

IN THE SUPERIOR COURT OF FULTON COUNTY
STATE OF GEORGIA

GARLAND FAVORITO, MARK SAWYER,)
RICARDO DAVIS, AL HERMAN,)
FRIEDA SMITH, KATHRYN WEITZEL,)
ADAM SHAPIRO, and CATHIE)
CALABRO,)

Plaintiffs,)

vs.) CIVIL ACTION FILE
) 2006CV119719

CATHY COX, Secretary of State,)
SONNY PERDUE, Governor of the)
State of Georgia, GEORGIA)
STATE ELECTION BOARD,)

Defendants.)

DEPOSITION OF
RAY COBB

Taken on behalf of the Plaintiffs
Friday, June 22, 2007
3:25 p.m.

At the office of the
Center for Election Systems
Kennesaw State University
Kennesaw, Georgia

Sharon J. Ruschell, RMR, CRR, CCR No. B-1179
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9 On behalf of the Defendants:

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13

14 Also Present:

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GARLAND FAVORITO
MARK SAWYER

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21 (Pursuant to Article 8.B of the Rules & Regulations of
the Board of Court Reporting of the Judicial Council of
22 Georgia, a disclosure form was submitted to all
parties/counsel for signature and attachment to the original
23 transcript in this matter.)

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P R O C E E D I N G S

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MR. CHANDLER: This is the deposition of Ray Cobb, taken in Civil Action 2006CV119719, Fulton Superior Court, Favorito versus Handel, Perdue et al. It's being taken for the purposes of use at trial, discovery and any other purposes allowed by the Civil Practice Act. We'll reserve any objections until the time of use except as to the form of the question and the responsiveness of the answer. Are there any other stipulations, sir?

MR. RITTER: No. I'm fine with those.

MR. CHANDLER: And you'd like to --

MR. RITTER: Again read and sign.

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RAY COBB,

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

EXAMINATION

BY MR. CHANDLER:

Q. Would you please state your name.

A. Ray Cobb or full name, Raymond Oliver Cobb, Jr.

Q. Where do you live, Mr. Cobb?

A. I live at 837 Village Greene, Marietta, Georgia,

1 30064.

2 Q. And do you work for the State of Georgia?

3 A. I work for Kennesaw State University, which is a
4 division of the State of Georgia.

5 Q. All right, sir. And what is your job description?

6 A. I'm currently the director of the Center for
7 Election Systems here at Kennesaw State University.

8 Q. So does that have you in overall control of this
9 office here in Kennesaw?

10 A. Yes, this office.

11 Q. Is your office considered a subdivision of the
12 Secretary of State's office?

13 A. No.

14 Q. So it's considered performing functions in
15 conjunction with the Secretary of State's office?

16 A. Under contract with the Secretary of State's
17 office.

18 Q. Under contract. Is that a multi-page contract?
19 Is it like a 20-page contract? When you say under contract,
20 I assume it's in writing of some sort.

21 A. Yes. It's an annual contract.

22 Q. How many pages is that contract?

23 A. It's less than ten.

24 Q. Off the record for a second.

25 (Discussion held off the record.)

1 Q. Back on the record, do you agree that the machines
2 that are currently in use that were installed in '02 don't
3 have a capability of producing an independent paper audit
4 trail of every ballot cast?

5 A. You need to define what you mean by independent
6 paper audit trail.

7 Q. An independent would be a separate piece of paper
8 that represents each ballot cast.

9 A. I do not agree because the system can produce
10 that.

11 Q. The system can produce that if called on to do so.

12 A. Correct.

13 Q. Now, if a person used a machine, are you saying
14 that the system at the end of the day could reproduce the
15 ballot that person cast?

16 A. Yes, it can but it cannot be identified to that
17 person.

18 Q. Yes, sir. Now, the reproduction of that ballot,
19 is that not based on not that ballot but on the accumulated
20 total of ballots cast that day?

21 A. No. The individual ballot can be produced.

22 Q. The individual ballot could be produced.

23 A. Yes. Each individual ballot cast could be
24 produced.

25 Q. All right. Now, is that based on the assumption

1 that the software that says what that individual voted
2 accurately is recorded on that internal chip that's in the
3 machine?

4 A. There's more involved than that. That particular
5 vote or that particular ballot the way it's voted is stored
6 in many different forms and it's uploaded from one computer
7 to another and it's on the second computer where the
8 capability exists to print each individual ballot that's
9 cast on each of the electronic voting machines.

10 Q. So are you saying that if at the end of the day
11 the -- what do you call that chip that's in the individual
12 machine?

13 A. PCMCIA.

14 Q. Yes. If that thing is drawn out and put into the
15 second computer, it can produce essentially what would look
16 like every ballot that was cast that day?

17 A. It could be -- yes, it could be presented in one
18 of two different forms.

19 Q. All right. And when we say a ballot, for example,
20 if it had five different races, it would show the five
21 different races that were cast by that particular voter,
22 whoever he might have been --

23 A. Correct.

24 Q. -- at the end of the day, but that image would
25 show each different ballot that was cast during that day.

1 A. Right. It would show how every voter voted on
2 each of those races individually. It would be an image of
3 something like an optical scan ballot.

4 Q. When we met before -- and it was basically an
5 off-the-record conference we had --

6 A. Out here on the 24th.

7 MR. RITTER: Entirely off the record.

8 BY MR. CHANDLER:

9 Q. Yeah, entirely off the record. Did you not say
10 that -- I just wasn't aware that the machines had a
11 capability of creating --

12 A. We've said that all along.

13 Q. -- a picture.

14 A. They create an image of each ballot.

15 MR. RITTER: Let me object, and
16 respectfully. Our discussion was off the record
17 before and we agreed to that really for the
18 purpose of trying to facilitate settlements and
19 discussions and stipulations and so forth.

20 With that I will say that my recollection
21 very clearly is that it was said at that time.

22 In fact, I think there was some disagreement
23 about it. Maybe it was just a misunderstanding
24 because I remember that we disagreed about how
25 that was done and what would be in a ballot.

1 But that's just for the purposes of
2 objection, what would be in such an image and
3 how it would be stored.

4 But in any regard, I didn't mean to
5 interrupt but I don't want to go back into those
6 conversations and talk about vague recollections
7 about them.

8 BY MR. CHANDLER:

9 Q. This recreated ballot that could be produced by
10 the second thing is not something that a voter himself comes
11 in and says yes, that's exactly what I voted, is it?

12 A. No, it's not verified by the voter.

13 Q. The image that's created, the State doesn't
14 contend that that image that's created is a ballot, do they?

15 A. The image is the image of what was voted by that
16 voter. The definition of a ballot is varied.

17 Q. In your opinion, does it meet the definition --

18 MR. RITTER: Stop before you answer. I
19 have to object again because you're asking for a
20 legal conclusion and we'll make that argument.
21 With that said and the objection on the record
22 you can answer the question.

23 BY MR. CHANDLER:

24 Q. Do you think that that image -- do you think that
25 the electronic material that is contained on that card is a

1 ballot, a legal ballot?

2 A. Would you define what you mean by ballot in this
3 case?

4 Q. Is the electronic information that is contained in
5 the machine at the end of the day, is it the instrument by
6 which the voter cast his vote?

7 MR. RITTER: Objection; same objection made
8 before, still a legal conclusion. You can
9 answer.

10 THE WITNESS: I understand there's several
11 different definitions of ballot from a legal
12 standpoint. One of them is broad enough that it
13 includes everything that is under the control of
14 the voter, you know, the images, the hardware,
15 the software and then whatever gets propagated
16 from that is all included in the definition of a
17 ballot. This is an electronic version of that.

18 BY MR. CHANDLER:

19 Q. Were the Diebold AccuVote-TS-R6 machines used in
20 the pilot project in '01?

21 A. I cannot answer that. I didn't come on board
22 until June of '03. I can't answer that for certainty
23 because I wasn't here.

24 Q. Excuse us for just a second. We're going to take
25 a little break here.

1 (Brief recess.)

2 Q. We're back on the record. Mr. Cobb, I don't ever
3 intend to ask a confusing question so if you don't
4 understand a question or if we need to define some subpart
5 of a question, just please ask me to rephrase it or define a
6 part.

7 A. Okay.

8 Q. In the electronic voting systems that we are now
9 currently using is it the State's position that the touch
10 screen itself, the physical touch screen is the instrument
11 by which an elector casts his vote?

12 MR. RITTER: First of all, I object, and
13 the reason I object is because Mr. Cobb can
14 provide his personal knowledge. He is not
15 authorized to state the State's position.

16 And just for the record, I will tell you
17 that the State's position is that it is part of
18 the instrument that you do that with.

19 And I think if you look at the definitions,
20 21-2-2-1, 18, 20, you can see that. That's our
21 position and Mr. Cobb can tell you what his
22 personal knowledge is and I'm allowed to have
23 him testify for that.

24 MR. CHANDLER: I agree with you and I just
25 want us to all be sure we're on the same funny

1 looking page here.

2 BY MR. CHANDLER:

3 Q. Is the touch screen the instrument by which an
4 elector casts his vote?

5 A. It's part of the instrument.

6 Q. And what are the other parts of the instrument by
7 which he casts his vote?

8 A. The vote or the ballot, in my understanding,
9 according to the definition in the code book, is the image
10 that the voter sees, the process that the voter uses to
11 touch the screen, the equipment on which the screen is
12 touched, and the electronic media that's involved from that
13 point through the PCMCIA card all the way up through the
14 uploading into the county server where the votes are
15 tabulated. All that is part of casting a vote.

16 Q. I take it that your understanding is that the
17 ballot is not a single entity but is a process.

18 A. The ballot is a process, correct, involving all of
19 those things.

20 Q. Now, if we were to look -- I sometimes think the
21 best way for us to all think is by analogy.

22 A. Okay.

23 Q. So in the old days a piece of paper plus the ink
24 on it plus the pencil in the hand of the voter becomes a
25 ballot. Would you agree with that?

1 A. In the old days when we were voting by paper only?

2 Q. By paper only with a piece of pencil, grade
3 school.

4 A. Right.

5 Q. And then that ballot is physically hopefully put
6 in a secure place until such time as they are counted.

7 A. Correct.

8 Q. But Georgia has elected, as you understand it --
9 and I'm not trying to put words in your mouth -- to adopt
10 instead of that sort of ballot a process that results in a
11 ballot.

12 A. Well, the process itself is the ballot.

13 Q. The process itself is the ballot.

14 A. Yes.

15 Q. And at the end of that process, that is to say
16 when it's been uploaded to the GMS and when the PCIM cards
17 or whatever they are are put down, then hopefully an image
18 that relates back to the first of the process, which is the
19 firing up of the machine and looking at the thing, can be
20 recreated complete with what the person -- a voter actually
21 input; is that correct?

22 A. That's right.

23 Q. Now, in these processes here part of the process
24 is a software process, is it not?

25 A. It uses software, yes.

1 Q. And part of the software process from the touching
2 of the screen involves going through a software process
3 which records information on the PCMS card.

4 A. PCMCIA, yeah.

5 Q. And is it not true that the voter himself cannot
6 see at the time that he votes whether or not the information
7 that he has tried to put in on the touch screen has been
8 properly recorded on the card?

9 A. That is correct. The voter cannot see the
10 electronic bits.

11 Q. And so the voter is therefore dependent on the
12 State of Georgia and its certifying processes to -- the
13 voter is dependent on the State to accurately record what he
14 says that he wants; is that correct?

15 A. Through the certification and testing processes
16 that go on.

17 Q. So it would be proper to say that between the
18 voter's intent and the result listed the State of Georgia is
19 responsible for the monitoring and the accumulation process.

20 MR. RITTER: Let me object first. I'm
21 sorry to interrupt again. I just want to make
22 this clear. I've tried not to be obstructionist
23 but again, you're asking for his opinion, not
24 for what the State of Georgia as a legal entity
25 can say, and you can ask for opinions.

1 We're not going to agree that's binding.
2 We're not going to agree that's frankly
3 anything, but I'm not trying to stop you from
4 getting his testimony. He's also not allowed to
5 give a legal opinion. Subject to those
6 objections you may answer.

7 MR. CHANDLER: If I may suggest, I think
8 that all of us here and the court, anybody could
9 take judicial notice of the fact that between
10 what a person touches here and what's recorded
11 on the card has to go through a software
12 process.

13 MR. RITTER: No one's disagreed with that.
14 We're all agreeing with that. Certainly he can
15 testify as to facts and his understanding of
16 that, no problem with that, but when you ask a
17 question like is it the State's position or
18 whatever, that's something we have to object to.

19 Do you want to go off the record for a
20 second?

21 (Discussion held off the record.)

22 BY MR. CHANDLER:

23 Q. We agree, do we not, that the software essentially
24 reports the actions of the voter on touching a touch screen;
25 is that correct?

1 A. The software and hardware together.

2 Q. Yes; and that at the end of the day the machine
3 reports what it says all the people have touched and their
4 various choices; is this correct?

5 A. Yeah, but there's two machines we're talking
6 about, the actual touch screen that the voter interacts with
7 and then the server that ultimately tabulates the votes.
8 Both of them summarize them.

9 Q. Are you a computer engineer yourself?

10 A. I am retired director of information systems at
11 Lockheed Corporation. I have been in the computing field
12 since 1972. I have a master's degree in computer science
13 from Georgia State and I've been in the field and management
14 in the field. I have taught information systems courses
15 here at Kennesaw.

16 Q. Do you agree that the official ballot could change
17 from the time an elector casts his or her vote and the time
18 that the CD containing his votes is produced?

19 A. There's no absolutes in this but I don't agree
20 with that because I have no evidence that that's ever
21 occurred. I can't speculate. I don't know that it can but
22 I will acknowledge that there's no absolutes.

23 Q. If machines had software that directed them to
24 improperly record votes other than the testing system at the
25 beginning of the day for the first five or ten votes when

1 they do the test at the precinct level, would there be any
2 way of finding out that votes were improperly cast?

3 A. Well, let me answer that by saying how would
4 someone change the software in the precinct after the polls
5 had opened?

6 Q. I was thinking it would be possible to have
7 software that was changed that was set up prior to the
8 election that would, for example, allocate votes.

9 A. I can only answer that with a question. I'm sure
10 again nothing is absolute but I know of no way that that
11 software could be modified.

12 Q. Unless modified by the -- unless it was modified
13 by the State itself; is that correct?

14 A. The election officials have no way of modifying
15 software because software is only available to them that's
16 in an executable form. The source code does not exist
17 outside of this office.

18 MR. RITTER: I think Walker was asking you
19 about specifically whether your office or the
20 State itself is the only people that can modify
21 it.

22 BY MR. CHANDLER:

23 Q. Yes.

24 A. Well, can my office modify it? Obviously they
25 could but I don't believe they could do it without being

1 detected because we have too many checks and balances plus
2 we don't write the software. We keep the software for
3 verification purposes. Software is all written by the
4 vendor.

5 Q. All right. The software is written by the vendor.

6 A. Yes, but they are required to give us a copy of
7 the source code and that's the only copy that exists in the
8 State.

9 Q. How would your office know if anybody had modified
10 the software so as to essentially influence or control a
11 election?

12 A. This is going to be a long explanation but I can
13 answer that. Every time there's a new version of the
14 software we get the software directly from the federal
15 certification agency. It used to be called ITA. Now it's
16 called VSTL.

17 The software comes to us, which is called a
18 witness build compilation. We maintain that witness build
19 here and from that software we build a hash code file. A
20 hash code is something recognized by National Institute of
21 Standards and Technology. If you hash code a file and you
22 run that same hash code algorithm against another file and
23 if those hash code signatures are identical, then that
24 software is identical.

25 So we have a hash code of the certified version of

1 the GEMS software. We go out every time we're in a county
2 or any time somebody suspects that their system could have
3 been tampered with and we can go run that comparison of the
4 gold copy of the software that we have and that hash code,
5 hash code that's on that server, and then run a hash compare
6 routine. If it says there's no mismatches, we can guarantee
7 that that software is identical to what it's supposed to be.

8 So yes, we can guarantee that the software that's
9 running in the county is what it's supposed to be.

10 Q. Let's take a break.

11 (Brief recess.)

12 Q. Back on the record, Mr. Cobb, do you know the
13 format of the records of votes cast as stored in the
14 electronic voting machines implemented in '02?

15 A. No, I do not.

16 Q. Do you know the format of the records of votes
17 cast as stored in the memory cards used by those voting
18 machines?

19 A. I do not.

20 Q. Do you know the format of the records of votes
21 cast as stored or compiled by the servers in the servers?

22 A. No.

23 Q. And may I ask why you don't know that?

24 A. I mean, that's Diebold's software or electronic --
25 how that stuff is formatted into those media, and I don't

1 have a need to know that as long as it can be transmitted
2 properly and the reports work. I know generally what the
3 software does but I do not know the format in there.

4 Q. Do you agree that the ballot that's used in an
5 Optiscan system is the paper instrument marked by the
6 elector and used to cast his or her vote?

7 A. That's part of the ballot. That's not the entire
8 ballot.

9 Q. You consider the machine that they put it through
10 as being part of the ballot?

11 A. Yes, and the server too.

12 Q. Well, if there is a recount, they don't just take
13 the totals the machines say, do they?

14 A. No, they reread the optical scan.

15 Q. And if the machines that read them are broken
16 down, then the ballots themselves can be read, can't they?

17 A. Read?

18 Q. The sheets signed by the voters can be
19 actually --

20 A. Read manually, yes.

21 Q. And in fact, before machines were invented like in
22 schools grading papers, they just count -- teachers would
23 count correct answers that way by an overlay card.

24 A. Overlay card or a tally sheet.

25 Q. So in an Optiscan system it's actually the paper

1 is the ballot or are you still contending that the machine
2 that counts them is part of the ballot?

3 A. I contend that even an optical scan machine --
4 it's still an electronic process and it goes all the way to
5 the end of the electronic process for the definition of the
6 ballot.

7 Q. You don't think that in an Optiscan system the
8 machine is merely an adding machine that adds and subtracts
9 and accumulates?

10 A. Exactly the same thing a touch screen does. They
11 both have memory cards that are read up into the server,
12 memory cards being PCMCIA cards.

13 Q. You would agree that in a punch card system, not
14 Optiscan but a punch card system, the punch card itself is
15 the actual instrument that an elector uses to cast his vote.

16 A. It's no different than an optical scan DRE. A
17 punch card is read by a card reader and an electronic file
18 is created and uploaded to a computer to be tabulated.

19 Q. But in the event of a recount that individual card
20 is looked at again just like an Optiscan.

21 A. Correct.

22 Q. Or an old-fashioned paper ballot.

23 A. Uh-huh (affirmative).

24 Q. Now, in an old-fashioned paper ballot system would
25 you contend that the individual who's sitting there counting

1 the ballots in front of the poll watchers -- do you consider
2 that he is part of the ballot?

3 A. No, not according to the definition of the code
4 because the code is very specific. If there's electronic
5 components used, the electronic components become part of
6 the definition of the ballot. In that system you described
7 there's no electronic component.

8 Q. Then in the old system, paper ballots counted out
9 in front of what we could call God and everybody, is an
10 adding machine part of the ballot?

11 A. You know, I've never witnessed manual count but I
12 don't think they use an adding machine. From what I
13 understand, it's strictly a tally sheet.

14 Q. Was that tally sheet a ballot?

15 A. No.

16 Q. All right.

17 MR. RITTER: Let me just ask one quick
18 question off the record real quick.

19 (Discussion held off the record.)

20 MR. RITTER: I'll just tell you just to
21 smooth things along -- I'm trying to avoid
22 having a speaking objection, but I will tell you
23 that in our view you've got to look and you've
24 got to start with the definition that's in
25 21-2-2, subpart 1. You go to subpart 18; you go

1 to subpart 20; you go to other parts of the
2 code.

3 And 21-2-2-1 says ballot means, quote,
4 official ballot, close quote, paper ballot,
5 close quote, and shall include the instrument,
6 whether paper, mechanical or electronic in which
7 the elector counts his or her vote.

8 So certainly we think that the memory card
9 as well as the DRE machine, which is mechanical
10 and electronic, is part of the ballot by that
11 definition.

12 In the paper example that you've given if
13 you're talking about someone using an adding
14 machine, that's not part of how someone casts
15 their vote so that wouldn't be part of that
16 definition of ballot.

17 But the DRE machine, which is the screen as
18 well as the memory card, the software, the
19 hardware, the whole thing in the State's
20 position is part of the ballot. We refer to it
21 as a process. That's fine, what he says, but I
22 will tell you that in our view, in the State's
23 view it is a collection of electronic and
24 mechanical instruments that do this as well as
25 one small thermal paper record that does it.

1 So I just want to make that clear. That's
2 our position. If you've got some disputes about
3 that or problem, maybe that will shortchange it,
4 but we would just drive straight by the code and
5 that's where we are.

6 BY MR. CHANDLER:

7 Q. Now, is there any audit process after the election
8 to evaluate the effectiveness of hardware testing?

9 A. Yes.

10 Q. What is that audit process to evaluate hardware
11 testing?

12 A. The testing is through the complete cycle and is a
13 process we call parallel monitoring. This is Phase II after
14 the fact in that we ask the counties -- we randomly select
15 counties and precincts. We ask them to send in tapes off of
16 their machines, the tapes that are for each machine, and
17 then we go in -- once the CD comes in we go in and print the
18 ballots off of all those machines and we manually count all
19 of those ballots to make sure that we agree with what the
20 totals were that were sent up from that card that night. We
21 do this after the fact. So that's a hardware and a software
22 process check.

23 Q. So if I were to say is there any audit process
24 after the election to evaluate the effectiveness of software
25 testing --

1 A. Software and hardware.

2 Q. So that is the test by which --

3 A. That's the after-the-fact test.

4 Q. The after-the-fact test by which both software and
5 hardware are tested.

6 A. Yes.

7 Q. Has your office been involved in any recounts?

8 A. Yes. Let me qualify that. We don't do recounts
9 here but the recounts are done in the counties; but yes, we
10 have gone out to the counties during a recount process and
11 helped and observed.

12 Q. Has any recount in Georgia ever produced different
13 electronic vote totals than the original count?

14 A. Not to my knowledge.

15 MR. RITTER: I'm sorry to interrupt you.
16 You may want to qualify that by time because
17 your question seemed pretty open-ended.

18 BY MR. CHANDLER:

19 Q. I just meant since the universe of the option of
20 DRE's.

21 A. I'll have to qualify my answer since I've been
22 involved.

23 Q. How many years have you been involved?

24 A. I came on board June of 2003 as the director.

25 Q. All right. If we were using a punch card system,

1 would a punch card used in that system be considered a type
2 of paper ballot?

3 A. It would be part of the ballot.

4 Q. Because again --

5 A. Again, there's electronics used.

6 Q. There's a reading machine system that's used.

7 A. Right.

8 Q. Unless it falls back on a recount or look at chads
9 and the like; is that correct?

10 A. It could still be a recount. I'm not going to get
11 into chads but it would be just like an optical scan. You
12 refeed the cards into the card feeder to recount.

13 Q. The ballots in a recount, there are two types of
14 ballots being recounted, are there not? There's one of the
15 people who voted by absentee or prevoting on paper; is that
16 correct?

17 A. Correct.

18 Q. And then there's the type that are essentially the
19 electronic process ballots; is that correct?

20 A. Yeah. We actually classify a third type, the
21 provisional ballot, but it is the same media as the absentee
22 mail-in ballot.

23 Q. Paper; is that right?

24 A. Right; the optical scan.

25 Q. So would you agree that those -- well, let me just

1 ask have there been any vandal attacks on voting machines,
2 on the new voting machines in Georgia, to your knowledge?

3 A. Vandal attacks on the touch screen?

4 Q. Yes, by the use of some kind of malicious software
5 codes.

6 A. Not to my knowledge.

7 Q. What about the use of something like magnets?

8 A. I'm not aware of any. We did have one incident
9 when someone tried to break into an election office but they
10 were unsuccessful. They were trying to drill through the
11 door with a crowbar trying to destroy the door but they
12 never were successful getting in.

13 Q. They probably didn't know what they were doing
14 anyway.

15 A. That's one of those cases where we go out and run
16 the hash code and make sure nothing is compromised.

17 Q. Have there been any reported failures of machines
18 on election days?

19 A. We have had isolated hardware failures on some
20 machines.

21 Q. Would it be fair to say that when those hardware
22 failures occur that the votes that had been cast on them
23 before the failure were lost?

24 A. No, absolutely not.

25 Q. Why is that?

1 A. In no case have we ever lost a vote because even
2 if the machine fails the PCMCIA card is recovered and the
3 votes up to the point of failure are counted and the machine
4 is just shut down for the rest of the day. We have no
5 evidence of a vote ever being lost, electronic vote.

6 Q. Do you agree that the touch screen itself does not
7 contain a permanent electronic record of the votes cast?

8 A. I do not agree with that statement. There is a
9 record inside.

10 Q. You're saying because of the touches that have
11 been done on it there's a record of the touches that have
12 been done on it?

13 A. There's an image of the PCMCIA card kept
14 internally. The same image on the PCMCIA card is kept in
15 nonvolatile storage on the touch screen itself.

16 Q. Is the storage permanent?

17 A. The storage is permanent until it's overwritten,
18 yes.

19 Q. When is the overwriting? When does that occur?

20 A. Generally the storage, depending on the size of
21 election, the storage and the numbers of votes cast, the
22 storage internally will hold three to four elections and
23 then once the space is used up it overwrites the oldest
24 election for the new one.

25 Q. That information, how the touch screen was used is

1 stored on a PC card; is that right?

2 A. The PC card that you call it, you know, if by
3 chance those cards are being taken back to the county office
4 to be uploaded into the server -- and hopefully it'll never
5 happen, but in the event if that card were to be involved in
6 an accident and burned to shreds, well, those cards are like
7 any other electronic media. They can't stand the high heat.
8 We would be able to go back to the touch screen, recreate
9 that memory card and still bring it forward and count the
10 vote.

11 Q. I see. So there are two areas of memory storage
12 in the machine itself.

13 A. One of it's the card and one is mirror image of
14 the card which is kept internally in nonvolatile memory,
15 which means when you turn it off it's still there.

16 Q. You do agree that an Optiscan ballot used in a
17 recount is the actual ballot or thing that was touched, held
18 and otherwise possessed by the elector at the time he made
19 his choice; right?

20 A. That is what the elector recorded the votes on.
21 But again, it's part of the ballot by my understanding of
22 the definition of ballot.

23 Q. If a supervisor of a precinct called for a recount
24 of the paper ballots, the scope of the recount would include
25 the correctness and accuracy of the translation of votes

1 between the ballot and the official ballot.

2 A. I don't understand the question, number one,
3 because a supervisor cannot call a recount.

4 Q. Hold on a second. In a recount situation
5 basically what's done in a recount? What's actually
6 occurring?

7 A. Do you want me to describe the recount process?

8 Q. Right now, just a simple recount process.

9 A. Recount consists of two parts. The absentee and
10 the provisional are scanned again and the results placed on
11 a memory card and the cards from the touch screen machines
12 for each precinct are uploaded to the server again.

13 Before any of that happens those memory cards have
14 to all be zeroed so that -- I mean the optical scan memory
15 cards have to be zeroed so that you're overstoring; you're
16 not duplicating the ballots.

17 The election in the GEMS server has to be zeroed
18 out so that when you upload everything you get a brand new
19 total and then, of course, before it's zeroed out a copy is
20 made of it so you can always go back to the original.

21 And then the reports are printed with labels
22 indicating a recount.

23 Q. Would you agree with the statement that there is
24 no procedure currently in place for a poll manager to ensure
25 that the vote totals were accumulated correctly from the

1 machines to the precinct totals on election day?

2 A. I do not agree with that.

3 Q. What is the procedure?

4 A. We have a reconciliation process that the poll
5 manager has to do before they can leave the polls that
6 night.

7 Of course, the poll manager cannot see actual
8 votes but what the poll manager has is a reconciliation
9 between three different things, the number of voter
10 certificates that were presented that night that says this
11 many people came in, the number of people who were issued
12 voter access cards and the actual number of votes tallied
13 off of each of the touch screen units. So those three
14 things have to be reconciled so we know each voter received
15 a card and subsequently voted.

16 Q. Could that procedure identify any vote swapping or
17 incorrect functioning on the parts of the machines?

18 A. You'll have to define vote swapping.

19 Q. Well, that would be where a person thinks he's
20 voting for candidate A and it's recorded as voting for
21 candidate B, his opponent.

22 A. The only thing that could happen is for the
23 software to be modified. Like I said before, I'm not aware
24 that there's any software ever been modified in the
25 precinct.

1 Q. You do agree that there could be -- you do agree
2 that it's possible that software could be written to do
3 exactly that, don't you?

4 A. I'm going to answer that no and I'll try to
5 explain why. The only way software can be written to change
6 the votes is to have a knowledge of who's on the ballot,
7 what party they belong to, where they're physically located
8 on the touch screen.

9 The software we have was installed in 2005.
10 There's no way a person could know to modify that software
11 in 2005 that says who's on the ballot in 2007, who's there,
12 what party are they, where are they located on which page of
13 the touch screen.

14 That's why I contend the likelihood of modifying
15 software and then getting modified software into the machine
16 with the security procedures that we have -- nothing is
17 absolute but I don't believe it can be done. Can I expand a
18 little bit more?

19 Q. Sure.

20 A. When our software was installed we had a
21 Democratic governor, which meant all Democratic candidates
22 appeared first on the ballot. In 2006 we have a Republican
23 governor. Is that right? I'm sorry. 2004 we had a
24 Republican governor. That order switched and so all
25 Republican candidates appeared first. How would that be

1 known to somebody to modify the software beforehand?

2 Q. What I would ask maybe in response to that would
3 be if the people in this office wished to achieve a certain
4 electoral vote on the gubernatorial election, for example,
5 and the people in this office were certifying the software
6 to be used by the various counties and precincts, could not
7 this office do that?

8 A. I don't believe that this office has anyone
9 capable of doing that. We can review the software that's
10 there but as far as writing it -- and it would have to be
11 written after the election ballots were known and at that
12 point the machines are all sealed throughout the county. I
13 just don't believe -- even if a malicious employee tried to
14 do that, I don't believe they could do it.

15 Q. I'm sure you understand the whole worry that
16 voters might have about possibilities of elections being
17 hijacked by the State itself. You're familiar with those
18 kind of fears.

19 A. Yes, and like I said, nothing's absolute. If a
20 bank president wants to give somebody the combination to all
21 the safes and the keys to the front door and guarantee there
22 will be no nobody in there for the entire weekend and they
23 come in Monday morning and the vault's empty, when you've
24 got that kind of inside job nothing can prevent it. But you
25 know it after the fact and the same thing would be true

1 here; I think you would know it after the fact.

2 Q. Give us another little break. We're going to try
3 and bring this to a conclusion.

4 (Brief recess.)

5 Q. I'm going back to an area that we kind of thought
6 about ahead of time, audit trails, and I'll just say
7 describe any audit trails that is independent of the voting
8 equipment that's being used by which -- if you haven't
9 already done so -- by which each vote cast is memorialized.

10 A. Audit trails independent on the equipment -- are
11 you talking about touch screen voting here?

12 Q. Yes.

13 A. I'm not aware of any audit trails independent of
14 the equipment. All the audit trails are on the equipment.

15 Q. I sometimes think of all this as being like if you
16 went to Kroger and you bought a bunch of stuff and they just
17 told you how much you owed at the end and they didn't give
18 you a piece of paper. Would you kind of agree that that's a
19 pretty apt analogy?

20 A. I don't know if I agree that that is an exact
21 analogy, but if you were there monitoring, assuring that the
22 items scanned and you're watching the price as it comes up
23 on the menu and then -- yeah, at that point I think that's
24 accurate, but you've had a chance to see the price as it
25 came up, make sure that they didn't mischarge you on each

1 one.

2 Q. I guess if you had your own adding machine with
3 you you could be adding up while it's going through.

4 A. Yeah, you could.

5 Q. But then at the end of the day you wouldn't know
6 how much other people had spent.

7 A. Well, another thing, though, that makes it a
8 little bit different is the secrecy of the vote. There's
9 nothing secret about what things cost that's recorded.

10 Q. I always think in terms of taking that adding
11 machine tape, verifying what I was charged and then throwing
12 that piece of paper into a big bin with everybody else's
13 paper so at the end of the day we know who won the election
14 or if a recount had to be -- but I'm just talking. Excuse
15 me.

16 All right. What procedure is conducted on
17 election day, if any, so that an election official can
18 determine that every vote cast was recorded correctly and
19 accurately?

20 A. Election day in the precinct, as I said before,
21 the reconciliation that every vote cast was counted is
22 available. There's no way for that election official to
23 know how people voted that day.

24 Now, but I need to explain the Phase I of parallel
25 monitoring that we do here on election day. We randomly

1 select six counties. We load their exact ballots on a
2 machine here at the center and at ten o'clock in the morning
3 so we're voting on the exact same day to head off any
4 so-called Easter eggs or stuff that's in there or geared to
5 become active on election day.

6 So we're voting the same day. We vote every
7 ballot in that precinct a prescribed number of times, a
8 prescribed pattern, and then we close the election, that
9 machine. We know what the results are supposed to be. We
10 print the tape out and we make a comparison.

11 Every vote is done with two people, one watching
12 and reading, the other one actually hitting the keys and the
13 whole thing is video'd for permanent record.

14 So we do this for six different randomly selected
15 counties. We get the same -- in every case we get the same
16 results on the manual count as we do on the electronic count
17 so we feel like this is a good test. It's a sample. It's
18 not a hundred percent but it's a good test that the votes
19 are recording correctly.

20 Q. So I guess that if -- that would probably tie into
21 my next question, which is if there were software
22 inaccuracies that were being generated by a machine and they
23 were carried over into the ballot images that were presented
24 later on, there wouldn't be any evidence of that, would
25 there, if there were software inaccuracies?

1 A. Software inaccuracies on the touch screen?

2 Q. Yes, sir. In other words, if there were software
3 inaccuracies that were resulting in images that were not
4 really what people voted, how would you know other than
5 through this testing that y'all do that's random?

6 A. That testing is one way. Another way is that the
7 fourth level of testing done on the equipment called logic
8 and accuracy test is done just prior to the election by the
9 county so that every machine to be used in that election has
10 all of the ballot images on that machine already loaded and
11 they are tested against every race, every candidate through
12 a prescribed pattern. They are voted to prove that they're
13 correct and then those machines are locked and sealed at
14 that time so there's no way to change the software.

15 Q. So those are the only two procedures y'all have
16 then is the random testing --

17 A. The random testing we do on election day.

18 Q. And then the little preelection --

19 A. The logic and accuracy test, which are very
20 comprehensive.

21 Q. Okay. Have you read the Princeton University
22 security analysis of Diebold AccuVote-TS voting machine?

23 A. I am familiar with the content but I have not read
24 it. I have only watched Professor Felton and some of his
25 demonstrations on TV and things like that. I have not

1 actually read the report.

2 Q. And have your views given you any concerns about
3 the Diebold machine?

4 A. None whatsoever because I know what Professor
5 Felton did. He did exactly what we talked about earlier.
6 He had the machine for several months. He went in and
7 created an election that he knew exactly what was going to
8 be on there. He knew that there was one race and two
9 candidates. He knew the X and Y coordinates of those
10 candidate names and he went and he modified the software so
11 that he could record what he wanted to record on there but
12 it was not a real election environment. I have no
13 confidence in these laboratory tests that Felton and Rubin
14 and all those guys did. They're worthless.

15 Q. Would it be fair to say that the only place then
16 that that sort of tampering could be done would be in this
17 office?

18 A. No, because we do not have any of the county
19 machines in this office.

20 Q. I was saying by tampering the software that y'all
21 certified and put out, the official tampering.

22 A. We don't load the software. We only test the
23 software. The software is loaded by the vendor.

24 Q. Are you familiar with the Johns Hopkins Analysis
25 for Electronic Voting System Report of '04?

1 A. Is that the Avi Rubin report?

2 Q. Yes.

3 A. Again, I'm available of the content. I have not
4 actually read the report.

5 Q. Are you familiar with the decertification and
6 withdrawal of approval of Diebold equipment that was carried
7 out in California?

8 A. And the subsequent recertification, yes.

9 Q. What about the Ohio Secretary of State DRE
10 Technical Security Assessment Report; are you familiar with
11 that?

12 A. I am familiar with the Cuyahoga County activities.
13 Gary Smith, the election director in Forsyth County here,
14 was the supervisor of all of those tests. It was fraught
15 with error such as for some reason the poll workers moved
16 memory cards around in the machines that day. They had
17 tremendous printer jams and so it was totally explainable
18 why their printed paper results did not match their
19 electronic results, if that's the one you're referring to.

20 Q. What about the University of California Security
21 Analysis of Diebold AccuBasic Interpreter Report; are you
22 familiar with that?

23 A. No, I'm not familiar with that one.

24 (Brief recess.)

25 Q. Mr. Cobb, you agree that all those reports I

1 talked to you about and mentioned that you have some
2 familiarity with --

3 A. With some of them, yes.

4 Q. Some of them reference the certified Diebold
5 systems.

6 A. Yes, they did, but none of them referenced the
7 system we use.

8 Q. And you agree that they reference Diebold
9 AccuVote-TS systems?

10 A. They did, but again, they were not running the
11 same software that we run.

12 Q. Do you agree they contain evaluations or
13 conclusions about Diebold AccuVote-TS voting machines?

14 A. They had sections in the reports that had the
15 evaluations and conclusions. I don't necessarily agree with
16 those but they did have them, yes.

17 Q. And you agree that they evaluated and made
18 conclusions about potential security risks involved in the
19 Diebold machines.

20 A. They did that. Again, I did not necessarily agree
21 with the concept of the report.

22 Q. And you agree that they evaluated or made
23 conclusions about the specific risk of electronic voting
24 results manipulation for Diebold AccuVote-TS voting
25 machines.

1 A. You'll have to explain specific because I do not
2 know what the specifics were.

3 Q. They made conclusions about specific risks that
4 were --

5 A. I saw conclusions about general risk that might
6 occur but I am not familiar with the specificity of what
7 those were.

8 Q. Were the general risks related to electronic
9 voting results manipulation possibilities?

10 A. They were in the ones that I'm aware of. They
11 defined those, their definition. Again, I don't necessarily
12 agree with the framework in which they did their test.

13 Q. All right. I'm just trying to clarify for my
14 clients' benefit and for the court's benefit eventually a
15 couple of matters and this is kind of a rephrasing of a
16 question I asked earlier.

17 A. Okay.

18 Q. During the course of an election itself, that is
19 to say while people are voting, if there were software
20 generated inaccuracies that would be carried over in the
21 ballot images, would there be any way to prove, to find out
22 that those inaccuracies existed?

23 A. Possibly because however the votes were recorded,
24 you know, there's a tape placed on the window of the polling
25 place each night which candidates and press read and when

1 they go back to the county to get the official results
2 there's a comparison to see if things were generally
3 correct.

4 If there was a software error that grossly
5 modified results, then I think there would be enough
6 witnesses there that could point that out. If it changed a
7 few votes here and there, probably not. But again, I'd like
8 to qualify -- I don't know how that software change could be
9 accomplished.

10 Q. But if it was, you wouldn't know it had been done.

11 A. Not if it was still in the framework of possible
12 votes.

13 Q. We're talking about for the individual machine.
14 In other words, if this machine is doing this
15 inaccurately --

16 A. Some precincts only have two machines. That's the
17 minimum. And if one of those machines is so messed up that
18 it affects the outcome of that precinct, yeah, that would be
19 noticeable.

20 Q. If a machine itself was reporting inaccurately on
21 a given election, nobody would know it.

22 A. Unless it was so grossly --

23 Q. Unless it was grossly disproportionate and said a
24 million people voted when only 20 people voted, for example.

25 A. Or for instance, it had a wrong number of voters

1 on it.

2 Q. But if it was just saying that the voters
3 voted for somebody else --

4 A. Just switched the candidates?

5 Q. There wouldn't be any way of knowing that.

6 A. No way of knowing that as long as it's within the
7 reasonable realm. But again, I don't know how that software
8 could have gotten in there.

9 Q. I understand. So in a recount situation, a
10 recanvass of electronic votes doesn't include the instrument
11 that the voter has used. It just includes only the
12 compilation that the machines have said.

13 A. The recount starts with the PCMCIA card.

14 Q. Yes, sir, and so whatever it has on it is what's
15 recounted.

16 A. That's right.

17 Q. So it's not the ballot of this guy that is
18 recounted. It is what the machine says was voted on that
19 day is recounted.

20 A. Go back to the definition I understand of the
21 ballot. The PCMCIA card is part of the ballot. Therefore,
22 in that case the ballot is reread.

23 Q. And then, of course, a person that voted on an
24 optical scan type thing that you could actually use the
25 piece of paper they voted on --

C E R T I F I C A T E

STATE OF GEORGIA:

COUNTY OF CHEROKEE:

I hereby certify that the foregoing transcript was taken down as stated in the caption, that the witness was first duly sworn, and the questions and answers thereto were reduced to typewriting under my direction; that the foregoing transcript is a true and correct record of the evidence given, and I further certify that I am not a relative or counsel to the parties in this case, am not in the regular employ of counsel for any of said parties, nor am I in anywise interested in the result of said case.

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This, the 25th day of June, 2007.

Sharon J. Ruschell, RMR, CRR, CCR B-1179

My Commission Expires 2-19-2008