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3 NORTH CAROLINA  
4 WAKE COUNTY

IN THE GENERAL COURT OF JUSTICE  
SUPERIOR COURT DIVISION

4

95 CVS 09176

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CLIFTON XOODY,

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Plaintiff,

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Vs.

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CSX TRANSPORTATION, INC.,

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Defendant.

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12 VIDEOTAPED DEPOSITION OF RRYXOND TODD BROWN, a

01'

13 witness in the above-entitled cause, purbuant to Notice

14 of Taking Deposition, at the Offices of CSX

15 Transportation, Inc., 500 Water Street, Conference Room

16 No. 2022, JackBonville, Duval County, Florida, on

17 Wednesday, November 20, 1996, confnencing at 3:45 o'clock

18 p.m., taken before Dorie A. Morgan, Registered

19 Professional Reporter and Notary Public in and for Duval

20 County, Florida.

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ORIGINAL

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ANDERSON REPORTING SERVICES, INC.

218 EAST FORSYTH STREET

25

JACKSONVILLE, FLORIDA 32202

(904) 358-0112

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(904) 358-0112

APPEARANCES:

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RICKARD N. SHAPIRO, EBquire,

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of the law firm of

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WilBon, Hajek & Shapiro, P.C.

5

1294 Diamond Springs Road

Virginia Beach, Virginia 23455

6

attorney appearing on behalf of the Plaintiff.

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8 JOHN C. MILLBERG, EBquire,

9

of the law firm of

10

Millberg & Gordon, P.L.L.C.

1030 Washington Street

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Raleigh, North Carolina 27605

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attorney appearing on behalf of the Defendant.

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1		I N D E X			
2	WITNESS:	DIRECT	CROSS	REDIRECT	RECROSS
3	Raymond Todd Brown				
	(By Mr. Shapiro)	4			
4	(By Mr. Millberg)		64		
	(By Mr. Shapiro)			66	
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E X B I B I T S

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(Retained by counbel)

15	NO. & DESCRIPTION	FOR IDENTIFICATION
16	Plaintiff's No. 1	16
	Plaintiff'B No. 2	17
17	Plaintiff's Nos. 3, 4 and 5	21
	Plaintiff'B No. 6	26

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1                                   S T I P U L A T I O N  
2            It WaB Btipulated and agreed by and between counsel  
3 for the respective parties, and the witness, that the  
4 reading and signing of the deposition by the witness be  
5 waived.  
6

7                                   RAYMOND TODD BROWN,  
8 having been produced and first duly sworn as a witness,  
9 testified as follows:

10                                  DIRECT EXAMINATION

11 BY MR. SHAPIRO:

12            Q        My name is Rick Shapiro for the plaintiff.  
13 Could you please state your full name?

14            A        My name iB Raymond Todd Brown.

15            Q        What is your home address, Mr. Brown?

16            A        4651 Long Bow Road, Jacksonville, Florida,  
17 ZIP code 32210.

18            Q        And we're located in Jacksonville today at  
19 the CSX company headquarters?

20            A        That's correct.

21            Q        And it's November...

22            A        20th.

23            Q        20th, 1996. Thank you.

24            Q        What is your position with CSX, Bir?

25            A        i,m director of occupational health programs.

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1 Q And in that position, I take it, you are  
2 involved with ergonomic matters and ergonomic assessments  
3 with CSX?

4 A That's my chief responsibility, yes, sir.

5 Q And have you generally had an opportunity to  
6 review and become familiar with CSX's ergonomics programs  
7 or evaluations since you've come to work here at CSX?

8 A I've become quite familiar with the CSX  
9 safety program. The ergonomics function has been added  
10 as an adjunct or an extension to that program.

11 Q When did you first come to work with CSX  
12 Transportation?

13 A I began work in March of 1995.

14 Q I'm going to go into some of your  
15 professional background in a moment, but before I do I  
16 wanted to just at the beginning here state that we're  
17 going to explore a number of aspects of ergonomics and  
18 your work with CSX and your knowledge in the field. And  
19 you generally understand that we're going to be looking  
20 into those matters today?

21 A Yes, I do.

22 Q About your professional background, I believe  
23 that I would like to summarize a few things that were  
24 provided to you, and you tell me if they're right and  
25 correct me if there's anything wrong here.

1 A Okay.

2 Q You have a bachelor of science degree in  
3 psychology from VCU in Virginia in 1977?

4 A Correct.

5 Q Went to North Carolina State University and  
6 obtained a Ph.D. in philosophy, and I think your  
7 secondary emphasis was in psychology and ergonomics.

8 A No, it was primary emphasis in psychology  
9 with a minor in industrial engineering, the  
10 concentration, the track study was the ergonomics program  
11 there.

12 Q All right. Thank you.

13 And from mid '87 to mid '89 you were with a  
14 company called TRW as a human factors engineer, right?

15 A That's correct.

16 Q And that's similar to ergonomics, right, if  
17 not the same?

is A What I waB doing at TRW is one aspect of  
19 ergonomics or human factors.

20 Q All right. And then after that position you  
21 went to the Association of American Railroads as a  
22 research engineer and then a senior research engineer  
23 between September of 1989 and March of 1995; is that  
24 correct?

25 A That's correct.

1 Q And then that takes us up to where, March  
2 '95, you've been with CSX since then?

3 A Yes.

4 Q For those persons on the jury that may not  
5 understand or know, the Association of American Railroads  
6 is the main trade and research organization arm for the  
7 nations railroads; is that true?

8 A We are -- we were the trade aBBOCiation for  
9 the U.S. railroad industry, that's correct.

10 Q And a good deal of your work while you were  
11 with the AAR, as we'll call it, between '89 and '95 was  
12 in the field of ergonomics; is that true?

13 A That's correct.

14 Q Could you define what ergonOMiCB iB?

15 A There are any number of definitions of  
16 ergonomics. ErgonOMiCB is also called human factors  
17 engineering as you've pointed out earlier. It's called  
18 engineering psychology. It's called human ergology. A  
19 half a dozen or so different definitionb.

20 Chiefly, it involves the study of the work  
21 situation considering the interaction between the  
22 individual performing the work, the actual work being  
23 performed, that is the requirements of the tools that are  
24 used, any type of specialized equipment, and the  
25 enviroRlment in which that work iB performed.

1                   The chief aim of the discipline is to try and  
2 match the requirements of the job with the capabilities  
3 of the individual to promote comfort and reduce fatigue  
4 and enhance efficiency.

5           Q        I've seen a phrase that it's fitting the job  
6 to the worker to some extent.

7           A        That's another kind of shirt-sleeve English  
8 term for it, sure.

9           Q        You were within the Safety Research Division  
10 of the Research and Test Department during your time at  
11 the AAR; is that true?

12          A        That's correct.

13          Q        You were located in Washington D.C.?

14          A        The association was located in Washington,  
15 yes.

16          Q        And while there, some of your colleagues that  
17 you worked with in the field of ergonomics were George  
18 Page and Paul McMahan?

19          A        Correct.

20          Q        And do you have a -- do you have a good deal  
21 of respect for their professional abilities and opinions?

22          A        George, I have a great deal of respect for.  
23 I find him to be very credible. Paul tended to be, you  
24 know, less technical and more managerial in his role  
25 there. So it was not so much a peer relationship as it



1 was an employee/employer relationship.

2 Q Okay. They have written a number of  
3 publications and articles in the field of ergonomics and  
4 so have you, correct?

5 A I wouldn't say I've written a number. I've  
6 written some.

7 Q They've written a number, though, right?

8 A They've been active in publication, yes.

9 Q All right. And prior to the time that you  
10 even went to the AAR in '89, Page and McMahan were  
11 investigating and researching ways to improve railroad  
12 profitability and reduce worker injuries; is that true?

13 A They were conducting ergonomic research. I  
14 don't know that I would necessarily represent it as  
15 improving profitability and reducing injuries as the  
16 chief aims. That was one of a number of considerations  
17 that they advanced in advocating ergonomic job design.

18 Q All right. And I want to ask you if you're  
19 familiar with some of Mr. McMahan's articles that  
20 predated your arrival at the AAR that you may have had an  
21 opportunity to look at. Let me show you this first one  
22 here and ask you if you have seen that at some time  
23 before?

24 A This is titled overexertion Injuries, a  
25 National Epidemic. It was presented by Paul B. McMahan

1 at the 1987 meeting of the National Safety Congress.  
2 I've seen the reference. I don't know that I ever really  
3 read the article in full.

4 Q He mentioned in here manual materials  
5 handling involves the physical exertion to lift, lower,  
6 push, pull or carry objects and overexertion injuries  
7 occur when people attempt physical exertionb beyond the  
8 limit of their capabilities. You would generally agree  
9 with that, wouldn't you?

10 MR. MILL13ERG: Objection to the form of the  
11 quebtion.

12 BY MR. SHAPIRO:

13 Q IB there anything --

14 A That's what Paul wrote.

15 Q All right. He said in this article in 1987  
16 that low back pain --

17 MR. MILLBERG: Let me -- if I may interject  
18 just for a moment. I apologize for interrupting,  
19 but if I may just put an objection on the record to  
20 examining the witness about a document he has said  
21 that he has not read. That's my objection.

22 MR. SHAPIRO: That's why I'm going to ask him  
23 whether he agreeb or disagreeb with some of the  
24 excerptionb.

25 THE WIT14ESS: I'd like to see it in the full

ol-

1 context, if you don't mind.

2 MR. SHAPIRO: Sure.

3 THE WITNESS: I'll be glad to read the thing  
4 for you.

5 BY MR. SHAPIRO:

6 Q For example, he said here in this article  
7 that low back pain is the most significant of the  
8 industrial overexertion injuries. Not only is it a  
9 serious physical problem for the individual sufferer but  
10 is a major socio-economic disability as well. Those are  
11 jUBt tWO sentenceb right here.

12 Will you -- it really doesn't matter. I'm  
13 jUSt abking if you agree or dib&gree with the statement.

14 MR. MILLBERG: I'm objection -- I'm objecting  
15 to the hearsay introduction of materials that this  
16 witness has never read. That's my objection.

17 MR. SHAPIRO: I understand.

18 THE WITNESS: Well, about the third sentence  
19 in, in the pasbage that you cited, Paul makes a  
20 reference to Akeson, A-k-e-B-o-n, 1997 (sic).

21 BY MR. SHAPIRO:

22 Q 1987?

23 A 1977.

24 Q Oh, '77?

25 A I'm sorry, yes. And it's not clear from the

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1 context as to whether these are Pauls words or whether  
2 these are conclusions or opinions advanced by the author.

3 Q All right. Thank you, sir.

4 Let me just see if -- there might have been  
5 one or two other points I wanted to ask you about. He  
6 said -- and I'm just asking at this point if you agree  
7 based on your experience that this is an accurate  
8 statement. Overexertion injuries account for 50 percent  
9 of all reported lost time injuries. And he goes into  
10 discussing injuries, and I believe he's referring to the  
11 railroad industry.

12 MR. MILLBERG: Same objection.

13 THE WITNESS: I don't know from the context  
14 and --

15 BY MR. SRAPIRO:

16 Q This was written in 1987. So I presume he  
17 was referring to some statistics prior to 187?

18 MR. MILLBERG: There's a question pending.

19 THE WITNESS: Well, the reference that's  
20 cited to lead this was an analysis of injury data  
21 compiled by the Federal Railroad Administration.

22 BY MR. SHAPIRO:

23 Q Do you think that would be a good source of  
24 information?

25 A That's the data required by law that the

1 railroad's report to the government, certainly.  
2 overexertion injuries account for 50 percent  
3 of all reported 10Bt time injuries. Is that the point  
4 that you were --

5 Q Yes.

6 A -- you were asking about? Okay.

7 Q Can I exchange with you?

8 A Oh, sure.

9 Q It's the same one.

10 A Okay.

11 Q Did you want to continue your answer?

12 A (No audible response.)

13 Q All right. Well, anyway --

14 A Well, they, you know, if the date -- I don't  
15 recall ever reading that particular document. If, you  
16 know, that's what the data showed. I'm trying to recall  
17 the exact format in which injuries are reported to the  
18 FRA.

19 Q All right. Let --

20 A Whether there's an overexertion category or  
21 not, you know, that's kind of a judgment call on the part  
22 of the railroad that's doing the reporting.

23 Q Let me ask you, further down in the article  
24 he says major activities found to be associated with  
25 overexertion injuries in the railroad industry are

1 handling material, handling ties, using tools, et cetera,

2 et cetera. These --

3 A Hand break couplers, switches, sure.

4 Q Would you agree with that?

5 A Not being able to, you know, directly look at  
6 that report, you know, I'd have to go on -- on the  
7 surface of, you know, what is being presented here. Paul  
8 is usually pretty accurate in his citations.

9 Q Then further in this article, I mean, the  
10 point is he's talking about occupational ergonomics and  
11 there's a title Tools for Injury Control and the idea  
12 here is to advance ergonomics as a method to redesign  
13 jobs and to reduce injuries to workers, correct?

14 A That's true, that's what he's going after.  
15 That's the point he needs to make.

16 Q And he talks about the NIOSH -- that's the  
17 National Institute of Occupational Safety and Health --

18 is A Right.

19 Q -- guidelines relating to work practices for  
20 manual lifting; is that true?

21 A It's the NIOSH Work Practices Guide for  
22 Manual Lifting.

23 MR. MILLBERG: State an objection to that  
24 question about NIOSH documents.

25 MR. SHAPIRO: All right.

1 MR. MILLBERG: And I don't want to keep  
2 interrupting.  
3 MR. SHAPIRO: I understand.  
4 MR. MILLBERG: If I can just have a line  
5 objection to that  
6 MR. SHAPIRO: All right.  
7 MR. MILLBERG: -- I'll stay out of your way.  
8 MR. SHAPIRO: Okay.  
9 BY MR. SHAPIRO:  
10 Q Well, on Page 4 here, do you see under Job  
11 Analysis and Design he referred to Ford Motor Company as  
12 another example where they've used biomechanical models?  
13 MR. MILLBERG: Objection.  
14 THE WITNESS: That's the third paragraph  
15 down. That's what it says.  
16 BY MR. SHAPIRO:  
17 Q Were you generally familiar with any of the  
18 ergonomics work that was done at Ford in the 1980s or  
19 late '80s?  
20 MR. MILLBERG: Objection.  
21 THE WITNESS: Not really, no.  
22 BY MR. SHAPIRO:  
23 Q And let me show you this other article  
24 entitled Work Measurement System Create Shared  
25 Responsibility Among Workers at Ford. Is that an article

1 that you'd ever seen before?

2 A lio.

3 Q Do you know who Dr. Michael Schinnick is, an  
4 ergonomist who was a co-author of the article?

5 A I understand that he is the expert that you  
6 have retained in this matter.

7 Q Okay. And did you know he waB an ergonomist  
8 before thib case? Had you ever heard of him before?

9 A I've had dealings with him on cases in the  
10 past, yes.

11 Q And he -- were you aware that he basically  
12 was involved at Ford in designing some ergonomic programs  
13 in the late 19BOB?

14 A No, I was not.

15 MR. SHAPIRO: I guess I'll move to introduce  
16 this as No. 1, the article we were just referring  
17 to.

18 (The document last-above referred to was  
19 marked for identification as Plaintiff's Exhibit No.  
20 1.)

21 BY MR. SHAPIRO:

22 Q Let me show you another document --

23 MR. MILLBERG: Objection for the record.

24 Q -- all right -- dated 1988 that's entitled  
25 Application of the NIOSH Work Practices Guide for Manual

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1 Lifting. It's purported to be authored by Page and  
2 McMahan. Are you familiar with that document?  
3 A I believe I've seen this, yes.  
4 Q And these were your colleagues at the AAR  
5 once you were working there, right?  
6 A That's correct.  
7 Q And this art- -- this article, to summarize  
8 it basically, was an article designed for the railroad  
9 industry professional to get them familiar with the NIOSH  
10 Work PracticeB Guide for Manual Lifting and how to apply  
11 it to tasks in the railroad industry?  
12 A As I recall, that was the intent of the  
13 article, yes.  
14 Q And was that kept at the AAR and made  
15 available to railroad profeBBionals that sought to get a  
16 copy of it?  
17 A To the best of my knowledge, yeB.  
18 MR. SHAPIRO: I move to introduce this as No.  
19 2.  
20 MR. MILLBERG: Objection.  
21 (The document last-above referred to was  
22 marked for identification as Plaintiff's Exhibit No.  
23 2.)  
24 BY MR. SHAPIRO:  
25 Q By 1990 the AAR had developed and synthesized

1 a lot of this material, some of which we just covered in  
2 that article, and decided to present a workshop for the  
3 nation's railroad safety representatives on ergonomics;  
4 is that true?

5 A The intent was to develop an ergonomic  
6 training program for railroad safety professionals. A  
7 series of what we call developmental workshops in which  
8 representatives from different railroads were invited to  
9 participate were held. The intent was to ensure that the  
10 information presented was not overly technical, was  
11 presented at a level that was understandable and  
12 meaningful for railroad safety professionals, give them a  
13 tool that they could go out and apply to jobs that met  
14 the criteria, the assumptions and limitations of the  
15 various models and techniques involved.

16 Q And was that ergonomics workshop first held  
17 in October 1990, or was there one before that?

18 A As I said, there were several developmental  
19 workshops that were held. The time frame, as I recall,  
20 was the late '80s, early '90s. The development of the  
21 guide had been underway for some time.

22 Q Let me show you several documents and ask you  
23 if you can identify those. This one first. It's called  
24 the AAR Ergonomic Guide dated October 19, 1990. And,  
25 naturally, I'm not asking you to read the entire

1 document, but could you tell me if that appears to be  
2 generally familiar to you?

3 A Well, it appears to be a mix of a number of  
4 things, text as well as copies of some of the slides that  
5 were used in workshop. And whether --

6 Q The first portion appearb to be the overhead  
7 slides?

8 A The first portion appears to be that, yes.

9 Q And then was there a -- like a manual or a  
10 seminar, you know, manual that waB given to attendeeb?

11 A As originally conceived, the ergonomic guide  
12 would consist of Beparate sections, the section on  
13 background, the section on techniques, a section on case  
14 studieb illustrating application of the techniqueb, a  
15 system on -- or a section on job design guidelines.

16 There was also Bome consideration at the time  
17 of Betting up in a modular fashion such that a railroad  
18 could build its ergonomic education program around its  
19 own interests or concernb so that you would have, for  
20 example, a module on manual materialb handling, you could  
21 have a module on working hot and cold environments, you  
22 could have a module on slips, tripb and falls or any  
23 other topic area that was addressed in the ergonomic  
24 guide.

25 Q And BO generally this iB different materials

1 that would have been presented at the workshop?

2 A This -- from what I can tell just by glancing  
3 through it, this appears to be the information that would  
4 comprise the low back pain and manual materials handling  
5 module, the text of the guide as well as the overheads  
6 that would have been used.

7 Q Okay. I'm going to go back to some of the  
8 points about that in the firbt seminar. But jUSt BO we  
9 can get some things identified, here's another document  
10 here which is entitled AAR Ergonomic Guide and it's  
11 ergonomics workshop December 1990. And last I have a  
12 document here which is also entitled AAR Ergonomic Guide  
13 and it's called Prerelease Edition. It says 1991.

14 Are these documents that you're generally  
15 familiar with? They look to be different series of  
16 documents.

17 A (No audible response.)

18 Q What I used to guide me was on the top right  
19 of the pages it has draft dates on most of the documents  
20 so I could tell.

21 A Yeah. This second set of documents that you  
22 presented to me would be the, say, second and third  
23 module in that modular approach that I was telling you  
24 about, addressing anthropometry, seating design and  
25 Blips, trips and falls.

1 Q All right. And what is then this third one  
2 here which said Prerelease Edition, what is that, Mr.  
3 Brown? Do you go by Dr. Brown or --

4 A I go by Todd.

5 Q I'll just --

6 A I don't stand on a lot of pretense.

7 Q All right.

8 A If memory serves, this is essentially the  
9 same material that we talked about in the first package.  
10 I didn't see the overheads for training, but essentially  
11 the same material with maybe some modifications on the  
12 basis of feedback received from the workshops, but  
13 essentially addressing low back pain and manual materials  
14 handling put together in the modular format that we  
15 talked about.

16 Q And all of these were presented between 1990  
17 and 1991?

18 A That time period sounds about right, yes.

19 MR. SHAPIRO: Okay. I'm going to ask that  
20 the first guide for '90, October 1990, be marked as  
21 No. 3, the modular part that on the cover here has  
22 December 1990 mark as 4, and the one that's entitled  
23 Prerelease Edition and has a copyright of '91 mark  
24 as No. 5.

25 (The documents last-above referred to were

1 marked for identification as Plaintiff's Exhibit  
2 Nos. 3, 4 and 5.)

3 BY MR. SHAPIRO:

4 Q And at this point I have a few more  
5 questions. And before I get into all the workshops,  
6 there's an article that's apparently written in 1991 that  
7 I wanted to ask you about that you were co-author of, and  
8 it's this one here entitled Ergonomics in the U.S.  
9 Railroad Industry. I wanted to ask about this because it  
10 seems to summarize some of the thoughts that were going  
11 on at workshops.

12 First of all, you're familiar with the  
13 article, right?

14 A Yes, I'm the lead author on it.

15 Q Right. You, Mr. Page and Mr. McMahan wrote  
16 this ergonomics article and -- okay. On the second  
17 column on the right on the first page here, I'm going to  
18 ask about a few BstatementB and I want to see if you can  
19 expound on them.

20 The physically demanding nature of many  
21 railroad crafts coupled with the increased age of  
22 railroad employees, parenthesis, (the average is 45  
23 years), end parenthesis, dictates that special attention  
24 be paid to the capabilities and limitations of the  
25 workers.

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1                   You still stand by that, don't you?  
2           A        Yes.  And I wouldn't just say it's exclusive  
3  problems or concern with the railroad industry --  
4           Q        Yes, sir.  
5           A        -- but of all industries, sure.  
6           Q        Down on the third paragraph on that column  
7  that begins "the ergonomic function," you talked about  
8  the fact that this division of the AAR that you were in,  
9  the Safety Research Division, employs a variety of  
10 methods in its evaluation of employee work practices,  
11 including analysis of accidents/injury data, employees,  
12 surveys, job and task analysis, videotape and still  
13 photography and postural analysis using biomechanical  
14 models.  
15                   You were doing that by 1991, right, if not  
16 earlier?  
17           A        We were doing all those, yes.  
18           Q        Now, the article was written in 1991; is that  
19 correct?  
20           A        Well, it was written in late 1990 and saw the  
21 light of day in March of 1991.  
22           Q        This was published in the Human Factors  
23 Society Bulletin which is an industry publication, right?  
24           A        Human Factors Society Bulletin is a  
25 publication of the Human Factors Society which is a

1 professional society that I belong to. It's not an  
2 industry publication.

3 Q Oh, I'm sorry. Not a railroad industry  
4 publication but more of an ergonomics publication?

5 A Professional publication, yes.

6 Q On Page 2 on the right column on the second  
7 paragraph, I guess it's the first paragraph that begins  
8 there, you were talking about in the last sentence  
9 "alternatively AAR ergonomists have provided management  
10 with solutions that emphaBiZe improved job design and  
11 work practices."

12 A Uh-huh. YeB.

13 Q And --

14 A Where is that?

15 Q The second paragraph up here on the right  
16 side. It's the last -- it's the next to the last  
17 sentence there.

18 A Yes.

19 Q All right. And you mentioned at the end of  
20 the page, you gave an example of railroad spikes that  
21 were at one time in kegs weighing 200 pounds and that one  
22 of the railroads had developed a better method of  
23 packaging the spike. I believe instead of round  
24 containers, for example, they reduced the pound weight  
25 and they shipped them in cardboard boxes --



1           A           Uh-huh, yes.  
2           Q           -- that weren't round either. I think they  
3 were square and they could be stacked.  
4           A           Yes.  
5           Q           And essentially in this article you were  
6 summarizing a lot of the different things that the AAR  
7 had been providing to the railroad to assist them with  
8 ergonomic analysis, right?  
9           A           Chiefly, the reBUltS of the research that we  
10 had been conducting and the information that we had been  
11 gathering to educate railroad safety professionals.  
12          Q           And since I'm going to go through some of the  
13 blowups here from the seminar, I'm not going to beat this  
14 too far here on the article, but --  
15          A           Okay.  
16          Q           -- you talked about NIOSH guidelines, you  
17 talked about biomechanical models which software was  
18 developed to do biomechanical modelb.  
19          A           Uh-huh.  
20          Q           And you mentioned here on Page 3 that work  
21 was progressing on evaluated track maintenance operations  
22 and a top-down analysis of track maintenance work  
23 practices for one thing.  
24          A           Yes.  
25          Q           And then you mention a number of other

1 points.

2 A Uh-huh.

3 Q All right. Let's go back to some of the  
4 points that were discussed in the workshop.

5 MR. SHAPIRO: I'm going to aBk that this be  
6 marked as Wo. 6.

7 (The document last-above referred to was  
8 marked for identification as Plaintiff'B Exhibit No.  
9 6.)

10 BY MR. SHAPIRO:

11 Q At this point I'm going to refer you to thOBe  
12 other binder clipped -- the blowups here, and I want to  
13 refer to this easel if we could. I'm referring back to  
14 the October 1990 Beminar that was held in WaBhington.  
15 And on this page here this was, I guess, the -- obviously  
16 the syllabus of what was going to go on at the seminar.  
17 And you were a presenter of a number of the particular  
18 topics, weren't you?

19 A Now, according to this I was going to discuss  
20 the analysis of medical and safety data and job design  
21 for manual materials handling case studies.

22 Q And some of your topics involved looking at  
23 that medical and safety data and how the professional  
24 could look at that, use that in a constructive way in  
25 reducing injuries, correct?

1 A Well, looking at it as a means of focusing  
2 one's attention on potential problem areas.

3 Q It -- obviously we talked about some of  
4 these. There was guidance here on using biomechanical  
5 modelb, changing jobs, redesigning jobs, using the NIOSH  
6 Work Practices Guide, et cetera, correct?

7 A That's what it says.

8 Q And at that October seminar in 1990 it  
9 included some of the personnel that were at the Beminar,  
10 and I wanted to focus your attention on Joe McCall with  
11 CSX, who you now work with, was there, right?

12 A Joe was listed as a potential attendee. As I  
13 recall, thib list was prepared in advance and conbisted  
14 of people who had indicated that they would attend. Now,  
15 whether Joe was there or not at that particular workshop,  
16 I can't recall specifically.

17 Q If he wasn't there in October, you certainly  
18 remember him being at one of the other seminars, don't  
19 you? I mean, this presentation was repeated in some  
20 changed wayb in December, right?

21 A I don't recall.

22 Q You know Sandy Hall, right?

23 A I met Sandy at these workshops and recall her  
24 attendance at some. I can't say that she attended all of  
25 them.

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1 Q She has the materials, though?

2 A She received materials for review. She was  
3 identified by CSX as a participant in this review process  
4 to essentially, like I say, ensure that the information  
5 was accurate and at a level that could be understood by  
6 railroad safety professionals.

7 Q is she still with CSX today?

8 A Yes, she is.

9 Q And is Mr. McCall still with CSX?

10 A I believe so.

11 Q And these are colleagues that you work with  
12 daily, right?

13 A I wouldn't say daily. We work from time to  
14 time on different things.

15 Q Are you both located here in the same office?

16 A Joe and Sandy are located in the Safety  
17 Department. They're on the eighth floor. I'm located in  
18 the Medical Department here on the second floor.

19 Q Okay. And Mr. Robey from Norfolk Southern  
20 there, a person who is their main ergonomist was listed  
21 as being present at the workshop, correct?

22 A Bill Robey also attended a number of those  
23 workshops. That's where I met him. Whether he was at  
24 that particular one, I can't say. Again, this was a  
25 pre-workshop list. It was developed on the basis of

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1 people who said they would attend if possible.

2 Q In other words, they pre-regibtered for the  
3 seminar?

4 A Well, there was no cost involved other than,  
5 you know, the tickets up there.

6 Q Right. And some of the other nations  
7 railroads were there. Amtrak was reprebented, Union  
8 Pacific and so on and BO forth.

9 A Again, they were pre-registered. You know,  
10 some people attended some, some people attended all of  
11 them.

12 ThiB was a definition of ergonomics that was  
13 listed in the workshop materials and we talked about it  
14 earlier. Ergonomics means fitting jobs to people and  
15 that frequently the causeb Of injuries, illnesses,  
16 accidents and job performance errors or mistakes can be  
17 traced to the very tools we use in the requirements of  
18 is the work itbelf. Tools and equipment are often designed  
19 without consideration of the capabilities of people who  
20 operate them.

21 That's a good definition of ergonomics, isn't  
22 it?

23 A Well, some of what was going on here was a  
24 hard sell by Paul McMahan of ergonomics to the industry.  
25 There were occasions where both George Page and I took

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1 exception to some of the assertions that were advanced by  
2 Paul in the guide. However, he retained editorial  
3 control of the document, if you will.

4 And I think what you see here is ergonomics  
5 means fitting jobs to people. I have no problem with  
6 that. Ergonomics is concerned with the interaction  
7 between the work environment and the worker. You know,  
8 I -- right up front we talked about that, and I told you  
9 that that's something that, you know, I work with.

10 Frequently the causes of injuries, illnesses,  
11 et cetera, et cetera, that's where the marketing comes  
12 in, creating a sense -- trying to create a sense of need  
13 for this product, if you will, of the AAR.

14 Q You're representing to the railroad  
15 professional at the workshops, right?

16 A Right.

17 Q Well, do you agree with this: Some jobs  
18 require excessive repetitive movements of the hand or  
19 wrist. Other jobs may require workers to perform tasks  
20 in uncomfortable bent-over positions. I mean, lots of  
21 different jobs have situations like that, and that's one  
22 of the reasons ergonomics is designed to correct those  
23 problems, isn't it?

24 A I don't know the context that Paul was  
25 referring to in that statement. I don't know whether he

1 was referring to railroad jobs. I don't know whether he  
2 was referring to jobs in general. Again, as I said, this  
3 was a rather indelicate hard sell of the discipline.

4 Q All right. Some of these other blowups, I've  
5 taken some of the overheads. They might not have been  
6 exactly in this fashion, but in the copy that we had we  
7 just used some that we felt were important to your  
8 deposition. But this one just basically outlined that  
9 Mr. McMahan, yourself, Mr. Page and Mr. Wilker were  
10 taking part. It talked about the goals of the guide, and  
11 certainly one of the goals was to target the job  
12 analyst.

13 Now, what does that mean? Does that mean any  
14 person with the railroad that waB going to go out and  
15 assess the ergonomics of a particular task?

16 A The goal of the program was to improve  
17 safety, health and productivity; the objective, provide  
18 the basic training. The target for that training was  
19 what waB generally referred to as the job analyst,  
20 someone involved in safety, health, ergonomics, what have  
21 you, as indicated there, someone who would go out and  
22 look at the jobs.

23 Q All right. Certainly, your efforts in the  
24 workshop to improve the understanding of the  
25 professionals there would be futile if the job analyst

1 didn't go out in the workplace and start applying the  
2 principles, right?

3 A I wouldn't say they'd be futile. I'd say it  
4 would certainly be frustrating.

5 Q Okay. And some of the application areas that  
6 you were talking about were the job design, and there's  
7 how the job -- the materials in question would be handled  
8 in the job in the workplace, avoiding repetitive stress  
9 injuries, avoiding overfatigue and discomfort of the  
10 worker, equipment design. You're talking here about  
11 looking at the debigns and POSBibly re-engineering them  
12 if necessary or feabile, correct?

13 A YeB.

14 Q Looking at vibration, heat, cold, noise?

15 A Yes.

16 Q And for people that were office workers  
17 looking at changes in those respects, right?

18 A Correct.

19 Q This was not part of the seminar, but I saw  
20 this in another industry publication and I wanted to ask  
21 you if you can read -- take a look at these 12 items and  
22 tell me whether you agree these are all good, fundamental  
23 principles of ergonomics.

24 MR. MILLBERG: Objection. You can answer.

25 THE WITNESS: Well, there'B some subjective



words in a lot of thOBe 12 points.

2 BY MR. SHAPIRO:

3 Q All of these --

4 A Yet, you have to be -- it's almost a one size  
5 fits all 12-point approach to ergonomics. In many  
6 respects, ergonomics is very Bpecific to the job or the  
7 task that you're looking at.

8 Q So, in other words, not every one of these 12  
9 is going to apply to every particular job task, but in  
10 general terms these are things you'd be looking at that  
11 could apply or they might not apply, right?

12 A They may or may not apply, but, then again,  
13 there's a highly subjective flavor to a number of these.  
14 No. 3, reduce excessive forces. Wo one knows what  
15 exceBBive force is. OSHA can't tell you what excessive  
16 force is.

17 Reduce excess repetition. OSHA can't define  
18 repetition, let alone what excessive repetition iB. YOU  
19 know, provide adjustability and change of posture. You  
20 know, where? When? Maintain a comfortable environment.  
21 You know, what's comfortable for me iB freezing for my  
22 wife. This is a --

23 Q Have you seen this before?

24 A I've never seen that before, no.

25 Q I didn't know if it was something that you

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1 had seen.

2 A You know, keep everything in easy reach.  
3 Okay. Where are you going to do your work? You know,  
4 there are a number of, for lack of a better term,  
5 moderators, that need to take into consideration when  
6 you're looking at work. And this is -- this is almost  
7 ergonomics almost reduced to the absurd, in my opinion.

8 Q These are back to the blowups from the actual  
9 workshop. This particular blowup was talking about job  
10 analysis techniques and it BAYS tools to identify and  
11 evaluate a problem, analyze it to safety data.

12 Would that be looking at accident reports and  
13 injury reports involved in a particular work task? Would  
14 that be one aspect of looking at the safety data?

15 A What was being discussed there is, as I  
16 recall, was taking something like company injury records  
17 or FRA data, performing statistical analyses to get an  
18 idea of incident rate and prevalence of types of injuries and  
19 using that information to target your efforts for  
20 subsequent job analysis techniques such as manual  
21 lifting, biomechanics, fatigue assessment, posture  
22 analysis, that sort of thing.

23 Q Is it important to analyze posture in a job  
24 task?

25 A It depends on the job.

1 Q You want to avoid awkward postures in a job  
2 that are repeated, don't you?

3 MR. MILLBERG: Objection; it's vague.

4 THE WITNESS: It's a matter of frequency and  
5 duration.

6 BY MR. SHAPIRO:

7 Q All right. Here there was this graphic that  
8 was presented that overexertion was linked to 61 percent  
9 of low back pain.

10 Do you recall, is this from railroad records  
11 or industry records in general?

12 A I don't recall.

13 Q In looking at low back injuries and analyzing  
14 jobs, this particular graphic talked about four  
15 particular items, the medical and safety data, the NIOSH  
16 Work Practice Guide, biomechanical analysis and  
17 surveying the workers.

18 Now, of these four only one of them involves  
19 getting into the workforce and talking to the workers,  
20 and that's the last one, right?

21 A well, to conduct a job analysis using either  
22 a biomechanical model or the NIOSH Work Practice Guide  
23 you would have to be in the workforce and observe the  
24 work.

25 Q So you'd have to -- the job analyst has to

1 get out there and look at the particular job?

2 A YeB.

3 Q And some of the basics that were highlighted  
4 in this graphic were that the risk of injury would  
5 increase with how far away the object was from the body,  
6 how heavy the object is, how often it's lifted and  
7 whether there's any twisting or bending involved, right?

8 A Those are some of the risk factors that have  
9 been cited. Again, the risk, these are not absolute.  
10 They are moderated by how often the activity occurs as  
11 indicated in the third bullet and also the duration of  
12 the activity, a lift and carry versus just a lift and a  
13 place, for example.

14 Q Okay. The manual in that first workshop gave  
15 this list here of what the job analyst should do in  
16 looking at a particular job. And there was a  
17 checklist -- and I think we'll find that later in the  
18 blowups here -- and that was provided to the railroad  
19 professionals for use in the workplace, right?

20 A That was provided in the ergonomics guide and  
21 to attendees at the workshop.

22 Q Looking at the technical and scientific  
23 literature and the workshop gave examples of methods to  
24 utilize in looking at the job, and then the manual talked  
25 about ways to ergonomically alter the job such as using

1 engineering controls.

2 Now, an engineering control, would that  
3 include altering a piece of equipment?

4 MR. MILLBERG: Objection to the dialogue that  
5 precedes the question, or monologue, actually. Go  
6 ahead.

7 MR. SHAPIRO: All right.

8 THE WITNESS: Well, what you see here is  
9 essentially what we talked about earlier as an  
10 overview of the different sections of the guide, the  
11 background -- give you a little bit of  
12 orientation to the particular topic under  
13 consideration. It worked in hot and cold  
14 environment, slips and falls, whatever, how you  
15 could analyze a job, how if you think you have an  
16 issue in a job design you could redesign the job,  
17 provides reference on which the analysis methods of  
18 the job redesign methods are based. It also  
19 provided case studies illustrating how you might use  
20 the method and what you might do to accomplish a job  
21 redesign.

22 BY MR. SHAPIRO:

23 Q One example of an engineering control is  
24 changing equipment, as it says here, right?

25 A An engineering control, sure, would be a

1 redesign of the equipment.

2 Q And one example of an adminibtrative control  
3 would be rotating workers in and out of a particular  
4 repetitive job, for example?

5 A Work rotation is a traditional administrative  
6 control, yes.

7 Q Okay. This is a particular checklist for low  
8 back pain injuries as opposed to other types of injuries  
9 that the professional might be looking at; is that true?

10 A That waB the checklist that was produced for  
11 low back pain section.

12 Q One thing mentioned down here was whether  
13 there's whole body vibration in the task, correct?

14 A YeB.

15 Q What if there's whole body vibration during  
16 the entire workday, what would be the concern then?

17 MR. MILLBERG: Objection.

18 THE WITNESS: The issue there, as I recall,  
19 was there was some evidence to suggebt that  
20 over-the-road truck drivers seemed to have a  
21 Bomewhat higher incidence of low back pain.

22 BY MR. SHAPIRO:

23 Q Is there any Btandard to measure vibration  
24 and to decide exactly what's dangerous and what's not?

25 A No, there iB not.

1 Q So it's just something you have to look at,  
2 and if it's repetitive maybe deal with it the best way  
3 you can?

4 MR. MILLBERG: Objection.

5 THE WITNESS: I don't know what the basis for  
6 the inclusion of that particular point or most of  
7 these points in the checklist was, you know. This  
8 material had been developed prior to my arrival at  
9 the AAR.

10 MR. SRAPIRO: Okay. Thank you.

11 Let'B just take a quick break.

12 (Whereupon, a short recess was taken, after  
13 which the deposition waB resumed as follows:)

14 BY MR. SELAPIRO:

15 Q We just flipped the page. Okay. Tell us --  
16 this is another graphic from -- I believe this iB from  
17 the workbhop also in October 190. And this particular  
18 one was headed Why Monitor Employee Medical and Safety  
19 Data, and basically it was giving the reasonb why you  
20 should look at the injury reports or the safety records,  
21 and if there's -- certainly if there's some history of a  
22 problem with prior injuries or lots of prior injuries,  
23 that would be a topic that would make the job analyst  
24 look at that particular task, right?

25 A If you see a particularly high incidence or

1 prevalence of injuries within a certain craft group or  
2 within a certain plant area, certainly that is a red flag  
3 or an area that you would want to concentrate your  
4 efforts on.

5 Q The NIOSH Work Practices Guide came out what,  
6 in 1981; is that true?

7 A FirBt published in 1981, yes.

8 Q And it's been looked at and it's been a good,  
9 handy guide utilized by ergonomists out in the field,  
10 correct?

11 A I wouldn't necessarily characterize it that  
12 way.

13 Q It has its limitations but it's been useful,  
14 hasn't it, to the extent --

15 A Well, the NIOSH Work Practices Guide has a  
16 number of limitations. I think probably the biggest  
17 indictment of the work practices guide came -- and  
18 is biomechanical models, for that matter, came in the  
19 Beverly Enterprises case where OSHA tried to cite Beverly  
20 Enterprises for failing to provide a safe workplace given  
21 the NIOSH Work Practices Guide and biomechanical  
22 considerations in manual lifting tasks, and the citation  
23 was overturned.

24 Q okay. I don't want you to get into  
25 specific --



1 MR. MILLBERG: Well, let him --  
2 MR. SHAPIRO: -- diSCUSBion. The general  
3 topics is fine.  
4 MR. MILLBERG: Excuse me.  
5 MR. SHAPIRO: Okay.  
6 MR. MILLBERG: Let him finibh his answer.  
7 THE WITNESS: So, you know, clearly I think  
8 that that'B an indictment of the limitations of some  
9 of thebe, you know, so-called bedrock or foundation  
10 documents in ergonomics.  
11 BY MR. SHAPIRO:  
12 Q Do they have no use for the ergonomic  
13 professional?  
14 A I don't neceSBarily need the NIOSH Work  
15 Practices Guide or a biomechanical model to --  
16 Q It was presented to the workshop attendees,  
17 wasn't it?  
18 A It was presented as a vehicle to provide a  
19 fundamental understanding of some of the issues that you  
20 Bould consider, you should look at when you're looking  
21 at, in thib case, a manual lifting task.  
22 Q And this particular graphic highlights that  
23 the job analyst needs to measure with some yardstick or a  
24 tape measure certain height, vertical heights,  
25 essentially take measurements at different POBitions in a

1 lift in order to put those variables into first, I gueBS,  
2 the work practices guides?

3 A That was actually a -- an example taken from  
4 the guide itself. It was presented as these are the data  
5 points that you need to gather in order to, you know, run  
6 through the equation. As I recall, one of the comments  
7 in the workshop shop was where on the railroad is there a  
8 task like that.

9 Q These other graphics were pertaining to UBing  
10 biological -- a biomechanical model, excuse me, and there  
11 are some limitations in 14IOSH Work Practices Guide with  
12 more complicated work tabks so the biomechanical modelb  
13 were explained to be in some ways more accurate with  
14 these other types of job tasks; is that correct?

15 A Not necessarily accurate. The biomechanical  
16 models were presented aB a means of evaluating task --  
17 tasks, excuse me, that you could not evaluate using the  
18 NIOSH Work Practices Guide.

19 Q And, for example, in this particular blowup  
20 of the graphic there are a few more measurements that  
21 need to be looked at in the biomechanical model; is that  
22 correct?

23 A The biomechanical model you essentially enter  
24 the angles of various body segments derived from the  
25 posture that is assumed by a worker in the course of the

1 exertion.

2 Q Did -- at this time in this workbhop, did the  
3 AAR make available software on biomechanical modeling to  
4 the participants?

5 A As I recall, Paul had developed a two  
6 dimensional static biomechanical model that could be run  
7 on, I think it was a Radio Shack computer, and I think  
8 that that was made available to people who were  
9 interested in it.

10 Q That's been modified and improved, hasn't it?

11 A Well, the University of Michigan is in the  
12 businesS, to give you an example, of updating and selling  
13 biomechanical models, both a two-dimensional and a  
14 three-dimensional version.

15 Q Well, some of the literature here indicates  
16 the AAR is making available the Boftware to the railroads  
17 free in order to do the biomechanical modeling; iB that  
18 true?

19 A I don't think it'B true any longer. I think  
20 the original software waB made available free, but during  
21 my tenure at the AAR I don't recall any effort being made  
22 to enhance or upgrade the software.

23 Q What about here at CSX, do you use  
24 biomechanical modeling software?

25 A Do I use biomechanical software?

1 Q Is it available here at CSX?  
2 A Joe McCall did some biomechanical analyses, I  
3 believe, on work done by electricianb. Do I use  
4 biomechanical modeling and software? For a while I had a  
5 beta version of the University of Michigan  
6 three-dimensional static strength prediction program more  
7 from an evaluative "is this something that you can use  
8 and tell us where the problems are so we can debug it"  
9 prerelease version. But I do not -- I put in for the  
10 three-dimensional static strength prediction program  
11 software in next year's budget. I don't have it yet.  
12 Q From the University of Michigan?  
13 A From the University of Michigan.  
14 Q Have you used any biomechanical modeling  
15 software in the last year?  
16 A I'm trying to recall. Other than the Beta  
17 version jUBt to confirm some thoughts that I had or to  
18 test some -- or look at some things, not really, no.  
19 Q Have you seen Mr. McCall's software that he  
20 had used as early as 1991?  
21 A I've seen the outputs from that program.  
22 Q He still has that available, doesn't he?  
23 A I don't know.  
24 Q You haven't seen anything that Mr. McCall's  
25 done with any of his software since 1991? in other

1 words, you've been there in the last year I understand,  
2 but have you seen any of hiB work that he did earlier  
3 than that?

4 A In talking to him I believe I recall him  
5 saying that about all he did were the two or three  
6 evaluations of the electricians. I may be wrong on that,  
7 though.

8 Q So the biomechanical modeling is or is not  
9 helpful to the ergonomist now?

10 A Biomechanical modeling may be useful to test  
11 some aSBUMptiOnS or to confirm some suspicions or --

12 Q Do you recognize what this is?

13 MR. MILLBERG: Well, let's get --

14 THE WITNESS: That's --

15 MR. SHAPIRO: I didn't stop him. I'm sorry.

16 Go ahead.

17 THE WITNESS: That's about it. Again, as I  
18 was going to say, I don't rely exclusively on  
19 biomechanical modeling software to tell me if I've  
20 got a problem with the job or not.

21 BY MR. SHAPIRO:

22 Q Can you tell it without the modeling  
23 sometimes?

24 A I think usually a good ergonomist can look at  
25 a job and on the basis of his training and experience

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1 determine whether or not it's a problem.

2 Q Okay. This blowup here, this was not from  
3 the workshop guides itself, but I'm going to ask you if  
4 you recognize this type of printout?

5 A That looks like a screen that would be  
6 provided by a two-dimensional model. Now, whether that  
7 was the AAR version of the software or whether it was a  
8 University of Michigan version of the software, I can't  
9 tell just on the way it's presented.

10 Q Does this look like the kind of software that  
11 Mr. McCall had?

12 A Well, it says analyst J. M. McCall.

13 Q I didn't want to put any words in your  
14 mouth. I realize that.

15 Okay. In any way -- in any case, this  
16 particular software would show the ergonomist the  
17 percentage of males and females that would generally in  
18 the population be capable of doing a particular task as  
19 far as the particular joint of their body affected,  
20 right?

21 A Right.

22 Q And it would also -- this AL and MPL refers  
23 to the action limit and the maximum permissible limit  
24 from NIOSH guides, isn't it?

25 A Well, the biomechanical model produces an

1 index of back compression. Technically speaking, what  
2 the NIOSH Work Practices Guide gives you in terms of the  
3 AL, the action limit, and the MPL, the maximum  
4 permissible limit, is a weight that can be lifted.

5 Q Okay. These figures here, these are the  
6 individual measurements of the height, the vertical  
7 positioning of the particular item being handed or  
8 lifted, correct?

9 A On the baSiB of the postural data that is  
10 entered, the model comes up with an optimum posture or a  
11 posture, an arrangement of the body, and it then  
12 calculates the H distance, that is the horizontal  
13 distance of the center of the load or the hands from the  
14 body, the vertical distance or the height of the load to  
15 be lifted from the ground, the distance from the L5-S1  
16 joint, that's the fifth lumbar vertebrae sacrum to the  
17 hand, and that the L5-S1 is assumed to be the rotation or  
18 flexion point for the upper body.

19 Q That's the very low point in the back?

20 A The low back.

21 Q All right. These figures can be obtained  
22 simply with a tape measure or a yardstick and with the  
23 job analyst out in the field to carefully take these  
24 measurements; is that correct?

25 A Actually --

2 Q Except for the weight of the object, i  
3 suppose.

4 A Well, the weight of the object you can  
5 clearly weigh. The posture data you can derive using a  
6 still photograph and a protractor.

7 Q Okay. What about a digitized photograph?

8 A You can, you know, digitize a photograph the  
9 same way --

10 Q Do you know how Mr. McCall did it, whether he  
11 used a protractor or a digitized photograph?

12 A I don't know, no.

13 Q How do you do it with a protractor if you  
14 don't digitize an actual photograph of the posture?

15 A Well, there are any number of data  
16 acquisition devices that are available. There are some  
17 fairly sophisticated front end data capture programs  
18 that, like you say, will take a frame by frame digital  
19 analysis of work postures over the course of the  
20 particular task and will literally provide a screen like  
21 this for each posture. But, basically, what it then goes  
22 into is either -- it feeds that postural data either into  
23 a 2D or a 3D model.

24 Q What's the poor man's method --

25 A The poor man's method is you have the still  
photograph taken from the side and you go in and you



1 measure the angles with the protractor.

2 Q Right on top of the photograph?

3 A Right on top of the photograph, sure.

4 Q Okay.

5 A All you're doing is basically you're drawing  
6 horizontal lines at each of these articulations and then  
7 measuring the angle.

8 Q Okay.

9 A And, as I say, the program, there's certain  
10 assumptions, there's an optimization routine built in in  
11 which the program itself is making certain assumptions  
12 about given the particular anthropometry entered, given  
13 the gender of the worker that's entered, it assumes  
14 certain orientationb of the body.

15 You know, one of the problems both with the  
16 biomechanical model and the VIOSH Work Practices Guide is  
17 that they neglect certain micropostural considerations  
18 and that is -- particularly with regard to the low back  
19 it is making assumptions about what the low back is  
20 going, what is the posture of the low back. is it  
21 flexed? Is it extended? What's going on there?

22 And all of thOBe can have a bearing or a  
23 consideration -- that's why -- on what's happening to the  
24 lumbar spine in the worker. That's why I don't rely  
25 exclusively on these things. I want to go out. I want

1 to see, you know, is the guy jerking and pressing like  
2 an -- like an Olympic weight lifter? You know, is he  
3 flexing his low back? Do you see a lot of kyphosis?  
4 That is where they're rotating their low back inward.

5 Q Is this the -- we talked about earlier, is  
6 this the table that was in the workshop guides to allow  
7 the job analyst to enter a number of the variables on the  
8 movement in the lift in order to calculate things?

9 A That basically was provided as a data  
10 collection device where they could go in and make the  
11 measurementb that we talked about earlier, the horizontal  
12 location of the hands, the vertical location of the  
13 hande, that sort of the thing.

14 Q Okay. Then this WaB -- I believe when you  
15 referred earlier to thebe three large exhibits, which  
16 were the workshop guides and materials, the last one from  
17 1991 had a table of contents. And this appears to be --  
18 now, I've edited this to make it fit on one page. This  
19 appears to be the table of contents from the -- that was  
20 outlined in the 1991 workshop -- not a workbhop but in  
21 the ergonomic guide.

22 A That being the prerelease edition?

23 Q Yes. I think it's here.

24 I'm sorry. It might not be that page. It's  
25 further in, I suppose.

1 A I don't see it.  
2 Q Let me take a look here.  
3 Just to compare that page and the next page.  
4 A Oh, okay.  
5 Q It's the one after it when you pass the --  
6 A I didn't go far enough.  
7 Q -- acknowledgments.  
8 A Okay.  
9 Q There you go. I just merged them together  
10 for the blowup.  
11 A okay.  
12 Q All right.  
13 A That, I assume, is what was published with  
14 it.  
15 Q So this waB the table of contents from the  
16 prerelease guide which was similar to the October 190  
17 workshop. There might have been some slight changes.  
18 You were listed as an editor along with Messrs. Page,  
19 McMahan and Wilker.  
20 A Uh-huh.  
21 Q And it said here, "We greatly acknowledge the  
22 following individuals who carefully critiqued these  
23 materials at our first workshop on this subject. We have  
24 tried to implement their recommendations where possible.  
25 Through their assistance we feel this product will better

1 serve the railroad industry.,, And it included two  
2 individuals from csx --  
3 A There's Sandy.  
4 Q -- Sandy Hall and Joe McCall.  
5 A Okay.  
6 Q Some of the other railroads also contributed  
7 including Southern Amtrak. No, I'm sorry. @trak's not  
8 mentioned, is it?  
9 So you would agree that Mr. McCall and Ms.  
10 Hall obviously reviewed the materials and assisted the  
11 AAR with cormmentb?  
12 A Well, that's what it sayb.  
13 Q This is a table that I took from the 1991  
14 Prerelease Guide, and this is a pretty familiar graph  
15 that YOU Bee in the ergonomics guide, isn't it, adopted  
16 from the NIOSH Work Practices Guides?  
17 A WaB that in the '90 -- I never saw ultimately  
18 the Prerelease Edition of Unit 1. Was that in there?  
19 Q I believe it was.  
20 A Okay.  
21 Q You're familiar with that table, right?  
22 You've seen that?  
23 A I've seen a variant of it, yes. Okay.  
24 Q And ebsentially what this table doeb in a  
25 handy one-page easily readable chart is indicate, for

1 example, this is the amount of inches or feet away from  
2 the center point of the stance of the worker.

3 A Uh-huh.

4 Q And, for example, if the worker is holding  
5 something between 12 inches and 24 inches away from the  
6 center point of his posture and he's holding it less than  
7 20 inches off the ground, that indicates in a handy way  
8 that he should not be lifting more than 20 pounds at that  
9 position; is that true?

10 A Now, for the assumptions made in the  
11 calculation, that's what it's essentially trying to  
12 illustrate, sure.

13 Q Or just to give a different example, if the  
14 worker is holding something out from his body or her body  
15 12 inches or more at this level, say, at the top of the  
16 shoulders, there shouldn't be more than 20 pounds being  
17 lifted at that quadrant; is that correct?

18 A Subject to the assumptions made, that's what  
19 it's saying, yes.

20 Q And it has some things that -- these were all  
21 in the 1991 guide there -- talks about some little points  
22 in relation to the table, and it says jobs involving  
23 frequent lifting require careful analysis and design, but  
24 as a general rule consider that frequently lifted loads  
25 should be at least 50 percent smaller than the value

1 shown.

2 That was presented at the workshop, wasn't  
3 it, or in the guides in 1991?

4 A Again, I don't recall seeing that, but that's  
5 what it says.

6 Q And this is another way of expressing the  
7 figures and the quadrants that we just saw on the  
8 previous table. This is just showing similar data in a  
9 different way. In other words, this is sort of the point  
10 where the person would be standing ground zero, this is  
11 the number of inches moving out from their center of  
12 gravity, this is the amount of pounds they could hold,  
13 and as it moves away from their body the amount that they  
14 can carry moves down.

15 A Well, that doesn't consider the vertical  
16 location of the load as the previous graphic did.

17 Q Right.

18 A But that -- that is essentially a  
19 reproduction probably taken from the 1981 NIOSH document.

20 Q I'm sorry. I think that concludes the  
21 blowups.

22 Now, since you joined CSX in '95 you've  
23 become a colleague of Mr. McCall and Ms. Hall, right?  
24 You've worked together with them?

25 A We are co-workers, yes.

1 Q And do you feel they have Bolid skillb in  
2 order to do ergonomic analysis as a result of their  
3 involvement in the workshOPB in '90 and '91?

4 A That's a tough call to make. I think both  
5 Sandy and Joe bring a number of years of practical  
6 experience to their positions. Certainly, they have had  
7 exposure to things that I have not and the converse is  
8 true.

9 The intent of the training that they were  
10 provided by the AAR waB to acquaint them with basic  
11 ergonomic principles and allow them to perform curbory  
12 ergonomic analySiB. The intent was not to turn them into  
13 degreed ergonomists.

14 Q I understand that. But Mr. McCall did some  
15 ergonomic assebaments utilizing some of the materials he  
16 learned, and he did those as early at 1991, didn't he?

17 A That's true.

18 Q And he did them of electricians at CSX.  
19 You're aware of that, right?

20 A Yes, I am.

21 Q He had biomechanical modeling, in other  
22 words, he had software. We know that, right?

23 A Clearly.

24 Q Have you been made aware of any written  
25 ergonomic job analyses by any CSX personnel of any type

1 of trackman or track laborer that was done prior to the  
2 summer of 1993?

3 A I can't recall any, no.

4 Q What about of the brazing saw activity of a  
5 track laborer prior to the summer of 1993?

6 A I have not seen any, no.

7 Q What about any ergonomic analysis of the  
8 handling of kegB of railroad spikes prior to the summer  
9 of 1993 at CSX by CSX personnel?

10 A I am not aware of any, no.

11 Q Since the summer of '93, moving forward, are  
12 you aware of any ergonomic analysis in writing between  
13 that time and, let's say, the end of 1994 of track work  
14 of any kind done at CSX?

15 A I am not aware of any, no.

16 Q Okay. Are you aware of any ergonomic  
17 analysis that were done of brakeman or of engineers in  
18 the period 1993 or 1994 by CSX personnel in any of their  
19 work tasks?

20 A I'm not aware of any, no.

21 Q To the best of your knowledge, you, Mr.  
22 McCall and Ms. Hall do not have any @ made available  
23 software on biomechanical modeling besides the Beta  
24 version that you said you had before?

25 MR. MILLBERG: I would object to what other



1 people have.

2 MR. SHAPIRO: I'm asking from his knowledge.

3 MR. MILLBERG: He's already testified at some  
4 length about -- it's obvious that Mr. McCall has  
5 something because you've been cross-examining him  
6 about it.

7 MR. SHAPIRO: Right.

8 BY MR. SHAPIRO:

9 Q Well, you previously said Mr. McCall had some  
10 biomechanical modeling material. Do you know whether he  
11 still has it?

12 A I do not know.

13 Q What about Ms. Hall, do you know if she has  
14 any biomechanical modeling software?

15 A There were some spreadsheet based application  
16 programs for the NIOSH Work Practices Guide that were  
17 developed as companion information to the workshop.  
18 Whether and to what extent that information was made  
19 available to AAR member roads, I don't know.

20 Q Well, let me just put it this way: Are you  
21 testifying that there is no AAR made available software  
22 used by any of the ergonomists here at CSX as best as you  
23 know?

24 A I can't testify to that. I'm telling you  
25 that there was information made available. I have copies

1 of it on my computer at home.  
2 Q Okay.  
3 A But whether they have it here in the office  
4 and use it, I don't know.  
5 Q Do you use it as part of your work at all?  
6 A On occasion.  
7 Q Well, if we make a request to counsel for the  
8 railroad to produce it, what would be involved in you  
9 making available a copy of the software, just duplicating  
10 the disk?  
11 A Just putting it on a disk.  
12 Q All right. Do you have manualb that explain  
13 how to use the software or any materials?  
14 A That I would have to check on. I don't  
15 know. I would have to look in some of my moving boxes.  
16 Q Who at the AAR was the person that was in  
17 charge of distributing the software when you were there  
18 up until 195?  
19 A Tim Jones, who was a colleague of mine at the  
20 AAR, he replaced George Page there.  
21 Q Is he still there as best you know?  
22 A To the best of my knowledge, yes.  
23 Q All right. What is the title -- what's the  
24 name of the AAR software? Does it have a name that you  
25 knew of?

1           A           It was really just, like I say, a spreadsheet  
2 application and I think it was just designated VIOSH.WPG  
3 for word practices guide.

4           Q           And obviously it's been updated, but this is  
5 the similar material that was made available in '91 with  
6 updates?

7                       MR. MILLBERG: Objection to the form of the  
8 question.

9                       THE WITNESS: I don't recall whether there  
10 was NIOSH spreadsheet software made available to the  
11 attendees of developmental workshops. The software  
12 that I'm thinking about probably was developed  
13 around '93 or '94.

14 BY MR. SRAPIRO:

15           Q           So there have been two -- there's been two  
16 different kinds then you're describing? There WaB  
17 Bome that was --

18           A           Well, there was some that waB available that,  
19 you know, Paul developed --

20           Q           All right.

21           A           -- as we talked about earlier. That would  
22 have been his version or his take of the 2D biomechanical  
23 model. Then there was a spreadsheet application, like I  
24 say, where you just plug in numbers and that was for the  
25 NIOSH Work Practicea Guide.

1 Q And that's what you have at home?

2 A And that's what I have at home.

3 Q All right. Let me switch gears now back to  
4 the ergonomic training in general and what the job  
5 analyst does.

6 It's important for the job analyst to take  
7 the ergonomic material knowledge into the workplace and  
8 apply the principles, right?

9 A Evaluate the jobs, certain-- make a  
10 determination that a problem or an issue exists, then  
11 look for ways to resolve it, sure.

12 Q And the job analyst is encouraged, through  
13 the workshop materials that we talked about, to interact  
14 with the workers and explain the principles to the  
15 workers, correct, explain lifting methods, what they're  
16 trying to do with the workers to analyze their task and  
17 so forth?

18 A Well, we have had a comprehensive lifting and  
19 back conservation program at CSX for a number of years.  
20 We started with Proback back in the 180s when we brought  
21 in professionals to start taking a look at work  
22 conditions. Employee input was solicited in helping to  
23 resolve a number of these issues, and that's carried over  
24 into our current back conservation effort which is called  
25 Back in Motion, and that is an annual thing. There is an



1 annual refresher on Back in Motion.

2 You know, supervisors are brought into  
3 Jacksonville or other points around the system. Th  
4 particular emphasis for the year is presented at that  
5 point, and, you know, it's -- the supervisors are  
6 released to go back and ensure that the employees are  
7 working using good Proback/Back in Motion methods, many  
8 of which incorporate points that we've already covered.  
9 You know, keeping the load clobe, don't twist and lift,  
10 don't jerk.

11 You know, it's all part of our larger safety  
12 certification effort where we go annually throughout the  
13 system, train the employeeb, refresh, reinforce the  
14 concepts of our safety program. The cornerstone being  
15 the concept of empowerment. If it's not safe, don't do  
16 it.

17 Q Let me just make sure I understand. All of  
18 what you just talked about that happened prior to -- when  
19 did you start with CSX? When in 1995?

20 A 1995 in March.

21 Q Everything that you just talked about prior  
22 to that, you relied on records you've seen here to say  
23 that it happened, right?

24 MR. MILLBERG: Objection.

25 BY MR. SHAPIRO:

1 Q In other words, any training that happened  
2 before your start date here, you've reviewed that in  
3 records from CSX to determine that, right?  
4 A And I've talked to the employees. I've  
5 talked to the people who put on the training.  
6 Q All right. But it was before your tenure  
7 here. These things that you just talked about were  
8 before you joined CSX, right?  
9 A It's going on now.  
10 Q Mr. Brown, I understand that. I just -- you  
11 would agree, right, it happened before you joined here?  
12 Everything you talked about before '95 happened before  
13 you joined CSX, right?  
14 A (No audible response.)  
15 Q You've been here a year and-a-half?  
16 A Yes.  
17 Q Okay.  
18 MR. MILLBERG: The answer to that question  
19 the question you were answering was you have been  
20 here Bince 1995, a year and-a-half.  
21 THE WITNESS: That'B correct.  
22 MR. MILLBERG: Okay.  
23 MR. SHAPIRO: All right.  
24 BY MR. SHAPIRO:  
25 Q So everything regarding training that

1 happened, you reviewed either in records or you're sa  
2 you got feedback from people in the field, right?  
3 A I can provide the documentation to  
4 Q Well, I'm just trying  
5 A -- verify it.  
6 Q I'm not questioning that. I'm jult trying to  
7 get the foundation of where you found these things out.  
8 You've just explained that.  
9 You testified that no one did any ergonomic  
10 assessment of the brazing saw activity prior to 1993 --  
11 MR. MILLBERG: Repetitious; objection  
12 Q -- right?  
13 A To my knowledge no one looked at the brazing  
14 saw, no.  
15 Q All right. I would just ask that you make  
16 available to your counsel the software and any manuals  
17 that apply to it.  
18 MR. MILLBERG: Well, I object to your  
19 making --  
20 MR. SHAPIRO: I understand.  
21 MR. MILLBERG: I object to your making  
22 requests like that of this witness. You can make  
23 object- -- you can make requests to the defendant  
24 through me.  
25 BY MR. SHAPIRO:



1 Q Well, you've previously testified it would  
2 just be a matter of duplicating the disk and bringing it  
3 into the office, right?  
4 MR. MILLBERG: It's repetitiOUB.  
5 MR. SHAPIRO: Is that correct?  
6 THE WITNESS: That's correct.  
7 MR. SHAPIRO: All right. I have nothing  
8 further. Please answer opposing counsel's  
9 questions.

17

10 CROSS-EXAMINATION  
11 BY MR. MILLBERG:  
12 Q Dr. Brown, I just wanted to ask you a couple  
13 of questions --  
14 A Yes, sir.  
15 Q -- so we're on the record today.  
16 FirBt of all, I'd like to direct your  
17 attention back to the exhibit I've placed up on the board  
18 and ask the cameraman to zoom in on that for just a  
19 minute.  
20 Do you recall answering a few questions for  
21 counsel about that exhibit a few moments ago?  
22 A Yes, sir.  
23 Q And I would direct your attention to the  
24 small print, the footnote-type material down at the  
25 bottom. Does that indicate that that information that

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1 appears on that document is based on the NIOSH Work  
2 Practices Guide as opposed to any publication or  
3 guidelines or standards created by the AAR?

4 A That was derived from the NIOSH Work  
5 Practices Guide in 1981, yes, sir.

6 Q Okay. That was all I wanted to ask you about  
7 that. Now -- about that specific document.

8 Now, you've been asked a lot of questions  
9 about the AAR, about NIOSH, about guidelines, about  
10 biomechanical models and that kind of thing. My question  
11 to you is this, sir: Are there any of those that lend  
12 themselves to an analysis of the rail-saw task involved in  
13 this lawsuit?

14 A Not really, no, sir.

15 Q Have you looked at the rail-saw task involved  
16 in this lawsuit?

17 A Yes, sir, I have. I have even performed the  
18 task.

19 Q Are there any of the questions -- do any of the  
20 questions that have been asked to you by counsel today,  
21 do any of those bring up any subjects or suggest anything  
22 to you that would suggest to you that the rail-saw task  
23 is an unreasonably dangerous or unsafe task to ask  
24 employees to perform?

25 A I do not believe that the task is unsafe to

1 perform, based first on my observation and converbatio  
2 with the employees that perform the task, based on my u.ii  
3 performance of the task, based on the fact that the task  
4 is performed fairly infrequently and is a fairly short  
5 duration. If you aggregate the time, for example, in  
6 this matter that the plaintiff spent on the task, it  
7 represents only a small percentage of the full time out  
8 of the day.

9 We spoke earlier about the importance of  
10 frequency and duration aB moderators. You can do things  
11 that may be, quote, unquote, "stressful on the body," but  
12 you do them infrequently and you do them for a short  
13 period of time. The body recovers very rapidly, so...

14 Q Is there any standard of -- published by any  
15 entity that, to your knowledge, is violated by the  
16 performance of the rail saw task at iSBue in this case?

17 A No, sir.

18 MR. MILLBERG: Thank you. Those are all my  
19 questions. We will reserve the rest of our  
20 que5tions for trial.

21 MR. SHAPIRO: I have a couple of questions,  
22 but --

23 REDIRECT EXAMINATION

24 BY MR. SHAPIRO:

25 Q Mr. Brown, when did you perform rail saw

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1 cutting?

2 A I visited Franklin, Virginia, I want to say,  
3 about three weeks, four weeks ago and spent about two  
4 and-a-half days up there with various section gangb and  
5 went out with them, observed the work, performed some of  
6 the work, made CUTB on rail using the Racine saw and the  
7 Matweld saw.

8 Q How many cuts did you make on the Racine  
9 saw?

10 A I made one cut with the Racine saw and I made  
11 a cut with the Matweld Baw.

12 Q Were you going to look at various job tasks  
13 besides the rail saw, other job tasks, too, or was it  
14 just the rail saw?

15 A Well, I always take the opportunity when I go  
16 out to observe whatever it is that the employeeb are  
17 doing. The UBe of the rail saw -- I've been out, I want  
18 to say, three or four times with various section workers  
19 in and around JackBonville and at other locations. And  
20 the use of the rail saw was something that was actually  
21 specially scheduled so I could observe it. I made  
22 arrangements with the road master so I could see it.

23 Q You didn't cut 20 or 30 cuts of rail, did  
24 you?

25 A No, sir.

1 Q You understand that's what the plaintiff says  
2 he did over a 24, 36-hour period?

3 MR. MILLBERG: How many? I didn't hear you.

4 MR. SHAPIRO: Twenty-four or 36 hour period,  
5 somewhere in there.

6 THE WITNESS: How many cuts?

7 MR. MILLBERG: How many cuts? I didn't hear  
8 you.

9 MR. SHAPIRO: I think I said 20 to 30 --

10 MR. MILLBERG: Well, I object to that  
11 question.

12 MR. SHAPIRO: -- cuts.

13 MR. MILLBERG: There's no evidence to support  
14 it.

15 BY MR. SHAPIRO:

16 Q If the plaintiff asserts that he did that,  
17 would that in any way change your opinions?

18 MR. MILLBERG: Same objection.

19 THE WITNESS: Again, it goes back to the  
20 frequency and duration consideration. The cut using  
21 the saw requires roughly two to three minutes to  
22 complete SO it'B a fairly low duration. There's  
23 time in between during which the plaintiff would be  
24 moving the saw, during which the plaintiff would  
25 change the blade on the saw. The blades on those

1 things are only good for somewhere between three to  
2 six cuts, six being optimistic. He's not doing this  
3 task continuously.

4 BY MR. SRAPIRO:

5 Q Did you take a look at the prior injury  
6 reports using the brazing saw that CSX had on file before  
7 Mr. Moody was hurt?

8 A I WaB provided with copies of them. I have  
9 not had time to research them in depth.

10 Q Are those of no significance to the job  
11 analyst?

12 A To the extent that the reports contain a  
13 detailed description of what was occurring at the time of  
14 the injury, including the type of saw, would certainly be  
15 a consideration.

16 Q So you've looked at those, right?

17 A I have glanced through them. I've -- as I  
18 said, I haven't had time to research them in depth.

19 Q Did you take the measurements of the position  
20 using the Racine Bar of where the hands are on the worker  
21 when he's in the middle and the end of the cut?

22 A Did I measure that directly, no, sir, I did  
23 not.

24 Q Well, the posture of the worker, did you  
25 notice the posture of the worker is pretty much down at

1 the knees or lower when they're finishing a cut with the  
2 Racine Baw?  
3 A The posture of the right hand, as I recall,  
4 was above the knee. The posture -- I would have to go  
5 back and review the videotapes you provided.  
6 Q You have videotapes, too?  
7 A These were videotapes made by your expert.  
8 Q Oh, did you take videotapes when you were out  
9 there?  
10 A I did videotape the task, yes.  
11 Q Did you turn them over to counsel for the  
12 railroad?  
13 A Yes, I did.  
14 Q What about still photographs, did you turn  
15 those over to counbel for the railroad?  
16 A I did not take still photographs.  
17 Q What was the date you were at Franklin again?  
18 A It was between three and four weeks ago, as I  
19 recall.  
20 Q So mid October or early October?  
21 A I want to say -- I believe it was the last  
22 week in October.  
23 Q Did you create any written documents at all  
24 as a reBUlt of your looking at the brazing Baw?  
25 A Any reportb?

1 Q Anything in writing at all?  
2 A Just notes with regard to the weight of the  
3 saw.  
4 Q Which ones? Which saws? Every saw?  
5 A We UBed the Racine and we used the Matweld.  
6 Q What other notes did you take?  
7 A That was about the -- some measurements and  
8 that was about the extent of it.  
9 Q Okay. You can make -- are those in your  
10 office where you can make thOBe available --  
11 A Yes, sir.  
12 Q -- if they were requested?  
13 A Okay. So there'B videotapes, there's some  
14 measurements and some handwritten noteb and there isn't  
15 anything else?  
16 A No, sir.  
17 MR. SHAPIRO: Okay. I think that's all I've  
18 got.  
19 MR. MILLBERG: Thank you, Dr. Brown. We will  
20 reserve the rebt Of our quebtions.  
21 MR. SHAPIRO: There's one more thing I want  
22 to state on the record, and that is that the  
23 plaintiff takes the position we would move to  
24 exclude any tebtimony related to the inspections  
25 that Mr. Brown did becaube they weren't turned over



1 to us under our discovery in the case. This is the  
2 first we've heard about it, and we --

3 MR. MILLBERG: That's not true.

4 MR. SHAPIRO: You can state your position.  
5 my position is that if you want to --

6 MR. MILLBERG: I will.

7 MR. SHAPIRO: We're here in Jacksonville. If  
8 you want to question him based on what he's reviewed  
9 in the case as opposed to what he saw, which was  
10 never produced to us, that's okay. But we're going  
11 to make the -- move the Court to exclude any portion  
12 of his testimony that related to the inspection  
13 materials. We were made available inspection materials  
14 from the summer, I believe, that you sent me a tape  
15 of. Unless he's got the dates wrong, it's my  
16 understanding that I don't have any information  
17 before today that Mr. Brown's been there or that he  
18 annualized this activity.

19 MR. MILLBERG: Well, then let me -- are you  
20 finished?

21 MR. SHAPIRO: Yes.

22 MR. MILLBERG: Let me state for the record  
23 that you have not read what I have Bent you because  
24 this witness was identified as an expert witness  
25 long ago and --

1 MR. SHAPIRO: Well, I saw your answer that he  
2 was an expert.

3 MR. MILLBERG: Excuse me. I'm not finished.  
4 And you were told in the interrogatory answer  
5 that his opinions would be based in part on his  
6 obbervations of this work activity, and he is here  
7 for you to depose and you depose him to your heart's  
8 content. We're calling him and we're asking him  
9 about all of that.

10 MR. SHAPIRO: I understand that, Mr.  
11 Millberg, but --

12 MR. MILLBERG: If you've got any other  
13 questions, have at it.

14 MR. SHAPIRO: I don't have any questions.

15 MR. MILLBERG: Okay.

16 MR. SHAPIRO: No videotapes were produced and  
17 no notes of Mr. Brown were produced, and the  
18 implication in the interrogatory answer that they  
19 were based on his obbervations was -- left us with  
20 the impression that he was reviewing materials from  
21 prior inspections. Okay. That's it.

22 MR. MILLBERG: Well, that's --

22 MR. SHAPIRO: He has the right to --

24 MR. MILLBERG: EXCUBE me just a minute.

25 MR. SHAPIRO: We don't need this on the

1 video.

2 MR. MILLBERG: I'm just about finished.  
3 I'm going to state for the record that  
4 counsel for the plaintiff was advised on October the  
5 the -- by interrogatory answers dated October the  
6 18th, 1996 that this witness was expected to give  
7 testimony regarding any ergonomics issues raised by  
8 the plaintiff in rebuttal -- and also in rebuttal to  
9 his expert that his testimony would be based on a  
10 review of all file materials as well as his  
11 examination of the work procedures involved, and  
12 that's what he's going to testify about.

13 MR. SHAPIRO: Are you going to use any  
14 videotapes or notes that he used at his inspection?  
15 Because I would ask for you to send those to me.  
16 I'm reserving my position.

17 MR. MILLBERG: No, I won't -- since you are  
18 making such a fuss about it, I'll tell you right now  
19 I won't even use them.

20 MR. SHAPIRO: Okay. He needs to be -- you  
21 need to read his rights to him or I will. Whatever  
22 you want to do.

23 MR. MILLBERG: We can go off the record.

24 (Off-the-record discussion.)

25 THE WITNESS: I'll waive.

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(Whereupon, the deposition was concluded at  
5:40 o'clock p.m.)

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C E R T I F I C A T E

2 STATE OF FLORIDA

3 COUNTY OF DUVAL

4 I, Dorie A. Morgan, Registered Professional  
5 Reporter and Notary Public duly and qualified in and for  
6 the State of Florida do hereby certify there came before  
7 me the deponent herein, namely RAYMOND TODD BROWN, who  
8 was by me duly sworn to testify to the truth and nothing  
9 but the truth concerning the matter in this cause.

10 I further certify that the foregoing  
11 transcript is a true and correct transcript of my  
12 original stenographic notes.

13 I further certify that I am neither attorney  
14 or counsel for, nor related to or employed by any of the  
15 parties to the action in which this deposition is taken;  
16 and furthermore, that I am not a relative or employee of  
17 any attorney or counsel employed by the parties hereto or  
18 is financially interested in the action.

19 IN WITNESS WHEREOF, I have hereunto set my  
20 hand and affixed my Notarial Seal this a(oth day of  
21 November, 1996.

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Dorie A. Morggn, RPPI  
NOTARY PUBLIC

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