



# ILLINOIS BALLOT INTEGRITY PROJECT SUBURBAN COOK COUNTY CHAPTER

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**Robert A. Wilson**  
*Chairperson*

***Via Electronic Transmission  
and United States Postal Service***

16 January 2006

Honorable Jesse R. Smart, Chairman  
Illinois State Board of Elections  
1020 S. Spring St.  
Springfield, IL 62701

Re: Diebold Unspun

Dear Chairman Smart:

When the Board approved the interim certification of the Diebold AccuVote-TSX on December 20, 2005, we assumed that you knew that Diebold wasn't just spinning one of their stories like:

- When on December 20, 2005, a Diebold representative extolled the "proven" reliability of the Diebold AccuVote-TSX in California testing on July 20, 2005, in fact in that test of 96 AccuVote TSXs, the machines had a minimum of 34 failures during 5.33 hours. This was a failure rate of 30.2% in less than half the length of an average election day. The report stated, "**It is hard to escape the conclusion that any system with failure rates this high is not ready for use in an election.**" Or,
- When in its December 29, 2005 letter to the Board, Diebold paraded its "ethics policy" while failing to mention that numerous members of top management had violated that policy and that ex-chairman, Walden O'Dell, had raised hundreds of thousands of dollars for George W. Bush and other Republican candidates. Or,
- When in its December 29, 2005 letter to the Board, Diebold ducked the issue of employee background checks by quoting its personnel policy while failing to mention that two key management employees, including one who was largely responsible for its computer code were convicted felons who served time together in a Washington State Correctional Facility for computer theft and cocaine trafficking. Or,
- When on December 29, 2005, Diebold claimed that problems in Alameda County (switched votes) occurred because, "The input from this many optical scanners caused an anomaly to occur." In fact, this was directly contradicted by Diebold's own statements to Alameda County on April 26, 2004, "DESI determined that these conditions are contributing factors [large number of ballot positions, multiple scanners] of the anomaly, not its cause. **Rather, the cause is a problem with the GEMS 1.18.18 program.**"

We assume that you didn't certify a pig in a poke - that the Diebold AccuVote-TSX had undergone rigorous hands-on testing by the Board's staff and its features were demonstrated to the Board. We didn't have that opportunity - and in fact, we can't get the Board to let us look at the reports prepared by your staff. So we thought we'd do the next best thing - we went online and looked at Diebold's website. Sure enough, they've got a demo: [http://www.diebold.com/dieboldes/OnLine\\_Demo/screen1.html](http://www.diebold.com/dieboldes/OnLine_Demo/screen1.html)

Honorable Jesse R. Smart  
16 January 2006  
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In Diebold's Frequently Asked Questions (FAQ) we found this statement in answer to a query about under-voting at <http://www.diebold.com/dieboldes/faq.htm>

**“The summary page will indicate via a distinct color which races have been under-voted.”**

So we tried the demo and what did we find? In three races presented, we were able to successfully **under-vote** in **two-thirds** of the races on the ballot, without a “distinct color” (or any other warning) appearing, casting votes for only **half** the choices available!

***The summary page did not indicate via a distinct color which races had been under-voted.***

If the AccuVote-TSX can't handle two races with a “vote for more than one” choice in a simple online demo, what leads the Board to believe that it can successfully handle real elections in for example, DuPage County which had more than 125 multi-choice races in a recent election?

In the attached document we present the exact steps followed in using the Diebold online demo and the screen captures that show the results. Try it – it takes just a few moments of your time – and its good for a hearty chuckle now . . . but will we be laughing on March 22<sup>nd</sup>?

Sincerely,



Attachment

Copies w/attachment to:

Wanda L. Rednour, Vice Chair – SBOE  
John R. Keith, Member – SBOE  
William M. McGuffage, Member – SBOE  
Patrick A. Brady, Member – SBOE  
Robert J. Walters, Member - SBOE  
Albert Porter, Member – SBOE

Brian A. Schneider, Member – SBOE  
Daniel W. White, Executive Director – SBOE  
Dianne Felts, Dir, Voting Systems & Standards  
Charles R. Owen - DESI  
Robert T. Saar – DuPage County  
William R. Barrett - Fidler  
Executive Committee – IBIP



# ILLINOIS BALLOT INTEGRITY PROJECT

[www.ballot-integrity.org](http://www.ballot-integrity.org)

## HOW TO UNDER-VOTE WITH A DIEBOLD ACCUVOTE-TSX *Diebold's Own Online Demo is Faulty*

January 14, 2006

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## UNDERVOTING WITH THE DIEBOLD ACCUVOTE-TSX TOUCH SCREEN DRE

One of the features of Touch Screen DREs (like the Diebold AccuVote-TSX) that's a big part of the sales pitch is the ability of the Touch Screen DRE to substantially reduce over-votes and under-votes. Admittedly a good sales pitch. Not having access to a Diebold AccuVote-TSX, we weren't able to test this feature in a real election, or even a simulated one. So we went to Diebold for information, specifically their website [www.diebold.com](http://www.diebold.com).

First we visited the Frequently Asked Questions (FAQs) and found the information right off the bat at: <http://www.diebold.com/dieboldes/faq.htm>

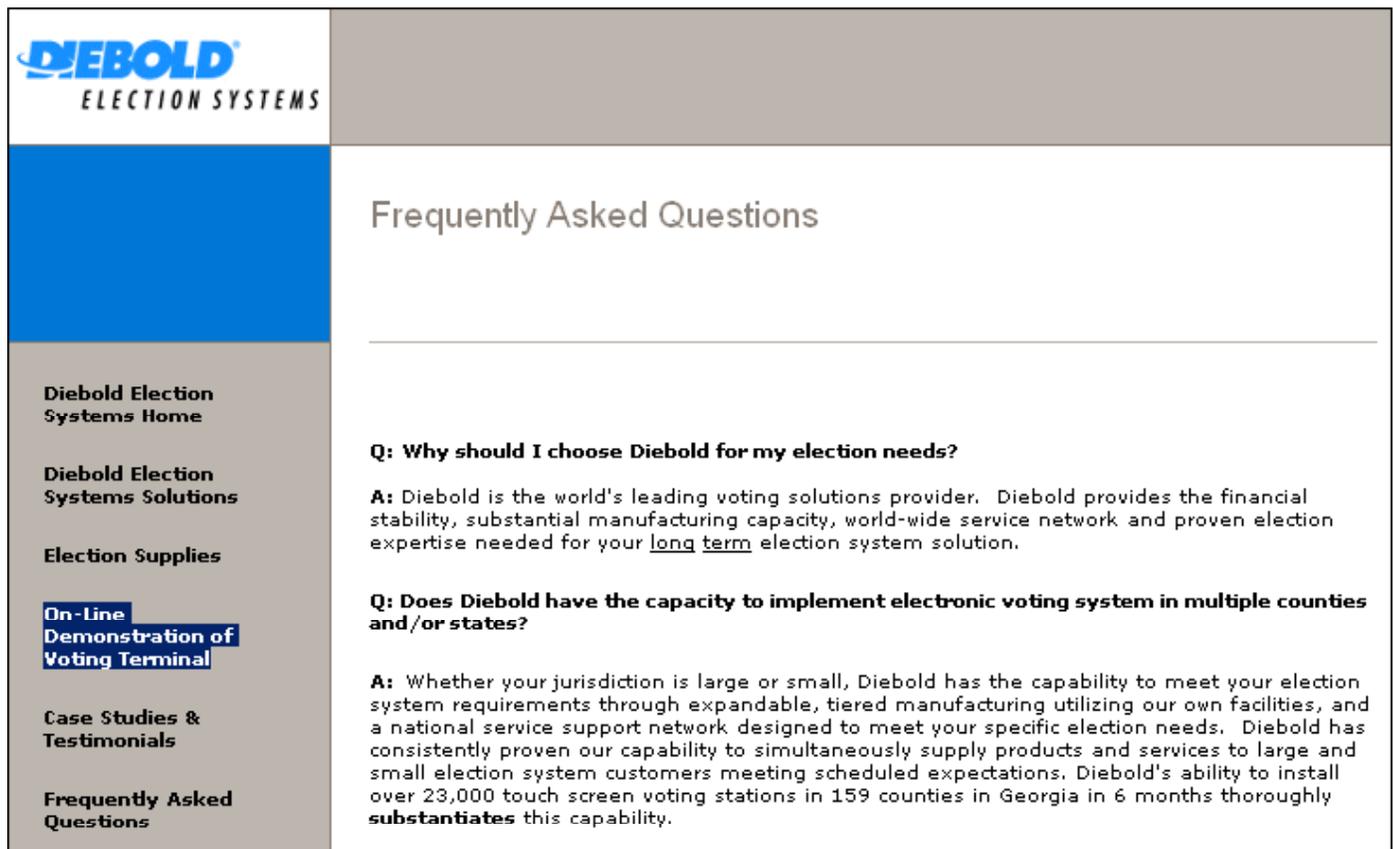
**Q: Can you over-vote using the AccuVote-TSX terminal?**

**A:** The AccuVote-TSX touch-screen ballot station does not allow a voter to select more than the designated candidates or selections for a specific race, eliminating the opportunity to over-vote.

**Q: Can you under-vote using the AccuVote-TSX terminal?**

**A:** The AccuVote-TSX touch-screen ballot station offers a summary page to the voter once the voter has sequenced through the entire ballot. **The summary page will indicate via a distinct color which races have been under-voted.** A touch of the screen on the under-voted race will cause the AccuVote-TSX to return the voter to the under-voted race within the ballot and allow the voter to complete the voting process. A voter can also step back and forth through the ballot, changing any selection until the ballot is "cast." The system will allow an under-voted ballot to be cast if it was the voter's intent not to vote in a race. [emphasis added]

OK, simple enough: Show us how it works. And, Diebold offers to do so, just click on the "On-Line Demonstration of Voting Terminal" menu selection:



	
	<h3>Frequently Asked Questions</h3>
<a href="#">Diebold Election Systems Home</a>	<b>Q: Why should I choose Diebold for my election needs?</b>
<a href="#">Diebold Election Systems Solutions</a>	<b>A:</b> Diebold is the world's leading voting solutions provider. Diebold provides the financial stability, substantial manufacturing capacity, world-wide service network and proven election expertise needed for your <u>long term</u> election system solution.
<a href="#">Election Supplies</a>	<b>Q: Does Diebold have the capacity to implement electronic voting system in multiple counties and/or states?</b>
<a href="#">On-Line Demonstration of Voting Terminal</a>	<b>A:</b> Whether your jurisdiction is large or small, Diebold has the capability to meet your election system requirements through expandable, tiered manufacturing utilizing our own facilities, and a national service support network designed to meet your specific election needs. Diebold has consistently proven our capability to simultaneously supply products and services to large and small election system customers meeting scheduled expectations. Diebold's ability to install over 23,000 touch screen voting stations in 159 counties in Georgia in 6 months thoroughly <b>substantiates</b> this capability.
<a href="#">Case Studies &amp; Testimonials</a>	
<a href="#">Frequently Asked Questions</a>	

Figure 1

Which takes you to the first page of the online demonstration:

[http://www.diebold.com/dieboldes/OnLine\\_Demo/screen1.html](http://www.diebold.com/dieboldes/OnLine_Demo/screen1.html)

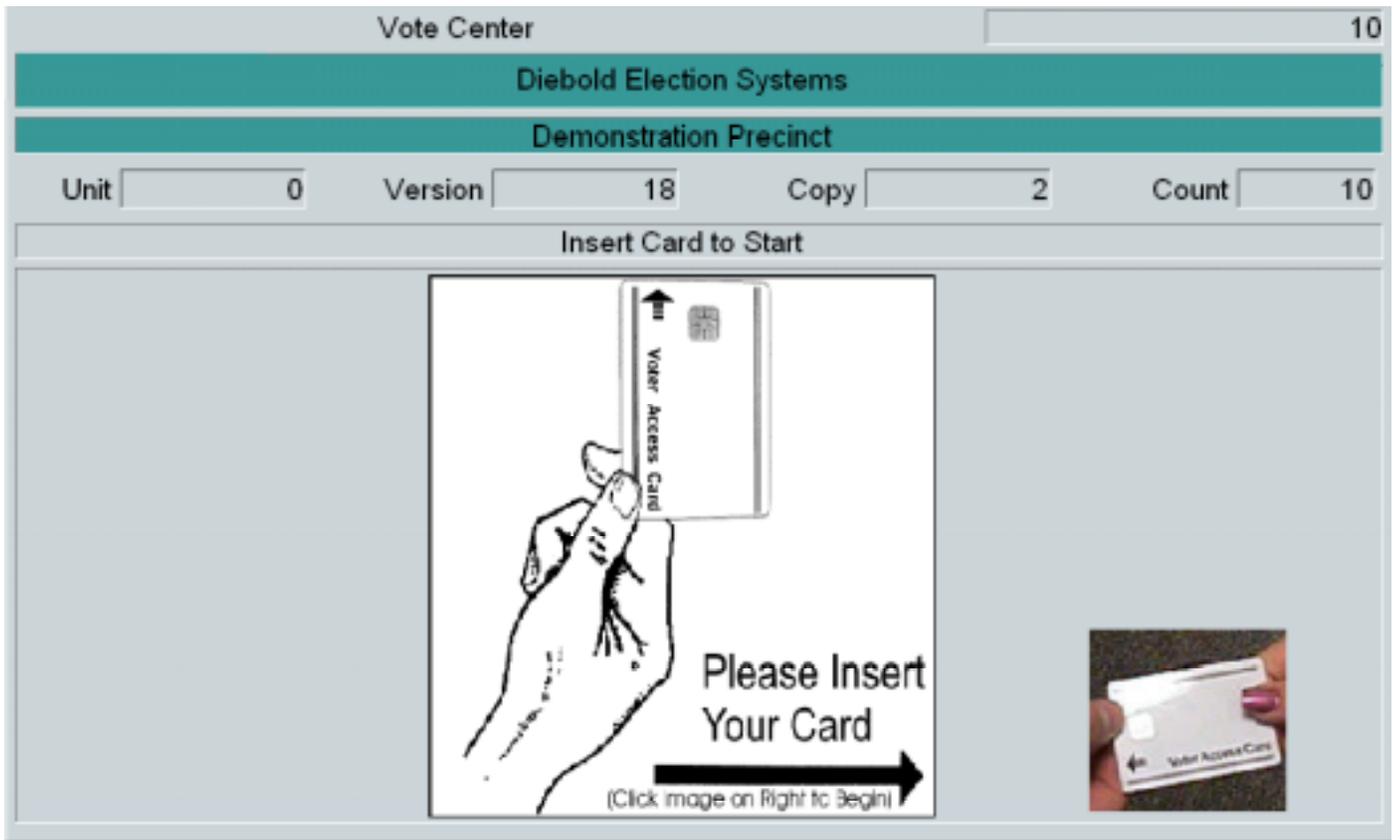


Figure 2

That was easy, so let's get started, click on the image of the Voter Access Card

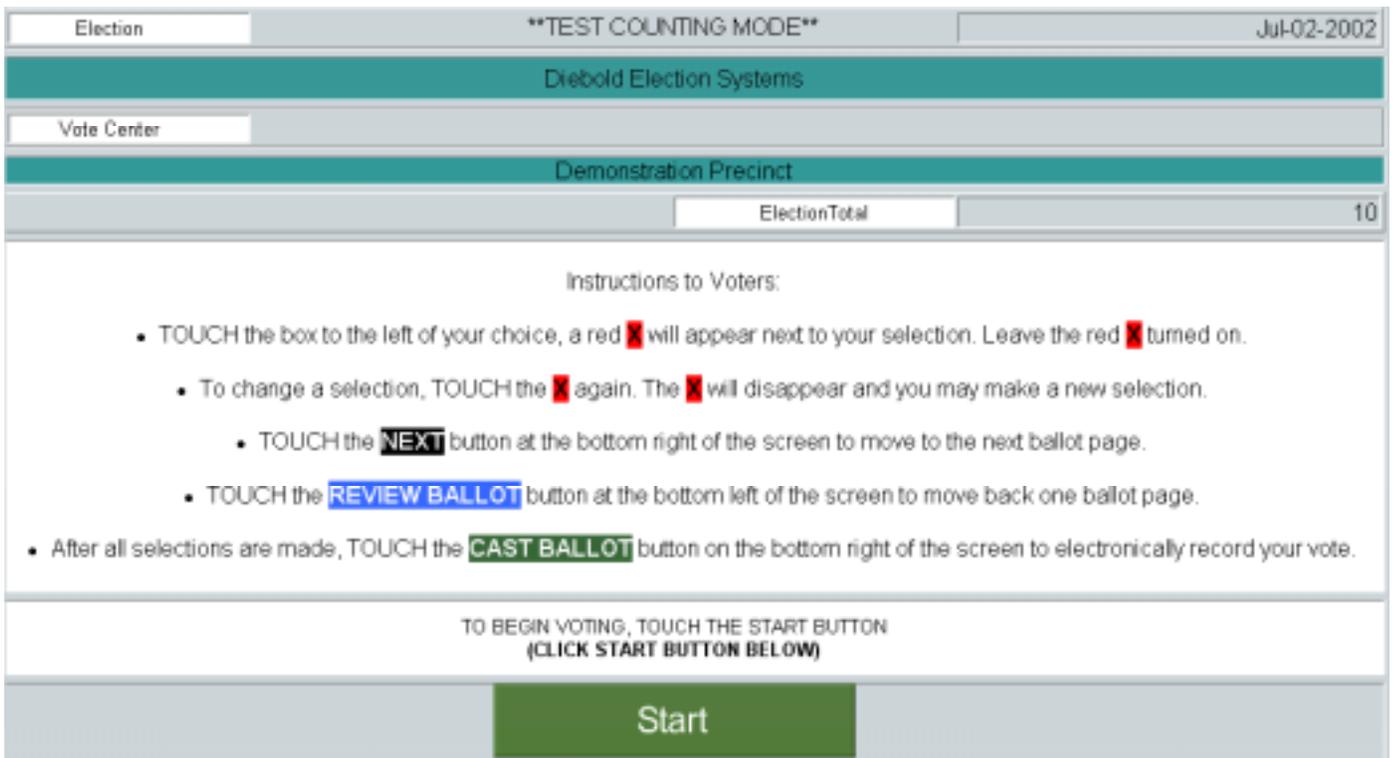


Figure 3

Now Click on the big Green "Start" button to see the ballot.

Diebold Election System AccuVote DemonstrationBallot		
<b>FAMOUS LEADERS</b> (Vote for one)	<b>FAMOUS SINGERS</b> (Vote for no more than two)	<b>FAMOUS ATHLETES</b> (Vote for no more than three)
<input type="checkbox"/> John ADAMS	<input type="checkbox"/> Frank SINATRA	<input type="checkbox"/> Alan AMECHE
<input type="checkbox"/> Benjamin FRANKLIN	<input type="checkbox"/> Dean MARTIN	<input type="checkbox"/> Jim PALMER
<input type="checkbox"/> Dolie MADISON	<input type="checkbox"/> Elvis PRESLEY	<input type="checkbox"/> Cal RIPKEN JR.
<input type="checkbox"/> Harriet TUBMAN	<input type="checkbox"/> Sammy DAVIS JR.	<input type="checkbox"/> Frank ROBINSON
<input type="checkbox"/> George WASHINGTON	<input type="checkbox"/> Aretha FRANKLIN	<input type="checkbox"/> Babe RUTH
<input type="checkbox"/> Write-In		<input type="checkbox"/> Johnny UNITAS
1 of 1		Next

Figure 4

Let's choose according to the instructions.

Diebold Election System AccuVote DemonstrationBallot		
<b>FAMOUS LEADERS</b> (Vote for one)	<b>FAMOUS SINGERS</b> (Vote for no more than two)	<b>FAMOUS ATHLETES</b> (Vote for no more than three)
<input checked="" type="checkbox"/> John ADAMS	<input checked="" type="checkbox"/> Frank SINATRA	<input checked="" type="checkbox"/> Alan AMECHE
<input type="checkbox"/> Benjamin FRANKLIN	<input checked="" type="checkbox"/> Dean MARTIN	<input checked="" type="checkbox"/> Jim PALMER
<input type="checkbox"/> Dolie MADISON	<input type="checkbox"/> Elvis PRESLEY	<input checked="" type="checkbox"/> Cal RIPKEN JR.
<input type="checkbox"/> Harriet TUBMAN	<input type="checkbox"/> Sammy DAVIS JR.	<input type="checkbox"/> Frank ROBINSON
<input type="checkbox"/> George WASHINGTON	<input type="checkbox"/> Aretha FRANKLIN	<input type="checkbox"/> Babe RUTH
<input type="checkbox"/> Write-In		<input type="checkbox"/> Johnny UNITAS
1 of 1		Next

Figure 5

Clicking the **Green** "Next" button takes you to the completed ballot screen:

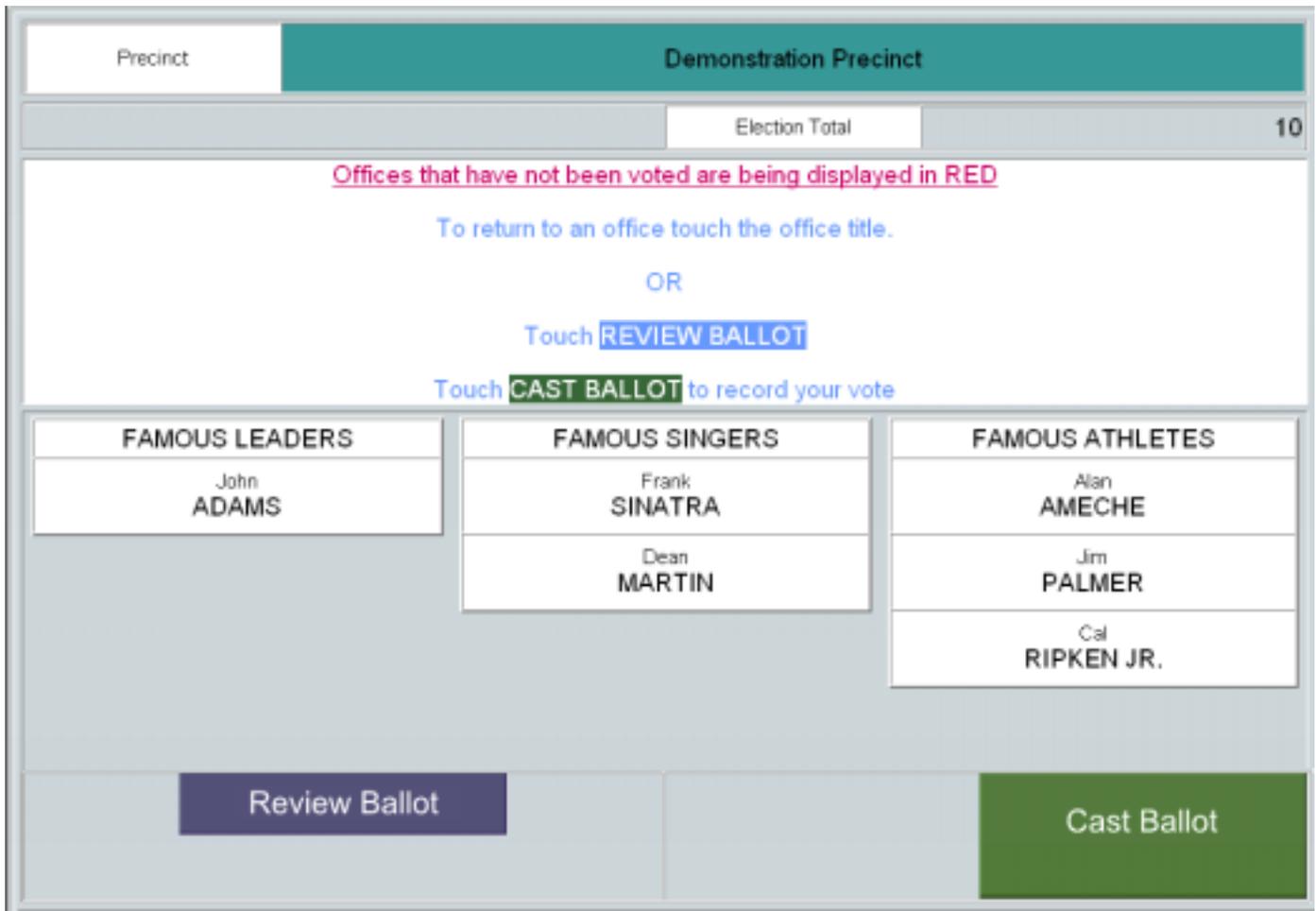


Figure 6

If these were your choices (and they were) you would click the **Green** “Cast Ballot” button. Or if they were not, clicking the **Blue** “Review Ballot” button would return you to the previous screen (just like the “back” button on your Web browser). Clicking the “Cast Ballot” button takes you here:

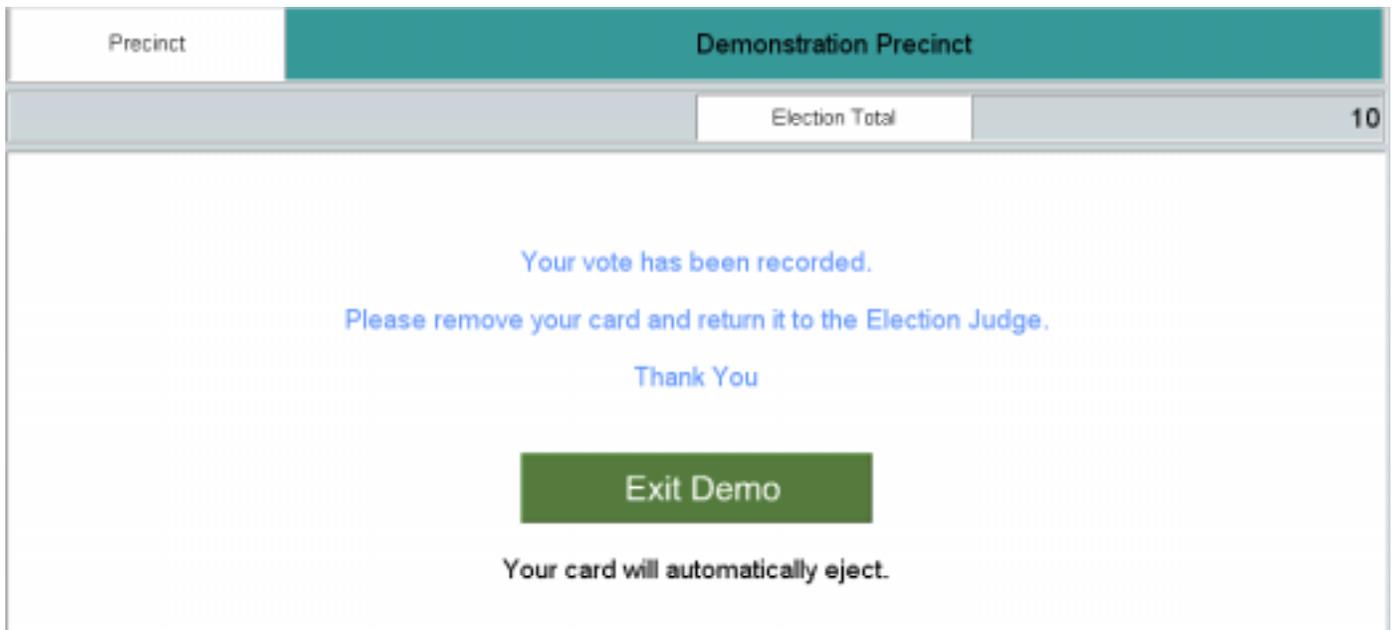


Figure 7

Congratulations! You’ve just cast your ballot by touch screen! But what if you had done this:

Diebold Election System AccuVote DemonstrationBallot		
<b>FAMOUS LEADERS</b> (Vote for one)	<b>FAMOUS SINGERS</b> (Vote for no more than two)	<b>FAMOUS ATHLETES</b> (Vote for no more than three)
<input type="checkbox"/> John ADAMS	<input checked="" type="checkbox"/> Frank SINATRA	<input checked="" type="checkbox"/> Alan AMECHE
<input type="checkbox"/> Benjamin FRANKLIN	<input checked="" type="checkbox"/> Dean MARTIN	<input checked="" type="checkbox"/> Jim PALMER
<input type="checkbox"/> Dolle MADISON	<input type="checkbox"/> Elvis PRESLEY	<input checked="" type="checkbox"/> Cal RIPKEN JR.
<input type="checkbox"/> Harriet TUBMAN	<input type="checkbox"/> Sammy DAVIS JR.	<input type="checkbox"/> Frank ROBINSON
<input type="checkbox"/> George WASHINGTON	<input type="checkbox"/> Aretha FRANKLIN	<input type="checkbox"/> Babe RUTH
<input type="checkbox"/> Write-In		<input type="checkbox"/> Johnny UNITAS
1 of 1		Next

Figure 8

If you failed to choose a famous leader, you'd get this warning in **RED WARNING**:

Election Total		10
<p><u>Offices that have not been voted are being displayed in RED</u></p> <p>To return to an office touch the office title.</p> <p>OR</p> <p>Touch <b>REVIEW BALLOT</b></p> <p>Touch <b>CAST BALLOT</b> to record your vote</p>		
<b>FAMOUS LEADERS</b>	<b>FAMOUS SINGERS</b> Frank SINATRA Dean MARTIN	<b>FAMOUS ATHLETES</b> Alan AMECHE Jim PALMER Cal RIPKEN JR.
Review Ballot	Cast Ballot	

Figure 9

And, you have the choice to cast your ballot without choosing a famous leader or going back to correct the omission. Assuming you don't want to choose a famous leader, click the Green "Cast Ballot" button

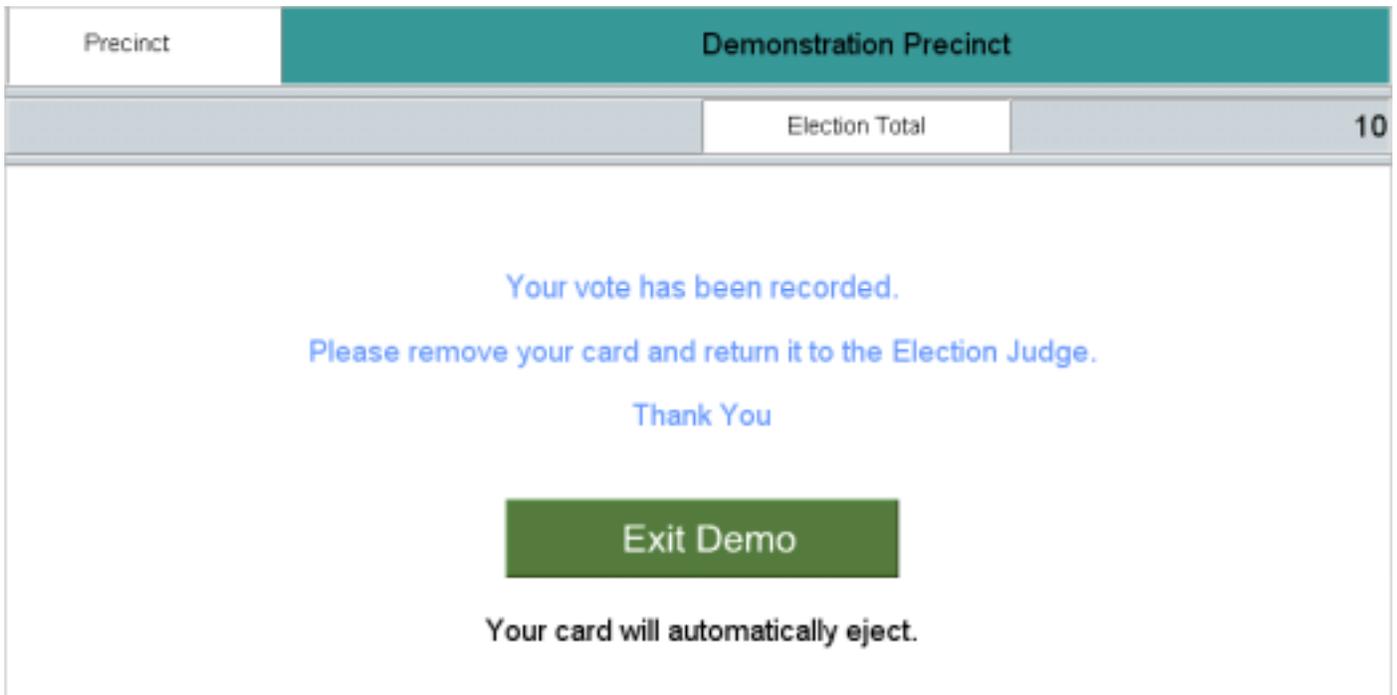


Figure 10

We've been here before. But just suppose you didn't read all the instructions, and inadvertently voted for just one choice in each of the three races, like this:

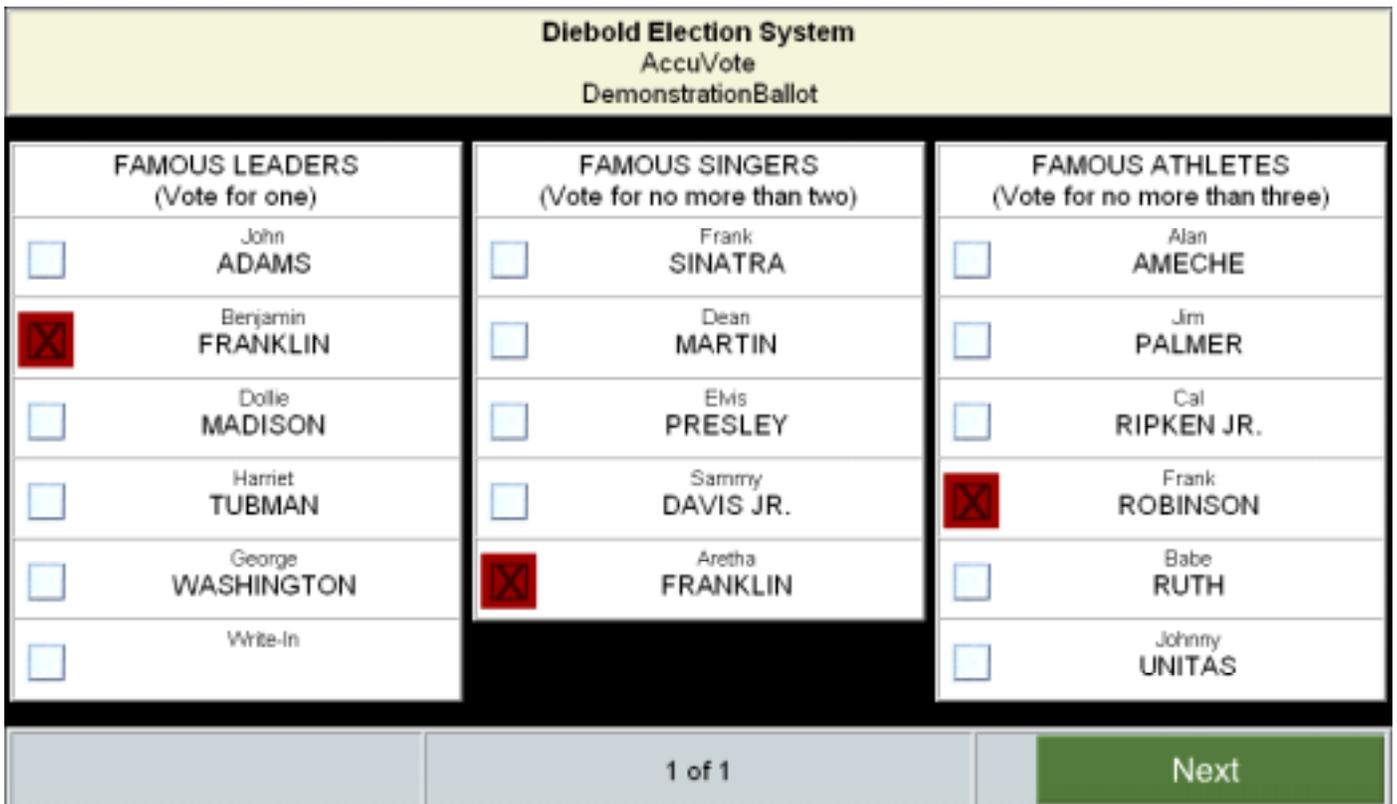


Figure 11

And clicked the "Next" button. You'd see a "summary" screen that looked like this:

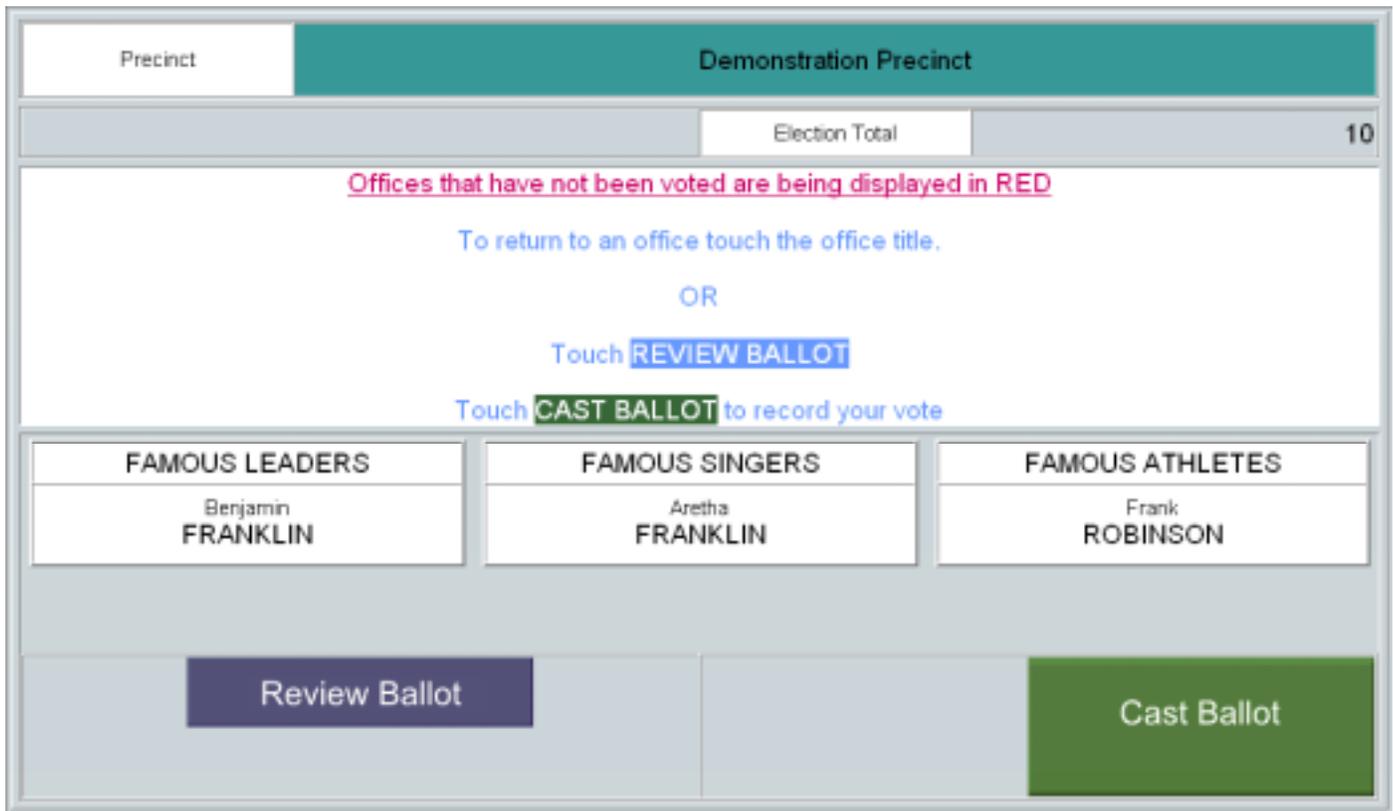


Figure 12

Ooops – No **RED WARNING!** There's no indication of the proper number of choices as there was on the ballot screen (Figure 11). So, you review the summary screen (as Diebold calls it) and say to yourself, "OK, those are my correct choices each of the three races, Ben Franklin, Aretha Franklin and Frank Robinson. There's **no red** highlight, **no** text note, nothing to warn you that you should go back and review the ballot where you might make **all** the choices available to you as a voter. So you go ahead and click the **Green** "Cast Ballot" button and get this screen:

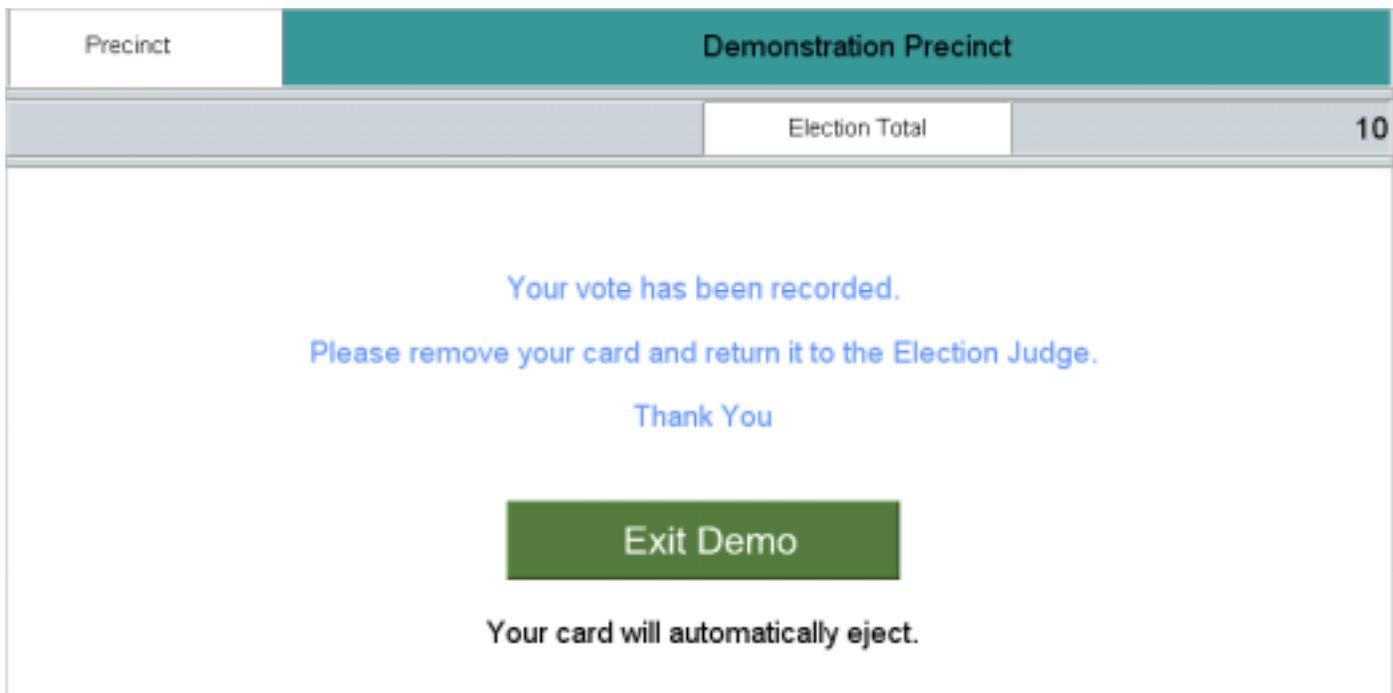


Figure 13

Congratulations! You've just successfully **under-voted** in **two-thirds** of the races on the ballot, casting votes for only **half** the choices you had. You've received the same response as when you voted for all the choices available to you in all three races (Figure 10).

So what's the point? It's only an online demo, not the real thing. Well, there are a number of conclusions we might draw based on what the facts turn out to be: The online demo doesn't work like a real Diebold touch screen DRE. In that case it's lousy marketing, bad Web design, or both. It also says that Diebold doesn't have enough programming expertise to make a simple three-race online demo work right. What does that say about their ability to program the functionality of a real machine for a real election?

Or, the demo really does work like a real touch screen DRE. In that case, there's a massive hole in the functionality of the Diebold AccuVote-TSX and it doesn't work like Diebold says it does:

"The summary page will indicate via a distinct color which races have been under-voted."

Probably the first thing that Diebold would say is that there's almost no relation between the code that's used in programming the AccuVote-TSX and the website demo, and that's exactly correct. The demo is written using two common Web languages, HTML (HyperText Mark-up Language and JavaScript (not to be confused with Java). These are relatively low-level languages and most programmers would deny that they are programming languages at all, and we tend to agree.

HTML controls text appearance and has certain syntax conventions that allow for "calls" that display graphics, provide links, etc. JavaScript is a more robust language that permits conditional statements and provides interactivity. The advantage of JavaScript on the Web is that it doesn't put a burden on the server for processing like some other script languages, for example Perl.

Any web builder with more than a few weeks experience is familiar with the concept of lists or choices that do not allow over-selection. This feature is often used for Yes/No questions or choose one from a list functions. That's why the demo won't let you over-vote. Choosing two (or three) from a list of multiple choices is a little trickier, but relatively straightforward.

Which brings us to the second, and significantly more important point: It's easy to examine the demo and see where problems might exist because the "code" is **open-source!** It's right there on the Web and you can look at it. Here's an example from the ballot screen page (our comments in **RED**):

```
<body topmargin="3" leftmargin="3" marginwidth="3" marginheight="3" bgcolor="#000000" > [page background=black]
<div align="center">
<table border="2" cellspacing="0" cellpadding="3" width="100%" bgcolor="beige"> [header area – background color = beige]
<tr>
<td align="center"><script language="JavaScript">document.write(voteheader);</script></td> [writes ballot header text (including typo)]
</tr>
</table>
<br>
<table border="0" cellpadding="0" cellspacing="0" width="100%"> [Defines ballot table]
<tr>
<td width="33%" valign="top"> [1st Column – 1/3 width]
<script language="JavaScript">drawBallot(1,candidate[1][0],set1header,candidate,3);</script> [Draw 1st ballot – max sel=1 min=0]
</td>
<td width="33%" valign="top"> [2nd Column – 1/3 width]
<script language="JavaScript">drawBallot(2,candidate[2][0],set2header,candidate,3);</script> [Draw 2nd ballot – max sel=2 min=0]
</td>
<td width="33%" valign="top"> [3rd Column – 1/3 width]
<script language="JavaScript">drawBallot(3,candidate[3][0],set3header,candidate,3);</script> [Draw 3rd ballot – max sel=3 min=0]
</td>
</tr>
</table>
<br>
<table border="2" width="100%" bgcolor="#CCD5D9">
<tr>
<td width="30%">&nbsp;</td>
<td width="40%" align="center">1 of 1</td>
<td align="right" width="30%">
<a name="submit" href="screen4.html">
</a></td> ["Submit" (Click) Next button – GoTo: Summary Screen]
</tr>
</table> [display "Next" button image]
```

As you can see, most HTML is fairly intuitive and even someone who has no real experience can get a general idea of what instructions are being given. Therefore, anyone with a reasonable knowledge of HTML and JavaScript could examine the under-voting problem and write some additional code (a patch or hack) that would fix the problem. **Open source code can be a valuable means to improve the product!**

The current scripting does alert the user when **no** choice is made in a race (a total under-vote), but doesn't alert the voter when **not all** choices have been exercised. With just a few lines of HTML code and a few more JavaScript screen drawing instructions, the "summary screen" could look like this when under-voting (not selecting the maximum number of choices) occurs.

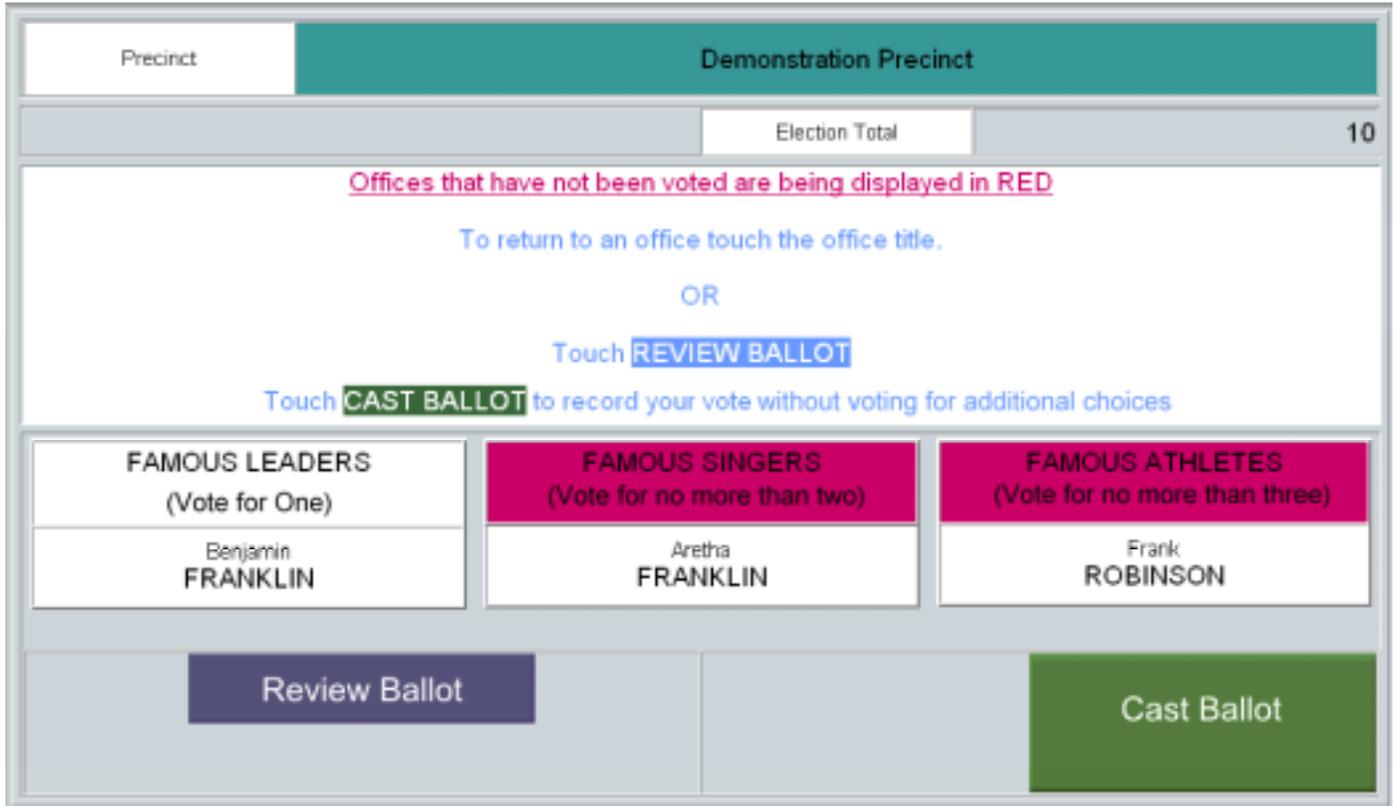


Figure 14

Compare Figure 14 with Figure 12. Which screen would you rather see if you've under-voted?

### Conclusion

We repeat, either this is an accurate depiction of how Diebold AccuVote Touch Screen DREs work and some changes need to be made; or it's a truly inadequate demo, especially from a marketing perspective, and some changes need to be made. We realize that the problem more likely lies with the demo, but it still doesn't reflect well on Diebold.

Note the copyright: Copyright © Diebold, Incorporated, 1994-2003 and demo date: July 2, 2002. Hardly looks up-to-date. But it also means that this demo which allows under-voted races with **no text** or **color warning** has been there a long time.

Diebold, here's some free advice:

Junk the JavaScript – try ASP (Active Server Protocol) – Free tutorials: <http://www.aspfree.com>. Make the design of the screen better resemble the actual AccuVote-TSX and fix the U-G-L-Y colors. Surely a company that "is at the forefront in providing high-quality, secure direct recording electronic (DRE) voting solutions;" and, "provides voters with an entirely new state-of-the-art . . . design that represents a major leap forward in voting technology," can do better than this. And most assuredly, Illinois voters deserve better than Diebold.