IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

THE UNIVERSITY OF ILLINOIS FOUNDATION, Plaintiff and Counterclaim Defendant; vs. BLONDER-TONGUE LABORATORIES, INC., Defendant and Counter-claimant, vs. JFD ELECTRONICS CORPORATION, Counterclaim Defendant.	Civil Action No. 66 C 567

The deposition of RONALD D. GRANT, a witness in the above-entitled cause, taken at the instance of the plaintiff and counterclaim defendant, pursuant to notice and pursuant to the Rules of Civil Procedure for the United States District Courts pertaining to the taking of depositions, before Lucile E. Moore, a notary public in and for the County of Cook and State of Illinois, in Room 279, Illini Union Building, University of Illinois, Urbana, Illinois, commencing at 9:30 o'clock a.m. on Thursday, December 15, 1966.

I[illegible]/mbs

APPEARANCES:

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Chicago, Illinois),

On behalf of Plaintiff and
Counterclaim Defendant;

MR. ROBERT H. RINES
(Rines & Rines,
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Boston, Massachusetts),

and

MR. RICHARD S. PHILLIPS
(Hofgren, Wegner, Allen, Stellman
& McCord
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Chicago, Illinois),

On behalf of Defendant
and Counterclaimant;

MR. MYRON C. CASS and
MR. SIDNEY N. FOX
(Silverman & Cass
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Chicago, Illinois)

On behalf of Counterclaim
Defendant.

ALSO PRESENT:

MR. ISAAC S. BLONDER

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I N D E X

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MR. CASS: There are some questions that I would like to ask Mr. Rines with respect to production of documents and things that were made on behalf of JFD.

Specifically, Mr. Rines, I am referring to my letter of November 21, 1966, and you have given us a number of things that were asked for, but in connection with the production that you have given I would like to ask certain questions.

Now, on page 201 of Mr. Blonder's deposition, I asked information with respect to foreign patents and patent applications. You said there was a Spanish patent No. 310,655 issued and there is an application pending in one other country.

What country is that, Mr. Rines, do you recall?

MR. RINES: I do recall. The reason it was worded that way, I was wondering whether you are entitled to it.

MR. CASS: Well, I explained that I would like to know what the prosecution history of that patent application was.

MR. RINES: Do you mean in terms of prior art cited?

MR. CASS: Yes, prior art cited, if any.

MR. RINES: There has been no prior art cited.

MR. CASS: What foreign country is that?

MR. RINES: I don't know that you are entitled to that.

MR. CASS: Why not, it has to do with the validity of your patents and I am entitled to any such information.

MR. RINES: If you show me it has to do with the validity of my patent, yes. It is still an application, still pending.

MR. CASS: But the country it is pending in certainly is not any kind of information entitled to be withheld. Are you claiming privilege?

MR. RINES: No.

MR. CASS: What are you claiming?

MR. RINES: In foreign countries it is well accepted that there are means of opposition and tying up the issuance of patents. This is not yet public information in those countries, and unless I am shown some authority, I don't believe I have to give you the name of the country.

MR. CASS: You are saying there has been no action on that application?

MR. RINES: That is the fact.

MR. CASS: You will advise us when and if there is an action on that application and the reference is cited?

MR. RINES: Yes, I will advise you of the references cited when and if there is an action.

MR. CASS: And that application was filed after the application in the United States?

MR. RINES: Oh, yes, the law so requires.

MR. CASS: Now on page 293 you were going to give me specific information in documents of tie-in sales and things of that sort. You have not given me any specific documents or information, other than some names listed. And I don't know when these events occurred or who the sales people were of JFD, or who the people were at JFD.

Do you have that information?

MR. RINES: We have in the list of names of specific people that we have information relating to bearing on tie-in sales, supplied you with at least one name where previously we supplied you with a memorandum, giving the time and the place and some of the events relating at least to the threats involved with that situation.

The difficulty has been that the gentleman, Mr. Jerry Balash, who was in charge not only of the Blonder-Tongue antenna program, but specifically, after this suit was brought, in charge of investigating the JFD tie-in sales, and the like, and who accumulated all of this data and information, was hired away by JFD. And we certainly hope, by taking his deposition in the very near future, to be able to have him supply you with the details of these tie-in sales that he was investigating for Blonder-Tongue.

MR. CASS: You are saying to me then, Mr. Rines, that Mr. Balash was hired away by JFD after JFD was joined in this lawsuit, is that what you are saying?

MR. RINES: No, after the University of Illinois brought this lawsuit.

MR. CASS: Oh, I see. Then you have given me all the specific information that you have at this particular time?

MR. RINES: Yes, sir.

MR. CASS: How about Leder Electronics and Wholesale Radio Company? These people were added to your list just recently.

MR. RINES: No, as to Wholesale Radio, some written documentation was supplied to you earlier in the deposition of Mr. Blonder.

MR. CASS: And the other one then you just don't have any other documents?

MR. RINES: All oral to date.

I wish to add another one, by the way.

I believe the name is Thurow Electronics. I will supply you with further information that we do have on that one through Mr. Phillips when I find all my papers.

MR. CASS: And where are they, Mr. Blonder?

MR. BLONDER: Thurow is a chain that operates in Florida. I am not sure where the principal office is.

MR. CASS: Is there any particular person?

MR. RINES: I will supply you with what I have.

MR. CASS: Fine. Now, on page 299 I asked for copies of all letters of indemnification Blonder-Tongue provided, and I understand there were none located.

MR. RINES: That is not so. We have already provided you with several letters and there were

none in addition to those letters.

MR. CASS: None at all that you know of?

MR. RINES: In addition to the ones we supplied you.

MR. CASS: Right; now, in connection with the so-called adoption of the trademark RANGER for all antenna products, I was supplied with a large sheet of paper, and that is supposed to represent an adoption of the trademark RANGER for all antenna products of Blonder-Tongue, is that correct?

MR. RINES: You were supplied with more than a large sheet of paper. You were supplied with interoffice memoranda, original sketches of the name RANGER, and different antennas on which the name RANGER was to be put.

And the large sheet to which you refer is merely the use of the name RANGER on one of those antennas. But you asked for documents relating to the adoption of the trademark RANGER for the line of antennas, and there was a great deal given to you besides that big sheet.

MR. CASS: And that is for all Blonder-Tongue antennas, including what is now the DART and ARROW?

MR. RINES: I can't answer that.

MR. CASS: Well, that is what I want to know.

MR. RINES: The whole line using the name RANGER.

MR. CASS: And not for all of the Blonder-Tongue antennas?

MR. RINES: I don't know that, sir.

MR. CASS: Well, can we ascertain this, because this is what my question was.

MR. RINES: Yes, you may ask Mr. Blonder.

MR. BLONDER: The concept RANGER was brought in after the DART and ARROW, and the advertising coordination that would be gotten by applying RANGER to all antennas was deemed valuable enough so that we will eventually modify the DART and ARROW to include the name RANGER. Eventually it will be put on there.

MR. CASS: Do these documents that you have supplied me with represent that intention?

MR. BLONDER: No, I don't know. It simply was a fact that we came up with the concept that we would like to have our entire line named RANGER, and all of our products eventually will carry that mark.

MR. CASS: This is just an intercompany

intention, but you don't have any document to verify that?

MR. BLONDER: I think whatever documents Mr. Rines referred to are the ones that indicate that. There was an intercompany memorandum, an internal engineering company memorandum a couple of years ago that indicated that this would be done. I don't know where it is.

MR. CASS: That was not supplied to us?

MR. BLONDER: I don't know.

MR. RINES: Well, wait just a minute, Mr. Cass. Let's see what was supplied.

MR. CASS: Well, for my purpose I think we understand what my question was directed to. It was my understanding that Blonder-Tongue is supposed to have intended to change the trademark to RANGER for all of its antennas, COLOR RANGER, which would include the DART and the ARROW, as such.

Now the papers that I have gotten don't indicate this.

MR. RINES: It may be that there are no papers indicating it. I would have to look.

MR. BLONDER: We did have a study made in which an outside consultant recommended that we

come up with a new program.

MR. RINES: I will have to look, was that a couple of years ago, did you say?

MR. BLONDER: A year and a half or two years ago. I don't have the exact time.

MR. RINES: We will look for that particular document. I didn't know that there was such a document.

MR. CASS: Now, on pages 313 and 314 of Mr. Blonder's deposition, you were going to identify antenna manufacturers other than JFD, which make antennas believed to infringe the Blonder patent in suit.

And you say that you found nothing on that. Does that mean that there are none?

MR. RINES: It means just what it says, Mr. Cass.

MR. CASS: Well, what does it mean?

MR. RINES: It means just what it says.

MR. CASS: Well, what does it mean?

MR. RINES: I stand on what I supplied you with.

MR. CASS: You don't have any at this time, is that what it means?

MR. RINES: Any what?

MR. CASS: Any antennas of other manufacturers which you believe infringe the patents in suit?

MR. RINES: All your question asked was an identification of antenna manufacturers and identification of specific antennas believed to infringe, other than JFD.

MR. CASS: And you don't have any at this time that you can identify?

MR. RINES: That is correct.

MR. CASS: Then am I correct in assuming that at this particular time there are none that you can point your finger at to support Mr. Blonder's testimony?

MR. RINES: There is a difference, Mr. Cass, as you well know, between hearsay and the supplying of information or knowledge.

We have answered that question with regard to the supplying of information or knowledge in our possession.

I believe Mr. Blonder testified with regard to his impressions we found to be based on hearsay.

MR. CASS: Well, this doesn't help my

discovery at all.

MR. RINES: If the Court will tell me that I have to tell you what our opinions are with regard to the possibility of infringements of other parties to this suit, I will come across with it.

MR. CASS: Mr. Rines, this testimony was made on behalf of Mr. Blonder. He gave this testimony, and he said that he would identify for me the specific antennas that he knew of which did or did not infringe in his opinion.

Now you tell me that you don't want to give me this information, contrary to what the witness says?

MR. RINES: Look, Mr. Cass, you are not going to put words in my mouth --

MR. CASS: But I want to know.

MR. RINES: Then be quiet and let me tell you.

MR. CASS: All right.

MR. RINES: I have reviewed with Mr. Blonder the basis of his comments on his testimony and find them to be hearsay. I found no evidence at his plant that allows us, from any knowledge, to make the identification you required and I have so answered.

MR. CASS: So I am advised now that we have no information on Wholesale Radio Company and Leder Electronics Company, which are listed in Mr. Phillips' letter of December 13, 1966.

These are completely new people.

MR. RINES: They are not, sir. Let me refresh your recollection. Prior to Mr. Blonder's deposition we supplied you with a tremendous amount of material, much of which was not put in evidence during the Blonder deposition.

It is among that material. It is not an exhibit.

MR. CASS: Would you at some later date identify those materials for me?

MR. RINES: I would be pleased to.

MR. CASS: On page 315 of Mr. Blonder's deposition we asked for the identification of the model of the Finney UHF section that did not infringe the Blonder patent. And again your answer was "nothing".

May I assume that again your answer is the same as it was in connection with 313 and 314?

MR. RINES: Precisely the same.

MR. CASS: Now, we were not supplied with any field tests of the Blonder-Tongue GOLDEN DART.

Does that mean that there weren't any field tests on that antenna?

That is on page 408 of the deposition. We were supplied with field tests with regard to the COLOR RANGER.

MR. RINES: Yes, that is the correct answer.

MR. CASS: That there were none?

MR. RINES: Yes, sir.

MR. CASS: Now you did not supply us with a list of patent infringement suits brought by Blonder-Tongue and I think you were going to, Mr. Rines.

Is that an oversight?

MR. RINES: Beg pardon, it is an oversight, I did supply that to Mr. Phillips.

Well, I will correct that. I had it in the hotel room and I guess I did not.

Maybe I have it right here. Just a moment.

(Off the record.)

MR. RINES: Let the record show that I did telephone to New Jersey and wrote those things down and was under the impression that I had given them to Mr. Phillips for supplying to Mr. Cass. Apparently I did not. I can't find the paper.

I will supply it to you.

MR. CASS: All right; now just to tie in the loose ends, I had asked about the field tests on the GOLDEN DART and you said there had not been any.

Does that same situation apply to the GOLDEN ARROW, so far as you know?

MR. RINES: If I gave the same answer, then it does.

MR. CASS: It applies to the GOLDEN ARROW as well?

MR. RINES: Yes.

MR. CASS: Now you were going to supply me with specific information as to loss of sales and customers lost.

MR. RINES: Same answer with regard to Mr. Balash.

MR. CASS: At this particular time you do not have any specific instances of customers lost, or sales lost, that you can supply me?

MR. RINES: Mr. Cass, don't put words in my mouth. I told you earlier that I supplied you with the names of people where sales were lost, where tie-in sales were, and I supplied you with memoranda, and with dates, all under the investigation of Mr.

Balash.

And I have given you as much information as I have with regard to who we lost sales from and who there were tie-in sales with that I have now.

And I will complete the rest, hopefully, through Mr. Balash and the other investigation we have going.

MR. CASS: Well, this I didn't understand. I didn't understand that the people that you have named here, Wholesale Radio, Leder Electronics, Sacramento Electronics, and Thurow Electronics, also represent lost customers.

Is that correct?

MR. RINES: Well, I would suggest that you read Mr. Balash's memo, and other things of that character and you will see.

The answer is, yes, these bear both on tie-in sales and lost business.

MR. CASS: These are customers that Blonder-Tongue lost?

MR. RINES: Yes, or at least lost sales to.

MR. CASS: And lost sales of?

MR. RINES: Of.

MR. CASS: That's all I have, Mr. Rines, thank you very much.

MR. MANN: I would like to make a request, Mr. Rines, on behalf of the Foundation. I would like to inquire whether the production of documents you made to us to date includes specifically the advertisements and the articles of Blonder-Tongue relating to the antennas in suit?

MR. RINES: Mr. Mann, I think we supplied you with everything we found.

MR. MANN: I wanted to know whether you construed our request to include advertisements and articles written by some employee of Blonder-Tongue?

MR. RINES: Well, there were no articles.

MR. MANN: But you searched with that in mind, is that right?

MR. RINES: Oh, excuse me, yes.

MR. MANN: And did you also keep in mind as within the scope of our request intracompany reports, developmental reports and the like?

MR. RINES: Yes, sir, and we supplied some of those.

MR. MANN: And I also want to make of record the request that I made informally of you a few

days ago and to which you agreed, that we be supplied with documents corresponding to those that we had already asked for, but with respect to your COLOR RANGER series.

I understand that you agreed to do so.

MR. RINES: Relating to variation of boom spacing.

MR. MANN: Also documents relating to specific length, your engineering drawings, in effect.

MR. RINES: Yes.

MR. MANN: The same type of documents that we had requested, or which we had identified, in our interrogatories to date, but applied specifically to the DART and to the ARROW.

MR. RINES: Mr. Mann, I am not clear, because we have already supplied you a good deal of material relating to COLOR RANGER, including field tests.

My understanding is that what you asked for the other day and what we agreed to produce was the drawings that show you the construction of the COLOR RANGER, and tests relating to variation of boom spacing and its effect with regard to the COLOR RANGER.

MR. MANN: Yes. I asked at the time, though,

in effect, for the same type of documents with respect to the COLOR RANGER that we had already asked for specifically with respect to the DART and ARROW.

MR. RINES: That's my understanding.

14 MR. MANN: I just wanted to clear up any possible misunderstanding. Our agreement now is that you will supply or have already supplied some of this information and will supply the remainder in due course.

MR. RINES: Yes, and may I respectfully ask, after you see what we supply, if it does not reflect what you have in mind right now, will you please come back and tell me.

MR. MANN: All right. I have nothing further.

MR. PHILLIPS: Mr. Cass, yesterday evening you supplied me with certain documents supplementing some which you sent me on November 8.

Do these represent all of the material which was requested at the previous depositions, as outlined in my letter to you of October 31, and my letter of November 23?

MR. CASS: With some qualification, which I can explain. May I use your letter?

MR. PHILLIPS: Yes.

MR. CASS: With respect to the gain curve of Exhibit B-33, I was erroneous in saying to you that this information was obtained from the JFD Laboratories here in Champaign.

Mr. Grant will testify to that and you can ask him about that particular aspect of it.

As I understand it, that gain curve information was not procured from the JFD Laboratory in Champaign.

MR. RINES: Has Mr. Grant available for production the material on which those gain curves are based?

MR. CASS: Well, he tells me that they didn't come from Champaign.

MR. RINES: That is not my question.

MR. CASS: No, he doesn't have it available.

And so with respect to item No. 1 and item No. 2, this is all I can tell you.

With respect to the Blonder-Tongue antenna received at JFD Laboratories, I have not been able to locate any specific document which shows purchase of that antenna, but Mr. Grant can testify with respect to the Blonder-Tongue antenna

that he saw and examined.

MR. RINES: Is this the antenna, the tests of which were reported under dates such as 11-3-63?

MR. CASS: This is my understanding.

MR. RINES: Thank you.

MR. CASS: Now the insulator part drawing, I have supplied.

With respect to the tests on LPV VU antennas, those that I did give you are not all of the tests. There were various other models, 12's, 18's, and other sizes.

These are representative of the earliest tests run and representative of the kinds of tests run with respect to the VU type antenna.

The other reports would be duplicates of these efforts but with respect to different models.

So I don't think it would contribute any more to your investigation.

Now I am reading from this document, "Material to be produced by JFD".

I think I have answered No. 1, and, No. 2, we have given you the test reports.

No. 3, I believe, has already been

supplied.

No. 4, you have everything there in this batch of papers that I have given you.

The names of all people who worked with Mr. Grant -- well, Mr. Grant is here and you can ask him that.

No. 6 has been supplied in those documents.

MR. RINES: Would you say that the material you supplied to us represents all that you were able to find?

MR. CASS: At JFD Laboratories, that's right, at this time.

MR. RINES: May I ask you, please, if you find anything else that is germane to these items 1 through 6 on one sheet, and 1 through 4 on the other, either at JFD Laboratories here or in New York, would you call it to our attention?

MR. CASS: Sure. I might say that the people at JFD in New York are looking for the purchase orders, et cetera, with respect to Blonder-Tongue antennas that Ed Finkel testified to.

MR. RINES: In light of some of your comments here this morning, Mr. Cass, I think we will have

a very short deposition with Mr. Grant.

Will you swear the witness, please.

RONALD DEAN GRANT,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. RINES:

Q Please state your name, residence and occupation.

A My name is Ronald Dean Grant. I live at 402 West Florida, in Urbana.

And I am chief engineer and manager of JFD Research Laboratories.

Q Of Champaign, Illinois?

A Of Champaign.

Q How long have you held that post?

A Since December 1, 1962 as engineer and since June of 1966 as manager.

Q Who was the manager prior to your assuming the management?

A His name was Tom Reeder.

Q Do you know his address?

A I am afraid not.

Q Is he with the company now?

A No, he isn't.

MR. RINES: Mr. Cass, would you find out where Mr. Reeder is at present.

BY MR. RINES:

Q Was Mr. Reeder the manager since 1962?

A Since 1962, yes.

Q Since your first association with the JFD Laboratories in Champaign?

A Yes.

Q What did you do prior to your association with these laboratories?

A I was a student at the University of Illinois.

Q A student in what?

A In electrical engineering and physics, and math.

Q Where?

A In Champaign-Urbana, here.

Q What department?

A Physics.

Q Any particular branch of physics that you particularly worked in during your undergraduate years?

A General physics.

Q Did you do anything with antennas?

A Yes, I did.

Q Will you tell us what you did with antennas?

A I was employed at the University Antenna Laboratory.

Q With the University of Illinois Antenna Laboratory?

A Yes.

Q Is that the laboratory of which Mr. Isbell and Professor Mayes worked?

A Yes, it is.

Q Did you work for Professor Mayes or Mr. Isbell at that laboratory?

A Yes.

Q On what projects?

A Primarily log-periodic arrays.

Q Did you work on log-periodic arrays of the Isbell type, with the dipoles in line, colinear?

A A few; most of them were constructed so they went directly into the top and bottom booms.

Q I didn't hear the last remark.

A Most of our models were constructed, they were Isbell type arrays, but constructed so that the elements joined directly to the top and bottom cross arm, if you are talking about one plane versus two planes.

Q Did you work on versions of that where the dipole elements were bent forward into V's?

A Yes.

Q Generally what kind of work did you do in connection with the antennas?

A Model construction, antenna pattern range, impedance measurement.

Q Did you get your degree from the University?

A Yes, I did.

Q Would that have been in 1962, just before you went to the Laboratory, or when?

A In the spring semester, 1963.

Q I understood you to say you were a student at the University of Illinois in 1962; that you were employed in the Antenna Laboratory at the University of Illinois in 1962; and that in 1962 you did work also for the JFD Laboratories in Champaign?

A That's right, sir.

MR. CASS: Was this concurrently, at the same time, or was there a sequence in 1962?

THE WITNESS: A sequence.

BY MR. RINES:

Q Tell us the sequence.

A I left my position at the University Laboratory in the fall of 1962. I was still a student at the University.

I took the position with JFD in December of 1962. I was still a student, and graduated in the spring.

Q After you had taken the position with JFD Laboratory in Champaign, did you still have any association with the University of Illinois Antenna Laboratory?

A Not directly with the laboratory, no.

Q With whom, then, if not directly with the laboratory; how about indirectly?

A With Professor Mayes.

Q Did you do any further experimental work at the University of Illinois Antenna Laboratory after November, 1962?

A No, I didn't.

Q You had no student work there?

A No.

Q Have you been involved in the development of the JFD log-periodic antennas since that period of 1962 to date?

A Yes, I have.

Q I show you a copy of Exhibit B-14, that has been marked for identification in previous depositions.

And, Mr. Mann, this is the numbering 65 through 68.

And I will ask you, are you familiar specifically with the antennas identified on page 68, LPV-UCL, LPV-CL, and LPV-ZU?

A Yes.

Q Mr. Cass has suggested that perhaps we have a better print, and that LPV-CL is perhaps better shown here, is it not, in Exhibit B-47?

A Yes.

Q I notice on Exhibit 47, as distinguished from Exhibit 14, that the antenna is described by the words, "COLOR LASER."

Can you tell us what that means?

A It is the name of the antenna.

Q The antenna certainly is not a laser device, though, is it?

A It depends on what your definition of "laser" would mean. It is because of the association of directivity that they call it "laser".

Q Do you know what "laser" is?

A Yes, I do.

Q Is this a laser?

A In the general definition of a laser, as people think of a laser being a laser, no, it would not be.

Q Now, your counsel supplied us earlier with drawings, such as Exhibit B-40, showing log-periodic antennas with spaced booms.

And I would ask you if you recall approximately what the spacing between the booms was for the antenna of B-40?

A It is not shown in the drawing.

Q I didn't find it, sir. If you can find it, fine. Otherwise the approximate thing from your recollection, if you have any.

A It would only be an approximation of maybe an inch and a half to two inches between the two cross arms.

Q Between the centers of the two booms or between the booms themselves?

A The booms run three-quarters of an inch, and there would be an error of a half inch or so, so maybe it is two and a half inches between centers.

Q Could you give me a similar answer with regard to the LPV-VU, of Exhibit B-47?

A It would be approximately the same.

Q And the LPV-CL?

A Approximately the same.

Q And the LPV-TV?

A Approximately the same.

Q By "approximately the same" you mean something about the same figure, not two or three times it?

A No, no, nothing like that.

Q Would you describe for us approximately what is the width or diameter of the small dipole elements on the UHF section to the right of the LPV-VU, shown in B-47, if you know?

A Approximately .187. We use .187 and .156; it was one of the two.

Q So it is approximately 2/10 of an inch

in width or diameter?

A Approximately.

Q Would you similarly tell us approximately what is the width or diameter of the rectangular metal teeth dipoles, shown in the UHF right-hand section of the LPV-CL in B-47, if you remember?

A In the neighborhood of 2 inches.

Q And that same comment would apply to the similar rectangular sheet metal dipoles shown for the LPV-CL and LPV-UCL in Exhibit 14?

A Yes.

Q And can you tell us approximately, in connection with the triangular or zig-zag dipole elements of the LPV-ZU, about the width?

A It changes from the rear to the front.

Q At the tip of the dipole it is almost zero in width?

A I am speaking from the back of the antenna to the front, the arm width gets progressively smaller.

Q Yes; I am asking now about the triangular dipole extensions on each side, does their width vary from about what to what at the tip?

A Well, in a neighborhood of 8 inches at the rear to a point, and of course at the front, much smaller.

Q Yes.

A In the neighborhood of an inch and a half to a point.

Q Yes, and at the point, which would be the tip of the zig-zag dipole element, extending out, it would be zero width?

A Right.

MR. RINES: We have not been supplied, Mr. Cass, with the drawings of these new antennas. And I have no desire to trap the witness.

The reason that I am calling this to your attention is that it is our information, and it can be incorrect, but I don't think so, that the boom spacing of the current line of JFD antennas, such as those of B-47, is closer to 4 or 5 inches, as distinguished from the 1½ to 2 inches that the witness has referred to.

MR. CASS: Didn't he refer to 2½ inches between centers?

MR. RINES: Yes, I am talking about the new line that came out with about double. We, unfortunately, don't have that, but Mr. Blonder has called my attention, so that we can settle the 2 inch thing, to a drawing you supplied us with on December 9th, Mr. Cass, No.12395-0001, which is the insulator used between booms of the older JFD type antennas, and which I would like to have the reporter mark for identification as Exhibit B-54.

(Whereupon said drawing was marked for identification as Exhibit No. B-54.)

BY MR. RINES:

Q By reference to this print, Exhibit B-54, can you pin down for us exactly what is the boom spacing on this older type of antenna of JFD?

Would you tell us now what is the actual spacing of that antenna?

A 1.75.

Q 1.75?

A That's right.

Q I would like to call your attention also that that jibes with Defendant's Exhibit

J-3, Mr. Cass, and Mr. Mann, which is the sketch made at Blonder-Tongue of the LPV-VU 12, showing the center to center spacing as 1 and 3/4 inches.

MR. CASS: Now, you are going to clarify if that is center to center, or air space, so that will be clear.

BY MR. RINES:

Q Would you clarify that, sir?

A It is center to center.

Q Now may I ask you please to check the current line of JFD and see if your statement is correct that the spacing is about the same, or whether there has been a change.

And we certainly would like to have copies, which we do not have, of those current antennas, Mr. Cass.

You said something about some mix-up, and they may be in Chicago.

MR. CASS: I might say this, last night we measured an antenna at the JFD Laboratories in Champaign, which was a COLOR LASER, is that right, Paul, a COLOR LASER model?

MR. MAYES: That's right.

MR. CASS: We measured a distance center

to center and it was approximately 2 and 3/4 inches, but we will verify that.

MR. RINES: Thank you.

MR. CASS: And I understand that this is the spacing of the current line of antennas. The 4 inches to 5 inches, I don't know where you got that information.

BY MR. RINES:

Q Well, assuming, therefore, that there is this increase, the 2½ inches, or whatever it might be, can you tell us, if you know, why the spacing was increased from 1 and 3/4 inches to this new figure that Mr. Cass mentioned?

A We use a different boom spacing on every series we design.

Q Can you tell us when was the first time you used the increased spacing that Mr. Cass referred to?

A Oh, on the display you had.

Q On the antennas of Exhibit B-47?

A The other display, yes.

Q And B-14?

A The boom spacing on this particular antenna is wider than these, so I don't know

which was the widest spacing. The spacing we used, the zig-zag, was approximately 3 feet at the rear between the two booms and approximately 5 inches at the front between the two booms.

This was in 1963.

Q Am I correct that this testimony, this last statement, you were pointing to the LPV-ZU zig-zag series?

A Yes.

Q My questions are directed to the parallel boom structures, and I am asking you if you recall when you went from the spacing, or the approximate spacing, of B-54 to the new spacing in the parallel boom antennas that Mr. Cass said was measured last night.

MR. CASS: That was the COLOR LASER.

BY MR. RINES:

Q All right, the COLOR LASER.

MR. CASS: I don't know whether that has been carried through on all of the antenna line.

BY THE WITNESS:

A Not on certainly every antenna we build that's a parallel boom.

MR. RINES: Off the record.

(Off the record.)

MR. RINES: I am perhaps the source of confusion here. Let the record show that we were under the impression that we had made it clear that the LPV-CL series and the LPV-UCL series that Mr. Blonder testified to in connection with Exhibit B-14, and that are now called COLOR LASER, with the same nomenclature, LPV-CL, in Exhibit 47, are charged to infringe the Blonder patent in suit.

BY MR. RINES:

Q Mr. Grant, I think you misunderstood my question.

What I am trying to get at is, can you in your mind tell us approximately when you changed from the spacing of the LPV-VU line, as exemplified by Exhibit B-54, to the increased spacing of the LPV-CL, for example, in Exhibit B-47?

A It isn't a change, that is an entirely different line of antennas.

Q Mr. Grant, will you try, please, to

answer my questions.

I am asking if you know when you changed boom spacing, boom spacing that you used in connection with one to the boom spacing you used in connection with LPV-CL?

A We didn't change boom spacing. We introduced a new line. If you are asking me when this new line was put into production it would have been this fall.

Q This fall?

A It is a different antenna.

Q Had you previously seen on the market a twin boom antenna of Blonder-Tongue that had this increased spacing before you introduced this new line?

A I saw one of the Blonder-Tongue twin boom antennas. I am not familiar with the spacing. I don't know what the spacings between the cross arms are.

17 Q Did you have one of these antennas in your possession before you introduced the LPV-CL line?

A Yes, we did.

Q Was it a COLOR RANGER antenna, to your

knowledge?

A Do you identify the COLOR RANGER as the all channel, or just the VHF channel?

MR. BLONDER: It could be both.

BY THE WITNESS:

A No, it wasn't the COLOR RANGER.

BY MR. RINES:

Q Was it an all channel or a VHF?

A A VHF.

MR. BLONDER: I'm sorry, the VHF and the VU and the UHF signals are all identified as RANGER type antennas.

BY MR. RINES:

Q Do you have in your material here anything that would help you pin down what the model of that Blonder-Tongue antenna was that you had in your possession?

A No, I don't.

Q Your counsel -- or the University of Illinois Foundation has given us some drawings from its files, which bear the JFD Electronic Corporation Antenna Laboratory marking on them.

And referring to the Blonder-Tongue RANGER 10, the RANGER 3, VHF-UHF, the RANGER 5, VHF-UHF,

I would ask you if you would look at these and tell me whether these are the Blonder-Tongue antennas that you had in mind in your last answer, if you know?

A It was the RANGER 10, VHF.

Q The RANGER 10, VHF.

MR. RINES: I would like to have marked for the purposes of identification the three JFD Electronic drawings, bearing Mr. Mann's numbers A00415, A00418, A00421, bearing on the Blonder-Tongue RANGER 10, the three of which I would give a single Exhibit No. 55 to.

(Whereupon, said drawings were marked for identification as Group Exhibit 55.)

BY MR. RINES:

Q Have you never seen the Blonder-Tongue RANGER 3, shown in the JFD Electronic Corp. drawings A00416 and A00419?

A Yes, I have.

Q When?

A I don't remember when I saw them. Do you want a specific date?

Q Well, it was certainly before you came out with the COLOR RANGER line, wasn't it?

A No, it wasn't.

Q It wasn't?

A The one I mentioned was the one we bought and looked at.

Q The only one you saw before the COLOR LASER was the RANGER 10?

A As near as I can tell.

MR. RINES: I would like to put in as Exhibit B-56, the RANGER 3 and RANGER 5 drawings of JFD Electronics Corp. paper, Mr. Mann's numbers A-00416, A-00419, A-00420, and A-00417.

(Whereupon, said papers were marked for identification as Exhibit B-56.)

MR. RINES: And so the record is clear, Mr. Cass, I understand that you are still trying to produce for us invoices or other information showing when the first Blonder-Tongue, the DART, the GOLDEN ARROW and the COLOR RANGER antennas were received by JFD.

MR. CASS: I had not looked for the COLOR RANGER material.

MR. RINES: Would you add that too?

MR. CASS: I will, yes.

BY MR. RINES:

Q In what models of antenna did you first introduce the concept of using a separate half wave UHF log-periodic section in front of the log-periodic VHF section, and feeding the latter through the former, if you know?

A In conjunction with a VHF antenna, you are speaking of, using a half wave tip-to-tip dimension, you are speaking?

Q So that the question is very clear, let me back up.

The original JFD antennas that came out using the LPV concept, did they have a separate half wave UHF front section, forward of and connected to the VHF section?

A I still need to know where you are getting your half wave dimension.

Q Half wave dipoles?

A The quarter wave half dipole, or half wave tip-to-tip, you are speaking of?

Q Yes.

A They were a higher mode of operation.

Q My question is, when did you change

to the kind of concept shown in LPV-VU, Exhibit B-47, or LPV-CL, where we have a separate UHF half wave log-periodic section in front of the V section, VHF periodic?

18 A And I need also to know -- are you speaking of a change for mass production or one in the laboratory, an antenna built in the laboratory for us, or one which JFD Electronics actually put into production?

Q Well, let's take the production first.

A When this CL Series was introduced.

Q When the LPV-CL Series came out, which you said was when, roughly?

A I am not positive of the production date. It was this fall. I don't have the date.

Q Somewhere in the fall of 1966?

A I don't have the production date.

Q To the best of your knowledge, we would not be inaccurate in saying that it was late 1966?

A The summer or the fall.

Q The summer or the fall of 1966?

A Right.

Q Can you tell us why you used this particular technique and not the 5 halves, 7 halves

combination VHF-UHF V system that was previously used?

A We had decided to use a disk director on the UHF section, and with the disk director is stamped "trapezoidal tooth driver", which is what we are using. It is a good engineering mate, because of the response curves between the stamp driver and the disk director.

Q Well, now, there is no disk director with the LPV-VU, shown in B-47, is there?

A No, there isn't.

Q Now, in the LPV-VU do we not also have this same concept of the separate UHF half wave log-periodic structure in front of the VHF V section?

A Yes.

Q When did this type of antenna enter the LPV-VU series, as distinguished from the antennas operating in the 5 halves, 7 halves mode, where the VHF and UHF were on the same V antenna system?

A This went into production the same time the CL Series went into production.

Q In the summer or fall of 1966?

A Yes, sir.

Q Prior to that time had you seen any

competitor's antenna on the market embodying this principle of a separate UHF section that we just discussed, that is the UHF section in front?

A No, I hadn't. If I may clarify it, it is the triple boom construction.

Q Well, my question is directed to --

A Well, you said, like this (indicating). I am sorry.

Q As shown in the LPV-VU, Exhibit B-47, for example, had you seen another competitor with a product on the market before yours that used that separate UHF section in front of the V -- VHF section?

A The way I understood the question, do you mean like this, or are you going back to your other definition, strictly fundamental mode half wave UHF, mounted in front of the VHF?

Q Yes, sir, had you seen that before you came out with your series?

A We had worked with them in the lab, and I think one or two other competitors had been on the market with one.

Q And one was Blonder-Tongue that you had

known about?

A And I believe Finney.

Q Finney; do you remember which Finney?

A The ALLIED KNIGHT Series.

Q What about the RANGER 10?

A The RANGER 10 I identified earlier that I received in the laboratory, and that was a VHF antenna only.

These prints that you brought up is an antenna that I opened up personally in the laboratory and looked at. These were sent into JFD, just as any other antenna when we introduce a line, from a competitor, sending in for an analysis run against them.

At that time drawings were made, the antenna may not have been run then, drawings were made and sent out.

Q The date on these drawings, and all the data is on here, is the 20th of January, 1966, and you told me that the series that we are talking about, LPV-VU and LPV-CL, and E-47, didn't come out until the summer or fall of 1966.

A That's right.

Q So isn't it a correct statement that you had seen, for example, this Blonder-Tongue RANGER 10, shown on A-00418, before --

A No.

Q Well, someone at JFD Electronic Corporation had seen it, but not you, is that correct?

A Let me answer it.

Q Yes?

A The antenna was received at the JFD Laboratory. We were supposed to get prints drawn of the antenna and that is what was done on this series.

Prints were made on the RANGERS, with the UHF printing on them.

The earlier question you asked me if I had seen the RANGER 10, and the only one that we had opened up and made measurements on was the RANGER VHF 10 element antenna.

Q Is it a correct statement then that the JFD Electronics Corporation Laboratory had received the RANGER 10 shown in A-00418 before the summer and fall of 1966?

A Yes.

Q Similarly, is it correct to say that the Blonder-Tongue RANGER 3 and the Blonder-Tongue RANGER 5, each having this half wave UHF section in front of the V-shaped V section, were received

at the JFD Electronics Corporation before the summer and fall of 1966?

A Would you show me the dates, because I don't have that good a memory.

Q They are all the same.

A Yes.

Q The answer is "yes"?

A Yes.

Q Who did the actual design work on the LPV-VU and the LPV-CL series of Exhibit B-47?

A I did.

Q Did you have any assistance?

A Yes.

Q From whom?

A Technicians, foremen, project engineers.

Q Who was the project engineer, for example, on the LPV-VU of B-47?

A The antennas were worked on in sections.

MR. RINES: Mr. Cass, would you undertake to find out for us who the project engineer was, or the technicians, who worked on the LPV-VU and the LPV-CL antennas of B-47, and their addresses and whether they are still with the company?

MR. CASS: Yes.

BY MR. RINES:

Q How would you describe Dr. Mayes' association in 1966 with the JFD Antenna Laboratories in Champaign?

A He is the technical consultant.

Q Would you say that the engineering was under his direction?

A He is a consultant.

Q He is not the director?

A The product director?

Q The director of the engineering.

A Not necessarily; I would consider him a research consultant, not a director.

(Recess.)

MR. RINES: Mr. Cass, I have nothing further to ask this witness.

We will, however, have to await these further documents to know whether we want to resume with him or not.

CROSS EXAMINATION

BY MR. CASS:

Q Mr. Grant, you will recall that amongst the papers that you collected from the JFD Laboratories

and which are represented here in various folders, bearing designations -- what is it -- VAL-TV 18, and which you saw, Mr. Rines, is that correct -- you saw these papers?

MR. RINES: Yes, last night.

BY MR. CASS:

Q There was reference to a VU-LPV antenna, which was made for Sears Roebuck in 1963.

Do you recall that?

A Yes, I do.

Q Now what generally was that type of antenna that was made for Sears Roebuck?

A A twin boom VHF-UHF combination antenna.

Q Did it have the UHF section ahead of the VHF portion?

A Yes, it did.

Q In that sense then, was it similar to the LPV-VU series antenna which you discussed in connection with Exhibit B-14?

A Yes, it is.

Q Is my understanding correct that in varying the spacing between booms, to which you were referred by Mr. Rines, that this was not a change in structure of JFD antennas, but rather a

variation that arose as a result of coming out with a new model of antennas, is that correct?

A That's right.

Q I know you made that statement and it wasn't too clear to me, and I wonder if you would explain that further?

A Every line that we introduce, depending on what particular modes of operation we are using, and what frequencies we are operating on, we use varying spacings. And that was where I was misled, I wasn't necessarily speaking of strictly a twin boom parallel spacing. I was talking about one that would start wide and go to the narrow.

Or even speaking of the twin boom parallel spacing, depending on what design we are using, we will vary the spacing from a close to a wide spacing, or even a tapered.

Q Does JFD have a commercial model antenna which uses the so-called older spacing of WJL-TV 18?

A We have the Sears models.

Q Yes, is that still being sold, that type of model?

A I wouldn't be able to answer that, because JFD takes various models, they keep them in their

files and they sell them to private label companies.

Q Would the spacing between the booms of those antennas have been varied?

A No, they have not.

MR. CASS: No further questions.

MR. RINES: I would like to call again for the production of the drawings relating to the Sears antenna concerning which the witness has testified.

THE WITNESS: Those were the blueprints you had out when you were showing me the center-to-center spacing.

REDIRECT EXAMINATION

BY MR. RINES:

Q In your answer to Mr. Cass' question about the UHF Section, was the UHF section a multi-resonant mode section or was it the half wave section that we were talking about?

A The model we built for Sears was a multi-mode VHF.

MR. RINES: That's all.

RECROSS EXAMINATION

BY MR. CASS:

Q Am I clear then in understanding that

the difference between the UHF section that appeared on the Sears Roebuck antenna and the one that is in this B-14, is of the type where one is a multi-mode type and the other is what?

A Fundamental mode.

Q And that is the only difference?

A Yes.

MR. CASS: That's all.

(Whereupon, this deposition was adjourned at the hour of 11:30 o'clock a.m. on December 15, 1966, sine die.)