THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 208

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

DEBRA L. SINGER, SHANTI SWARUP,
and MICHAEL A. MAYO

Junior Party,[1]

v.

JOHN W. REHFUSS and DONALD L. St. AUBIN

Senior Party.[2]

Patent Interference No. 103,711

Before: SOFOCLEOUS and METZ, Administrative Patent Judges, and McKELVEY, Senior Administrative Patent Judge.

McKelvey, Senior Administrative Patent Judge.

FINAL DECISION ON REHFUSS PRELIMINARY MOTION 7

Alleged inequitable conduct by Singer

[1] Application 08/320,793, filed October 7, 1994. The real party in interest is PPG Industries Inc.

[2] U.S. Patent Nº 5,356,669, granted October 18, 1994, based on application 07/965,577, filed October 23, 1992, and U.S. Patent Nº 5,474,811, issued December 12, 1995, based on application 08/241,925, filed May 11, 1994. The real party in interest is BASF Corporation.

Table of Contents

A. Abbreviations

Certain abbreviations are used in this opinion. We refer the reader to the section on abbreviations in our FINAL DECISION (Paper No. 207) entered concurrently herewith

B. Background

After cross-examination was complete, Rehfuss Preliminary Motion 7 (Paper No. 171) was filed in which Rehfuss alleged that Singer had engaged in inequitable conduct.

The issue of alleged inequitable conduct was considered on a separate record which consists solely of the testimony and exhibits received in evidence at an evidentiary hearing held on November 5, 1997. The testimony is found in Paper No. 202. The Rehfuss exhibits received in evidence are Rehfuss Exhibits 501-556. The Singer exhibits received in evidence are Singer Exhibits 1001-1012.

No evidence submitted before final hearing, which took place on September 30, 1997, was considered in deciding the issue of alleged inequitable conduct. No evidence submitted in connection with inequitable conduct was considered in deciding any other issue in the interference.

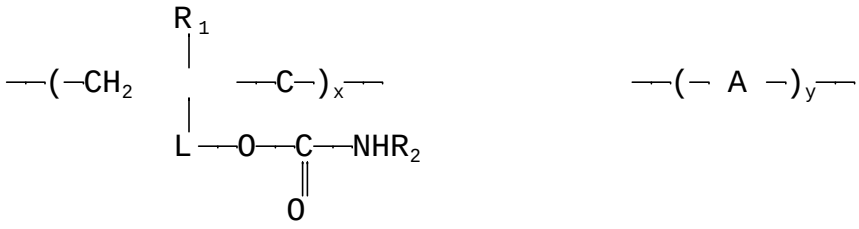
C. Findings of fact

Singer effort to have an interference declared

1. In February of 1995, Singer added Singer claims 26-38 (RX-525) to the Singer application involved in the

interference. The purpose for adding the claims was to provoke an interference with Rehfuss '669 (RX-525, page 1).

2. Singer claim 26 calls for the use of a curable coating composition comprising a "first component (a)" comprising a polymer backbone having appended thereto at least one carbamate functional group, said first component represented by randomly repeating units according to the formula:



wherein:

"x" represents 30 to 40 weight %, and

"y" represents 70 to 60 weight %.

3. It is the "x" and "y" which are important in connection with the inequitable conduct issue raised by Rehfuss in this interference.

4. In requesting an interference, and to show support in its specification for Singer claim 26, Singer mentioned copolymers used to make the color-plus-clear coatings of Singer application Examples 1, 7, 8 and 11 (RX-525, page 5).

5. Singer advised the examiner that the "x" and "y" for the copolymers of the examples are those in Table A (RX-525, page 6), where the letter in brackets identifies the example in the Singer specification where there is described a process for

making a carbamate-containing copolymer used in the numbered example:

Table A

Example	Value of x	Value of y
1 [D]	40.9	59.1
7 [E]	34	66
8 [F]	31	69
11 [M]	29.2	70.8

6. Examples D, E and F in the Singer specification each describe a process for making a carbamate-containing copolymer from a carbamate monomer and other monomers in which the carbamate monomer is prepared in accordance with Example A (RX-505, pages 19-20 and 22-24).

7. After an interview between the examiner and counsel for Singer, the examiner made a request (RX-526):

> [Singer] *** will submit a paper describing the structural features of the polymers prepared in the example and specification to show that the polymers *** correspond to those of the Rehfuss patent.

8. In response to the examiner's request, Singer filed a declaration of Dr. Shanti Swarup (RX-529). In his declaration, Dr. Swarup confirmed the values of "x" and "y" (RX-529, pages 4, 5 and 7; Tr-21:2-6) as set out in Table A.

9. In a "preliminary communication" accompanying the Swarup declaration, Singer argued to the examiner "that Dr. Swarup's declaration shows there is clear support in the

[Singer] specification for element (a) of claim 26" (RX-519, page 2).

10. The "x" and "y" values described in the request for interference (RX-525) and the Swarup declaration (RX-529) are essentially the same.

11. The examiner determined that Singer claim 26 was "supported" by the Singer specification, because he forwarded the Singer application and Rehfuss '669 to the board so that an interference could be declared. By "supported," we mean described in an enabling manner as required by the first paragraph of 35 U.S.C. § 112.

Declaration of the interference and request for information

12. The interference was declared on January 16, 1996.

13. In response to a request to the parties (Paper No. 2, pages 3-5), Singer submitted in the interference a document (Paper No. 19) describing the structural formulae, inter alia, of the copolymers of Examples D and E (RX-540). According to the document, the copolymers of Examples D and E have the following "x" (reported as "m") and "y" (reported as "n") values:

Table B

Example	Value of x	Value of y	
D	about 40	about 60	(RX-540, page 7)
E	34	66	(RX-540, page 8)

14. The "x" and "y" values described by Singer in the document (Table B) are consistent with the x and y values

previously described in the request for an interference (Table A) and the declaration of Dr. Swarup.

Examples in the Singer application

15. The carbamate monomer used to make the copolymers of Examples D, E and F is described in Example A (RX-505, page 19-20).

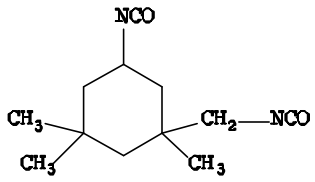
16. Example A describes a process for making a carbamate-containing monomer from three compounds:

a. isophorone diisocyanate (IPDI),

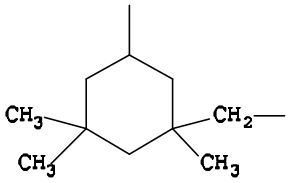
b. hydroxy ethyl methacrylate (HEMA), and

c. hydroxy propyl carbamate (HPC).

17. Isophorone diisocyanate (IPDI) has the following formula:[3]

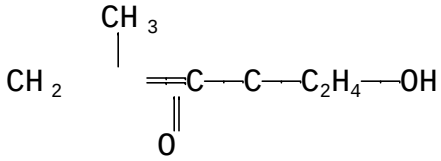


18. Isophorone (IPDI) without its isocyanate (—NCO) groups will be depicted as "R" wherein "R" is:

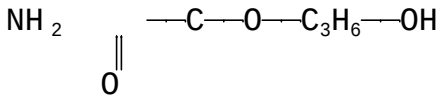


[3] In various papers in the record, the —CH_3 in the lower right-hand corner is missing.

19. Hydroxy ethyl methacrylate (HEMA) has the following formula:



20. Hydroxy propyl carbamate (HPC) has the following formula:



Example A in the Singer application

21. In Example A, IPDI is said to have been first reacted with HPC "until the isocyanate equivalent weight became constant" (RX-505, page 20, lines 2-3). Thereafter, hydroxy ethyl methacrylate is said to have been added "until infrared analysis indicated the absence of isocyanate" (RX-505, page 20, lines 4-5).

22. At least (Tr-27:2-3; Tr-54:22 through 55:2) three products result from the reaction scheme of Example A (Paper No. 171, page 13, ¶ 23; Paper No. 187, page 12, ¶ 23): [4]

a. Product I HEMA-IPDI-HPC, [5]

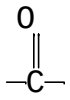
b. Product II HPC-IPDI-HPC, and

c. Product III HEMA-IPDI-HEMA.

[4] We make this finding because Singer agrees it is correct, not necessarily because of Dr. Jones' testimony. As will become apparent, we are inclined to give Dr. Jones' testimony little weight in certain respects.

[5] In his testimony, Dr. Swarup often referred to Product I as "HIC" (Tr-37:9-16).

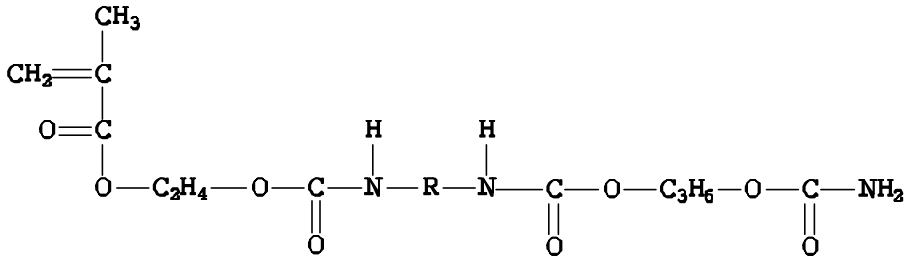
23. The formulae of the three products appears in various parts of the record, often erroneously. For example, in RX-545, —C— on the right side of Product I should be (Tr-27:15-20):



An —O— is missing between —C— and $-C_3H_6-$ on the right side of

Product II. The upper right portion of the formula of Product III should be connected to the —O and not the H_4. The formula for isophorone is often incorrect due to a missing $-CH_3$. See e.g., RX-544 (prepared by Rehfuss) and SX-1009 (prepared by Singer).

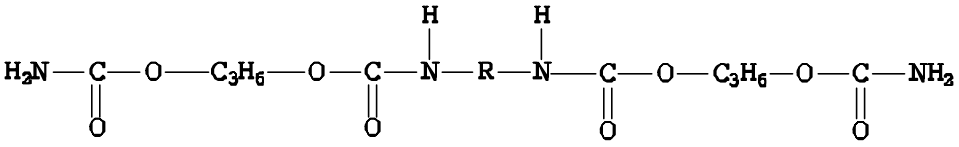
24. The formula for Product I is:



HEMA—IPDI—HPC

Product I

25. The formula for Product II is:



HPC—IPDI—HPC

Product II

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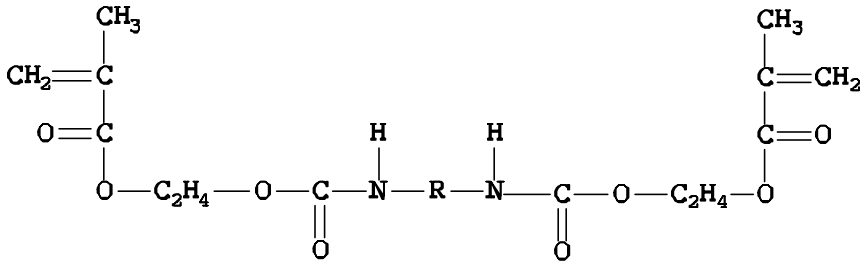
26. The formula for Product III is:



HEMA—IPDI—HEMA

Product III

27. Product II has been characterized in the record as a "dicarbamate" because it has two carbamate groups, one on each end.

28. Product III has been characterized in the record as a "diacrylate" because it has two methacrylate groups, one on each end.

29. Because of the available isocyanate (—NCO) groups on IPDI, the available hydroxy (—OH) groups on both HEMA and HPC

and the amounts of IPDI, HPC and HEMA used in the process described in Example A, the maximum "theoretical" percentage of Product I in the mixture of Products I, II and III produced in Example A is 80% (Paper No. 171, page 18, ¶ 55; Paper No. 187, page 16, ¶ 55; Tr-53:5-8). Theoretically, the other 20% would be Product II and there would be no Product III. The reason is the following. In Example A, there are 0.8 equivalents of HEMA, 1.0 equivalent of IPDI and 1.2 equivalents of HPC. If, for purposes of discussion, one (1) equivalent is viewed as 10 molecules, then there would be 8 molecules of HEMA, 10 of IPDI and 12 of HPC. Remembering that IPDI has two isocyanate (—NCO) groups, in theory all 12 molecules of HPC (which has one hydroxyl group (—OH) which can react with an isocyanate group on IPDI) will react with isocyanate groups on the IPDI to make the following 10 molecules:[6]

(1)	HPC—IPDI—HPC
(2)	HPC—IPDI—HPC
(3)	IPDI—HPC
(4)	IPDI—HPC
(5)	IPDI—HPC
(6)	IPDI—HPC
(7)	IPDI—HPC
(8)	IPDI—HPC
(9)	IPDI—HPC
(10)	IPDI—HPC

After all 12 molecules of HPC react with IPDI, then the 8 molecules of HEMA (which has one hydroxyl group which can react with an isocyanate group on IPDI) react with 8 molecules of

[6] This model assumes that one of the two isocyanate groups on IPDI is more reactive toward the hydroxyl group on HPC.

IPDI-HPC (each of which would have one free isocyanate group) to make the following 10 molecules:

(1) HPC—IPDI—HPC
(2) HPC—IPDI—HPC
(3) HEMA—IPDI—HPC
(4) HEMA—IPDI—HPC
(5) HEMA—IPDI—HPC
(6) HEMA—IPDI—HPC
(7) HEMA—IPDI—HPC
(8) HEMA—IPDI—HPC
(9) HEMA—IPDI—HPC
(10) HEMA—IPDI—HPC

Eight of the 10 molecules, or 80% of the molecules, are HEMA—IPDI—HPC. Theoretically no HEMA—IPDI—HEMA would be produced.

30. Notwithstanding theory, and as indicated above, at least three products are produced and a theoretical result is not obtained.

Errors in papers filed by Singer

31. Singer now recognizes that the maximum theoretical possible weight percentage for "x" in each of Examples D, E, F and M is as follows (Paper No. 171, page 14, ¶ 31; Paper No. 187, page 14, ¶ 31).[7]

[7] Again, we make this finding because Singer agrees it is correct, not necessarily because of Dr. Jones' testimony.

Table C

Example	Value of x	Value of y
1 [D]	34.4	65.6
7 [E]	29.2	70.8
8 [F]	26.4	73.6
11 [M]	29.2	70.8

32. The "x" value for Example M in Table C would be expected to be, and is, the same as that in Table A. However, the "x" value for Examples D, E and F are different (and lower). A comparison of the "x" values is shown in Table D.

Table D

Example	Table C	Table A
1 [D]	34.4	40.9
7 [E]	29.2	34
8 [F]	26.4	31
11 [M]	29.2	29.2

33. If the product made in accordance with Example A was 100% Product I, then the weight percentages of "x" in Table A would have been correct.

34. Only Products I and III have ethylenically unsaturated bonds (i.e., $CH_2{=}{=}CH-$). Thus, when a copolymer is made using the reaction product of Example A, Products I and III can become part of the copolymer backbone through a reaction known as free-radical polymerization.

35. Only Product I "contributes" to the value of "x". In other words, the value of "x" in Examples D, E and F is a function of the composition of Example A (Tr-24:14-17).

36. Dr. Swarup attempted to minimize the amount of Product III so as to avoid "gelling" (Tr-30:23 through 31:1). What Dr. Swarup means by "gelling" is cross-linking which will result due to the presence of two ethylenically unsaturated bonds (one on each end) in Product III.

37. It is possible that Product II forms part of the copolymer backbone through a process which Dr. Swarup described as "hydrogen abstraction" (Tr-29:25 through 30:14). Dr. Swarup indicated that he had "no way of knowing whether [Product] II is on the backbone [of the carbamate copolymer] or not" (Tr-34:3-4). In any event, if there is any Product II associated with the copolymer (i.e., mixed with the copolymer), that Product II will react with the cross-linking agent (component (b) in Singer claim 26) (Tr-29:16-18; Tr-30:21-22), because Product II, like Product I, has terminal carbamate groups.

Dr. Swarup's rebuttal declaration

38. There came a time in the interference when Dr. Frank N. Jones was deposed (RR-891) for the purpose of cross-examination. Rehfuss had earlier filed a "second" declaration of Dr. Jones (RX-533).

39. There also came a time when Dr. Swarup read a portion (RR-976 through 998) of a transcript of the Jones deposition (RX-530, page 80, ¶ 4).

40. After reading the Jones testimony, Dr. Swarup recognized that his numbers may have been in error and caused Example A to be repeated (RX-530, page 82, ¶ 6). A sample (identified internally at PPG as 96-333-134) was obtained (RX-530, page 86, Appendix I). The sample is referred to in the record as Sample A. It was made by Ms. Lu Ann Holsing, who works for PPG under the supervision of Dr. Swarup (RX-532, pages 107-110).

41. The sample was given to Dr. Joseph Benga, an analytical chemist (RX-94, ¶ 1), to determine the percentages of Products I, II and III in the sample (RX-530, page 83, ¶ 6(c)).

42. MS (mass spectroscopy) techniques were used to analyze Sample A (RX-531, page 95, ¶ 3).

43. As a result of the analysis, Dr. Benga determined that the sample contained the following "relative" (Tr-154:6:9) amounts of Products I, II and III (RX-531, page 106, ¶ 14):

Table E

a.	Product I	88
b.	Product II	8
c.	Product III	4

44. In conducting the analysis, personnel at PPG apparently did not look into other impurities which might be present (Tr-155:3-4).

45. The percentages of Table E were obtained from data obtained as a result of mass spectroscopy of Sample A. Figure 2

(RX-531, page 103) of Dr. Benga's declaration is a mass spectrum of Sample A. According to Dr. Benga, Figure 2 contains all the mass numbers expected from the fragmentation of Product I. The spectrum also had the mass numbers for Products II and III (RX-531, page 100, ¶ 12). The right side of the mass spectrum is shown in Figure 2.

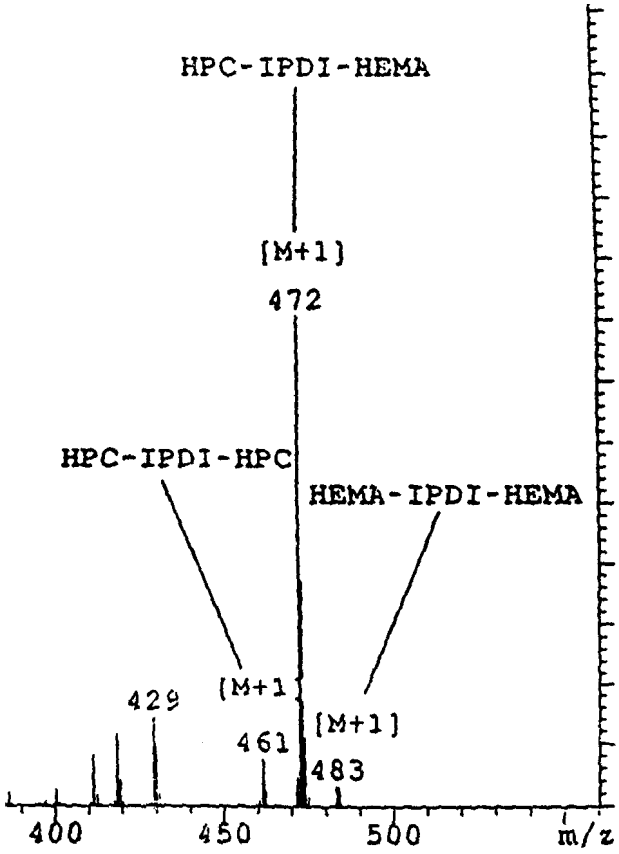


Figure 2

46. The 461, 472 and 483 peaks show the presence of Products II, I and III, respectively.

47. To determine the relative amount of each of Products I, II and III present, "curves under the molecular mass

*** were integrated (see Figure 3 at page 104)." By "curves" Dr. Benga means the curves shown in Figure 3.

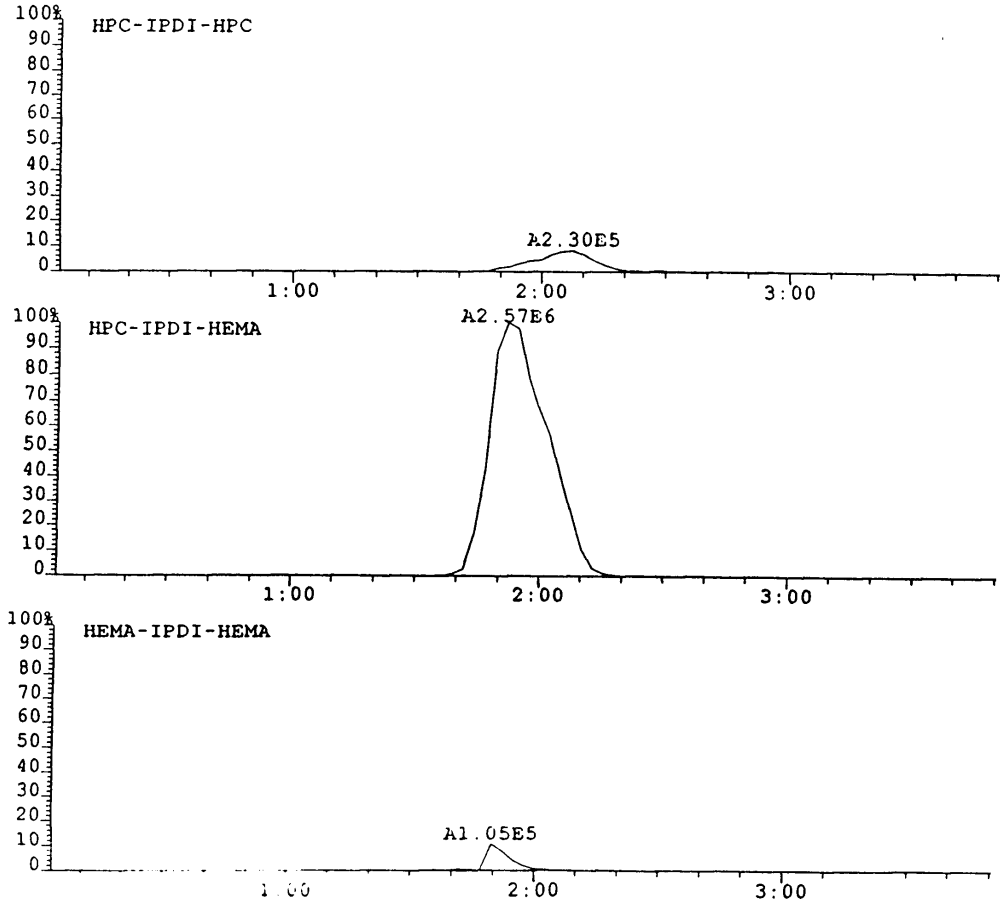


Figure 3

The areas (which appear triangle-shaped) "under" the curves and "above" the x-axis (horizontal axis) in Figure 3, represent the amounts of each of Products I, II and III. From these amounts, the relative amounts of each of Product I, II and III in Sample A were determined (RX-531; page 101).

48. Dr. Benga believes the mass spectroscopy results to be accurate and that it was possible to obtain the "relative" amounts of material shown by mass spectroscopy (Tr-177:2-18).

49. Based on Dr. Benga's work, Dr. Swarup was able to recalculate the values of "x" for Examples D, E and F (RX-530, page 84, end of ¶ 7)). Those values are shown in Table F, where the value in brackets represents the value reported to the PTO in the Swarup declaration provided to the examiner (Table A).

Table F

Example	Value of x	Value of y
D	37 [40]	63 [60]
E	31 [34]	69 [66]
F	28 [31]	72 [69]

The 1993 Feulmer report

50. There came a time in early 1993, when Dr. Swarup had Mr. Gerald P. Feulmer, a PPG employee, study and analyze the reaction products produced by Example A (Tr-64:8-10; Tr-67:25 through 68:2).

51. Mr. Feulmer made an analysis of the reaction products of Example A (RX-504; RX-550).

52. Mr. Feulmer analyzed two samples of reaction products made in accordance with the process of Example A (identified internally at PPG as KM-55-4334 and 93-027-35). One sample (93-027-35) was based on work in the laboratory; the other sample was based on a pilot plant run (Tr-67:7-11; Tr-87:10-22).

53. The results of Mr. Feulmer's analysis for the two materials is shown in Table G.

Table G

	HEMA-IPDI-HEMA Product III	HEMA-IPDI-HPC Product I	HPC-IPDI-HPC Product II
KM-55-4334	9.4	58.0	32.6
93-027-35	7.3	57.9	34.8

54. Specifically, Mr. Feulmer analyzed the products using a procedure known as "high pressure liquid chromatography" (HPLC) (Tr-89:13-14), which involves forcing the material to be analyzed through a packed column. Different compounds in a mixture fed into the column pass through the column at different speeds. As each compound leaves the column, it passes through a detector, which registers its presence as a peak on a recorder chart (Tr-222:5 through 223:5). In order to accurately analyze each compound, a peak is compared to a "reference" or known peak.

55. Dr. Benga discussed HPLC (Tr-165:23 through 166:21):

> A. It's a common technique used in our industry and in the laboratory, and a preferred approach for determining the amounts of materials in any mixture is using standards or well-characterized materials that we can use as a reference. That requires having access to, in this particular case three pure materials that could be used as a reference material.
>
> The second approach, in lack of -- not having three clearly defined standards -- is, we may be able

to estimate a third level by knowing the composition of two or knowing the impurity of two materials.

***

Q. [By Mr. Voight, counsel for Singer] What if you only have one standard material?

A. The only way we can determine -- we would only be able to determine one component in that mixture accurately.

JUDGE McKELVEY: That would be that material?

THE WITNESS: The material we have the reference for by any technique.

56. PPG did not have a reference for di-HPC (i.e., Product III) (Tr-169:23-24).

57. Dr. Benga testified that he understood, based on Mr. Feulmer's notebook entries (RX-504, third page (with the number 50 in the upper-left-hand corner)), that there was no "response" for the di-HPC component (i.e., Product II).

58. Hence, the value reported for Product III in the Feulmer report was "estimated" based on the amount found for the di-HEMA component (i.e., Product III).

59. Dr. Benga declined to give the Feulmer report much weight. In fact, Dr. Benga characterized the Feulmer report as "totally valueless" (Tr-195:4). An accurate report would have been based on actual measurements for each of Products I, II and III. The Feulmer analysis "concludes that there are two components that appear to be in that mixture" (i.e., Products I and III) (Tr-196:10-13). Moreover, based on discussions

Dr. Benga had with Mr. Feulmer, Dr. Benga was under the impression that Mr. Feulmer "did not believe that the values for *** two species [i.e., two of Products I, II and III] were accurate" (Tr-170:16-21).

60. Dr. Benga expressed the view that use of mass spectroscopy vis-a-vis HPLC was the more accurate way to make the analysis (Tr-174:13-24).

Criticism by Jones of the Benga analysis

61. Dr. Jones was a witness for Rehfuss.

62. Dr. Jones is currently a professor at Eastern Michigan University in the Coatings Research Institute. He is also Director of National Science Foundation Coatings Research Center (Tr-207:6-9).

63. Dr. Jones asserts that Dr. Benga's analysis "cannot be accurate" (RX-533, page 5, three lines from the bottom).

64. Dr. Jones agrees that some "diacrylate byproduct" (i.e., Product III) is present in Sample A "demonstrating that the reaction is not 100% selective" (RX-533, page 8, end of ¶ 14). Hence, Dr. Jones concedes that the process set out in Example A for making Sample A does not proceed in a theoretical manner.

65. Without reproducing Example A, and relying solely on his "experience in the art pertaining [to] such coatings" (RX-533, page 9, ¶ 16), Dr. Jones expresses an opinion that "approximate weight percentages for the three products

produced by Example A *** likely would fall" in the ranges shown in Table H.

Table H

Product I	60 to 72%
Product II	24 to 30%
Product III	4 to 10%

66. The Jones estimates are closer to the results reported in the Feulmer report than to the mass spectroscopy results obtained under Dr. Benga's supervision.

Table I

	Jones	Feulmer	Feulmer	Benga
Product I	60-72	58.0	57.9	88
Product II	24-30	32.6	34.8	8
Product III	4-10	9.4	7.3	4

67. At the evidentiary hearing, Dr. Jones expressed his disagreement with numerous findings made by Dr. Benga and criticized Dr. Benga's reliance of mass spectroscopy.

68. Dr. Jones conceded that he uses mass spectroscopy "[n]ot terribly frequently" (Tr-212:12-16). Moreover, it appears he may never have personally performed a mass spectroscopy (Tr-234:1-4). But, he nevertheless asserted that the technique used by Dr. Benga was "probably very poor" (Tr-215:5-6).

69. According to Dr. Jones, "[f]rom the chemistry of the way the reaction was run, the generated material he [Dr. Benga] is analyzing, the largest amount of the *** [Product I] that could possibly be in there if everything were

working perfectly is 80 percent" (Tr-215:10-15). See also Tr-230:1-6. Dr. Jones testified that the "result I would find to be very surprising since it appears to be impossible" (Tr-215:21-23).

70. Dr. Jones basis his 80% percent on what he understands to be the chemistry. In his opinion, if a tin catalyst (a common catalyst for isocyanate-hydroxy group reactions) is used, all the hydroxyl groups on compounds with hydroxyl groups (i.e., HPC) will react with available isocyanate groups on compounds with isocyanate groups (Tr-231:9 through 232:24). But, Dr. Jones acknowledged that it is "not impossible" albeit "extremely unlikely" that some hydroxyl groups may not have reacted (Tr-233:10-12). Furthermore, he said that the reaction is not 100% selective, i.e., does not proceed purely according to theory.

71. Dr. Jones questioned a peak at 102 on Figure 2 (Tr-217:4-12). But, in the end, Dr. Jones recognized that he did not know the "time interval *** the sample was actually read" during the mass spectroscopy run (Tr-218:7-8). Dr. Jones also felt that the instrument might have been "slightly out of tune" (Tr-218:15). But, he concedes that PPG personnel were "looking at the compounds they think they are looking at" (Tr-221:14-16).

72. Dr. Jones found the Feulmer report more valuable than the mass spectroscopy analysis performed under the direction of Dr. Benga. When asked whether one could determine the amount of Product II based on the Feulmer analysis, Dr. Jones said yes.

According to Dr. Jones, if you can measure two of three components, you can calculate the third component (Tr-224:21-24). Dr. Jones seems to favor HPLC over mass spectroscopy (Tr-228:7-12), even through he conceded "HPLC procedure is subject to a number of errors" (Tr-228:7-8). However, Dr. Jones totally equivocated when asked by the bench whether he would rely on the Feulmer report (Tr-250:1-251:7).

Benga testimony v. Jones testimony

73. There are differences of opinion between testimony given by Dr. Benga and Dr. Jones.

74. We find that Dr. Benga's testimony is entitled to more weight than Dr. Jones' testimony. To the extent that there is a conflict, we accept the testimony of Dr. Benga and reject that of Dr. Jones.

75. Dr. Benga works in a lab where mass spectroscopy and HPLC equipment is located. Dr. Benga is an analytical chemist and Dr. Jones is not. Dr. Benga's group analyzed an actual sample and Dr. Jones did not. Dr. Benga is manifestly familiar with mass spectroscopy, whereas Dr. Jones may have never used a mass spectroscopy apparatus and relies on mass spectroscopy results "[n]ot terribly frequently." Dr. Jones said that he has never seen graphs of the type shown in Figure 3, supra (Tr-258:21 through 259:22).

76. While theoretically only 80% of Product I can be obtained by using the process of Example A, it is manifest that theory and actuality do not coincide in this case. Apparently,

all the hydroxyl groups do not react with isocyanate groups in the manner Dr. Jones theorizes. Moreover, Dr. Benga's 88-8-4 results are based on the relative amounts of Products I, II and III--a proposition Dr. Jones basically avoided and declined to come to grips with.

Dr. Swarup's intent

77. At the time the Swarup declaration (RX-530) was submitted to the examiner and at the time structural formulae were presented to the board (RX-540), had someone specifically asked Dr. Swarup whether Example A produced Products I, II and III, and not only Product I, he would have said "yes."

78. The examiner was not told that Products II and III were produced by the process described in Example A when Singer submitted the Swarup declaration to the examiner.

79. The board was not told that Products II and III were produced by the process described in Example A when Singer submitted its paper describing structural formulae.

80. Dr. Swarup testified at an evidentiary hearing held on November 5, 1997.

81. Dr. Swarup's testimony is credible and is entitled to considerable weight.

82. During his testimony, Dr. Swarup explained why he did not bring the existence of Products II and III of Example A to the attention of the examiner and/or the board.

83. Dr. Swarup indicated that "it was an oversight" that Products II and III were not mentioned (Tr-28:4-5).

84. When he signed the declaration submitted to the examiner, Dr. Swarup "did not know" that Products II and III were produced by Example A (Tr-44:15-17; Tr-48:8-22). Specifically, Dr. Swarup said:

> A. I did not know at the time of the signing [of my declaration]. I did not know it was not in my mind that [Products] II and III are there.

Dr. Swarup is a citizen of India. He speaks good English (with an accent), but he expressed the view that he does not always phrase sentences in English like individuals whose native language is English (Tr-122:1-5). Based on all of Dr. Swarup's testimony, including his demeanor, in our opinion, what Dr. Swarup meant by "not in my mind" is that at the time he signed his declaration, he did not think about Products II and III being present. If he had been asked by a chemist what products were present, Dr. Swarup would have said at least Products I, II and III. However, Dr. Swarup generally thought of the products of Example A as being "HIC" because the principal product of interest in the products of Example A was Product I. (See generally Tr-47:12 through 48:6).

85. The Rehfuss evidence did not establish that at the time he signed the declaration presented to the examiner, Dr. Swarup had remembered, or was then aware of, the existence of the Feulmer report. The Feulmer report and the declaration signing were not contemporaneous events. Hence, we cannot fault Dr. Swarup for not having a perfect memory and for not

"remembering" the existence of the 1993 Feulmer report when signing declarations in 1995.

86. Dr. Swarup in signing his declaration, knowing it was going to be filed in the Patent and Trademark Office, in no way intended to deceive the Patent and Trademark Office.

D. Discussion

1.

A determination of inequitable conduct is committed to our discretion. Critikon, Inc. v. Becton Dickinson Vascular Access, Inc., 120 F.3d 1253, 1255, 43 USPQ 1666, 1668 (Fed. Cir. 1997). In order to convince us to exercise our discretion and hold that conduct amounts to "inequitable conduct," a party must show that its opponent:

(1) made an affirmative misrepresentation of fact or failed to disclose a fact;

(2) the fact misrepresented or not disclosed was material; and

(3) the misrepresentation or failure to disclose was done with an intent to deceive or mislead the Patent and Trademark Office.

Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178, 33 USPQ2d 1823, 1826 (Fed. Cir. 1995).

The party alleging inequitable conduct on the part of its opponent bears a burden of proving its case by clear and convincing evidence. Refac Int'l, Ltd. v. Lotus Development Corp., 81 F.3d 1576, 1581, 38 USPQ2d 1665, 1669 (Fed. Cir. 1996).

2.

In our opinion, there is no inequitable conduct because Rehfuss has failed to prove (even by a preponderance of the evidence, let alone by clear and convincing evidence) that any error committed by Dr. Swarup and/or PPG was done with intent to deceive the Patent and Trademark Office. There being no proof of intent to deceive or mislead, the Rehfuss inequitable conduct argument fails. Critikon, Inc. v. Becton Disckinson Vascular Access, Inc., 120 F.3d at 1256, 43 USPQ2d at 1668 ("[i]nequitable conduct resides in the failure to disclose material information with an intent to deceive or mislead the PTO " (emphasis added)).

3.

Were personnel at PPG sloppy? Yes. Did errors occur in papers presented by PPG on behalf of Singer? Yes. Could personnel at PPG have had better memories? Probably. Did personnel intend to deceive or mislead the PTO? No.

We have analyzed all the arguments presented by the post-evidentiary hearing briefs submitted by the parties (Papers Nos. 202, 204 and 205). Based on those arguments, and our findings set out above, we make the following observations.

Contrary to the argument made by Singer, the patent examiner made his request to verify that Singer claim 26 was supported by the Singer specification. Necessarily, a showing of support would require Singer to demonstrate where the Singer specification supported the structure of component (a), as well as the values for "x" and "y."

Contrary to the argument made by Rehfuss, the board's request (Paper No. 2) to both parties to set out certain structures was not to verify the values "x" and "y." Rather, it was the requests were made to verify the structure of component (a).

Sometimes it is best if an opinion simply states, sans legalese, "how we see things." This is one of those occasions.

Dr. Swarup was asked by the examiner to demonstrate that Singer claim 26 was described in the Singer application. He proceeded to do just that, but he overlooked the fact that Example A produces a mixture of products. As he says, "it was not in his mind." Did he know as a chemist that Example A produces a mixture? Yes. But, there are lot of things humans "know," but momentarily overlook due to our human nature. Humans are not computers which always remember every document we have ever seen. Dr. Swarup generally viewed Example A as producing HIC--to use his abbreviation. When a certain Jones document was shown to Dr. Swarup, he said "that's right, Example A does produce side products." What I have told the PTO is not correct and I had better look into this matter. He did so. Does it matter that Dr. Swarup set out to correct an error after the other side pointed it out? No. Honest people look into their errors when they are called to their attention by whatever means. To look into his error, Dr. Swarup decided he had better analyze Example A to see what products are, in fact, produced. Dr. Swarup had Ms. Holsing repeat Example A and had Dr. Benga do

the analysis. Dr. Benga did the analysis, but Dr. Jones says it is flawed. We disagree, because Dr. Benga's testimony is considerably more credible than Dr. Jones' testimony. In fact, to the extent there is a conflict, we credit Dr. Benga's testimony. Does this mean that Dr. Jones was lying? No. He just disagrees for a whole lot of wrong reasons with Dr. Benga. But, even if we agreed with Dr. Jones, which we do not, it would not mean that either Dr. Swarup or Dr. Benga set out to lie or to conduct an experiment in a particular manner for the purpose of hoodwinking the PTO. There is a big difference between an "error" or even a "string of errors" and an attempt to deceive and/or mislead.

Dr. Swarup made an error, discovered his error, set out to correct the error and in no way intended in any way to deceive or mislead the PTO in the process. It is not clear that Dr. Benga even made an error. There is no inequitable conduct. There simply were some unfortunate errors, all of which now have been corrected.

4.

Rehfuss maintains that "material" information was withheld from the PTO. We need not agree or disagree with Rehfuss, because where there is "zero" intent, there cannot be inequitable conduct. There were no "false" affidavits filed and there was no "false" testimony. Instead, there were "erroneous" affidavits and testimony.

Rehfuss maintains that the more material the "omission," the less intent must be shown. Our appellate reviewing court says it this way: "The more material the omission or the misrepresentation, the lower the level of intent required to establish inequitable conduct, and vice versa." Critikon, Inc. v. Becton Disckinson Vascular Access, Inc. , 120 at 1256, 43 USPQ at 1668. But, we are not aware of any decision of the Federal Circuit which holds that where there is **no** intent to deceive or mislead, there still can be inequitable conduct.

Rehfuss says that Singer recited in Singer claim 26 "a carbamate range it knew it could not support ***" (Paper No. 202, page 26). But, there is no proof that at the time Singer urged that "carbamate range" that "it knew" it could not support it.

Rehfuss further says that in presenting "those erroneous values," Dr. Swarup "deliberately represented" to the PTO that Example A makes but a single product (Paper No. 202, page 26). Rehfuss is correct about the "erroneous values," but is incorrect about the "deliberately [mis]represented" nature of those values. Rehfuss claims to have proved its case because, in the view of Rehfuss, Dr. Swarup knowingly made an "intentional decision" (Paper No. 202, page 27) not to disclose to the PTO that Products II and III also result from Example A. We simply disagree with Rehfuss' assessment of Dr. Swarup's testimony. It is true that there are certain parts of the cross-examination of Dr. Swarup during the testimony period in the interference from which a fact finder conceivably could conclude that "he knew." But, it is not

appropriate to limit a consideration of an individual's testimony to one or two questions and answers during cross. Rather, an individual's testimony, as a whole, should be evaluated. When we evaluate Dr. Swarup's testimony, as a whole, we are more than satisfied that he did not "knowingly" submit any "erroneous" data.

5.

We have considered all of the remaining arguments made by Rehfuss, but we are not persuaded that they establish a basis for a holding of inequitable conduct.

We feel compelled, however, to address one of them which is "buried" in facts proposed by Rehfuss (Paper No. 202, page 6, ¶¶ 11 and 12; page 7, ¶¶ 13 and 14; page 26, lines 9-10). According to Rehfuss, the Singer "shenanigans" precluded Rehfuss from removing claim 12 of Rehfuss '669 from the interference. We disagree. In charitable terms, the argument by Rehfuss is "without merit." In not so charitable terms, it borders on being "frivolous."

Because Singer presented in Singer claim 26 an "x" range of 30 to 40, Rehfuss says that it was not possible for Rehfuss to take action by filing a preliminary motion to take Rehfuss '669 claim 12 out of the interference. As will appear, the Rehfuss argument is an attempt to belatedly raise an afterthought argument to overcome its litigation strategy.

The rules authorize a party to file a preliminary motion to have a claim designated as not corresponding to the count which

was originally designated as corresponding to the count. 37 CFR § 1.633(c)(4). The party has the burden (37 CFR § 1.637(a), first sentence) to establish that the subject matter of the claim sought to be "undesignated" is directed to an invention which is patentably district from the remaining claims (37 CFR § 1.601(n)). Alternatively, a party may file a preliminary motion (as to all claims or just one claim) that there is no "interference-in-fact." 37 CFR § 1.633(b). The term of art "interference-in-fact" is often misunderstood. There is no interference-in-fact when a claim of a party is not directed to the same patentable invention as a claim of an opponent. 37 CFR § 1.601(j). When a party and its opponent claim the same patentable invention in exactly the same words, there is manifestly an interference-in-fact.[8] When the language of a party's claim differs from the language of an opponent's claim and both claims are designated as corresponding to a count, there is a possibility of preliminary motion for judgment based on no interference-in-fact. If the preliminary motion is granted, both the party and its opponent obtain patents to their respective claims, because the claims define a separate patentable invention. If the preliminary motion is denied, the interference proceeds to a final decision on the merits of priority and patentability.

[8] We acknowledge that when identically worded claims use means-plus-function language, a possibility exists that the claims are not directed to the same patentable invention.

Rehfuss '669 claim 12 reads:

> 12. A method according to claim 1[9] wherein x represents 40 to 60 weight % and y represents 60 to 40 weight %.

Singer never has presented a claim having the same scope as Rehfuss '669 claim 12. Hence, throughout this interference, Rehfuss has always had the possibility of filing a preliminary motion seeking judgment in its favor with respect to Rehfuss '669 claim 12 based on an alleged no interference-in-fact (37 CFR § 1.633(b)). But, Rehfuss did not do so.

Moreover, Rehfuss had two opportunities in this interference to raise a no interference-in-fact argument in oppositions to preliminary motion filed by Singer.

The first opportunity was during the preliminary motion period. During the preliminary motion period, Rehfuss filed a preliminary motion under 37 CFR § 1.633(a) maintaining that Singer were not patentable under 35 U.S.C. § 112, first paragraph. According to Rehfuss, Singer could not "support" the 30 to 40 weight percent range of Singer claims 26-50. Singer responded, inter alia, with a preliminary motion (37 CFR § 1.633(i)), requesting that Singer claims 51-53 be added to the Singer application. In opposing Singer's Rule 633(i) preliminary motion, Rehfuss could have argued that if its preliminary motion under Rule 633(a) is ultimately granted and Singer's motion under

[9] See Finding 25 of the opinion in support of our FINAL DECISION (Paper No. 207) for a copy of Rehfuss '669 claim 1.

Rule 633(i) is ultimately granted, that Rehfuss '669 claim 12 should not be designated as corresponding to the count.

The second opportunity was when Singer filed its preliminary motion (37 CFR § 1.633(i)) seeking to amend Singer claims 26-53 and add Singer claims 54-56 (Paper No. 135). In its opposition to the Singer motion, Rehfuss could have maintained that if the Singer motion is granted, that Rehfuss '669 claim 12 should no longer be designated as corresponding to the count.

Because Rehfuss:

(1) could have raised, but did not raise, a no interference-in-fact issue in this interference, or

(2) could have sought, but did not seek, to have Rehfuss '669 claim 12 designated as not corresponding to the count,

there is no occasion to consider the separate patentability of Rehfuss '669 claim 12. Absolutely nothing, done by Singer prevented Rehfuss from raising any question of no interference-in-fact in this interference. Likewise, it was not Singer's fault that Rehfuss did not seek to undesignate Rehfuss '669 claim 12. Rehfuss planned its litigation strategy. Apparently that strategy did not include undesignating Rehfuss '669 claim 12. Rehfuss now has to live with its litigation strategy.

6.

We close this chapter of the interference with the following observation. In interference cases the charge of inequitable

conduct is appearing with more frequency. The following observation of the Federal Circuit with respect to inequitable conduct in court litigation applies with equal force to administrative litigation in interferences before this board:

> [T]he habit of charging inequitable conduct in almost every major patent case has become an absolute plague. Reputable lawyers seem to feel compelled to make the charge *** on the slenderest grounds, to represent their client's interests adequately, perhaps. They get anywhere with the accusation in but a small percentage of the cases, but such charges are not inconsequential on that account. They destroy the respect for one another's integrity ***. A patent litigant should be made to feel, therefore, that an unsupported charge of "inequitable conduct in the Patent Office" is a negative contribution to the rightful administration of justice. The charge was formerly known as "fraud on the Patent Office," a more pejorative term, but the change of name does not make the thing itself smell any sweeter. Even after complete testimony the court should find inequitable conduct only if shown by clear and convincing evidence.

Burlington Industries Inc. v. Dayco Corp. , 849 F.2d 1418, 1422, 7 USPQ2d 1158, 1161 (Fed. Cir. 1988). We do not even find a preponderance of the evidence in this case. Hence, Rehfuss Preliminary Motion 7 shall be denied.

E. Effect of inequitable conduct in an interference

Rehfuss maintains that it is entitled to win on the issue of priority if it prevails on the inequitable conduct issue. The argument could be regarded as moot given that Rehfuss has not prevailed. We take this opportunity, however, to explain why Rehfuss is wrong.

Prior to the Patent Law Amendments Act of 1984, Pub. L. 98-633 (1984), the former Board of Patent Interferences could consider priority and an issue which had been determined to be "ancillary" to priority when resolving an interference. 37 CFR § 1.258 (1984). Patentability was not an issue which had been determined to be ancillary to priority. Glass v. DeRoo, 239 F.2d 402, 112 USPQ 62 (CCPA 1956). Inequitable conduct was an issue which had been determined to be "ancillary" to priority. Norton v. Curtiss, 433 F.2d 779, 167 USPQ 532 (CCPA 1970). Thus, inequitable conduct, as well as host of other issues which had been determined to be ancillary to priority, were considered a basis for "awarding priority" to an opponent.

With passage of the Patent Law Amendments Act of 1984, patentability was made an issue which could be considered by the board in an interference. Upon passage of the 1984 Act, the PTO and its reviewing courts "will no longer have to decide whether an issue is 'ancillary to priority.'" 103 Cong. Red. H10522, H10528, col. 3 (daily ed.) (Oct. 1, 1984).

New rules were promulgated to implement the Patent Law Amendments Act of 1984. Notice of Final Rule, Patent

Interference Proceedings, 49 Fed. Reg. 48416 (Dec. 12, 1984). The new rules authorized a party to file a motion for judgment based on unpatentability of a claim. 37 CFR § 1.633(a)(1985). An object of the new rules, including new Rule 633(a), was to permit a party to raise all issues which previously had been determined to be ancillary to priority, as well as patentability. The comments published with the new rules point out that "[a]ny ground of unpatentability may be made the subject of a motion under § 1.633(a) except: (1) Priority of invention of the subject matter of a count by the moving party as against any opponent or (2) derivation of the subject matter of a count by an opponent from the moving party." 49 Fed. Reg. at 48440 (col. 2). Since a claim would be unpatentable to a party who committed inequitable conduct, a preliminary motion for judgment under Rule 633(a) may be based on inequitable conduct.

Entry of a judgment against an opponent based on a preliminary motion under Rule 633(a), however, does not entitle the party to a judgment on the issue of priority. See, e.g., Perkins v. Kwon, 886 F.2d 325, 12 USPQ2d 1308 (Fed. Cir. 1989) (one party not entitled to a patent because it lost on priority; the party winning on priority not entitled to a patent based on a prior public use/sale).

Hence, the most Rehfuss could have achieved, had its Preliminary Motion 7 been granted, would be a judgment that Singer is not entitled to its claims. Rehfuss would not have prevailed on priority, because its claims are not patentable

under 35 U.S.C. § 102(g)--whether the priority issue is raised by Singer inter partes in the interference, or by some other third party (including the PTO) in another proceeding.

F. Order

Upon consideration of Rehfuss Preliminary Motion 7, and for the reasons given, it is

ORDERED that Rehfuss Preliminary Motion 7 is denied.

MICHAEL SOFOCLEOUS, Administrative Patent Judge	)
ANDREW H. METZ, Administrative Patent Judge	)BOARD OF PATENT) APPEALS AND) INTERFERENCES
FRED E. McKELVEY, Senior Administrative Patent Judge	)