

0 Connecticut Citizen Election Audit

Citizen Post-Election Audit Report

Independent Observation and Analysis of the November 2013
Connecticut Post-Election Audit

March 3, 2014

Executive Summary

Introduction

After the November 2013 Municipal election, Connecticut conducted its twelfth large-scale post-election audit¹. This was also the Connecticut Citizen Election Audit's² twelfth large-scale audit observation.

The purposes of the observations are to demonstrate citizen interest in the process, increase citizen involvement in elections, provide feedback to the Secretary of the State and the Connecticut Legislature on the audit process, and to provide the public with information necessary to determine their confidence in our elections.

Volunteer observers invested 43 days observing 34 local counting sessions, providing feedback on the process. Observers frequently attended audits on short notice, observed multiple audits, and accommodated last minute changes to the audit schedule. **Without the service from these volunteers, Connecticut's post-election audits would take place without public observation and the insights in this report would not be possible.**

Findings

We conclude, based on our citizen observations and our analysis of official audit reports, that the November post-election audits continue to fail to inspire confidence, based on the:

- Lack of consistency, reliability, and transparency in the conduct of the audit.
- Discrepancies between machine counts and hand counts reported to the Secretary of the State by municipalities.
- Lack of investigation of such discrepancies, and the lack of standards for triggering such investigations.
- Weaknesses in the ballot chain-of-custody.

Our observations and concerns remain similar to those reported in previous reports. Comparing this audit to the two most recent November reports for 2011 and 2012, we note:

- Little difference, positive or negative, in the issues and level of concerns affecting confidence identified in previous reports.
- An unsatisfactory improvement in the random audit drawing integrity vs. the November 2012 audit, as reported in our recent Districts In Drawing Study³.

¹ In this document we will frequently use the term "audit" when we mean "post-election audit" or "post-election audit counting session". Technically, we believe that the whole process encompassing everything from the preservation of records, random drawings, counting in municipalities, the report by the University of Connecticut, and the evaluation of that report by the Secretary of the State would be the "audit". However, for readability we will usually follow the common practice of using "audit" to refer to parts of the whole.

² Formerly, the Connecticut Citizen Election Audit Coalition, we have recently reorganized as an independent organization, with many of the same volunteers continuing and extending the work of the Coalition.

One of our greatest concerns is the discrepancies between machine counts and hand counts reported to the Secretary of the State (SOTS) by Registrars of Voters. **In many cases, discrepancies are not thoroughly and reasonably explained nor investigated. In some cases the explanations make no sense or contradict the data in municipalities' reports.**

Based on citizen observation and reported results, **we find that the organization, planning, and ad-hoc counting procedures used by many municipalities are not sufficient to count accurately and efficiently and as a result, we have no means to determine whether discrepancies should be attributed to either human error or to optical-scan voting machines.**

The public, candidates, and the Secretary of the State should expect officials to be able to organize audits, to produce accurate hand counts.

Recommendations

We continue to support our long-standing recommendations for improving the audits and the audit law (See Appendix B).

With this report we emphasize several areas which can be addressed by local officials and the Secretary of the State's Office to meet the letter and the intent of the law, without legislative action:

- The audit procedures should be revised to conform to the law; provide detailed methods for accurate, efficient counting; include detailed methods for accounting for results from multiple batches; and provide clearer, more accurate descriptions of questionable votes. Revisions could be accomplished by the SOTS Office or by the Registrars of Voters Association of Connecticut (ROVAC).
- The SOTS Office should not accept incomplete Audit Report Forms; require that forms be received shortly after the audit counting sessions; require that forms have all required items filled-in; and require that the specified number of offices and candidates be counted.
- The SOTS Office should establish and enforce standards for triggering investigations of reported differences, including public re-counting, and technical investigations of such differences.

³ Available at <http://CTElectionAudit.org>

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Background

After the November 2013 Municipal election, Connecticut conducted its twelfth large-scale post-election audit. This was also the Connecticut Citizen Election Audit's twelfth large-scale audit observation.

The purposes of the observations are to demonstrate citizen interest in the process, increase citizen involvement in elections, provide feedback to the Secretary of the State and the Connecticut Legislature on the audit process, and to provide the public with information necessary to determine their confidence in our elections.

By law, the Secretary of the State (SOTS) is required, in each election, to select at random 10% of Connecticut's voting districts to participate in post-election audits. In a municipal election year, Municipal Clerks in Municipalities with selected districts randomly select three offices for audit in each of those districts.

The audit counting sessions were required to be conducted between November 20, 2013 and December 13, 2013. In the random drawing, 66 districts were selected for audits from the list of districts not exempt from the audits due to close vote recanvasses⁴. The districts performing audits were located in 44 municipalities.⁵

Our volunteers invested 43 days observing 34 local counting sessions, providing feedback on the process. Observers frequently attended audits on short notice, observed multiple audits, and accommodated last minute changes to the audit schedule. **Without the service from these volunteer observers, Connecticut's post-election audits would take place without public observation and the insights in this report would not be possible.**

Citizen Observation: Challenges and Limitations

Through past experience in observing audits, we have continuously improved our forms, training materials, and conference call training sessions for observers. This year for the first time, we supplemented conference call training with web-based video training.

We recognize that there may be occasional errors in our raw data derived from observations. However, when taken as a whole, the observations tell a collective story that is quite consistent and provides valuable feedback for continuing education of elections officials.

⁴ The Connecticut post-election audit law exempts districts with close vote recanvasses from the audit along with any districts subject to a contested election. Alternate districts are selected in the random drawing, in case towns have neglected to report recanvasses to the Secretary of the State or if subsequent election contests exempt additional districts.

⁵ SOTS drawing press release: <http://tinyurl.com/CTEANov2013PR>

Without our volunteer observers willing to invest a day of their time, available for short-notice scheduling, and observing to the best of their ability, nobody but local election officials would know how post-election audits are conducted in Connecticut. Our observers care about democracy and ensuring that measures are in place to protect the integrity of our elections.⁶

Purpose of Connecticut's Random, Post-Election Audits

As stated in the Office of the Secretary of the State's Post-Election Audit Procedures⁷:

The primary purpose of the hand count audit is to assess how well the optical scan voting machines functioned in an actual election and to ensure that votes cast using these machines are counted properly and accurately.

The Principles and Best Practices for Post-Election Audits⁸ includes the following definition and benefits:

Well-designed and properly performed post-election audits can significantly mitigate the threat of error, and should be considered integral to any vote counting system. A post-election audit in this document refers to hand counting votes on paper records and comparing those counts to the corresponding vote counts originally reported, as a check on the accuracy of election results, and resolving discrepancies using accurate hand counts of the paper records as the benchmark. Such audits are arguably the most economical component of a quality voting system, adding a very small cost for a large set of benefits.

The benefits of such audits include:

- *Revealing when recounts are necessary to verify election outcomes*
- *Finding error whether accidental or intentional*
- *Deterring fraud*
- *Providing for continuous improvement in the conduct of elections*
- *Promoting public confidence*

⁶ Upon request of any registrar of voters participating in the audit, we would be pleased to discuss volunteer observation reports and provide feedback applicable to their municipality.

⁷ Nov 2013 Official Procedures: <http://tinyurl.com/CTEANov2013OF>

⁸ <http://www.electionaudits.org/principles>

Methodology

The following activities were performed in the course of the project to organize observers, collect data, and analyze data for the report. They are in approximate time sequence:

- Just prior to the November 2013 election and shortly thereafter, we emailed past observers an invitation to sign-up on the web, to observe local counting sessions.
- Observers signed-up, providing dates that they could be available for observing and the distance they were willing to travel to an observation. Observers were encouraged to provide at least three availability dates and volunteer to travel at least thirty-five miles, in order to have a high probability of being assigned to an observation. Observers also sign-up for a conference call training session and are emailed training materials, including access to video training.
- Our volunteers attended the random audit drawing held at the SOTS Office. As has been the custom, our volunteers were invited by the Secretary to do the actual drawing of districts from a raffle barrel. The SOTS Office provided us with a list of districts included in the drawing, and those exempt from the audit, based on recanvasses. Shortly after the drawing, the SOTS Office issues a press release with the list of selected districts and selected alternate districts.
- Municipalities and districts in the drawing were recorded in our Audit Database. Emails were sent, calls made, and voice mails left with Registrars of Voters for the selected municipalities.
- Observers participated in conference call trainings in the days prior to the start date for the local audit counting sessions, which begin fifteen (15) days after the election.
- Starting shortly after the drawing and extending through the audit period, as the audit dates are obtained from local officials, observers are matched and tentatively scheduled for upcoming audits. Some audit dates are forwarded to us from the SOTS Office as that office is informed of dates by local officials. Often schedule changes are made when observers are unable to observe a tentatively scheduled audit. Some observers sign-up for additional dates. Others volunteer to observe additional audits.
- The list of municipalities and districts were updated as we learned of selected districts that are exempt and districts from the alternate lists are assigned.
- Observers attend audits, completing paper Observation Report Forms, and, where possible, collecting draft or final copies of the official SOTS Audit Report Forms. Copies of some Audit Report Forms are mailed or scanned by observers for early data entry. Most Observation Report Forms are submitted online using the SurveyMonkey tool, some paper forms are mailed or emailed for data entry.
- We review Observation Reports, consolidate multiple reports from the same Municipality, create statistical data, and analyze the data.
- The SOTS Office provided copies of received official Audit Report Forms to us on January 30, 2014

- We completed data entry of all Audit Report Forms based on the official data. Three municipal reports were not provided by the SOTS Office. The associated registrars were emailed, with two of the three supplying copies of the reports. The third responded, yet has not yet sent the reports. All data entry was verified, and then all significant differences between machine and human counts were verified at least a second time.
- Data and observation reports are analyzed, compared with past results, and this report is created.

Analysis

Summary

We conclude, based on our citizen observations and our analysis of official audit reports, that the November post-election audits continue to fail to inspire confidence, based on the:

- Lack of integrity in the random district selection.
- Lack of consistency, reliability, and transparency in the conduct of the audit.
- Discrepancies between machine counts and hand counts reported to the Secretary of the State by municipalities.
- Lack of investigation of such discrepancies, and the lack of standards for triggering such investigations.
- Weaknesses in the ballot chain-of-custody.

Our observations and concerns remain similar to those reported in previous reports. Comparing this audit to the two most recent November reports for 2011 and 2012, we note:

- An improvement in the random audit drawing integrity vs. the November 2012 audit, where we observed “A significantly higher inaccuracy of the districts included in the random audit drawing.”
- Little difference, positive or negative, in the issues and level of concerns affecting confidence identified in previous reports.

Based on the discrepancies uncovered in the random drawing for 2012, we initiated a project to independently audit the districts in the drawing for 2013. The findings of that Citizen Audit⁹ was reported in our recent “Districts in Drawing Study Report” available at <http://CTElectionAudit.org>

One of our greatest concerns is the discrepancies between machine counts and hand counts reported to the Secretary of the State by municipalities. In many cases, these discrepancies are not thoroughly and reasonably explained nor investigated. In some cases the explanations make no sense or contradict the data in municipalities’ reports.

Based on citizen observation and reported results, we find that the organization, planning, and ad-hoc counting procedures used by many municipalities are not sufficient to count accurately and efficiently and as a result, we have no means to determine whether discrepancies should be attributed to either human error or to optical-scan voting machines.

The public, candidates, and the Secretary of the State should expect officials to be able to organize audits, to produce accurate hand counts, yet not, in normal circumstances, to have the skills to analyze and explain differences between accurate hand counts and machine counts. Such differences should be investigated by technicians, with appropriate expertise, such as the University of Connecticut VoTeR

⁹ Unlike this report which is based on citizen observation and analysis of an audit conducted by officials, the Districts In the Drawing Study reports an audit conducted by citizens, of a public function.

Center. Investigations involving counting ballots or votes should be open to public observation and effectively announced to the public, in advance.

Citizen Observation Analysis

Volunteer citizen observers make observations of local counting sessions and report their observations on the Observation Report Forms¹⁰. Analysis in this section is based on those reports. Appendix A is a table showing the percentage of ‘yes’ responses on all yes/no questions on those forms for this audit and the previous two November audits.

In several aspects it is more appropriate to compare even-year-elections with even-year-elections and odd-year-elections with odd-year-elections. Even-year-elections are statewide, involve more ballots, yet are in general, easier races to count manually, while odd-year-elections are municipal and involve fewer ballots, yet involve more challenging counts of vote-for-multiple races.

A. Procedures Unenforceable, Current Laws Insufficient

As noted in previous reports, discussions with representatives of the Secretary of the State’s Office and the State Elections Enforcement Commission (SEEC) indicated that many, if not all, of the post-election audit procedures, including those covering chain-of-custody, are unenforceable. There is disagreement between past SEEC Directors and some members of the Legislature regarding the enforceability of regulations, but there is agreement that, currently, post-election audit procedures are not enforceable.

We note that the adherence to prescribed chain-of-custody and ballot security procedures varies widely among audited districts. Laws that govern the sealing of ballots, memory cards, and tabulators after an election are unclear. The law has not been updated to recognize that polling place voting with optical scanners involves paper ballots. Ballots are not uniformly maintained in secure facilities and access to these storage facilities is not reliably logged or recorded, even though two individuals are required to be present when these facilities are accessed. In many towns, each registrar could have individual, unsupervised access to the sealed ballots for extended periods undetected, and in many towns, several other individuals have such access. The lack of uniform security of the ballots diminishes confidence in the integrity of the ballots which are the basis for the data reported in audits.

We emphasize that this report does not question any individual’s integrity. However, secure, credible chain-of-custody procedures should preclude the opportunity for a single individual to have any extended access to ballots unobserved.

¹⁰ The form for November 2013, slightly refined in recent observations, is available at: <http://tinyurl.com/CTEANov2013OR>

B. Procedures Are Not Being Followed, Understood

Problems uncovered in this observation include: incorrectly completed forms, chain-of-custody concerns, transparency concerns, and actions contrary to procedures and the law.

In past years, the Secretary of the State's Office published incrementally improved audit procedures for each election, often basing those improvements on suggestions from the Citizen Audit. We noticed no improvements in 2013. The procedures are still frequently not followed, are not enforced, and, as noted previously, may not be enforceable. Additionally, the procedures still lack detailed guidance in efficient methods of counting that provide accurate and observable results. See Section C below.

This year we note that there was an error in the procedures that incorrectly stated the law. This error by the SOTS Office may have misled a few municipalities into counting less than the required number of races. The procedures stated:

three offices or twenty per cent of the number of offices (not candidates) on the ballot shall be selected at random by the municipal clerk.

Whereas the law requires:

*three offices or twenty per cent of the number of offices on the ballot, **whichever is greater**, selected at random by the municipal clerk,*

Our observations indicate that some towns do a good job of using the procedures in the audit, following each step in order, and enhancing them with effective detailed counting methods. However, in other towns, there is no evidence that election officials are referencing or following the procedures. Some who attempt to follow the steps do not seem to understand them and appear to be reading the procedures for the first time at the start of the counting session. Frequently, effective counting procedures are coupled with ad-hoc, disorganized totaling procedures which cause frustration for officials, inaccuracy, and make it difficult to observe the correspondence from vote totals by teams or batches to the final totals.

B.1 Notification To Selected Towns And To The Public

Unfortunately, the only requirement in the law is that towns notify the public of an audit counting session in advance, with no deadline or notice requirement. For example, a single notice on the door of the Registrars' Office, posted fifteen minutes prior to the counting session would meet the requirements of the law. The Secretary of the State's procedures do require three business days advance notice to the Secretary's Office.

For this audit, we had little problems in determining the dates, times and location of audits - an improvement over previous audits. We attribute that improvement to our obtaining the email addresses of registrars in municipalities selected for audit, and many registrars responding promptly to those emails.

	2013	2012	2011 ¹¹
The number of ballots counted by hand or machine was not filled in or was filled in incorrectly.	1	10	1
Some columns were not completed and/or incorrectly completed	6	3	10
Minor arithmetic errors	1	1	3
Reports with negative counts of questionable ballots	3	2	
Less races or candidates counted than required by law	7	1	11
Missing reports from SOTS	3	5	4
Differences attributed to questionables, but none reported in Col. E	3		3
Differences attributed to questionables, but not enough reported			2
Cross-endorsed candidates not counted as such	1		
Total Incorrect or Missing Reports	22	22	34
Districts Selected	66	75	73
Rate (some districts reports exhibited more than one error)	33%	29%	46%
Reports attributing differences in counts to "Human Error"	20	19	14

Errors In Official Report Forms - Table 1

Incomplete data should be taken seriously. The Secretary of the State should not accept incomplete forms, should insist that they be filled out correctly, that enough races are counted, and, where necessary, perform investigations, including counting ballots or votes again. These investigations should be announced publicly in advance for public observation. Every significant difference¹² is an opportunity for an election error or malfeasance to remain undetected.

Officials should be expected to count accurately. An official level of acceptable differences should be established in law or by the Secretary of the State. It should be unacceptable to have reports indicating "acceptable" levels of differences when none have been established.

The following are selected quotes from official audit report forms *Explanation of Differences* and our commentary in brackets¹³:

Error in not completely filled in ovals and/or human error in hand count.

The differences can be explained by questionably marked ballots, of which there were 37 [But none reported on form as questionable in Col. E]

The difference being what the human eye read to what the machine read . [But none reported on form as questionable in Col. E]

¹¹ We present several tables in this report from the 2013, 2012, and 2011 audits. The odd-year elections, 2011 and 2013 are similar municipal elections which are more directly comparable than the Federal 2012 election.

¹² There is no set standard in Connecticut for a level of difference to require an investigation. A possible standard would be related to the 0.5% level that triggers a close-vote canvass. For instance, Minnesota triggers an expanded audit when a district count difference exceeds the greater of 0.5% or 2 votes. <https://www.revisor.mn.gov/statutes/?id=206.89>

¹³ Official comments in this document are edited for grammar and spelling.

After 4 counts we feel that the difference is within an acceptable margin of error...

This is our sample and there is a machine error! Reviewing the ballots there should not have been 1 additional vote for [a candidate].

Images of the actual official Audit Report Forms obtained from the Secretary of the State's Office, along with our data compiled from those reports can be viewed at: <http://www.CTElectionAudit.org>

B.4 Multiple Chain-of-Custody Concerns

In several observations¹⁴, observers expressed concerns with the chain-of-custody in several ways. In seven (7) municipalities observers expressed general concerns with the chain-of-custody. This is a similar percentage (23%) to the four most recent observations where 27%, 17%, 14%, and 18% of observers expressed concerns.

A larger concern is that, in many towns, single individuals may access the ballots undetected for extended periods of time. In 38% of towns surveyed in this audit, a single individual can access the ballot storage. In other towns, even though policies require more than one person to access ballots, there are few protections in place to prevent a single person from accessing the ballots¹⁵.

The following are selected observer comments and their record of official responses to survey questions, our comments in brackets¹⁶:

The ballots were stored in a cardboard box that was taped closed with several layers of shipping tape. There were no numbered seals on the box or listed on the Moderator's Return. When I asked about seals, I was told that the ballots and tabulator tapes were all in the box, which was opened at the start of the audit.

No numbered seals were used. Ballots were packed in 2 boxes (those that the blanks had been delivered in), sealed closed with layers of shipping tape, and signed. The tape appeared to be intact. [Signed seals are an insufficient alternative to numbered seals, tape can easily be replaced and signed]

Two districts delivered on cart by one Registrar

¹⁴ Although we observed a total of thirty-four (34) counting sessions, we did not observe every attribute of every audit. Some questions did not apply in some audits, observers could not fully observe audits that continued beyond one day, etc.

¹⁵ Numbered tamper-evident seals are a useful protection, but without extensive practices for their verification, and other strong ballot protections, they at best provide a few seconds of protection from possible compromise. For example, see: <http://www.cs.princeton.edu/~appel/voting/SealsOnVotingMachines.pdf> and <http://www.cs.princeton.edu/~appel/voting/Johnston-AnalysisOfNJSeals.pdf>

¹⁶ All comments by observers in this document have been edited for length, for grammar, punctuation, and to make the meanings clear.

C. Guidance, Training, and Attention to Counting Procedures Inadequate, Inconsistently Followed

C.1 Audit Organization and Counting Procedures:

Observers expressed concerns that many of the audits were not well organized. Observers noted the following problems, which frequently occurred within the same audits:

- In thirteen (13) audits, observers had concerns that the auditing was not well organized.
- In six (6) audits, observers had concerns with the integrity of the counting and totaling process.
- In eleven (11) audits, observers had concerns that the manual count was inaccurate.
- In ten (10) audits with hand counts that did not match the machines, the votes or ballots were not recounted a second time.

Selected observer comments:

Tables were fairly close together; members of one team complained that they had trouble hearing each other as ballots were read. Each team member had one task, and there was no one double checking the accuracy of the reading or hashmarking. Since the mismatches did not trigger recounting and were not resolved by re-tallying, I believe the manual count may have been inaccurate for some of the races.

Two people were not enough to count 1300 ballots, and 10 votes per ballot

They were going to audit one candidate in each of three races. I pointed out that the audit requires three full races. To their credit they changed gears and counted the full races.

Good intentions cannot overcome a total lack of enthusiasm ...

C.2 Need for Dual Verification

Observers noted that audit counting procedures requiring “two eyes,” i.e., dual verification of counts, were frequently ignored. When a large number of ballots are counted by a single individual, miscounts can require tiring recounts and unnecessary investigation. When single individuals count hundreds of ballots or votes, errors are almost inevitable.

- When using the hashmark counting method to count votes, in fifteen (15) observations a second official did not verify that votes were read accurately by the first official; in fourteen (14) observations hash marks were not double checked by a second official.
- When using the stacking counting method to count votes, in four (4) observations a second official did not verify that votes were stacked accurately by the first official; in six (6) observations ballots were not counted by a second official.
- When counting ballots, in thirteen (13) observations a second official did not verify ballot counts.

From an observer:

They hadn't told the staff to expect or plan for a full day and half or more left during counting and had not expected to work more than 2.5 ... They did not evolve their process once they learned they could get lost mid stack. Did not reduce stack size, did not cross tally totals and when they switched teams they often mixed piles again. I am certain the counts are inaccurate - observed several such moments. One person making hash marks would forget when to cross the hash and get six, or a lonely mark between fives, or five crossed with a sixth... their fingers could not find the place to hash as fast as the readers were reading.

C.3 Blind Counting

Blind counting is a method of counting without pre-conceived knowledge of the expected outcome. When counting teams know the machine totals or know the differences between their counts and the machine totals, there is a natural human tendency to make the hand count match the machine count. This risks taking shortcuts and seeking cursory explanations for discrepancies which, in turn, lowers the credibility of the process and undermines confidence in the audit results.

- In eleven (11) observations, counters were aware of ballot or race counts from the election while they were counting.
- In eighteen (18) observations, when counts were off, counters were informed of the level of difference while they were recounting.

When election officials know the election totals or the differences between manual and machine counts, there is a tendency to accept any explanation or any new count that reduces the difference without any additional verification.

From observers:

After ballot count off, one registrar counted extras pile and knew amount off. After several recounts of votes, registrar announced "We need 3 more"

First ballot stack count was way off and totaling also a mess. They then all learned "desired" total and [supervisor] said "we'll count until we find one pile off"

C.4 Confusion in Definitions of Ballots with Questionable Votes

There continues to be confusion in the definitions of “ballots with questionable votes” (marks that the machine may have misread) and those ballots that should be considered “undisputed”¹⁷:

- On the official reporting form, some towns fail to classify any ballots as having any questionable votes. Other towns classify many ballots as questionable, when clearly the machine counted the vast majority of those votes.
- There is often confusion between differences in voters’ intent that would not be recognized by the machine and marks that may or may not have been read by the machine.
- Three (3) district reports included negative questionable votes – a clear misunderstanding of their definition and purpose.

There is a need for further examples of questionable votes, clarification of ambiguities, and revised instructions on how to classify and count questionable votes in the procedures.

Some observer comments:

Many poor explanations by leader and registrars. Sometimes talked about being about voter intent. Other times thinking marks outside lines caused it not to be read properly. In the end only counted questionables when they needed them to balance the count.

Too many ballots were classified as questionable, all votes on those ballots were counted as questionable. In reality only two or three should have been classified as questionable per race. A case where actual errors in the machine or in the manual counting are officially not differences because of this inaccurate classification.

C.5 Counting Write-In Votes and Cross-Endorsed Candidates

Several years ago we noted a high degree of confusion and lack of training of counters in counting cross-endorsed candidates. This year, as in recent years, we can report great improvement in this area. This year we note no less accuracy in counting cross-endorsed candidate votes than those for other candidates. In this audit though, several towns attributed small errors to confusions with cross-endorsed candidates, a significant improvement from past years.

Write-ins did not present problems to officials this year.

¹⁷ AccuVote Optical Scanners, those used in Connecticut, are designed to count only based on marks within bubbles, and must count bubbles when they are 0.16% filled in, with acceptable marking material. Thus questionable votes should only be those with some markings within the bubble and where those markings were done by an unacceptable marker or fill in an area that may be less than 0.16%, perhaps no more than 1/4 or 1/3 filled in the judgment of officials.

Official Audit Report Data Analysis

The information for the statistics in this section is produced from the official forms. The images of those forms and our detail data compiled from those forms is available at <http://CTElectionAudit.org>

After the local counting sessions, officials complete and submit the Official Audit Report Forms to the SOTS. Where possible, observers collect copies of the forms at the counting session, we also receive official copies of the forms from the SOTS Office.

Ballot Count Accuracy

Among our greatest concerns are the discrepancies reported. The table below shows all districts with ballot count discrepancies

Machine Totals (Tape)	Audit Count	Difference	Percent Difference
0	1206		-100.0%
806	827	-21	-2.6 %
1021	1040	-19	-1.9 %
1189	1185	4	0.3 %
1112	1116	-4	-0.4 %
2077	2074	3	0.1 %
615	613	2	0.3 %
1553	1551	2	0.1 %
1800	1799	1	0.1 %
793	794	-1	-0.1 %
1847	1846	1	0.1 %
1312	1311	1	0.1 %
364	365	-1	-0.3 %
1389	1390	-1	-0.1 %
761	760	1	0.1 %
442	443	-1	-0.2 %
2077	2074	3	0.1 %
615	613	2	0.3 %
1553	1551	2	0.1 %

Ballot Count Differences - Table 1

In this audit there were ballot differences reported in eighteen (18) towns totaling seventy (70) ballots, not including the town that did not report machine totals. In eleven (11) of these districts the scanner counted more ballots than reported as counted by hand; in seven (7) of these districts, the scanner counted fewer ballots than were counted by hand.

Unlike vote counts, discussed later, there are no questionable ballots counts. Any difference in ballot counts must be due to optical scanner or human error. Human errors are not limited to audit hand counts. Scanners or ballots could have been mishandled an incorrectly counted on election day, or misplaced on election day or subsequently.

Based on observer reports, **we do not believe that all of the hand counts are accurate because of the questionable counting methods observed. On the other hand, because of these differences and incorrectly completed reports, we also have no basis to conclude that the scanners counted all ballots accurately.**

When compared to the reports from the past two years there was little, if any, improvement.

Year	Districts with Ballot Count Differences	Total Differences	Districts Audited	Greatest Differences	
2013	18	70	66	21, 19, 4	2.6%, 1.9%, 0.4%
2012 ¹⁸	20	115	75	42, 25, 12	2.1%, 0.4%, 0.4%
2011	16	34	73	9,2,2	1.4%, 0.9%, 0.7%

Ballot Count Trends - Table 3

¹⁸ As stated earlier, we present several tables in this report from the 2013, 2012, and 2011 audits. The odd-year elections, 2011 and 2013 are similar municipal elections which are more directly comparable than the Federal 2012 election.

Vote Count Accuracy

Col C Machine Totals	Col D Undisputed Vote Totals	Col E Questionable	Col F Total Hand Count (D + E)	Difference (F - D or E - D)	Percent Difference
786	753	2	755	31	3.90%
879	860	0	860	19	2.20%
551	566	1	567	-15	-2.70%
1219	1191	14	1205	14	1.10%
869	854	1	855	14	1.60%
492	506	1	507	-14	-2.80%
939	925	0	925	14	1.50%
830	818	1	819	11	1.30%
741	728	2	730	11	1.50%
946	934	2	936	10	1.10%
505	514	1	515	-9	-1.80%
181	190	0	190	-9	-5.00%
751	740	3	743	8	1.10%
840	828	4	832	8	1.00%
1126	1110	8	1118	8	0.70%
494	501	0	501	-7	-1.40%
692	683	2	685	7	1.00%
70	63	0	63	7	10.00%
532	539	5	544	-7	-1.30%
721	715	0	715	6	0.80%
608	602	0	602	6	1.00%
532	526	0	526	6	1.10%
803	779	18	797	6	0.70%
365	370	1	371	-5	-1.40%
788	767	16	783	5	0.60%
727	732	0	732	-5	-0.70%
756	745	6	751	5	0.70%
441	446	0	446	-5	-1.10%
947	935	7	942	5	0.50%
439	424	10	434	5	1.10%
518	523	0	523	-5	-1.00%
417	412	0	412	5	1.20%
443	448	0	448	-5	-1.10%
166	171	0	171	-5	-3.00%
1294	1257	32	1289	5	0.40%

Candidate Count Differences 5 or Greater - Table 4

The table on the previous page presents, by number and percentage, vote differences greater than 4 between hand counted votes and machine-counted votes when all ballots with questionable votes are included and all votes for cross-endorsed candidates are totaled.

For votes as we said for ballots: Based on observer reports, **we do not believe that all of the hand counts of votes are accurate** because of the questionable counting methods observed. On the other hand, because of these differences, **we also have no basis to conclude that all the scanners counted all votes accurately.**

The following tables show the number of candidate counts with various levels of count differences between the optical scanners and the hand counts, after considering ballots with questionable votes may have been counted or may not have been counted by the scanners¹⁹:

Candidate Vote Count Difference Range	Number of Differences In Range	% of All Candidate Counts
0	478	60.1%
1-3	267	35.5%
4-6	34	4.0%
7-9	9	1.1%
>9	10	1.3%
Average Difference in Votes:	0.96	

Summary of Vote Count Differences -Table 5

Candidate Vote Count Difference Range	2013 % of All Candidate Counts	2012 % of All Candidate Counts	2011 % of All Candidate Counts
0	60.1%	64.1%	56.1%
1-3	35.5%	25.8%	34.5%
4-6	4.0%	4.7%	7.0%
7-9	1.1%	2.0%	1.6%
>9	1.3%	3.4%	0.8%
Average Difference in Votes:	0.96	1.80	1.12

Trend of Vote Count Differences by Range -Table 6

¹⁹ That is giving the maximum benefit of any doubt to the scanners: Counting a difference only when a scanner counted more votes than the sum of questionable votes and undisputed votes; or when a scanner counted less than the number of undisputed votes.

Range of % of Count Difference	Number of Candidate Counts	2013 % Of All Counts In Range	2012	2011
0	478	60.1%	68.5%	56.1%
> 0 and < 0.5 %	139	17.6%	19.4%	18.8%
0.5 % and < 1.0 %	96	12.1%	4.1%	14.4%
1.0 % and < 2.0 %	56	7.0%	3.1%	6.4%
2.0 % and < 5.0 %	22	2.8%	2.8%	2.5%
5.0 % and < 10.0 %	3	0.4%	3.7%	.5%
10.0 % and greater	2	0.3%	2.9%	1.3%
Average Difference %		.14%	.29%	.28%

Trend of Vote Count Differences by Percent -Table 7

In general, the November 2013 data shows some improvement over the previous similar municipal election audit in 2011, with increased percent of differences greater than nine (9) votes, yet, with a reduction in average differences, and a reduction in the largest differences.

“Questionable” Votes

Observations and comments from election officials indicate confusion about classifying “undisputed ballots” and about counting “questionable votes.” An undisputed ballot is a ballot with no apparent problem or questionable votes on it. A questionable vote is a mark on a ballot that may not have been read properly by the optical scanner. Audits exhibited a variety of interpretations of what constitutes “undisputed” and “ballots with questionable votes.” Audit statistics confirm these observations.

See Section C.4 for a more complete discussion of questionable votes.

Col C Machine Totals (Tape)	Col D Undisputed Vote Totals	Col E Questionable	Col F Total Hand Count (D + E)	Difference (F -D or E - D) ²⁰	Percent Questionable s
1276	1251	35	1286	0	2.70%
1294	1257	32	1289	5	2.50%
1191	1165	29	1194	0	2.40%
481	463	19	482	0	4.00%
447	430	18	448	0	4.00%
1142	1123	18	1141	1	1.60%
803	779	18	797	6	2.20%
982	965	18	983	0	1.80%
532	514	18	532	0	3.40%
523	507	16	523	0	3.10%
788	767	16	783	5	2.00%
283	269	15	284	0	5.30%
454	441	15	456	0	3.30%
770	757	14	771	0	1.80%
1258	1242	14	1256	2	1.10%
1125	1111	14	1125	0	1.20%
1219	1191	14	1205	14	1.10%
1079	1066	14	1080	0	1.30%
447	434	14	448	0	3.10%

Questionable Votes Over 13 -Table 8

²⁰ This is the difference of votes actually counted by the scanner greater than the sum of those judged as should have been counted by the scanner and those that might have been counted by the scanner. Or a fewer number of votes actually counted by the scanner, compared to those judged as should have been counted by the scanner. In other words, the net difference after giving the maximum benefit of the doubt to the scanner in either counting or not counting questionable votes.

2013 Overall % Questionables	2012 Overall % Questionables	2011 Overall % Questionables
0.63%	0.50%	0.77%

Trend in Questionable Votes -Table 9

Once again there is some improvement over the previous municipal election audit in 2011.

About

The Connecticut Citizen Election Audit

The purpose of the Connecticut Citizen Election Audit is to increase integrity and confidence in elections, for the benefit of the voters of Connecticut. We provide independent audit observations, independent audits, and independent reports focusing on the integrity of elections and election administration. We are non-partisan and strive for objectivity and integrity in our work. Organized originally in 2007, as the Connecticut Citizen Election Audit Coalition, our primary activity has been observing and reporting on post-election audits.

EXECUTIVE DIRECTOR/BOARD

Significant decisions and reports are approved by majority vote of the Board. Members of the Board are experienced volunteer observers, with diverse skills, political affiliation, and geographic representation. Current members of the Board are:

- Luther Weeks, Executive Director
- Aaron Goode, Douglas Lary, Jerri MacMillan, Tessa Marquis, Victoria Usher

Acknowledgements

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We also appreciate the League of Women Voters of Connecticut for publicizing our volunteer opportunities to their membership list.

Contact/Additional Information

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All reports and additional supporting data are available at <http://www.CTElectionAudit.org>

Appendix A - Observation Report Statistics

Question	% Yes 2013	% Yes 2012	% Yes 2011
Were the ballots delivered to the site by at least two individuals?	96%	88%	94%
Were you permitted to observe that ballot container seals were not tampered with?	97%	95%	96%
Were the ballot container seals intact?	94%	97%	96%
Were you able to see the seals and the seal numbers on the Moderator's Return?	90%	86%	100%
Did the supervisor review the state audit procedures with the counting team?	83%	73%	70%
Did the supervisor clarify procedures for everyone before beginning to count ballots?	84%	79%	70%
Did the supervisor review the ballot and vote counting procedures in detail with the counting teams?	78%	78%	65%
Was the total number of BALLOTS counted before the VOTES were counted for races?	91%	70%	97%
Were the BALLOTS counted by each team such that a 2nd election official verified each count?	61%	77%	72%
If multiple teams counted BALLOTS, was the totaling independently verified by a second election official?	77%	81%	86%
IF HASHMARKING USED: Did a second official observe that each vote was read accurately?	53%	45%	36%
IF HASHMARKING USED: Did a second official make duplicate hashmarks OR observe that each hashmark was recorded accurately?	56%	36%	36%
IF STACKING/PILES USED: Was the vote counting process such that two election officials verified each vote was stacked as marked?	57%	64%	62%
IF STACKING/PILES USED: Were the stacks of ballots counted such that two election officials verified that each stack was counted accurately?	86%	54%	54%
IF HASHMARKING USED: Were you permitted to see that each vote was read accurately?	100%	100%	100%
IF HASHMARKING USED: Were you permitted to see that each hashmark was recorded accurately?	100%	100%	100%
IF STACKING/PILES USED: Were you permitted to see that each vote was placed in a correct stack?	78%	93%	100%
IF STACKING/PILES USED: Were you permitted to see that the count of ballots in piles was accurate?	82%	88%	100%

Question	% Yes 2013	% Yes 2012	% Yes 2011
Were counters kept unaware of the election totals for the ballots or races they were counting until counting and recounting each race was finally complete?	67%	73%	48%
If initial counts were off, were counters kept unaware of the exact and approximate level of difference?	40%	52%	38%
Were votes on questionable ballots ruled upon separately race by race for reporting as questionable votes in the Audit Report?	77%	79%	89%
Were votes on such ballots ruled upon prior to the tallying of votes for each race AND counts not adjusted based on knowledge of the results of the total count for each race?	71%	77%	70%
Did elections officials find a match between machine counts and manual counts at the end of the initial count of each race?	33%	10%	17%
Did elections officials try to resolve mismatched counts by counting again?	63%	79%	81%
Did elections officials try to resolve mismatched counts by changing counting teams?	54%	43%	28%
Did elections officials resolve mismatched counts by the end of the audit?	64%	35%	41%
Were you able to confirm that hashmarks for each team and batch were tallied accurately? (i.e You could confirm that the number of hashmarks matched the total for each group of hashmarks.)	90%	97%	96%
Were you able to confirm that the number of ballots from multiple teams/batches was tallied accurately?	94%	90%	96%
Were you able to confirm that the number of votes from multiple teams/batches was tallied accurately?	91%	89%	93%
Did elections officials record counts, including unresolved discrepancies if any, on official forms by the end of the audit?	92%	97%	96%
Were you given an opportunity to have a copy or make a copy of the official forms?	88%	86%	96%
Did the BALLOT counts on the optical scanner tape(s) printed on election-night match the tabulator tape ballot count transcribed on the audit report form(s)?	95%	81%	96%
Did the RACE counts on the optical scanner tape(s) printed on election-day match the machine tape race counts transcribed IN COLUMN 'C' on the audit report form(s)	95%	72%	92%
Were the ballots under the observation of at least two individuals at all times during the observation?	94%	85%	96%
Could you confirm that ballots were returned to their proper containers?	93%	97%	97%
Were the ballot containers resealed?	96%	89%	100%
Were seal numbers recorded correctly on forms?	100%	91%	96%
Do you have any concerns over the way the room was laid out?	9%	7%	14%

Question	% Yes 2013	% Yes 2012	% Yes 2011
Do you have any concerns that the auditing was not well-organized?	38%	17%	28%
Do you have any concerns with the integrity of the counting and totaling process?	18%	17%	21%
Do you have any concerns that the manual count was inaccurate?	32%	20%	31%
Do you have any concerns that the officially reported information is inaccurate?	6%	10%	7%
Do you have any concerns with the transparency/observability of the process?	6%	5%	7%
Do you have any concerns with the chain-of-custody?	23%	27%	17%
Were there any memory card problems in pre-election testing or on election day?	47%	63%	90%
Were there any problems with the IVS voting system for persons with disabilities? (Or were some not setup?)	19%	5%	37%
Were there any other significant events, ballot problems, scanner problems or occurrences before during or after the election of note?	33%	13%	18%

Observation Report Statistics -Table 10

Appendix B. Standing Recommendations

Each of our previous reports included recommendations and updated recommendations to the Legislature and the Secretary of the State, as follows:

I. Independent Audits

The current system of the conduct of audits by individual towns lacks consistency, accuracy, and professionalism. A nonpartisan, independent audit board or professional team of independent auditors should conduct the audits.

However, if audits continue to be conducted by local officials, we recommend the measures below to improve the security and integrity of Connecticut's election outcomes. Many of these same recommendations would apply if an independent audit board were established, with the board performing many of the audit functions now performed or recommended by the Secretary of the State.

II. Audit Selection, Notification and Reporting

A. Amend PA 07-194 on selection and notification to:

1. In elections where federal and/or constitutional statewide offices appear on the ballot, require that the Secretary of the State randomly select the races to be audited during the same public event as the random selection of districts, at least one such race should be randomly selected from those federal races on the ballot and one race selected from statewide races on the ballot.
2. for municipal elections and primaries require that races randomly selected for audit be chosen by the Secretary of the State for all districts, or, at least, require local drawing of races be announced and held publicly in each selected municipality.
3. require that towns selected for audit be officially notified of their selection in a legally acceptable form, including an immediate posting of the list of audit sites on the Secretary of the State's Website.
4. require that towns provide ample notice of the scheduling and location of post-election audits to the Secretary of the State and on their municipal websites or local newspapers. We urge the Secretary of the State's office to review how other states are establishing and publicizing the schedule of audits and race selection to ensure maximum public notice and transparency.

B. Amend PA 07-194 to mandate deadlines for:

1. random selection of audit locations
2. completion of audits
3. municipalities report of audit results to the Secretary of the State's office

C. Amend PA 07-194 on reporting to:

1. mandate a deadline for completion of required reports from UConn and require that those reports include statistical data on deviations from the standards set in the audit law and reports on any incomplete or missing audit data
2. mandate timely publication of a final comprehensive report of each statewide audit. Require that the report include local statistics and analysis from local audit report forms, elections officials' and observers' (if any) comments, and conclusions regarding the effectiveness of the audit. The report should be readily available to the public.

D. Amend PA 07-194 on reporting to:

1. require that audit reports be compared to the machine tapes and final election results (including amended results, if applicable) to assure that the correct machine tape counts are recorded.
2. require that all originally machine counted ballots be counted in the audit. i.e. including machine counted Absentee Ballots and Election Day Registration Ballots.

III. General Provisions

A. Procedures that will yield trusted audits must be specified in law or regulation and must be made enforceable by the State Elections Enforcement Commission. Procedures should also provide a mechanism for the Secretary of State's office to report irregularities to appropriate authorities such as the State Elections Enforcement Commission.

B. The Secretary of State's Office should:

1. establish mechanisms and controls to audit the audits (log, detect and take action on errors) to assure that prescribed methods are followed. Audit reports that are incomplete or contain obvious or unexplained discrepancies should be rejected by the Secretary of the State's office and corrective action taken by election officials.
2. increase competency of registrars and election officials in election audits through mandatory educational programs that include security, audit organization, and conduct; the steps and details of the audit procedures; counting methods; and organizing and supervising the audit teams.

C. Amend PA 07-194 to:

1. mandate investigation and independent analysis of data discrepancies over legally defined limits which are not thoroughly and reasonably explained.
2. require that copies of the Moderators' Returns, and machine tapes, be present at the audit for review.

3. mandate that all ballots in all elections remain sealed until thirty days after all audits and audit investigations are complete. They should be released only after the Secretary of the State's notification in writing that the audit and investigations are complete. During that period ballots should only be unsealed temporarily for the purpose of recounts, audits, and state investigations – and resealed whenever audits, recounts, and investigations are complete or continued.
4. resolve the conflicting demands for any extended audit investigations with the need for re-programming of memory cards in preparation for new elections or referenda.
5. limit the role that candidates can perform in the post-election audit process. Opposed candidates, even if they are sitting registrars, should not supervise or have official roles in post-election audits. The Secretary of the State's office should develop procedures to identify who will supervise and have an official role in audits in cases of this kind of conflict.
6. set forth specific and enforceable criteria for chain-of-custody, access logs, and secure storage facilities for ballots, memory cards, and machines. The Secretary of the State's office should establish a system of random unannounced inspections of storage facilities and access logs.

IV. Audit Procedures

- A. The Secretary of the State should provide detailed guidance on methods of auditing that are efficient, transparent, specific, and accurate. National efforts should be reviewed, such as California's recently adopted audit procedures, the audit practices of Minnesota, recommendations of the Brennan Center, and the *Principles and Best Practices for Post Election Audits*²¹.
- B. The Secretary of the State should amend procedures to:
 1. remove the subjectivity associated with the identification of what constitutes an undisputed ballot and a ballot containing a questionable vote.
 2. require all tallies be performed in public and audit reports be filled out as part of the actual public audit and displayed publicly at the end of the audit along with the tally sheets.

V. Public Involvement

Observers' rights should be established in law. As long as observers don't interfere with the hand counting process, the public should be allowed to observe and verify all phases of the election audit from district and race selection through any follow-up investigation.

²¹ <http://www.electionaudits.org/principles>

VI. Random District Selection Integrity

In order that the random district selection is publicly verifiable and more accurate, with mechanisms for re-establishing audit integrity in the case of errors discovered:

A. Amend Sec. 9-50b to:

require registrars to maintain an accurate list of districts with the Secretary of the State for inclusion in the Central Voter Registration System (CVRS), with each district identified by a unique district number for the municipality

B. Amend Sec 9-314 to:

1. require the Head Moderator to submit copies of each district Moderator's Return totals and copies of all closing scanner tapes from the election or primary with the Head Moderator's Return shortly after the election or primary to the Secretary of the State. Provisions for later amended returns should also be included. Each district should be identified by unique district number for the municipality as listed in the CVRS.
2. require the Secretary of the State to make available a copy of the District Moderators' Reports and Head Moderator's Reports for public review.

C. Amend PA 07-194 to:

1. require the Secretary of the State to make available a copy of an extract of districts from the CVRS for public review at the random district drawing.
2. require that each district in the drawing be identified by municipality and by the unique district number listed in the CVRS and the district reports.
3. require in the case of errors discovered after the drawing or in the list of districts for random selection (omissions, non-existent districts, or ambiguities), that they must be, by law, resolved in a way that restores the integrity of the audit. For instance, when selected districts are ambiguous, audit integrity could be restored by clarifying the ambiguity. When districts are omitted from the drawing, integrity could be restored by auditing those districts.