual use.[22] In instances where the invention is sufficiently simple, mere construction or synthesis of the subject matter may be sufficient to show that it will operate satisfactorily.[23]

Thus, there appear to be four broad categories under which inventions can fall for

purposes of determining the amount of testing required for an ARP.

(1) Simple inventions in predictable fields may require no testing in order to show an ARP.[24]

(2) Slightly more complicated inventions require some testing, but that testing does not necessarily need to fully duplicate conditions of actual use.[25]

(3) Even more complex inventions may require testing that fully approximates conditions of actual use.[26]

(4) Finally, the most complex and novel inventions require full testing under true actual conditions of use.[27]

What all this means for the question of how good is good enough is discussed further below.

A Hypothetical

Suppose (1) that the alleged ARP was a "breadboard" consisting of electrical elements wired to one another by hand soldered connections and (2) that, when power was put to the network, it worked perfectly--for 10 milliseconds, after which the whole thing exploded in a shower of sparks. Suppose further that the experimenter then went home for the weekend in disgust and that, in the subsequent interference, he or she needed the benefit of a day during that weekend as an ARP. Is the critical question how long the network worked relative to how long a commercial embodiment of the network would have had to work?

We think not--at least, not necessarily. We think that the critical question is why the breadboard network "exploded in a shower of sparks."

If, when the experimenter came in on the next business day, he or she discovered that the problem was that one of the hand soldered connections was faulty and re-soldered the

connection, after which the breadboard network worked perfectly for months on end, then the less-than-perfect simulation might be treated as an ARP by analogy to the "simple" invention cases--which indicate that, in some cases, the embodiment relied upon as an ARP doesn't even have to be tested before the critical date. A similar argument might be accepted in this hypothetical situation because breadboard networks in general have been well understood for quite some time, and it has long been understood that a failure of a soldered connection can cause a breadboard to malfunction disastrously.

On the other hand, if, when the experimenter came in on the next business day, he or she futzed around with the network for days before concluding that one of the connections was wrong and reconfigured the whole network to correct that problem, after which the breadboard network worked perfectly for months on end, then the less-than perfect simulation clearly was not an ARP. It was, in fact, an abject failure (useful no doubt as evidence of diligence, but not as an ARP) because the experimenter's prototype was substantively wrong.

Comments

Although the court in DSL Dynamic Sciences v. Union Switch & Signal said that whether something constitutes an ARP is "a question of law," the decision of the BPAI or a court whether or not to conclude that a given prototype, test run, etc. was an ARP will ultimately turn on the facts--and how the facts strike the decisional authority. In Tomacek v. Stimpson, 513 F.2d 614, 618, 185 USPQ 235, 239 (CCPA 1975), the court said that a simulation could be counted as an ARP if (and only if?) "the testing conditions are sufficiently similar to those of the intended environment." (Emphasis supplied.) Notably, the court made no attempt to define (or even exemplify) how similar the two had to be to be "sufficiently similar."

The best that we can do to answer the question posed in the title of this article is to quote

a test that Judge Rich quoted approvingly in Goodrich v. Harmsen, 442 F.2d 377, 169 USPQ 553 (CCPA 1971). That test comes from Larsen v. Marzall, 195 F.2d 200, 92 USPQ 306 (D.C. Cir. 1952). In Larsen, the D.C. Circuit first observed that, "With some products[,] ... actual use may be necessary to show reduction to practice,"[28] whereas, "With others[,] ... laboratory (or similar) tests may be sufficient."[29] It then distinguished the two situations by asking:

> First, do the tests employed--in actual use or in the laboratory--show that the product will serve the purpose for which it is designed, and show this so conclusively that practical men[30] will without more take the risk of putting it into immediate commercial production and use? Second, would the time, effort and expense of conducting actual field experiments be unjustified because of the small likelihood that they would yield substantially greater knowledge concerning the product's performance?[31]

After quoting the D.C. Circuit's opinion, Judge Rich went on to comment that:

> In the nature of things, testing goes on throughout the process of "commercializing" and often continues after a product is on the market where it usually receives its severest test. As to products of the kind here involved[,] the point at which there is an actual reduction to practice is often, if not usually, somewhat short of the point where the product reaches its commercial form. [32]

Judge Rich's comment is surely a recognition of reality, although it means that there really is no "bright-line" test for how good is good enough. As discussed above, how good is good enough must be determined through a fact-intensive "common sense approach" based on the unique nature of the particular invention that is at issue. The good news is that that in turn means that the question of how good is good enough will keep members of the interference bar gainfully employed so long as we have interferences.

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[4] Taskett v. Dentlinger, 344 F.3d 1337, 1341, 68 USPQ2d 1472, 1476 (Fed. Cir. 2003) ("the test need not occur under conditions of actual, commercial use" in order to qualify as an ARP), discussed in Gholz, A Critique of Recent Opinions in Patent Interferences, 86 JPTOS 464 (2004) § IV.A.; King Instrument Corp. v. Otari Corp., 767 F.2d 853, 861, 226 USPQ 402, 407 (Fed. Cir. 1985) ("[I]n order for there to be a reduction to practice, there is no requirement that the invention when tested be in a commercially satisfactory stage of development."); Barmag Barmer Maschinenfabrik AG v. Murata Machinery, Ltd., 731 F.2d 831, 838, 221 USPQ 561, 567 (Fed. Cir. 1984) (same); and Randolph v. Shoberg, 590 F.2d 923, 926, 200 USPQ 647, 650 (CCPA 1979) (same).

[5] Pacholok v. Hutmacher, 2000 Pat. App. LEXIS 24, at *10 (BPAI Dec. 12, 2000) (finding that certain testing did not constitute an ARP in part because "the inventor testified that he was not satisfied with the test results."); Phillip Morris, Inc. v. Brown & Williamson Tobacco Corp., 641 F.Supp. 1438, 1471, 231 USPQ 321, 346 (M.D. Ga. 1986) (holding that certain testing of a process did not constitute an ARP because "it did not work for its intended purpose" of expanding tobacco). See also Eaton v. Evans, 204 F.3d 1094, 1097, 53 USPQ2d 1696, 1698 (Fed. Cir. 2000)("there can be no actual reduction to practice [even if the device works for its intended purpose] if the constructed embodiment or performed process lacks an element recited in the count or uses an equivalent of that element."), discussed in Gholz, A Critique of Recent

Opinions In Patent Interferences, 83 JPTOS 161 (2001) § IV.A; and Genise v. Desautels, 73 USPQ2d 1393 (PTOBPAI 2004)(non-precedential), discussed in Gholz, A Critique of Recent Opinions in Patent Interferences, 88 JPTOS 217 § IV.A., "It is Not Enough to Prove that an Alleged ARP Worked for Its Intended Purpose; You Must Prove that It Worked In the Way Recited in the Count."

[6] Discussed in Gholz,, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 75 JPTOS 448 (1993) § II,A., "Evidence Required to Prove an Actual Reduction to Practice."

[7] 928 F.2d at 1124, 18 USPQ2d at 1154.

[8] 928 F.2d at 1124, 18 USPQ2d at 1154.

[9] 928 F.2d at 1124, 18 USPQ2d at 1154; emphasis in the original.

[10] 928 F.2d at 1124, 18 USPQ2d at 1154.

[11] 928 F.2d at 1124, 18 USPQ2d at 1154.

[12] 928 F.2d at 1124, 18 USPQ2d at 1154.

[13] 928 F.2d at 1125, 18 USPQ2d at 1154.

[14] 928 F.2d at 1125, 18 USPQ2d at 1154.

[15] 928 F.2d at 1125, 18 USPQ2d at 1155.

[16] 928 F.2d at 1125, 18 USPQ2d at 1155.

[17] 928 F.2d at 1125, 18 USPQ2d at 1155.

[18] 928 F.2d at 1126, 18 USPQ2d at 1155.

[19] 928 F.2d at 1126, 18 USPQ2d at 1155.

[20] 928 F.2d at 1126, 18 USPQ2d at 1155.

[21] Discussed in Gholz, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 77 JPTOS 427 (§ II.C. "Evidence Required to Prove an Actual Reduction to Practice."

[22] The most extreme example of this proposition of which we are aware is Mahurkar v. C. R. Bard, Inc., 79 F.3d 1572, 38 USPQ2d 1288 (Fed. Cir. 1996), discussed in Gholz, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 79 JPTOS 271 (1997) § IV.A. "An Actual Reduction to Practice Can be Established By Proof that a Non-Functional Prototype Performed Satisfactorily in Test 'to the limits of…[the] design of those tests'."

[23] 34 F.3d at 1062 (quoting Gordon v. Hubbard, 347 F.2d 1001, 1006 (CCPA 1965)).

[24] See, e.g., In re Asahi/America Inc., 48 F.3d 1204, 33 USPQ2d 1921 (Fed. Cir. 1995), discussed in Gholz, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 78 JPTOS 550 (1996) § II.A., "An Invention That Has No Moving Parts Can be Reduced to Practice Without Testing It to See if It Works." But see Edwards v. Strazzabosco, 58 USPQ2d 1836 (PTOBPAI 2001), discussed in Gholz, A Critique of Recent Opinions in Patent Interferences 163 (2002) § IV.D., "An Actual Reduction to Practice Requires Construction of the Claimed Invention Even if the Invention Is Simple."

[25] DSL v. Union Switch is an example of this category. In addition, see Scott v. Finney, 34 F.3d 1058, 32 USPQ2d 1115 (Fed. Cir. 1994), discussed in Gholz, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 77 JPTOS 427 (1995) §II.C., "Evidence Required to Prove an Actual Reduction to Practice."

[26] See, e.g., Fujikawa v. Wattanasin, 93 F.3d 1559, 39 USPQ2d 1895 (Fed. Cir. 1996), discussed in Gholz, A Critique of Recent Opinions of the Federal Circuit in Patent Interferences, 79 JPTOS

271 (1007) § IV.C., "Evidence of In Vitro Activity Which is 'Typically Highly Correlatable' to a Desired Pharmacological Activity is Sufficient to Establish an Actual Reduction to Practice."

[27] See Payne v. Hurley, 71 F.2d 208, 210-11, 21 USPQ 624, 627 (CCPA 1934) (holding that improved spark plugs needed to be tested under actual conditions of use in order to be reduced to practice).

[28] 195 F.2d at 202, 92 USPQ at 308.

[29] 195 F.2d at 202, 92 USPQ at 308.

[30] Sorry, ladies. This is an old opinion.

[31] 195 F.2d at 202, 92 USPQ at 308.

[32] 442 F.2d at 383-84, 169 USPQ at 559.