THE STATUS OF VOTING EQUIPMENT

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Thank you very much. It's a pleasure to be here in Albany. I looked out at the audience and had a momentary pause. As was mentioned in my introduction, I have testified in nearly seventy-five different court cases around the country. One of my most intriguing cases was in the State of Indiana, in Indianapolis, where I was testifying about a redistricting case for the County of Marion County. The trial was held before the entire county court system with 35 judges in attendance. They set up an amphitheater like this, and it was strange testifying before 35 judges at once. We lost that case 18 to 17 on a perfect partisan split.

But I am here to talk to you today about voting equipment. It is a subject that I have become immersed in since I started in election administration. Election Data Services, which I head, is the only company in the nation that, as I always say, is crazy enough to keep track of what kind of voting equipment is used in every single county in the country, and we have been doing that since 1980. As a result, we have become a resource for a lot of people because we have a large amount of data. Not very many people thought about voting equipment and election administration until something happened in November of 2000 in a small contest called "President of the United States." Suddenly, everybody was focused on voting equipment, including a bunch of attorneys, and I ended up becoming Al Gore's expert witness on voting equipment down in Florida. So if I kept you awake for three and a half hours on that courtroom stand that Saturday morning, my apologies, but that is where the focus of the nation was that day.

Today I am here to talk with you a little bit about the status of voting equipment, but I want to start off by giving you a couple of important facts to realize when we discuss the election administration process in this country. First, size is an important element to remember. More than half the counties of this country have less than 10,000 registered voters in them. That is phenomenal. We always think about large jurisdictions, but more

651

than half of the counties have less than 10,000 registered voters.

There are only three hundred and twenty jurisdictions in the country that each have more than 100,000 registered voters, and there are only seventeen others, like New York City, that each have more than a million registered voters. And yet a lot of the focus that people have talked about has been about large jurisdictions, but that is not the state of the American Election Administration System in this country. Most election administrators manage a very small office, with few people, and a very thin budget.

Let me talk some about the history of voting equipment. For the first hundred years of this country's existence, we relied upon paper ballots. That was fine for the largely rural nature of this country. We were dealing with small precincts, small numbers of voters, certainly at that early time, and paper ballots were easy to count when you do not have a lot of them. Then, in the late 1800's, we started seeing significant growth in urbanized areas, which resulted in precincts becoming bigger and the counting of paper ballots taking a longer time. So as a result, the industrial revolution produced a mechanical solution in the form of the lever machines. These are still in existence here in your state, the last state of the nation to use lever machines. And, in fact, they started here in your state, just up the road, in Jamestown, New York with the Automatic Voting Machine Corporation, or AVM. Lever machines became very, very popular in this country, particularly in urban areas, for the first half of the 1900's. At the same time, paper ballots continued to be used in the rural parts of this country.

By the late 1950's, the urban areas, particularly the suburban communities around them, exploded in growth with the post World War II baby boom. And precincts continued to get larger and larger as we got more voters seeking to vote in the election process. Lever machines, of course, were becoming more costly to deal with in terms of administering. Around the country, there was an average of about two lever machines per precinct. But one of the major problems with lever machines was the transportation and trucking costs of taking these 700 pound behemoths out of the warehouse and getting them out to the polling places before Election Day. So transportation costs became a very major part of an election administrator's budget, and it was getting higher and higher in the mid part of the century.

As a result of only being able to afford two lever voting machines

in a precinct, the lines of voters waiting to vote on Election Day started to get longer. At the same time, the early start of women becoming a significant factor in the work place meant that the ready resources of poll workers, the housewife, started to dwindle. So election administrators had this problem of less people to man the polls, more voters, longer lines, and it became a major concern of a lot of jurisdictions around the country.

Once again technology came to the rescue, and in 1964, a small company (sic) with the initials of IBM came out with a new system for voting called punch cards. Punch cards really had been introduced by IBM two decades before for the Census Bureau to help them conduct the Census, but now IBM was looking for a new market for their technology, and the voting process looked to be a good prospect. One of the major selling points for punch cards was that the cost of one lever machine was equal to about ten punch card devices. All of a sudden the concern about having long lines at the polls could be alleviated by having more devices for voters to vote upon. Election administrators could deal with large precincts by having ten machines and ten voting booths in a single precinct and seek to eliminate the concern for long voting lines. One option was to have less precincts and as a result, fewer of those hard to find poll workers, because precincts could be larger in size. In addition, transportation costs could come down because you're dealing with just a 20-pound suitcase compared to a 700-pound lever machine.

One of the significant things with the punch cards was that we went back to a physical ballot. Many people do not realize it, but lever machines, of course, do not have a physical ballot. It is a fact that has been lost in the long debate on electronic voting machines and their lack of paper ballots. We went through a significant part of this nation's history without having a physical paper ballot when the lever machines were used in the first half of the 1900s. The early punch card systems were designed so that the cards could be brought back to the courthouse to be counted centrally. That was the easiest way of dealing with the many ballots that were being generated by the punch card system.

IBM's place in the market was short-lived in the election administration field, as they discovered the downsides of being in the public eye. Even back then punch cards had their problems. IBM ended up selling the patents for the punch card system to a number of their sales people in 1965. A company called CES, or Computer Election Systems, started up in Berkeley, California,

and it took over the reins of dealing with punch cards in this nation.

Punch cards became very popular in suburban parts of this country in the late 1960s and into the 70s. In the late 1970s, the City of Chicago began researching a move from their lever machines to the new punch cards. Anybody that knows anything about the history of Chicago and Chicago politics, knows there is a paranoia in that city around the voting process. It was the norm that ballots were counted in the precinct because nobody trusted that the ballots would go unaltered if they went downtown. This new central count punch card system became a major concern amongst election advocates, and the only way Chicago could purchase the punch card devices was if the company would develop a precinct based counting system. So CES created the PBC, the punch ballot counting system, so that Chicago could have a computer in the precinct that would count the ballots and they would know the results before the ballots made it into the Chicago River, or wherever.

In 1980, Election Data Services started keeping track of what kind of voting equipment was used in every county in the country. At the top of page 3 in the handout is a summary of the percent of counties and the percent of registered voters that were voting on different devices in 1980. It is intriguing when you compare the two numbers, and it's important to understand the differences. One can see that 40 percent of the nation's counties in 1980 were using paper ballots. That was the predominant use. It was old fashioned paper ballots marked with a pencil, counted by hand in the precinct with little tally sheets, mark one to four and cross out for five. That is how the vast majority of the counties in this country operated. However, if you look on the right-hand side of that table, one will see that all of these counties only accounted for ten percent of the registered voters. It is because it was all the rural parts of this country that were voting on paper ballots.

One ends up seeing the flip side of the equation when one looks at the punch card line in the chart. In 1980, 17 percent of the counties in the country were using punch cards, but they accounted for 28 percent of the registered voters. As a result, one can tell that punch cards were being used by the larger counties of this nation. Lever machines were used by 36 percent of the counties in the country in 1980. They were the second most predominant use of voting systems in the nation at that time in terms of counties, but, lever machines were the highest used in terms of registered voters;

42 percent of the nation's voters were voting on lever machines. We have made a series of maps, and if you had power up here, you would see those maps. I did bring paper copies of these maps, and they will be hanging in the auditorium when we go to lunch. You will be able to see and track the history of punch cards or of any type of voting equipment.

By the mid-1980's, a small company called American Information Systems, or AIS, operating out of Omaha, Nebraska began focusing their marketing efforts on the rural parts of the country. They were looking at how to help those jurisdictions that still had paper ballots. AIS developed a way to count paper ballots so that jurisdictions could keep using paper but have an easier way of counting them. This new system was called optical scan. For a voter, this system is a paper ballot. There is just a different way of counting the paper ballot; that was the new innovation. Originally in those early days of optical scan, it was sold as primarily a central count operation. Ballots were taken from the precincts down to the county courthouse to run through the large counting machine. However, by 1986, punch cards were used by more voters in the nation than any other type of voting system, and, again, if you had the map up here, you could see nice, little colors on the map in terms of seeing where they are. But by 1992, in the rural parts of the country or the mid part of the nation, people here had been mainly using paper ballots and by 1992 they were starting to move towards optical scan.

In 1996 we saw the merger of the largest punch card company in the nation with the largest optical scan organization. So CES plus AIS became ES&S, or Election Systems and Software. It is still in existence today, and is probably the largest company in terms of voting equipment in this nation. In 1996, Optical scan were in use by more counties in the country than any other voting system; upwards of 30 percent of the counties used optical scan in 1996. But punch cards were still used by more voters in the nation: thirty-one percent. Then we move towards 2000, and in 2000, as everybody was focused on the presidential election, we saw that optical scan was being used, by that time, by 41 percent of the counties of the country. But it was just 30 percent of the registered voters. Again, remember optical scan started in the smaller jurisdictions, and were still used in rural areas of the nation. The flip side of the evaluation coin was there with punch cards: it was in use by 16 percent of the counties, but by over 28 percent of the registered voters. Punch cards were almost equal to optical scan,

but usage of punch cards started coming down because of the small controversy with a small office called President of the United States.

Since 2000 we have kept track of the changes that are taking place with each election, each two year time period. If we had had this slide show, you'd see individual changes with each election calendar, 2000 to 2002, 2002 to 2004, and 2004 to 2006. These maps show the changes for each county and how many of them were making changes in voting equipment. All total, it was rather significant. It was the most extensive change in voting equipment usage that this country had experienced in its 200 year history, in the small matter of six years. So we ended up seeing significant amounts of changing going on, and you see the numbers there, upwards of 47 percent of the nation's counties changed voting systems between 2000 and 2006. Interestingly enough, most of the change for jurisdictions that had lever machines was towards electronic systems, while paper ballot jurisdictions predominately went to optical scan. Again, these jurisdictions were interested in keeping the paper.

So by 2006, that final poster, which is back there on the wall, ended up showing where we are at that election. And today, in 2007, there has continued to be change, although it does not appear to be as high as what happened between 2004 and 2006. We have created a set of line charts that shows the change over time. While it is harder to see the individual voting systems when the graph is in black and white, if it were in color like how we generated you would clearly see the change over the past nearly 30 years. One can clearly see the major changes in this nation that have occurred.

So, in conclusion, I leave you with a saying from a former election administrator. She would always tell people: "If I'm going to make a mistake, let it be an original one. I haven't learned anything if I'm repeating the mistakes of somebody else." So the key is, is learn from everybody. And that is what election administrators do, they listen and talk to everybody around the nation to obtain the latest information. Thank you, very much for this short introduction. Thank you.