EVS 6042 CA Election Management System

California Use Procedures

Election Systems & Software, LLC
Revision 1.1. July 2019
EVS 6042 CA Election Management System

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In accordance with the United States Election Assistance Commission (EAC) Testing and Certification Program Manual, Version 2.0, ES&S hereby notifies the purchaser that any changes or modifications to an EAC approved voting system which have not been tested and certified by the EAC will void the EAC certification for such EAC approved voting system.

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Chapter 1: Introduction

The ES&S EVS 6042 CA election management system is an integrated suite of products for conducting and reporting elections.

EVS 6042 CA combines election management software with accessible voting and scanning equipment, providing end-to-end election support, from defining an election, to generating the final reports. EVS 6042 CA enables jurisdictions to operate results and reporting software, and optional ballot printing software, on a Windows 7 operating system.

ES&S digital scanners use scanning technology similar to that of a copying machine to create two scanned images of the front and back of the ballot at the same time. These digital images are then processed by ES&S Electionware software, which creates a cast vote record (CVR). The CVR contains data from the front and back of the ballot and lists all vote selections made on the ballot. At the time of poll closing or data export, the CVRs are totaled to create aggregate results for that ballot scanning device. After the election, Electionware imports the tabulated results, machine logs, and images for reviewing, reporting, adjudication, and archiving.

1.1 About This Manual

This manual may have cross-references to other chapters or sections with information relevant to the current topic. If you are using the electronic version of this manual, click the blue cross-reference link to jump to that information. If you are using a printed version of this manual, the cross-reference tells you which section to consult.

1.1.1 Chapter and Section Numbers

Chapters are numbered in order. The headings of the topics within the chapter are also numbered in order, with the first number indicating the chapter, and subsequent numbers indicating that topic's position within the chapter. For example, heading number "3.2.3" indicates that this section is in chapter three, under the second major heading of chapter three, and under the third subheading below that heading.

1.1.2 Informational Symbols

The following symbols are used throughout the manual to call attention to specific types of information.

Table 1-1: Symbols Used in this Manual

Caution	The Caution symbol appears next to information that could help avoid errors in your election.
Important	The Important symbol appears next to information that could be critical to your election.
Jurisdictional	The Jurisdictional symbol appears next to procedures that may require you to modify them according to the requirements of your jurisdiction.
Note	The Note symbol appears next to information that is helpful but not necessarily critical to your election.
Warning	The Warning symbol appears next to procedures that could cause damage to the election if improperly executed.

1.2 Contact ES&S for Technical Support

If you need additional assistance, ES&S technical support staff can provide advice and help you resolve the situation.

When you contact ES&S for technical support, have the equipment on hand and be prepared to provide the following information to the support representative:

- The version number of the product you are using (for example, Electionware version x.x.x.x).

- The exact wording of any messages that appeared.

- A description of what was happening when the problem occurred.

Support representatives are available Monday through Friday, between 7:00 a.m. and 7:00 p.m. Central Time.

Telephone:	877-377-8683 (USA & Canada)
Fax:	402-970-1285
Email:	technicalsupport@essvote.com

ES&S support services are subject to the prices, terms, and conditions in place at the time of service.

1.3 System Components

ES&S supports central count voting systems and precinct count systems.

The following sections describe the functionality of the EVS 6042 CA system components.

1.3.1 Product Versions

The following table provides a list of the hardware and software versions included in this release.

Table 1-2: Product Versions

Product	Version Number
Electionware®	5.3.0.0
ExpressVote® XL	1.2.0.0
ExpressVote® HW2.1	2.5.0.0
DS200®	2.20.0.0
DS450®	3.3.0.0
DS850®	3.3.0.0
ExpressLink®	1.5.2.0
Removable Media Service	1.5.3.0

1.3.2 DS200 Precinct Ballot Scanner

Jurisdictions that use precinct count systems record election results at individual polling places as voters cast ballots.

The DS200 is a high-resolution, paper-based precinct tabulator that scans voter selections from both sides of the ballot simultaneously. It has a large touch screen for voter communication, an integrated thermal printer for limitless Election Day printing, an easy-to-use interface and an internal battery pack for reliable power in the event of a power outage.

DS200 Precinct Scanner (shown on attached secure ballot box)

Voters insert their ballots directly into the DS200 at the polling place. The touch-screen scanner tabulates votes and may be configured to drop the scanned ballot into an attached secure ballot box, which has an easy transport rolling case.

The DS200 can scan a variety of ballot sizes. It uses Intelligent Mark Recognition® (IMR) and Positive Target Recognition and Compensation® (PTRAC) technologies to determine what constitutes as a mark for a candidate. Scanned voter selections are stored to a USB memory device. The USB memory device is removable from the system for transport to a central election location where vote totals are consolidated for reporting.

1.3.3 DS850 Central Ballot Scanner

Jurisdictions with central count systems generally collect ballots at multiple polling places and transport them back to election headquarters for scanning after the polls close. During the voting process, the scanners record votes from each ballot and add results to an internal results total.

The DS850 central scanner and tabulator provides high-speed digital processing. It scans and automatically sorts ballots, separating them into one of three discrete bins without interrupting scanning. The DS850 can read ballots in all four orientations. The DS850 is designed with a series of rollers so ballots that were originally folded may be tabulated at the same rate of speed as standard ballots. The DS850 uses IMR and PTRAC technologies to determine what constitutes as a mark for a candidate.

1.3.4 DS450 Central Scanner and Tabulator

The new DS450 central count scanner and tabulator provides high-throughput scanning of ballots and vote summary cards, sorting tabulated ballots and/or cards into discrete output bins without interrupting scanning. Like the DS850, the DS450 can be optionally configured to transmit tabulation results via closed network. The DS450 is also capable of incremental file exports, export on save, and exported batches reports.

Easily manage folded ballots with the DS450 tabulator's TruGrip™ technology. The high-throughput tabulator uses our patented IMR and PTRAC technologies to identify marked vote targets, increasing the accuracy of tabulation and eliminating manual adjudication time. The DS450 competes with the industry's standard high-speed scanners while maintaining affordability for jurisdictions.

The ballot tracking feature can save time and effort by enabling you to manage ballot jams without rescanning the entire run. Through messages on interactive screens and LED lights on the output bins, the DS450 walks the operator through setting aside all properly scanned ballots and rescanning the rest.

1.3.5 ExpressVote Universal Vote Capture Device

The ExpressVote Universal Voting System has enhanced configuration options for optimal voter experience, including support for multi-card elections, blank ballot notification, two-column candidate display, and contest title wrapping. In addition to these features, the ExpressVote includes support for judges' initials and review boxes, Electionware-based precinct order, and rear-eject management.

The ExpressVote unit can optionally be mounted on a portable rolling kiosk, private adjustable voting booth, or multi-unit QuadExpress cart.

1.3.6 ExpressVote XL Full-Faced Universal Voting System

The ExpressVote XL is a large-format vote capture and marking device designed for all voters. It serves non-English speakers and those needing special assistance, allowing all voters to cast vote summary cards independently. The ExpressVote XL has a 32-inch, touch-operated interactive screen. Jurisdictions with ballots too large to fit on the single widescreen display can configure multi-page ballots for the ExpressVote XL.

Voters navigate ballot selections using the touch screen, detachable UVC keypad, or standard two-position ADA devices such as a sip-and-puff device.

The ExpressVote XL guides voters through the ballot selection process with screen prompts, symbols, and ballot audio, if applicable. Screen controls meet all applicable guidelines for size and readability.

For multi-page ballots, the ExpressVote XL includes a vote summary screen, which is enabled or disabled in Electionware. This allows voters to confirm or revise selections before printing the summary of ballot selections. The system also prevents overvotes and can alert voters about undervotes or blank ballots.

The ExpressVote XL's integrated thermal card printer marks a voter's selections on a verifiable paper vote summary card in human-readable format. If the election definition allows the voter to review the physical vote summary card before casting the ballot, the ExpressVote XL positions the vote summary card behind a clear viewing window. This enables the voter to visually inspect his or her printed vote selections without physically handling the card. After a voter verifies all selections, the system scans the marked vote summary card internally and saves a digital image of the card. The tabulated vote summary card is deposited into a secure card container attached to the ExpressVote XL cart.

System and results reports can be printed from the ExpressVote XL's integrated thermal report printer.

Universal Voting Console (UVC)

The Universal Voting Console (UVC) is a detachable, audio-tactile keypad and ADA support peripheral for use with the ExpressVote XL. This device can serve all voters, including those with special needs, enabling all voters to cast votes privately and independently.

The UVC features large, color-coded keys labeled with both visible text and braille characters. The keys enable the voter to navigate the ballot, make contest selections, open the help screen, adjust the audio volume and tempo, and use the blank privacy screen feature (for voters using an audio ballot).

The UVC includes a 3.5mm connection port that supports all standard two-position ADA devices, including rocker paddle or sip-and-puff devices. For elections that support audio ballots, a second 3.5mm audio port supports headphones for voters who wish to vote an audio ballot. In addition, all buttons and connection points are labeled in braille for blind or low vision voters.

1.3.7 Electionware - Software Version 5.3.0.0

Electionware® Election Management Software is for creating elections for ES&S voting, scanning, and tabulation equipment. Electionware is composed of five software groups containing ten modules.

Use ES&S software to create an election information database, format ballots, program ballot scanning and tabulating equipment, and generate Election Day reports. Election Systems & Software products and services enable you to customize and scale election processes to meet the needs of your jurisdiction.

Note   Electionware require the user to have a good working knowledge of personal computers, the Microsoft® Windows 7 operating system, the election process, and election terminology.

1.3.7.1 Electionware's Five Software Groups

The following is a brief description of the five software groups within Electionware and their respective modules:

Define – The Define group is used to input critical data for your election. The Define group modules are Home, Capture, and Element Library.

Use *Home* to create, edit, and manage your elections.

Capture is used to enter important election-specific information into the election database. Use Capture to enter precincts, districts, contests, candidates, parties, and other information applicable to the election.

Element Library stores graphics for the ES&S equipment and system translations for audio.

Design – The Design group is for designing ballot and audio elements for your election. The Design group modules are Paper Ballot, Touch Screen Ballot, and Accessible Ballot.

Paper Ballot is opened in a separate window where paper ballot layouts are designed for use with ES&S equipment.

Touch Screen Ballot is used to design flexible electronic ballots that support multiple screen layout sizes.

Accessible Ballot is used to format ballot display options as they will appear, manage ADA audio settings, and validate data before the election files are generated.

Deliver – The Deliver group is used to configure equipment, package election data, and print ballots on demand. The Deliver group modules are Configure, Package, and Print.

Configure is used to set parameters and access codes for election equipment, and generate election files for use with the ES&S equipment.

Package is used to create election media files stored on the equipment flash drives, and the ballot file for the ES&S electronic pollbook.

Print is for viewing and printing BOD (Ballot on Demand) ballots by precinct.

Results – The Results group is used to import, manage, and report election results data from the tabulation media. The Results group module is Reporting.

Reporting loads election results, machine logs, cast vote records, and ballot images. This module is then used to create the results reports, review and adjudicate ballots, and review and manage write-ins.

Manage – The Manage group is used to manage users and jurisdictions in Electionware. The Manage group module is Setup.

At Electionware's first use, *Setup* is the first module used. Setup allows management of users and jurisdictions, as well as election code strength.

1.3.8 ES&S Supporting Applications

Product	Version	Description
Removable Media Service	1.5.3.0	Service supporting election media programming
ExpressVote, HW2.1 Previewer	2.5.0.0	Ballot preview for accessible voting equipment.
Event Log Service (ELS)	1.6.0.0	Service supporting election media programming
Electionware-Server	5.3.0.0	EMS Server support

1.3.9 Commercial Off-the-Shelf (COTS) Products

Product	Version	Description
Windows 7 Enterprise	64-bit, SP-1	Operating System for standalone and client workstations
Windows Server 2008 R2		Operating System for EMS and results servers
Microsoft Patches (WSUS Offline Utility)	11.4	Software updates (Update utility)
Adobe Acrobat	XI	Desktop publishing software
Symantec Endpoint Protection - Small Business Edition 2013	1.4.2.0, 64-bit	Anti-Virus
Symantec Endpoint Protection - Intelligent Updater (File-Based Protection)	20180622-002-core3sdsv5i64.exe	
Symantec Endpoint Protection - Intelligent Updater (Network-Based Protection)	20180621-062-IPS_IU_SEP_14RU1.exe	
Symantec Endpoint Protection - Intelligent Updater (Behavior-Based Protection)	20180618-001-SONAR_IU_SEP.exe	

1.4 Terms and Definitions

Table 1-3: Abbreviations

Term	Definition
BMD	Ballot Marking Device
BOD	Ballot on Demand
CBT	Central Ballot Tabulator
CVR	Cast Vote Record
ELS	Event Log Service
EMS	Election Management System
EQC	Election Qualification Code
EVS	ES&S Voting System
L&A	Logic and Accuracy (testing)
SFTP	Secure File Transfer Protocol
SOP	System Operations Procedures

Table 1-4: Glossary of Terms

Term	Definition
Acceptance Testing	Examination of a voting system and its components by the purchasing election authority (usually in a simulated-use environment) to validate performance of delivered units in accordance with procurement requirements, and to validate that the delivered system is, in fact, the certified system purchased.
Ballot on Demand® (BOD)	Ballot on Demand enables the printing of individual ballots from a personal computer on Election Day. Many jurisdictions order ballots based on voter turnout from the previous year instead of printing a ballot for each registered voter in the jurisdiction. If ballots run short, the jurisdiction uses Ballot on Demand to print extra ballots on site.
Ballot Set	Electionware users group ballot information for different political parties in a primary or data for ballots that use different scanning equipment into individual ballot databases called ballot sets. When a user generates final election files from Electionware, the program merges all of the ballot sets created for an election into output files.

Table 1-4: Glossary of Terms (Continued)

Term	Definition
Canvassing Board	A group of county officials who are responsible for making sure that the number of ballots cast on Election Day is equal to the number of ballots that are counted on election night. The canvassing board is also responsible for certifying the results of an election, certifying final canvass reports and signing off results reports from precinct and central scanners.
Code Channel	The column of numbered black boxes on the left side of a ballot immediately right of the timing track. The scanner reads the combinations of boxes in this area to determine the precinct, split, type and style of the ballot.
Election Definition	Jurisdictional, contest, and candidate data loaded into voting and scanner/tabulator machines for an individual election.
Election Media	A portable flash media device containing the election definition in encrypted form, used to transfer data to and from ES&S equipment.
Logic and Accuracy Test (L&A Testing)	A public test performed prior to Election Day to demonstrate that the election system counts and reports election results correctly.
Zero Report / Zero Tape	A zero report is a version of the results report that is only available when no results are on the machine. It is used to verify that any prior vote data has been cleared.

Chapter 2: Paper Ballot Specifications

2.1 Electionware Paper Ballot

Electionware ballots are one or two-sided.

Machine-readable components are areas of the ballot that scanners recognize to record marks.

Voting Targets (Ovals) – A voting target is an oval that appears next to each candidate name (or referendum response). Voting targets are marked by the voter to indicate selection. Properly printed ovals are invisible to optical sensors. Place ballot text, tint, or ruling lines no closer than 0.20 inches (0.508 cm) from the oval. The oval line thickness is configured in Electionware. The value entered must be within the range of 0.004 inches to 0.006 inches.

For proper scanning and tabulation, the actual printed line must not exceed 0.008 inches in thickness. Use a micro ruler to validate proper thickness of the printed oval line.

Timing Marks – Timing marks are the rows of black squares used by the digital scanner to control ballot processing speeds. These marks serve to validate ballot registration and locate the voting targets.

Code Channel – This is the column of numbered black squares on the left side of the ballot. The scanner uses them to determine the precinct, split, type, and style of the ballot.

Registration Crosshairs – In early versions, these marks were used to verify that the ballot was within ES&S registration specifications. This function is now fulfilled by the Timing Marks. Registration Crosshairs can still be optionally added to the ballot PDF.

Cut Marks – These marks are used to guide you or your print service when cutting the ballots down to correct size.

2.1.1 Timing Mark Alignment

The timing marks create a virtual grid over the ballot. Each voting target position on the ballot is aligned within the intersection of a row and column.

The scanner uses the timing mark alignment to compensate for any image distortion and accurately locate the voting targets.
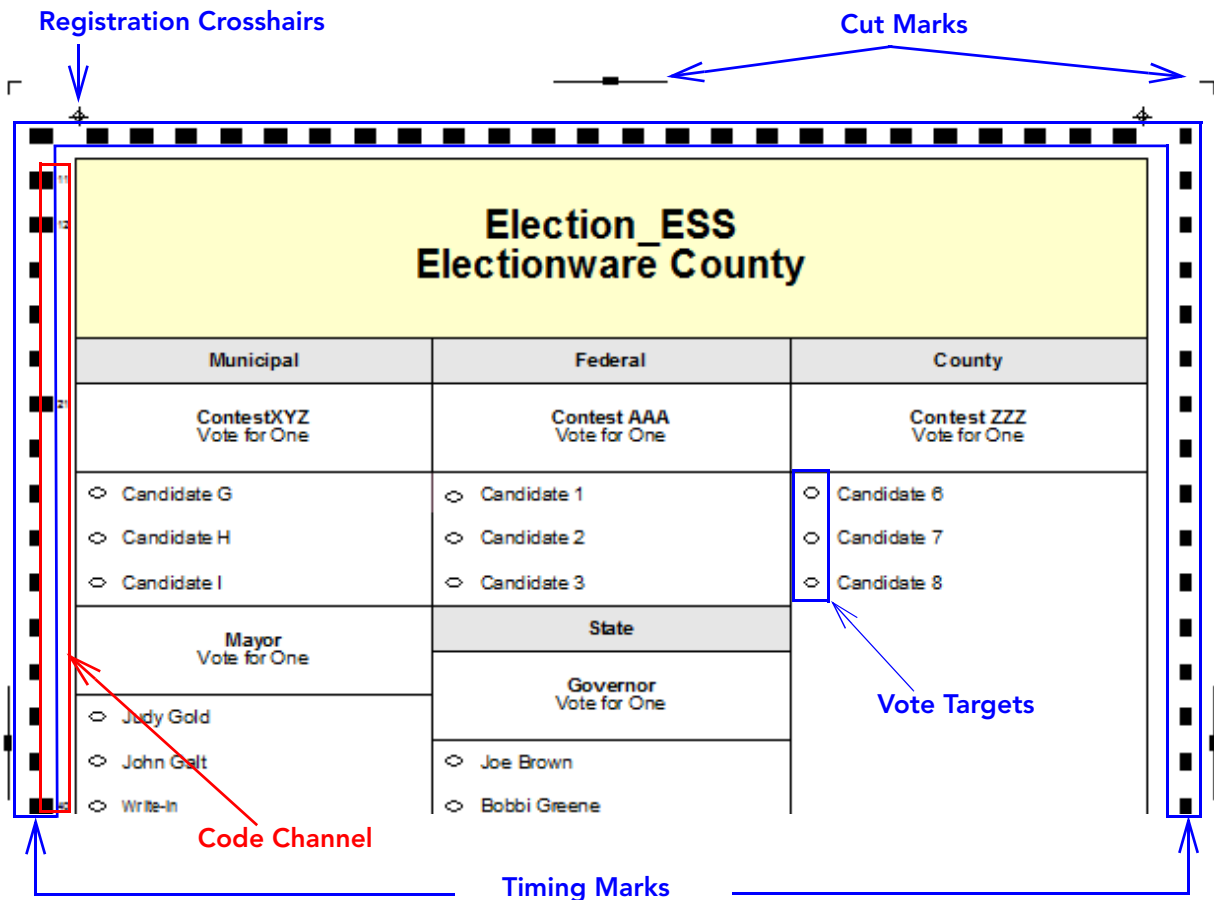
Electionware Paper Ballot

2.1.2 Timing Mark Spacing

The timing mark spacing (also referred to as density) varies according to ballot length and number of voting targets per inch, allowing for different row counts for each size. When checking the ballot, be sure to use the correct overlay for ballot size and timing mark spacing.

Table 2-1: Column Widths According to Ballot Length & Ovals/Inch

Length	5mm 0.20" (5 ovals per inch)	6.5mm 0.26" (3.8 ovals per inch)	8mm 0.31" (3.1 ovals per inch)
11"	50	38	N/A
14"	65	50	41
17"	81	62	50
19"	91	70	56

2.2 ES&S CountRight Ballot Stock

ES&S CountRight™ Ballot Stock has been specially engineered to run on ES&S tabulators and meets all ES&S specifications for the ES&S tabulators.

Important

The use of CountRight Ballot Stock is highly recommended when printing for ES&S equipment.

As the manufacturer of the scanning equipment, ES&S understands the critical synergy required between the ballot paper, the ink on the paper, and the tabulator logic. As a result, CountRight Ballot Stock was designed with specific consideration regarding the following measurements:

Caliper – Thickness of the paper

Opacity – Amount of light absorbed vs. reflected by the paper

Brightness – Reflectance of the paper when measured under a calibrated wave of light

Smoothness – Measurement of surface "roughness" of the paper

Basis Weight – Mass (expressed as weight) per number of sheets

ES&S tabulators are designed to use digital CountRight Ballot Stock, which is blank with no pre-printing for the DS200, DS450®, and DS850®.

2.2.1 Ordering CountRight Ballot Stock

When ordering stock, it is critical to tell ES&S what type of tabulator(s) you are using in order to ensure that correct stock is ordered. CountRight is available from two sources:

- As the only authorized distributor of CountRight, Veritiv offers parent sheets and rolls in several sizes and formats.

- ES&S stocks and markets CountRight Ballot Stock in several sizes and formats.

Contact ES&S Customer Service at 1-877-377-8683 with any questions or orders. Allow four weeks for delivery.

2.2.2 CountRight Specifications

Table 2-2: Ballot Specifications

Grain Direction on Finished Ballot	Long
Basis Weight	80# text weight (36.2874 kg)
Thickness	0.0061 in. (0.015494 cm)
Smoothness	130 Sheffields
Moisture	5.5 percent
Opacity	97.0
Brightness	92 to 94
Pages per Inch (PPI)	338

Table 2-3: Tolerances

Ballot Width	8.5 in. (+.027, -.02)
Ballot Length	11, 14, 17, 19 in. (+/- 0.03)
Ink Density	1.15 to 1.25 wet ink density; 1.10 to 1.15 dry ink density
Oval Thickness	The value entered in Electionware must be within the range of 0.004 inches to 0.006 inches.[a]

a. For proper scanning and tabulation, the actual printed line must not exceed 0.008 inches in thickness. Use a micro ruler to validate proper thickness of the printed oval line.

Important

The DS200, DS450, and DS850 can accommodate ExpressVote activation cards.

The DS200, DS450, and DS850 cannot read colored ballot stock.

Avoid using adhesive stickers or labels and avoid embossing or embellishing when printing ballots. Any technique that changes the caliper of the ballot stock may cause read errors during scanning.

2.2.3 Paper Storage and Conditioning

For optimal print quality and paper performance, follow these recommended guidelines.

2.2.3.1 Storage

Preserve the paper quality by storing in proper containers and climate.

Containers

Leave the paper sealed in its original wrapping and/or shipping carton until it is time to load it into the printer. Once opened, it is more likely to be affected by moisture, which can cause curling, waves, and other damage to the paper.

Once a ream of paper is opened, if some paper is not immediately used, reseal the wrapper with tape, and/or store the unused paper in a sealed plastic bag.

Caution

Do not store paper in the printer's paper trays.

Do not store paper on the floor. Use pallets, shelves, cabinets, etc.

Stacking

Stack individual reams or cartons carefully on top of one another to avoid crushing edges.

Stack cartons no more than five high, and pallets no more than three high.

Climate

Store paper at a temperature of 68°F/20°C to 76°F/24.4°C, at relative humidity of 35 to 55%.

2.2.3.2 Conditioning

Paper conditioning refers to the time required to acclimate to print room conditions before printing.

Note

Conditioning coated paper is generally a longer process than conditioning uncoated paper.

Separating the cartons speeds up conditioning.

Use the chart below to determine the exact amount of time required between moving the paper into the print room and starting to print.

Note

"Temperature Difference" refers to the difference between the temperature during transport and the temperature of the print room.

Table 2-4: Conditioning Hours for Ballot Paper

# Cartons	Temperature Difference (Degrees F/C)						
	10/5.5	15/8.5	20/11	25/13	30/17	40/22	50/28
	Hours						
1	4	8	11	14	17	24	34
5	5	9	12	15	18	25	35
10	8	14	18	22	27	38	51
20	11	16	23	28	35	48	67
40	14	19	26	32	38	54	75

2.3 Color Strip Identification

To assist with correct ballot distribution at the polling place, ES&S ballots can use a color strip instead of full color tinting.

The strip can be any color and darkness, as it is placed on a part of the ballot that the scanner does not read, and can be horizontal or vertical.

Note

Text or ballot art can appear within the color strip. However, because the scanned image will be black and white, the strip may appear black, rendering dark text unreadable. Check with your jurisdiction to see if white text can be used against a particular color strip.

Along the long edge of the ballot, the color strip can be flush with the borders of the inner frame. Along the short edge of the ballot, the strip must be 0.10 inch from the border of the inner frame.

The strip is considered ballot art, and must be 0.20 inch away from the nearest voting target. This limits the height of a horizontal strip, and the width of a vertical strip.
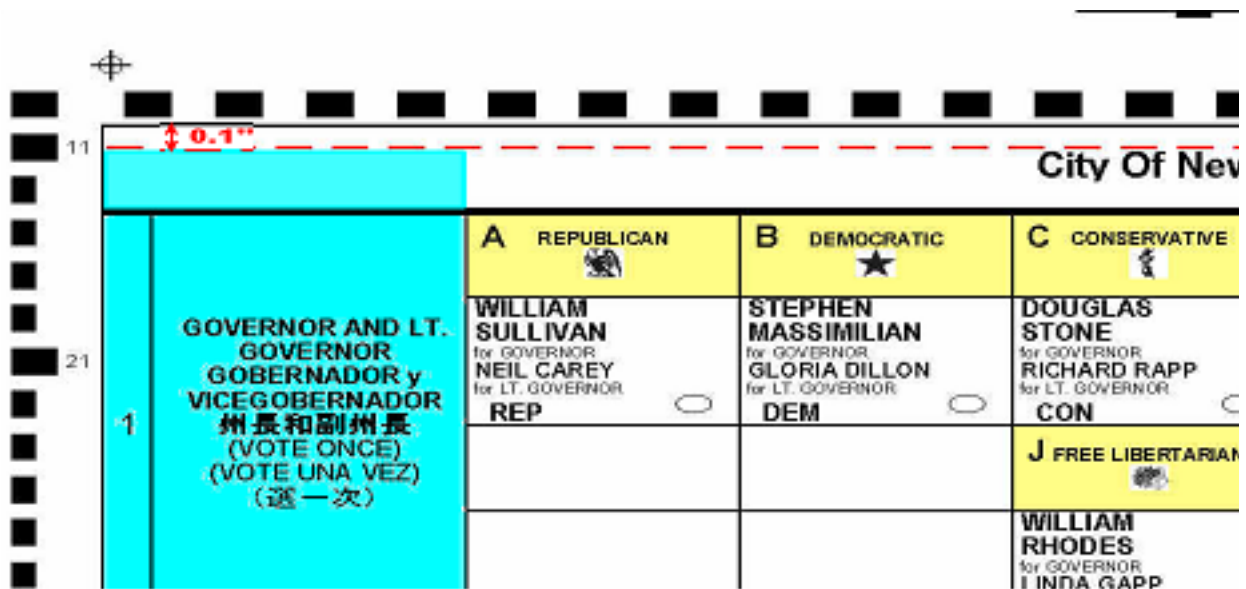
Example of vertical color strip layout

2.4 Color Rendering

Because the DS200, DS450, and DS850 scanners render images in black and white (no gray), the color strip will be rendered as either black or white.

Refer to the color chart and table on the following pages when selecting color for use on the ballot.

Note

This table is provided as a reference only. Colors may be rendered differently depending on different parameters, including ink (dye quality) and printer manufacturer.

2.4.1 Shading Guidelines

- For any shaded areas with dark text, ES&S recommends that shading not exceed 10%.

- For 100% shading, ES&S recommends a high contrast color for text (e.g., white text on black shading).

- Shading does not affect tabulation. It only affects human readability of text in shaded areas.

Color Scan Test Ballot

Black

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Red

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Green

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Cyan

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Orange

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Blue

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Magenta

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Yellow

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	

Purple

100%	
90%	
80%	
70%	
60%	
50%	
40%	
30%	
20%	
10%	
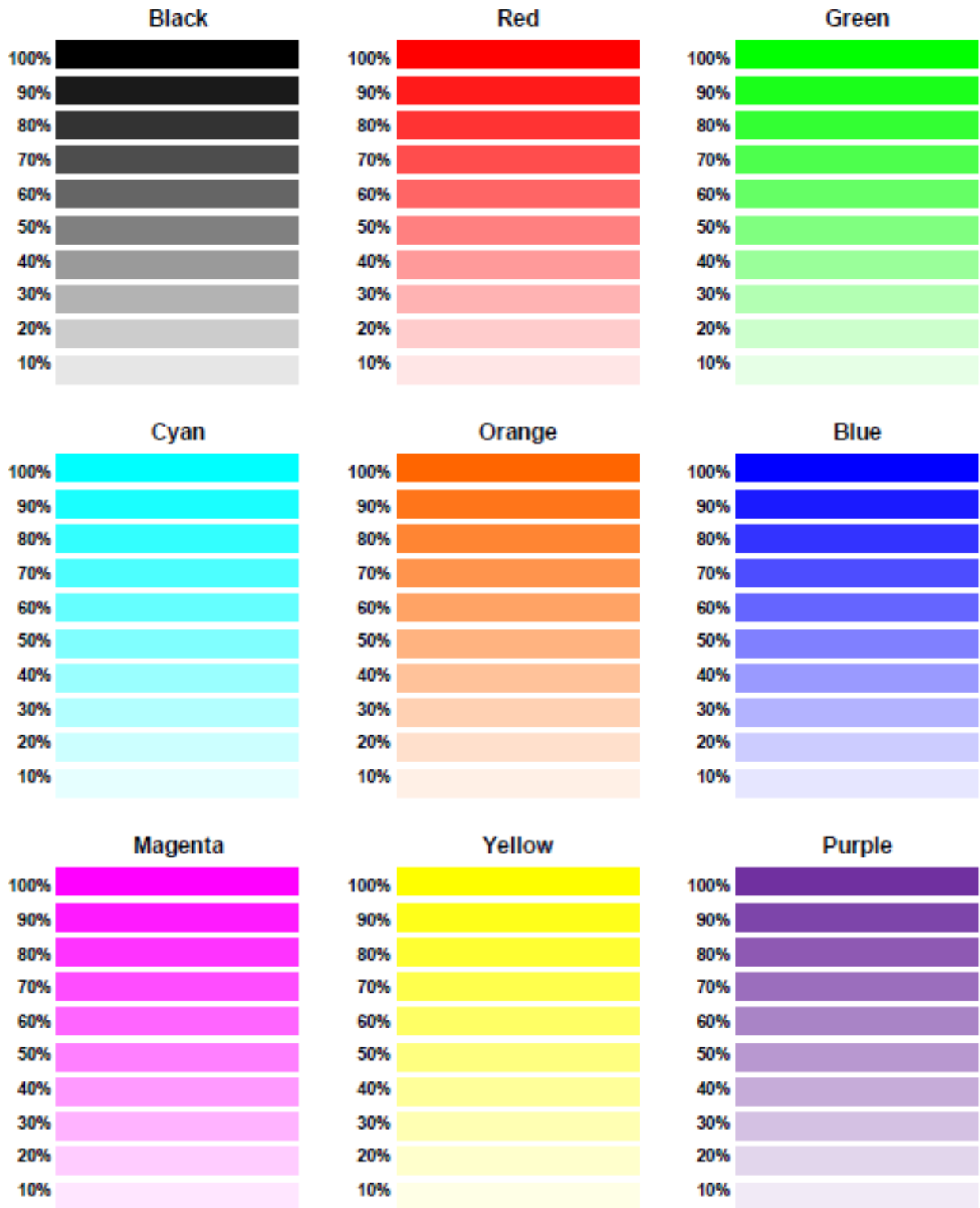
Table 2-5: Ballot Layout Color Guidelines[a]

Color	Threshold for White	Threshold for Black
Black	< 30%	> 40%
Red	< 30%	> 40%
Green	< 50%	*
Cyan	< 50%	*
Orange	< 35%	> 50%
Blue	< 30%	> 40%
Magenta	< 30%	> 40%
Yellow	< 50%	*
Purple	< 40%	> 55%

a. Colors with an asterisk (*) are usually rendered as white by the DS200 due to the green light it uses for scanning.

2.5 ExpressVote Card Stock

The ExpressVote® uses specially manufactured thermal paper to record printed images such as bar codes and contest selections. The unit's thermal printer selectively heats the paper on one side to activate the dye(s) in the paper. The paper stock is processed to prevent moisture from causing the paper to curl.

Approved grades are PTI's "PTI 351 14N," and Appvion's "Resiste 800-5.3."

ExpressVote card stock is only available from ES&S. Contact ES&S Customer Service at 1-877-377-8683 with any questions or orders. Allow four weeks for delivery.

ExpressVote paper specifications are provided in the table below and illustrated on the following pages.

Table 2-6: ExpressVote Paper Specifications

Type	Thermal heat-sensitive paper
Color	White
Thickness	134 Microns ± 6 Microns (0.005275" ± 0.000236")
Lengths Available	11, 14, 17, and 19-inches ± 0.015" tolerance for all lengths
Width Available	4.260 ± 0.015" tolerance for all paper lengths
Die-cut Corner	0.750 ± 0.015" tolerance on two sides (see the figures on the following pages)

2.5.1 Storage and Shelf Life Recommendations

Shelf Life – Store ExpressVote thermal card stock in a dark place at a relative humidity between 45% and 65% and a temperature below 77°F (25°C). Adhering to these recommendations will ensure satisfactory performance for at least three years from the date of manufacture.

Image Life – Once an ExpressVote vote summary card has been imaged, the image is expected to remain completely legible for at least seven years, assuming the documents are properly stored with compatible materials under normal filing conditions, with a relative humidity between 45% and 65%, as well as a temperature below 77°F (25°C).

After seven years, the image may begin to deteriorate. After twenty years, the image may no longer be visible.

Caution

Exposure to heat renders the card stock black and unusable.
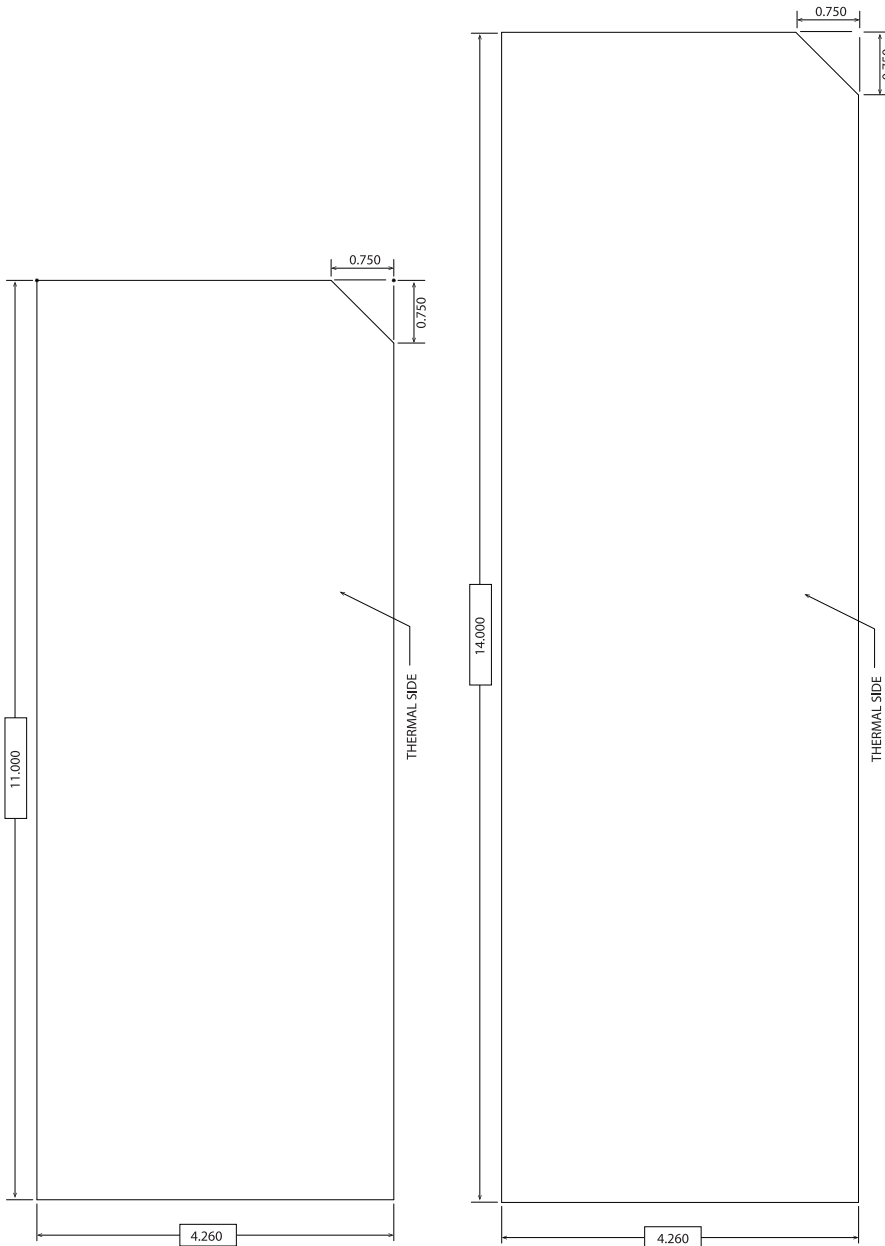
ExpressVote thermal paper stock: 11 inch & 14 inch

0.750

0.750

0.750

0.750

19.000

17.000

THERMAL SIDE

THERMAL SIDE

4.260

4.260
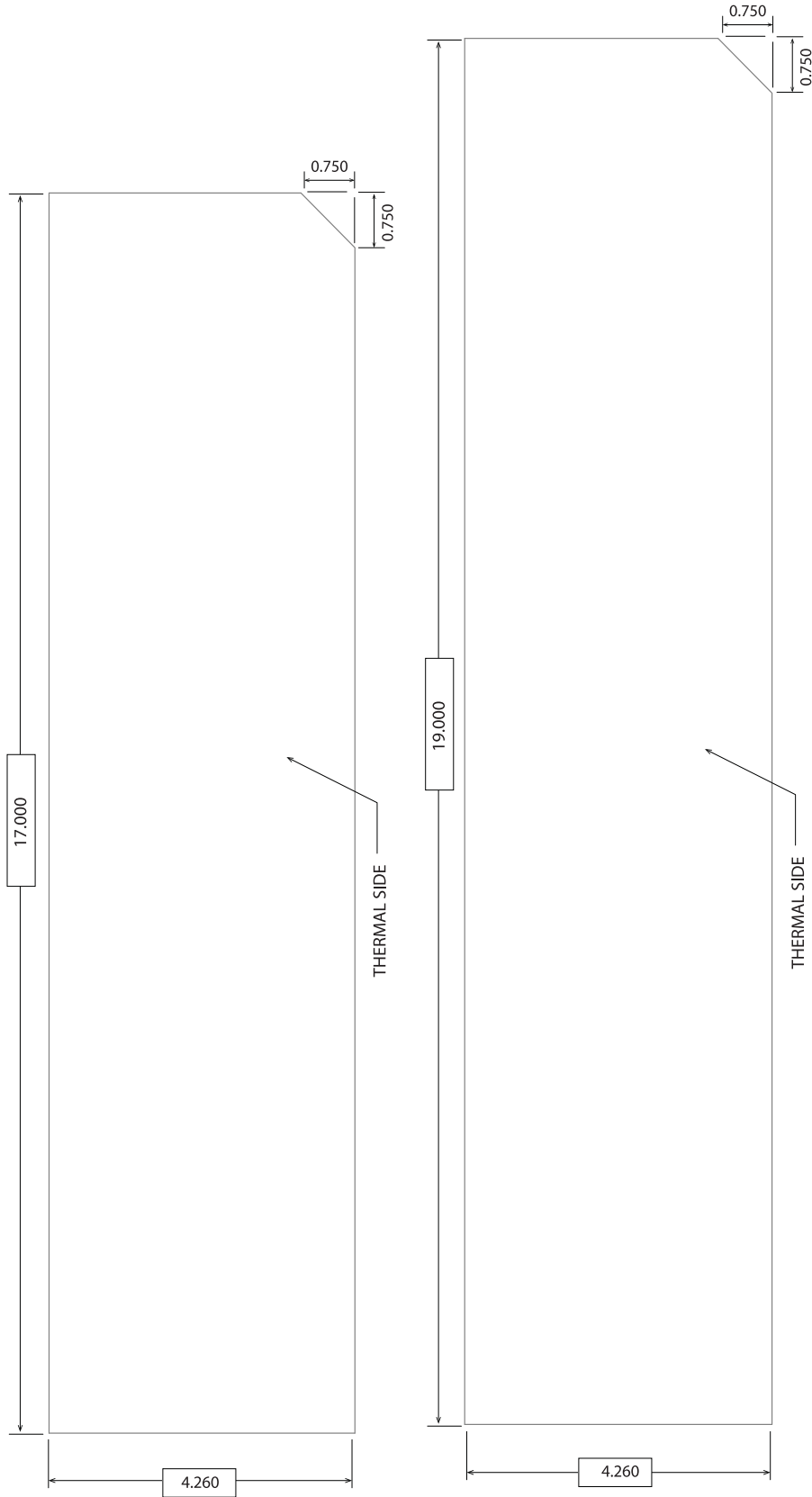
ExpressVote thermal paper stock: 17 inch & 19 inch

2.6 Offset Production

2.6.1 Ballot Ink for Offset Production

Print all of the machine-readable components with high quality, commercially available black ink (extra or double-black) and note the following guidelines:

- Use inks with high tack.

- Only use readable black ink to print ballot components.

- Make sure that all offset is solid and dense without voids, breakthroughs, dirt, foreign particles, white hickeys in the timing marks, or gray lines.

- Print with a minimum density of 0.95 and a maximum density of 1.50. Test at the press using a densitometer.

- For best results, use a density of 1.15.

- Do not use powder or varnish.

- Do not smear, smudge, or spray the ink when handling the ballots.

- Do not print text in the active voting tracks.

2.6.2 Offset Pre-Press Preparation

Before going to press, use the instructions that follow to prepare the ballot layout for mass printing.

In offset printing, use diazo-coated aluminum or high quality vinyl plates to preserve the integrity of the film image. (Paper plates do not maintain the side-to-side dimensions of the ballot image.)

1. Image the PDF file to film negatives or direct to plate at 100%. A PDF file can vary as much as 0.5%, depending upon how the software is handled by the output devices.

2. Use the registration overlays obtained from ES&S to verify that the PDF is sized correctly, that all machine-readable components are aligned, and that all cut marks and score marks appear on the ballot.

3. Inspect the ballot for accuracy with registration overlays, hard copy laser prints (if one is sent) and a visual inspection of the document image. Check

the ballot for wrapping, overprinting, dropping lines, text outside the text areas, or other signs of a corrupt file.

Note

Contact ES&S Print Services to obtain the registration overlays, or for additional assistance.

2.6.3 Prepare Ballot Stock

Only use ES&S CountRight Ballot Stock and ballot ink that adheres to the specifications in this manual.

Square the stock before sending it to the press.

2.6.3.1 Offset Preparation, Printing, and Proofing

1. Print 150 make-ready sheets and cut to the final size. Check the following:

    - Ballots are square.

    - Front-to-Back registration is accurate by holding ballot to the light.

    - Width is accurate by using a registration overlay.

    - Any visible spots or scratches on the ballot or printing plate.

2. Turn the ballot over and do the tests again on the back of the ballot. If all four tests on each side fall within tolerances, the scanner will be able to read the ballot.

3. After performing registration checks, print and inspect the ballots. Allow the ballots to dry.

4. For every 500 sheets printed on the main production run, check the following and initial accordingly:

    - Ink density with a densitometer.

    - Overall print quality – visible flaws, spots, or marks on the ballot or printing plate.

    - Make any corrections/adjustments necessary to the printer. Reprint, and replace ballots as needed.

2.6.3.2 Offset Cutting

The first few sheets should be taken to the cutter immediately to determine if all is square. Stack ballots in lift sizes of 3 to 5 inches (7.62 to 12.7 cm). The weight of the ballot stock may cause offset during the drying process if placed in stacks higher than 5 inches (12.7 cm).

Note

Keep ballot stock clean before, during, and after printing. Avoid grease, water, ink splatter or spray, and dirt. Always wash hands before handling ballot stock.

2.6.4 Cutting

To ensure ballots are the proper size, use the overlays to determine overall ballot width and length.

ES&S CountRight Ballot stock is already cut to size; however, check the ballot stock with the appropriate overlay to ensure it is properly cut.

If printing from a roll-fed machine, or cutting down from offset press sheets, periodically check with the appropriate overlay to ensure the ballots are cut to the correct width and length.

2.6.5 Scoring Ballots

Ensure that no scoring/folding does not intersect with any ovals.

Caution

Scoring followed by folding may result in the ballot separating at the score/fold line.

2.6.6 Folding Ballots

A folding machine should be used to expedite the process of folding ballots. In addition, roller pressures should be reduced to about 2 – 3X thickness of ballot stock.

Caution

- Do not fold across timing marks, ovals, write-in spaces (marked or unmarked), or arrows, as this may cause tabulation errors.

- Fold as few times as possible.

- When removing from envelopes, place all ballots in the same orientation for proper back-bending.

2.6.7 Perforating and Numbering Ballot Stubs

A ballot stub is a non-readable portion of the ballot that election workers remove at the polling place for auditing purposes. Stubs usually contain at least one identification number (such as a precinct identification number or sequence code number) and a sequentially printed number that matches the number on the ballot, used to audit ballots that have been cast. Ballots should be perforated for easy separation.

2.7 Digital Printing and Packaging

When printing, use the tools listed below to check the following:

- Registration Overlay:

    - Registration

    - Ballot width

    - Ballot length

- Go/No-Go Gauge:

    - Ballot width

- Densitometer:

    - Ink/toner density

- Micro-ruler:

    - Oval line thickness

On every ballot inspected, check the following:

- Overall print quality - any visible flaws, spots or marks

- Front-to-back registration

- Proper toner/ink adhesion

Note

Contact ES&S Print Services to obtain the registration overlay and correct Go/No-Go Gauge.

Important

If any of the measurements do not align with ES&S specifications, make any corrections / adjustments necessary to the printer, reprint and replace ballots as needed.

2.7.1 Preparation and Proofing

After receiving the files, all ballot sequences must be proofed to ensure that information on the ballot is correct.

2.7.1.1 Pre-Production

Before printing, verify that the following components on the ballot PDF match those on the ballot order form (also referred to as the BQRL), and record the results on the form:

- Correct party or ballot style

- Stub, sequential numbering, or color requests

- Scoring/folding, stapling, gluing, or any special finishing requests

- Type/sequence/split or style number

2.7.1.2 Overlays and Registration

A PDF can change, depending upon the software used, and although the change may not be visible (about 0.5%), it could be enough to cause read errors or ballot rejection on ES&S equipment. Use the registration overlays provided by ES&S to ensure that the ballots being produced are within ES&S specifications.

Using Registration Overlays

- Ensure that you have a "front" and a "back" overlay.

- Align the top and right edges of the ballot with the "edge of paper" lines on the overlay, and inspect the printed ovals. The ovals must be printed entirely inside the boxes. If any part of the oval is outside the box, the ballot is not within registration. The PDF or printer must be adjusted, and the ballots reprinted, until the sizing and registration are correct.

- Verify that the black timing marks and code channels are within the boxes printed on the overlay. The left and bottom edges of the ballot must fall between the Min. and Max. lines when the top and right edges are on the "edge of paper" line. If any part of the marks is outside the box, the ballot is not in registration. The PDF or printer must be adjusted, and the ballots reprinted, until the sizing and registration are correct.

Note

Check front-to-back registration on the ballot by holding it up to a light. The timing marks must line up evenly.

Overlay 11-38 - 24 Column - Ver. 1

Minimum Length
Maximum Length
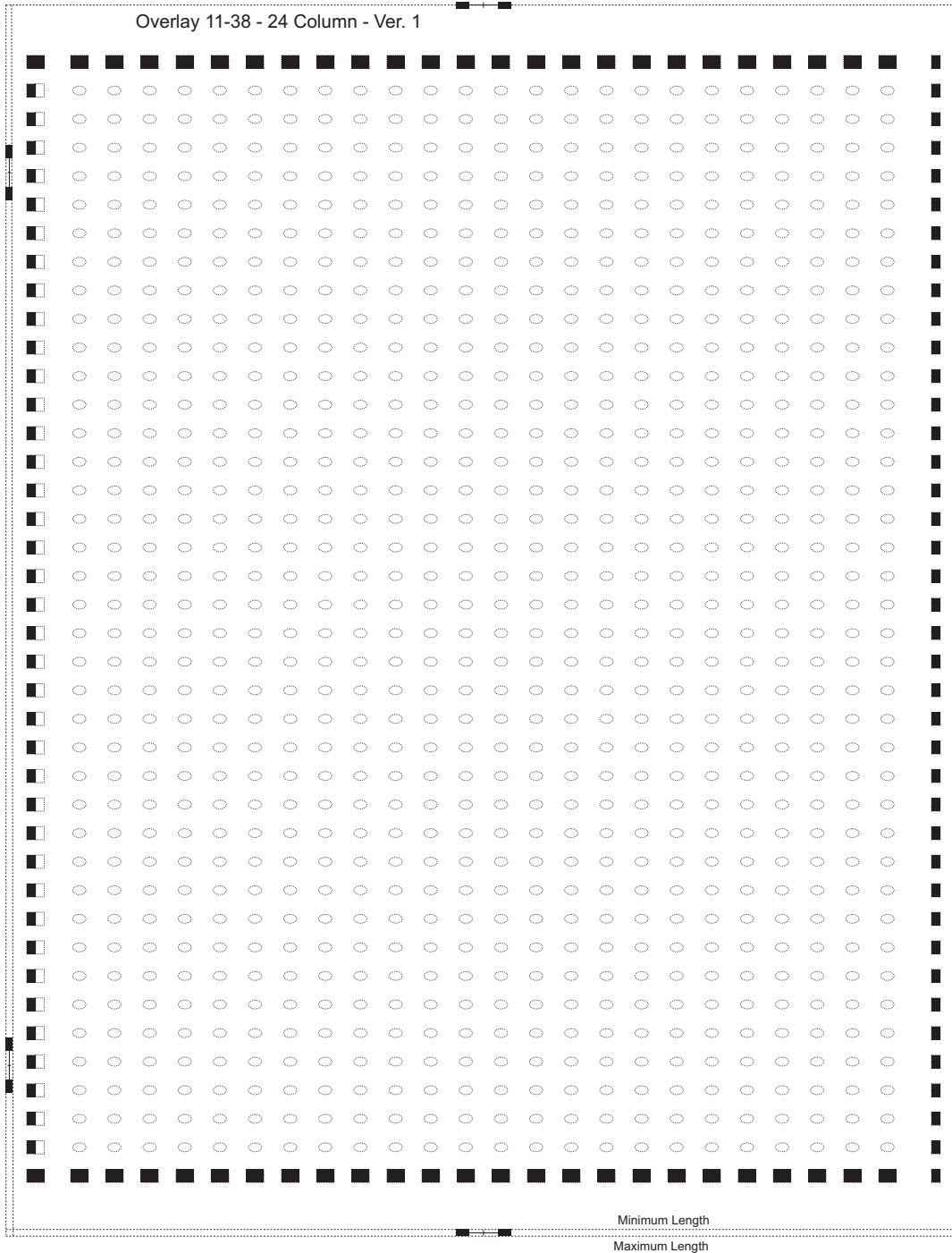
Example: EVS Registration Overlay

2.7.1.3 Print Inspections

For every **250** ballots run, check and initial the following:

- Check registration, width, and length using the registration overlay.

- Check front-to-back registration on the ballot by holding it up to a light. The timing track should line up evenly.

- Measure oval line thickness with the micro-ruler.

- Check overall print quality (any visible flaws, spots, or marks).

Make any necessary corrections/adjustments to the printer. Reprint and replace ballots as needed.

For every **1,000** ballots run, check and initial the following:

- Measure width using the Go/No-Go Gauge.

- Measure ink density using the densitometer.

- Check overall print quality (any visible flaws, spots, or marks).

- Check proper toner adhesion.

Make any necessary corrections/adjustments to the printer. Reprint and replace ballots as needed.

2.7.2 Preparation for Transport

2.7.2.1 Packaging

Before shrink-wrapping and shipping the ballots, perform these final tasks:

- Fan through the pages (both front and back) to visually identify any visible errors or marks. Reprint and replace ballots as necessary.

- Use chipboard when shrink-wrapping quantities of fewer than 50 ballots.

- Do not shrink-wrap quantities greater than 250.

- Include a packing list or label each ballot box to clearly indicate which ballots are in each specific box for easy customer recognition.

2.7.2.2 Binding and Shipping

- Bind, number, and box the ballots for shipping. If the ballots are to be glued or stitched, do so at the bottom of the ballot stub.

- Do not bind ballots at the top.

- Ship the exact number of ballots that have been requested in shrink-wrapped packaging.

- Package ballots with a backer to provide support and prevent damage.

- Ship ballots in containers large enough to hold in the ballots and strong enough to withstand damage that may occur during normal shipping and handling.

- Label the outside of the cartons "ELECTION MATERIALS" and include a shipping manifest unless directed to do otherwise.

Note

Call ES&S or the client for labels or for further assistance.

Chapter 3: System Configuration and Acceptance Testing

3.1 EMS Installation and Configuration Documents

EVS 6042 CA EMS installation and configuration procedures are provided in the following accompanying documents:

- *EVS 6042 CA EMS Client Workstation Installation*

- *EVS 6042 CA EMS Server Installation*

- *EVS 6042 CA EMS Standalone Workstation Installation*

3.2 Upgrading Firmware

3.2.1 DS200 Firmware Update

To install new firmware on the DS200, first obtain an official DS200 firmware update USB flash drive from the Secretary of State.

1. Power off the DS200 unit.

Note

The DS200 must be powered off before the firmware USB is inserted.

2. Unlock and open the front and rear access doors on the DS200 and remove any flash drives.

3. Insert the USB flash drive containing the firmware update into the USB port under the *rear access* door (normally used for the backup drive).
   Do not force the flash drive into the port.

Backup USB Port
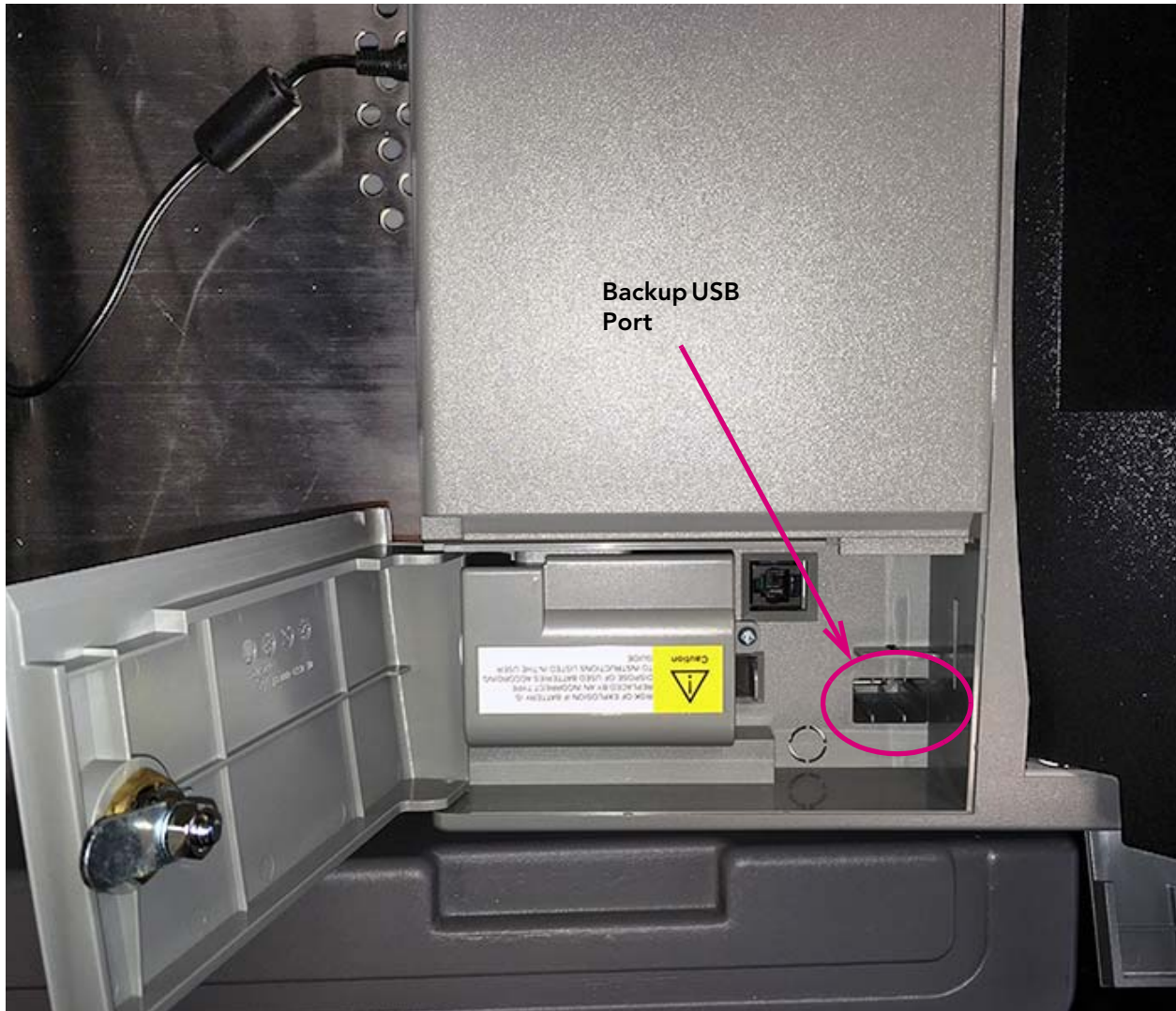
4. Turn the DS200 on.

5. When the Upload New Firmware screen appears, touch **Continue**.

Note

Do not remove the USB flash drive during this process.

When the firmware update is complete, a confirmation message will appear.

Note

When the DS200 is switched on, the firmware version will appear on the initial state report.

6. Per the on-screen instructions, remove the flash drive, then turn off the DS200 unit.

Note

If the firmware update is unsuccessful, update the DS200's internal compact flash (CF) card with a new prod.release.image file, then repeat the steps in this section.

3.2.2 Central Count Firmware Update

To install new firmware on the Central Count, first obtain official firmware update CF cards from the Secretary of State.

The DS850/DS450 firmware is updated using the following items:

- Auto Hard Drive Erase CF card

- New DS850/DS450 firmware CF card

Warning

Be aware that loading new firmware onto a Central Count tabulator will clear everything off the hard disk. Before starting this process, ensure that you have retrieved all needed data from the hard drive.

After you load new firmware onto the Central Count tabulator, you must calibrate the touchscreen and the camera.

1. Touch **Exit** in the lower left corner of the screen.

   (If you are on a screen that does not display the **Exit** icon, touch **Menu** to navigate to a screen displaying that icon.)

2. Touch **Shutdown Scanner**.

   a. If using a DS850 tabulator, unlock and open the access door on the left side of the tabulator.
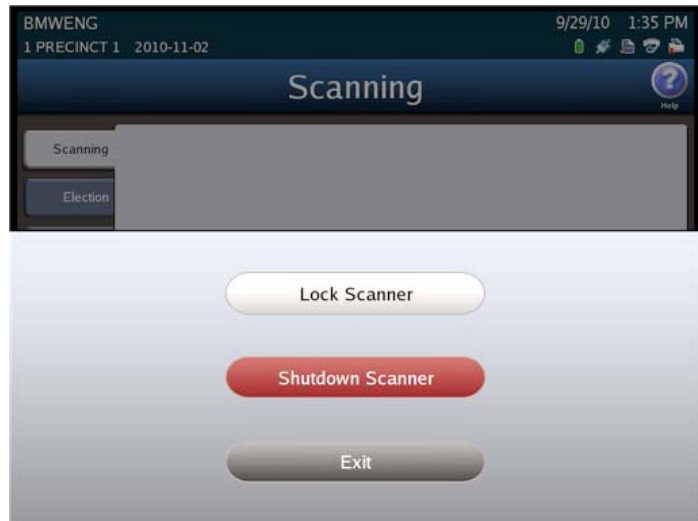
3. When the screen indicates it is safe to power off the machine, flip the power switch on the left side of the tabulator to the off position.

4. Unlock and open the rear panel on the tabulator. (You do not need to remove the screen.)

For CF card removal, depending on the model of your tabulator, proceed to either *3.2.2.1 DS850: Remove Current CF Card* (next page) or *3.2.2.2 DS450: Remove Current Firmware CF Card*.

3.2.2.1 DS850: Remove Current CF Card

1. Locate the CF card access panel.

2. Unscrew the four thumb screws holding the access panel in place, remove the thumb screws, and remove the panel.

3. Remove the old CF card.
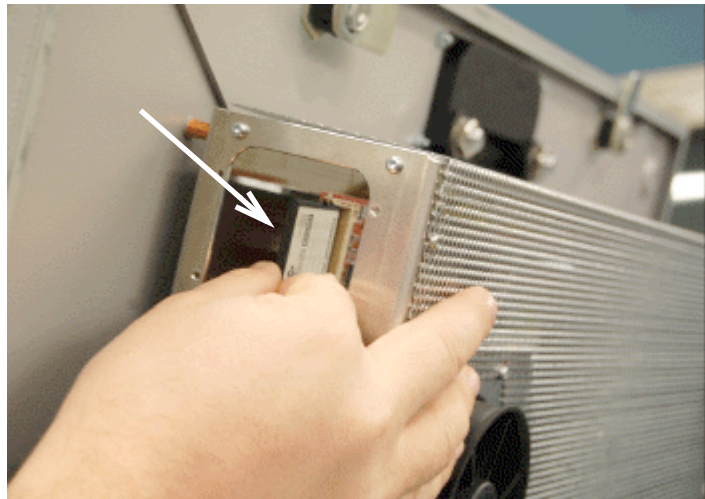
3.2.2.2 DS450: Remove Current Firmware CF Card

1. Remove the old firmware CF card from its slot in the upper right portion of the back of the machine.
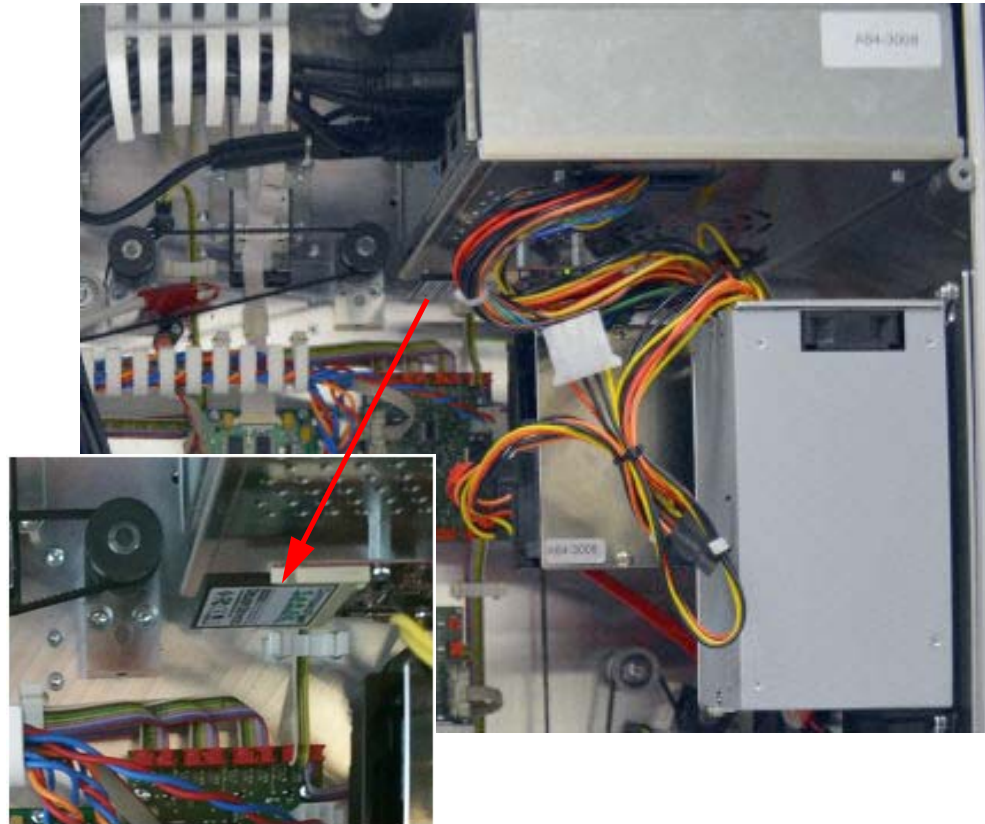
3.2.2.3 Erase Hard Drive and Load New Firmware

1. Insert the Auto Hard Drive Erase CF card, with the ridge on the back of the card facing out (DS850)/down (DS450).

Note

Do not force the CF card into the slot. Ensure that the card is oriented correctly.

2. Flip the power switch to the on position.

Warning

Turning on the tabulator at this point will start the process of erasing all data from the hard drive. Ensure that all necessary data has been retrieved.

After you start this process, you will have 60 seconds in which to shut down the unit if you decide you do not want to clear the hard drive.

Once the unit boots up, the touch screen displays a 60-second countdown message. When the countdown is complete, the formatting process begins and takes 7 to 10 minutes. An incrementing counter on the touch screen indicates the status of this process. When the formatting is complete, the tabulator automatically partitions the hard drive.

When the hard drive has been cleared, formatted, and partitioned, the touch screen displays the following message:

> *Your Hard Drive is Wiped*
> *Please turn off your DS850/DS450 and Replace the CF card*

3. Shut down and turn off the tabulator.

4. Remove the Auto Hard Drive Erase CF card.

5. Install the new firmware CF card and reattach the CF access cover.

6. Close and lock the rear panel of the scanner.

7. Flip the power switch to the on position.

Note

After loading the new firmware, you must calibrate the screen and camera, and clear and initialize the tabulator.

3.2.2.4 Test and Calibrate Camera

You must do this extended camera calibration after upgrading the Central Count tabulator firmware to ensure the camera is properly calibrated to work with the new firmware.

This procedure requires 40 sheets of blank 14-inch ballot stock, oval check sheet.

1. Load an election that has been coded for the new tabulator firmware. If you do not load an election at this time, you will be unable to properly calibrate the camera.

2. Set the output trays for 17-inch ballots.

3. On the Scanning menu, touch **Scan Ballots**.

4. Load the oval check sheet into the input hopper.

5. Touch **Start**. The tabulator will scan the oval check sheet and out stack it to the top tray.

6. Touch **Save**.

7. Touch **Save** a second time.

8. Touch **Done**.

9. Go to the Hardware tab located at the bottom left of the screen.

10. Touch **Transport**.

11. Enter the administration password for the current election.

12. Touch **Tests**.

13. Touch **Display Ballot**.

14. View the front and back of the ballot on the touch screen, using the navigation commands to move the image around on the screen so you can view the entire image. The ovals displayed on the screen should look consistent from one side of the image to the other.

    The ovals printed on the oval check sheet appear from top to bottom of the page in a repeating pattern of the following thicknesses:

    - 0.010 inch
    - 0.008 inch
    - 0.006 inch
    - 0.004 inch
    - 0.002 inch

    The 0.002 inch ovals will be broken up or not visible. Ovals of all other thicknesses should appear intact.

The following is a sample of a good ballot image. Notice that only the ovals of 0.002 inch thickness are broken or not visible.
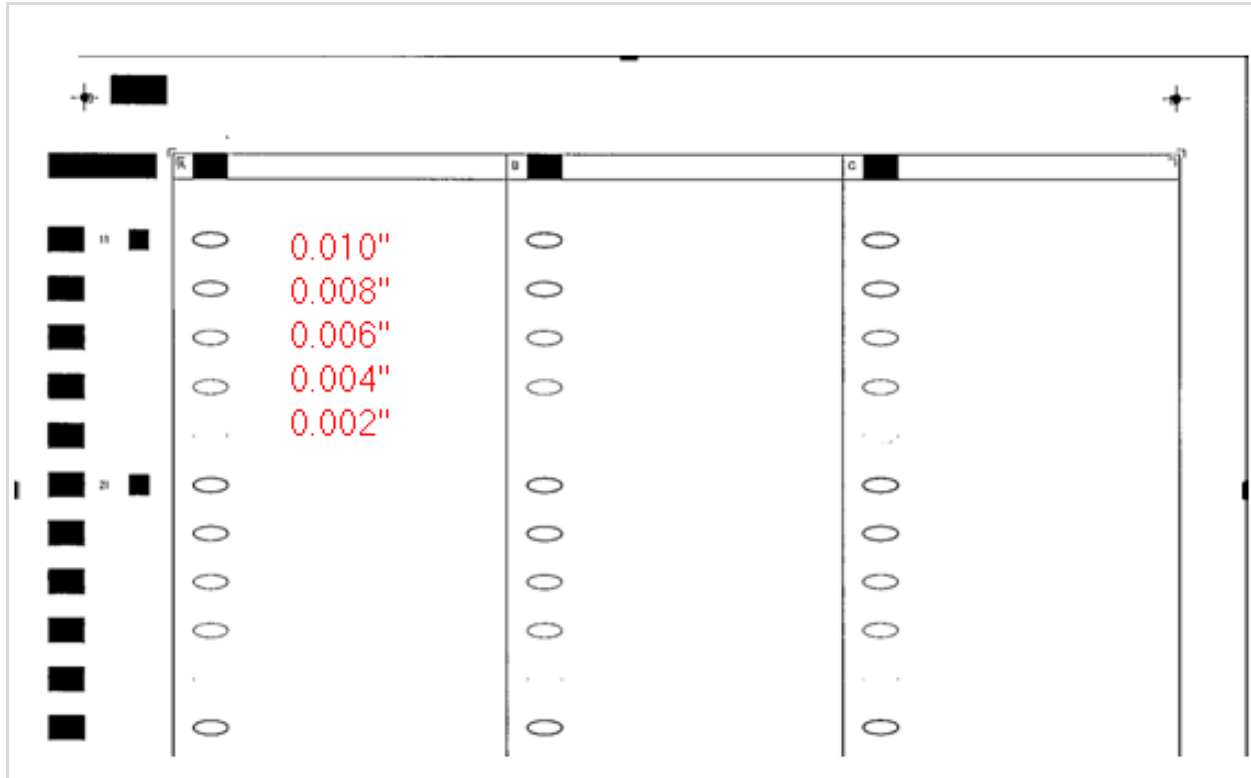
The following is a sample of a bad ballot image. Notice that the ovals of 0.004 inch thickness, as well as those of 0.002 inch thickness, are broken or not visible.
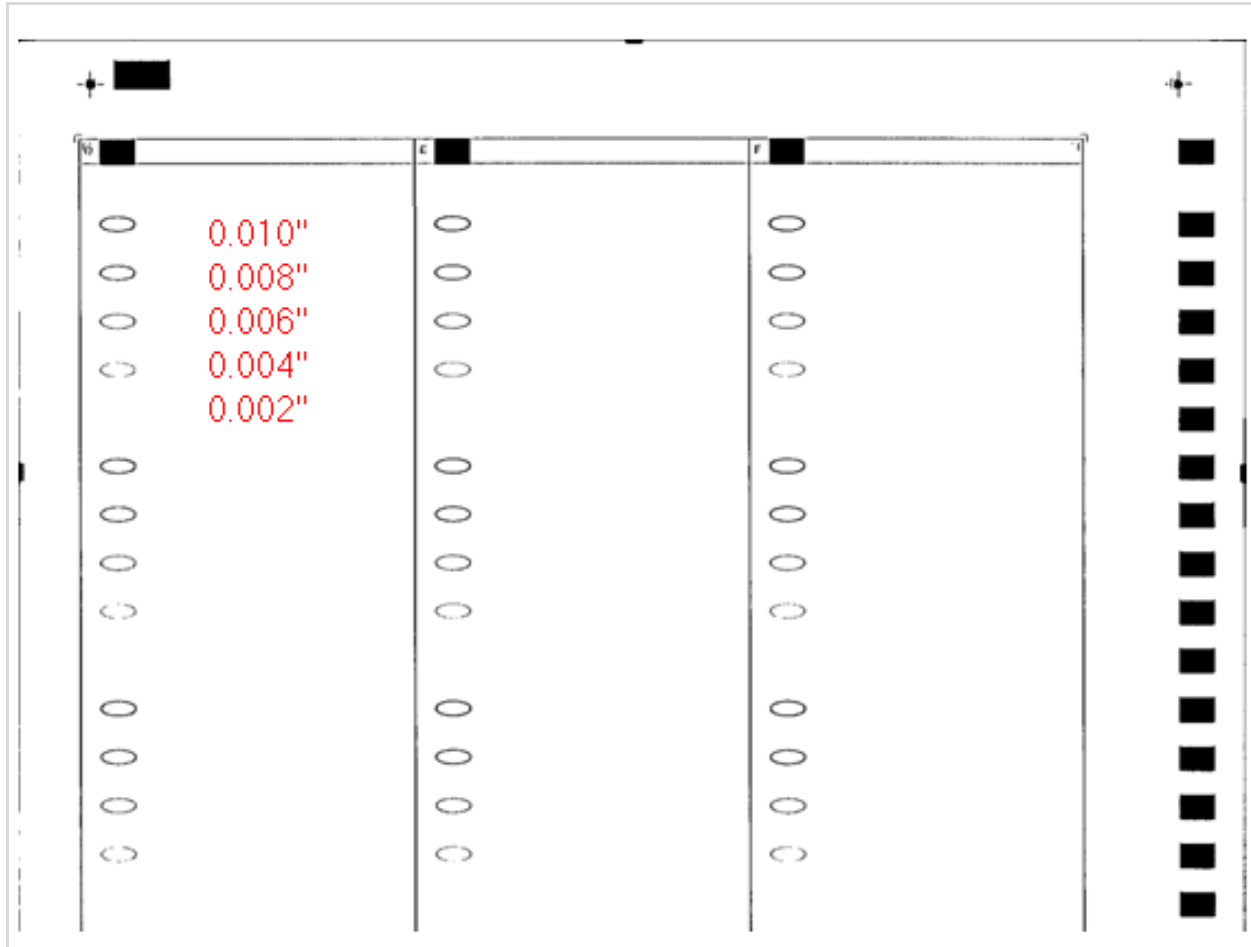
15. If the oval check sheet looks good, clear the counts from the machine. The tabulator is now ready for counting.

    If the oval check sheet does not look good, repeat the camera calibration.

16. Return to the Hardware tab.

17. Touch **Camera**.

18. Enter the administration password.

19. Touch **Camera Calibration**.

20. Adjust the output trays for 14-inch ballots.

21. Clean the cameras with a lint-free cloth and isopropyl alcohol.

22. Load the input tray with 10 sheets of blank 14-inch ballot stock.

23. Touch **Calibrate**. The tabulator will feed the blank ballot stock, four times.

24. Touch **Shutdown** when prompted to do so. Wait for the touch screen to display a message that it is safe to shutdown the machine.

25. Turn off the power to the tabulator. After 30 seconds, turn it back on.

26. Repeat the camera calibration.

27. When camera calibration is complete, close and lock the access door on the left side of the tabulator.

Contact

If the ballot images remain unsatisfactory after two attempts to calibrate the cameras, contact ES&S technical support for assistance.

3.2.3 ExpressVote Firmware Update

To install new firmware on the ExpressVote, first obtain an official ExpressVote firmware update flash drive from the Secretary of State.

When ES&S makes improvements to the ExpressVote firmware, ES&S issues a firmware update media device (USB flash drive) you can use to upgrade your ExpressVote units. Significant updates may require a reformatted internal solid-state drive (SSD), sometimes referred to as the Innodisk.

Note

For more information about updating and reinstalling the ExpressVote's SSD, contact ES&S personnel or the SOS office.

A firmware upgrade may involve enhancements to the ExpressVote application GUI (Graphical User Interface), the SPE (Scanner Printer Engine), or the IOB (Input Output Board). You can upgrade the SPE and the IOB simultaneously.

If your update includes enhancements to the firmware as well as the SPE and/or IOB firmware, perform the SPE/IOB update(s) first, then perform the application firmware update separately.

Use the Upload Software function to perform an ExpressVote firmware update either from an external update flash drive or from the internal SSD.

3.2.3.1 Uploading Software from an External Device

Complete the following steps to upload software using a USB update flash drive.

Note

If your update includes enhancements to the Application firmware as well as the SPE and/or IOB firmware, ES&S recommends that you perform the SPE/IOB update(s) first, then perform the Application update separately.

1. Set the ExpressVote unit to **Official** mode.

2. Insert the flash drive with the new firmware into any USB port in the access compartment.

3. On the main menu, touch **System Administrator**.
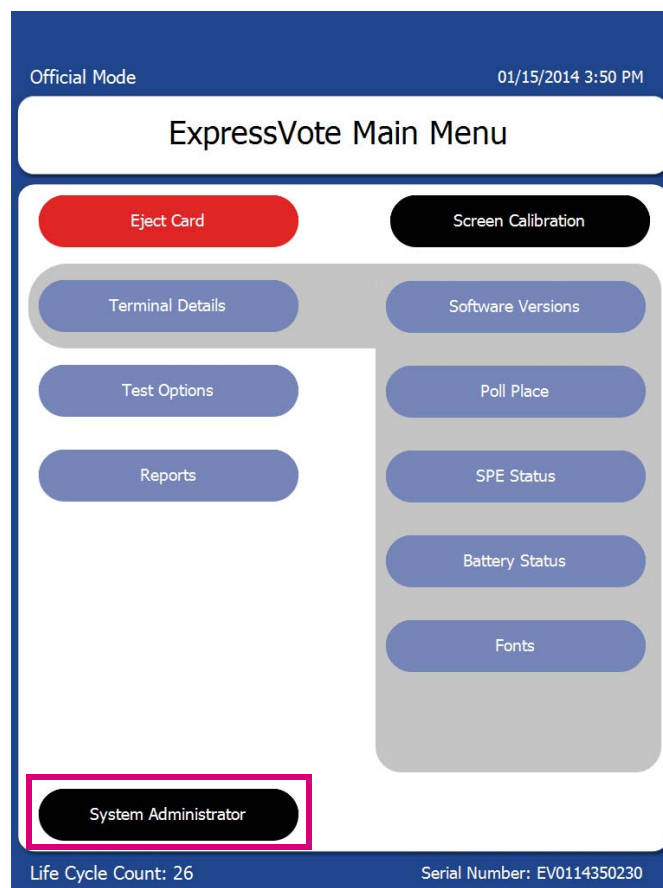
4. Enter the administrator security code and touch **Accept**.

5. On the ExpressVote System Administrator Menu, touch **Upload Software**.

ExpressVote System Administrator Menu

Reset AutoCast Count	Upload Software
Unit Serial Number	Set Time Zone / Date / Time
Clear System Log	Scanner Calibration
BOL Scanner Setup	Security
BOL Scanning	Cancel A/V File Check
Override Authorization Boxes	Ballot Diagnostics
Enable / Disable Keypad	Clear Jam
Rear Eject Enable	Bypass Access Code

EXIT
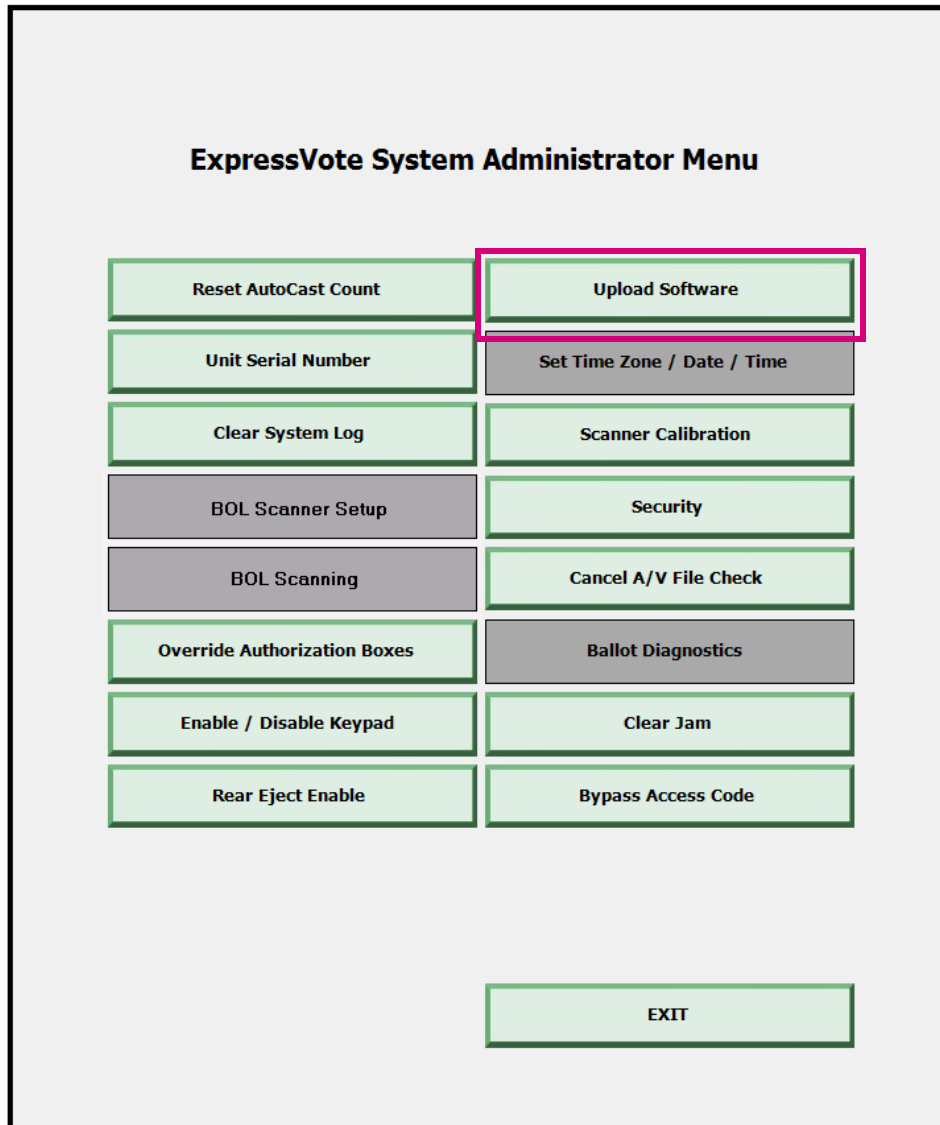
6. On the Upload New Firmware screen, if you are updateing update the SPE and/or IOB components, select the **SPE (Scanner Printer Engine)** and/or **IOB (Input Output Board)** options.

If you select **SPE** or **IOB**, the screen expands to include additional options. The ExpressVote unit detects the presence of the flash drive and selects the **From Update Media** by default. Ensure that this option is selected.

7. Touch **Begin Upload Firmware**.
   The uploading process continues automatically. Green, yellow and white status bars indicate the upload progress.

   The ExpressVote may require rebooting as part of the upgrade process. The unit may appear inactive during the reboot cycle, which may take several minutes to complete. This state is normal. The reboot process is dictated by the following conditions:

   • If you upgrade only the SPE, rebooting the unit is not necessary.

   • If you upgrade the IOB, either alone or with the SPE, the ExpressVote will reboot automatically.

- If you upgrade the Application GUI (see next step), the screen displays the REBOOT button. Touch **REBOOT** to initiate the reboot process. The REBOOT button turns yellow to indicate that the reboot is in process.

8. On the Upload New Firmware screen, select the **Application (Graphical User Interface)** option to update the ExpressVote firmware.

9. Touch **Begin Upload Firmware**.

10. After the upload and reboot are complete, use the Software Versions function of the ExpressVote Main Menu to verify that the updated firmware versions are successfully installed.

Important

ES&S recommends that you use the Scanner Calibration function via the System Administration Menu to recalibrate the ExpressVote's scanner after uploading new software. You may also consider recalibrating the unit's touch screen at this time.

3.2.4 ExpressVote XL Firmware Update

To install new firmware on the ExpressVote XL, first obtain official ExpressVote XL firmware update from the Secretary of State.

The ExpressVote XL firmware is updated using the following items:

- New firmware image file (*.img)

- Zero image file (zero.img)

- USB CFast card reader

- Imaging utility, such as imageUSB

Perform the following steps:

1. Turn off the ExpressVote XL.

2. Remove both CFast cards from the unit.

3. Image files using the CFast reader and imaging utility:

   a. Image the new firmware onto the OS card (2G, left slot).

   b. Image the zero.img file onto the data card (4G, right slot).

4. Install the reimaged cards into the ExpressVote XL and turn the power on.

3.3 Acceptance Testing

State and/or local jurisdiction election purchasing authorities are responsible for acceptance testing of the voting system and components. Authorities are also responsible for validating the performance of delivered units based on procurement requirements and for verifying that the delivered system is the certified system originally purchased.

Acceptance tests are usually completed on-site at the jurisdiction's acceptance location. The acceptance test requires the tester (jurisdictional representative) to acknowledge the performance of the requisite steps, then sign and date the acceptance form.

Acceptance testing is required to confirm the proper installation and operation of the EMS system and the election definition (the set of variables that define the specific election). The election definition media can be programmed by ES&S with client election data, or it can be created on-site by the client, using the EMS.

Inspect Shipping Containers and Packaging

Inspect the shipping container for signs of damage or mishandling before opening and unpacking. If damage is evident, do not open and unpack without first notifying the vendor.

3.3.1 Software Pre-Test Procedures: Electionware

Perform the following steps to complete acceptance testing of Electionware for EVS 6042 CA.

Note

For additional information about Electionware software, refer to *EVS 6042 CA Election Program Guide.*

1. Open and log into Electionware.

2. Click **Help**, the select **About Electionware**.

3. Verify that the software version in the upper left corner of the dialog box is **5.3.0.0**.

4. Click **OK**.

5. In Setup, add a State and County.

6. In Home, create a new Election.

7. In Capture, either import the election data, or:

   a. Add Languages.

   b. Add Parties.

   c. Add Precincts.

   d. Add District Types and Districts.

   e. Assign Precincts to Districts.

   f. Add Office Headings

   g. Add Contests and Candidates.

   h. Add Polling Places.

   i. Assign Precincts to Polling Places.

   j. Generate Ballot Styles.

8. In Element Library, import any system translations and/or audio files needed for the election.

9. In Paper Ballot:

   a. Create and save a Ballot Layout.

   b. Finalize the Ballot Layout.

   c. Generate BOD Data.

10. In Accessible ballot:

   a. Import any ballot audio files needed for the election.

   b. Validate the election data.

   c. Preview the accessible ballots.

11. In Configure Equipment:

   a. Set Equipment Security Codes.

   b. Configure the Equipment Settings.

   c. Generate the Election Data.

12. In Package and create the Qualification and Equipment media on their respective flash drives.

13. In Print, print BOD Ballots.

3.3.2 Hardware Acceptance Testing

To confirm the proper functionality of the hardware, users should follow and complete the steps detailed in the Acceptance Testing section provided for each hardware device. These steps contain product-specific inspection of each device. Performing the procedures outlined in the hardware sections verifies that the hardware is functioning properly and has not been damaged in transport. ES&S recommends performing acceptance tests upon initial receipt of the device. Acceptance tests are also recommended prior to each election. To perform acceptance testing, the jurisdictional representative must complete the steps detailed in each section.

3.3.2.1 DS200 Acceptance Testing

The following is a recommended list of the DS200 acceptance testing criteria. Upon receiving a new DS200 or a unit that had been sent out for maintenance, ES&S recommends that you perform each item on the checklist.

Visual Inspection

☐ Ensure that there are no scratches or gouges on any part of the unit.

☐ Verify that all labels are placed in their appropriate place and in their correct orientation.

☐ Ensure the printer paper roll is installed in the printer.

Physical Inspection

☐ Apply AC to the wall power adapter. Connect the wall power adapter to the back of the unit and press the POWER button. The DS200 will automatically print the Configuration Report.

☐ Use the Configuration Report to verify the DS200 firmware version.

☐ Check the LED battery power indicator light at the back of the machine, next to the wall power adapter cord connector. If the LED is amber and blinking, the battery pack is charging. If the LED is a solid green, the battery pack is completely charged.

☐ Verify that the touch screen header displays the AC power status indicator and that the icon shows the light blue and dark blue plugs together, indicating the AC power cord is plugged in.

☐ Insert the flash drive containing the election qualification code (EQC) with a demonstration election or other specific election into one of the USB ports inside the front compartment access door.
See *Clear and Initialize DS200 Tabulator, page 83* for information about performing the EQC procedure. Work with ES&S to obtain a demonstration election definition and test ballots.

☐ When prompted, remove the EQC flash drive and insert a flash drive containing the election definition into the USB port inside the access door. When the unit recognizes the flash drive containing the election definition, the election definition status indicator will change to indicate the election definition is in place. See *Load Election onto DS200 Tabulator, page 100* for election definition load steps.

☐ Access the Administration Menu.

☐ Calibrate the touch screen, if necessary.
See *DS200 Touch Screen Calibration, page 87*.

☐ Verify that the correct date and time are displayed in the screen header.

☐ Touch **Open the Poll** to enable the scanning of test ballots.

☐ Ensure that the test ballots scan in all four orientations (face up, face down, top in first, bottom in first).

☐ Insert two ballots at once to check the multi-sheet sensor. Both sheets should be rejected.

☐ Press and hold the **CLOSE POLL** button for two seconds to close the polls.

☐ Verify that the Voting Results Report shows four ballots cast.

☐ Disconnect the wall power adapter cord from the DS200.

The DS200 should continue to operate, and the AC power status indicator should be replaced by the battery power status indicator. Additionally, the unit should periodically issue a four-beep sequence indicating it is running on battery power.

☐ Re-connect the wall power supply cord

The battery power status indicator should be replaced by the AC power status indicator.

☐Power down the unit by touching **Finished - Turn Off**.

☐If the DS200 is plugged into an external power source, the unit will automatically turn on when the touch screen is raised. Verify that this operates correctly by completing the following:

- With the wall power adapter still connected to the unit, lower the screen to the closed position. The unit will beep for several minutes as a warning that power is still on, and then will power down automatically if no further action is taken. It is better for the unit to be powered down before the screen is closed.

- Raise the screen back to the opened position. The unit should automatically turn on.

☐Verify that all locks and doors function smoothly.

3.3.2.2 Central Count Acceptance Testing

1. Unpack supplies.

2. Check the contents of the accessory box against the included checklist.

3. Inspect unit for scratches or other signs of damage.

4. Record the serial number.

5. Connect printers and Uninterruptible Power Supply (UPS), if not already connected.

6. Load paper into printers in not already loaded.

7. Plug printers and DS850/DS450 into the UPS if not already connected.

8. Plug UPS into AC power source.

9. Turn on printers and DS850/DS450.

10. Turn on the UPS.

11. Press the **Setup** button and verify the firmware version.

12. Insert the Qualification Media into a USB port.

13. Press **Clear and Initialize.**

14. Enter the Qualification Password.

15. Press **Yes.**

16. Press **Done.**

17. Remove Qualification Media.

18. Insert the Election Media into a USB port.

19. Press **Load Election.**

20. Enter the Election Password.

21. Press **Yes.**

22. Press **Done.**

23. Remove Election Media.

24. Check/Set Zone, Date, Time.

25. Print a zero report.

26. Run ballots provided for acceptance test.

27. Save Results.

28. Print a Results report.

29. Insert blank formatted USB media.

30. Export Results to USB media.

31. Remove USB media.

32. Exit and shut down.

3.3.2.3 ExpressVote Acceptance Testing

Note

Even if you used the ExpressVote Previewer in Electionware to ensure that each ballot style displays the correct contests and candidates, and to verify that the audio and language support functions properly for the election, ES&S recommends that you perform thorough readiness testing on the physical machine(s) to be used for the election.

Unpack Unit(s)

To remove the ExpressVote from a shipping container:

1. Lift the unit from its container, and place it on a level surface, facing up.

Caution

To avoid damaging the ExpressVote unit, be sure to open the casing face-up.

2. Remove the clear protective bag. Reserve the bag for later use when storing the ExpressVote to protect the unit from dust and moisture.

3. Inventory the accessories and immediately notify your vendor if anything is missing.

Inspect Unit(s)

• Inspect for scratches or other signs of damage.

• Verify that all housing screws are securely in place.

• Verify the left compartment access door (where the election definition flash drive will be inserted) is in place.

• Verify that the front access door is in place.

• Verify that the right compartment paper path door is in place.

- Record the serial number from the label on the front top left of the unit or on the equipment label on the rear of the enclosure. The rear label also displays a model number and power requirements.

- If there is evidence of tampering (for example, missing covers or screws), or if the warranty seal is missing, refuse and return the unit to ES&S.

1. Place the unit on a level surface and connect to AC power.

2. Unlock the left access door and switch to ON.

3. Connect the keypad to the RJ port near the power switch.

4. Verify that the battery is fully charged.

5. Verify that the firmware version is correct.

USB Ports

Use the following steps to test the USB ports located in the left media flash drive compartment of the ExpressVote.

This example assumes you have already opened the access door to the left-side media device compartment and installed the election qualification code (EQC).

1. Insert a flash drive loaded with the election definition into one of the two available USB ports.

   The unit should display a prompt for a password.

2. Remove the flash drive and insert it into the other USB port.

   The unit should display the same prompt for a password.

If the password prompt screen appears for both steps 1 and 2, the USB ports are functioning properly.

Audio and ADA Ports

Plug headphones or amplified speakers into the audio jack on the front of the unit. Switch on the ExpressVote. You should hear the following message: "Please insert your activation card." If the headphones or amplified speakers have a volume control, turn up the volume setting.

Headphone jack

Audio-Tactile Keypad

There are eleven control buttons on the audio-tactile keypad, including two buttons each for Volume and Tempo. Press each button and confirm that a change occurs on the screen or through the audio component of the system. The Volume and Tempo controls may require multiple individual presses of each button before the effect becomes audible.

Print Test

1. Insert an activation card and vote the ballot.

2. Review the printed card for complete, dark printing.

3. Reinsert the voted card and review the summary to confirm the votes are represented.

4. Test each ballot configuration in the election in the same manner.

Calibration and Language Validation

If the ExpressVote touch screen requires calibration, switch the unit to Admin mode and calibrate the touch screen.

If the election includes multiple languages, during a test vote session, verify that the unit correctly displays the selected languages.

3.3.2.4 ExpressVote XL Acceptance Testing

State and/or local jurisdiction election purchasing authorities are responsible for acceptance testing of the voting system and components. Authorities also are responsible for validating the performance of delivered units based on procurement requirements and for verifying that the delivered system is the certified system originally purchased.

Inspect Shipping Container and Packaging

Inspect the shipping container for signs of damage or mishandling before opening and unpacking. If damage is evident, do not open and unpack without first notifying the vendor.

Note One person can unpack and remove the ExpressVote XL from its shipping container, but two people make the task easier. One person can perform testing, although ES&S recommends that an ES&S-trained service technician be present to assist with testing procedures.

Unpacking ExpressVote XL Unit

When removing the ExpressVote XL and/or accessories from shipping container(s), observe the following guidelines.

- Make an inventory of the included components and immediately notify your vendor if any items are missing.

- Save all protective cushions and coverings such as plastic bags or sleeves for later use. Protective shipping items help to shield the unit from dust and moisture during storage or transport.

Inspect ExpressVote XL

- Look for scratches or other signs of damage.

- Verify that all housing screws are securely in place.

- Verify that the access compartment door is in place.

- Verify that the right-side paper path door is in place.

- Record the serial number from the equipment label on the rear of the enclosure. The rear label also displays a model number and power requirements.

- If there is evidence of tampering, such as missing covers or screws, or if the warranty seal is damaged or missing, refuse and return the unit to ES&S.

3.4 Clear and Initialize Election Equipment

Before loading a new election definition onto ES&S equipment, you must first clear and initialize the equipment. This clears all previous election data from the equipment (including L&A vote totals on the DS equipment), and installs the encryption keys necessary to load and run the new election.

This process requires an ES&S-approved flash drive containing the Election Qualification Code (EQC) and required encryption keys for the election, obtained from ES&S.

3.4.1 Clear and Initialize ExpressVote

1. On the left side of the unit, unlock and open the access compartment.

2. Verify that no flash drives are installed in any of the unit's USB ports.

3. Ensure that all peripheral devices are connected to the appropriate ports.

4. Set the Mode switch to **Official**.

5. Press the Power switch to the **ON** position.

6. Insert the EQC flash drive into one of the two USB ports inside the access compartment.

7. On the touch screen, enter the security code when prompted.

8. Touch **Accept**.

9. Touch **Clear and Initialize**.

10. Remove the EQC flash drive from the ExpressVote unit.

The ExpressVote unit is now ready to accept the new election definition.

3.4.2 Clear and Initialize ExpressVote XL

1. After the unit is powered on, insert the EQC flash drive into one of the USB ports in the access compartment.
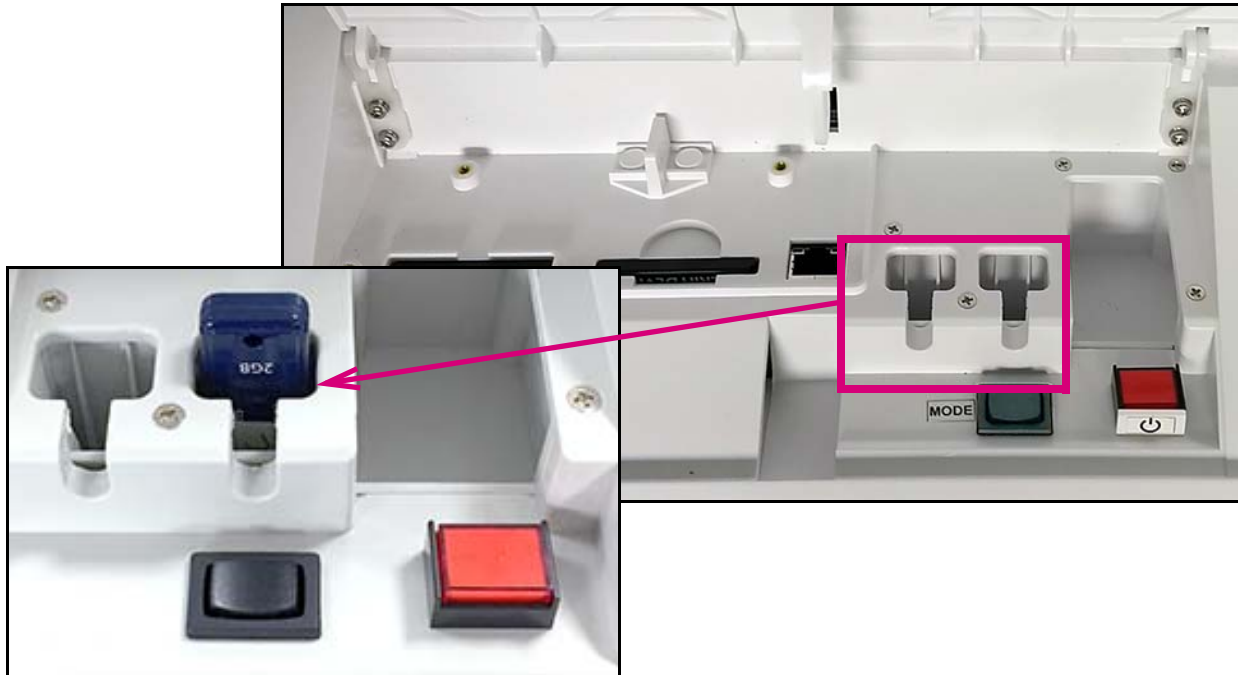
2. On the Enter Clear and Initialize screen, touch the on-screen keypad to enter the qualification code for this election, then touch **Accept**.

3. On the Clear and Initialize Election screen, verify that the information in the New Election to Load section is correct, then touch **Clear & Initialize**.

   When the process is complete, the touch screen displays a message confirming that the clear and initialize process was successful and prompting you to remove the EQC flash drive.

4. Remove the EQC flash drive from the ExpressVote XL unit.

   If the terminal is in Voter mode, the system displays the Poll & Device Status screen indicating that the election is not loaded.

   The terminal is now ready to accept a new election definition.

Note

If the terminal is in Supervisor mode, the system displays the Poll & Device screen of the Supervisor Menu.

3.4.3 Clear and Initialize DS200 Tabulator

Important

If a backup flash drive is required, it must be installed before using the EQC flash drive.

1. Lift the access door on the front left of the DS200 to access the USB ports.

2. Insert the EQC flash drive into USB port A or B. Do not force the flash drive into the slot.
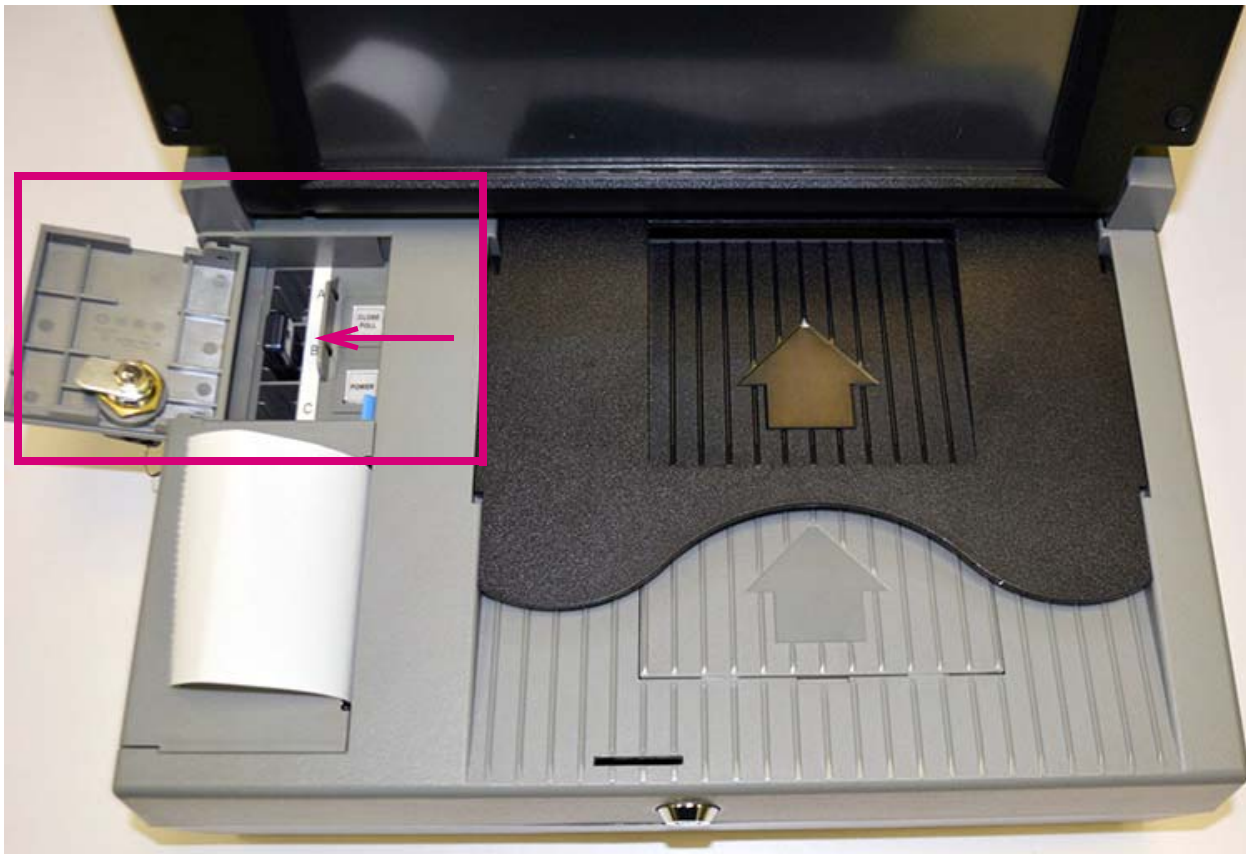
3. Press the **Power** button to turn the DS200 on.

4. On the Clear and Initialize screen, touch **Continue**.

5. Enter the Qualification security code when prompted, then touch **Accept**.

6. When the screen displays the "Initialization completed successfully!" screen, remove the EQC flash drive.

3.4.4 Clear and Initialize Central Count Tabulator

1. On the touch screen, touch **Election**.

2. On the Election menu, touch **Setup**.

3. On the Setup screen, touch **Clear and Initialize**.
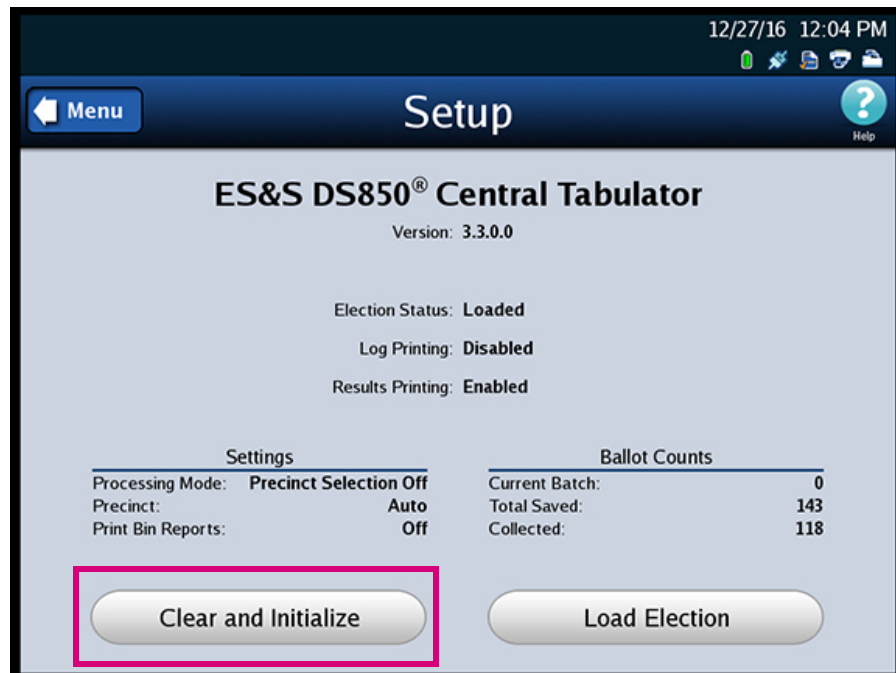
4. Insert the EQC flash drive into one of the Central Count USB ports. (See the figures on the following two pages for port locations on the DS450 and DS850, respectively.)

5. On the Clear and Initialize screen, enter the qualification code, then touch **Accept.**

6. When the Clear and Initialize screen indicates the system has found the EQC flash drive, touch **Yes** to continue.

7. When the screen indicates the Central Count has been successfully cleared and initialized, remove the EQC flash drive from the USB port and touch **Done**.

DS450 Left USB ports
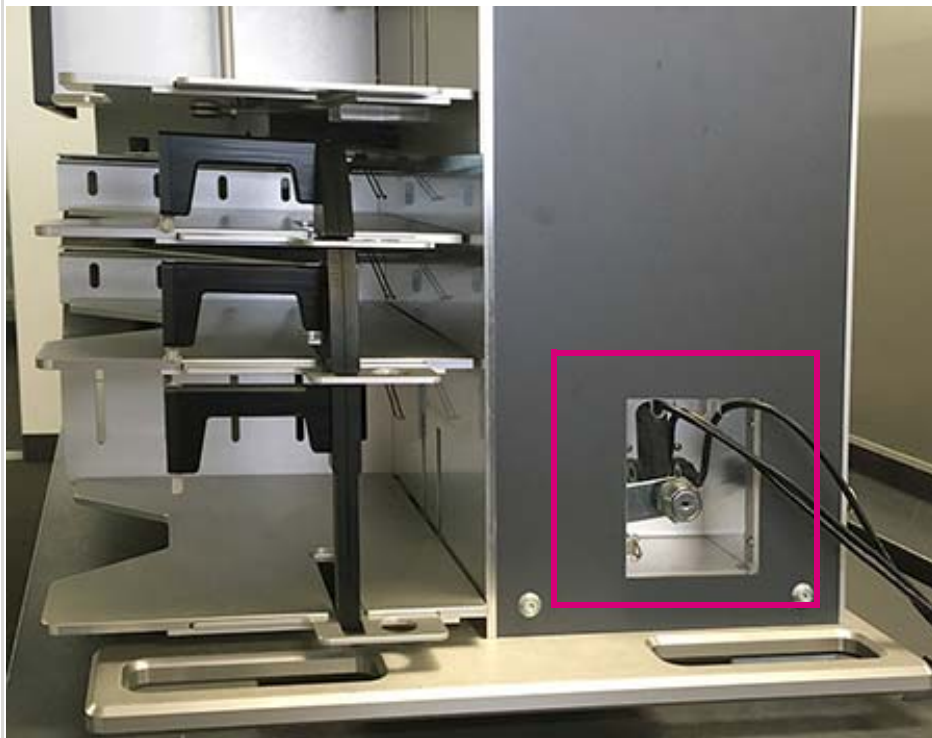
DS450 Right USB ports

DS450 Central Count: USB Port locations

DS850 Left USB ports
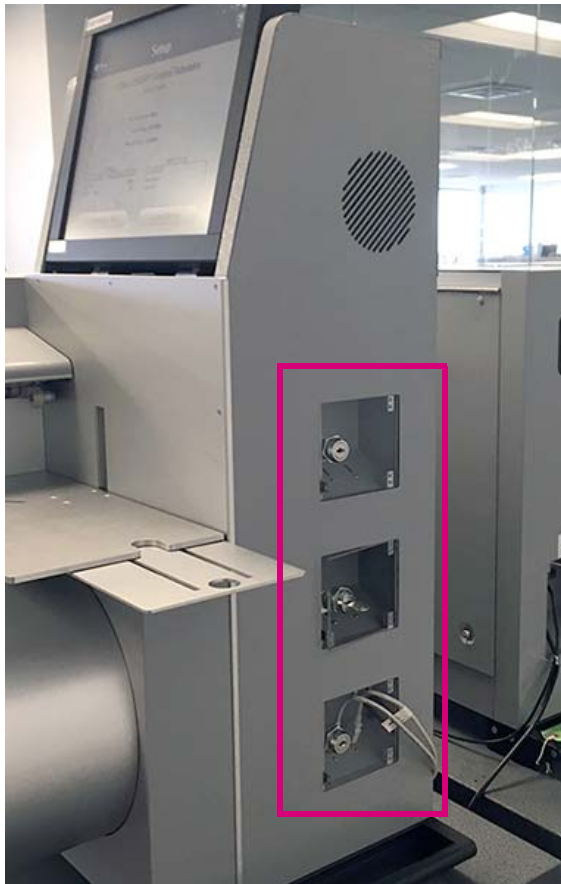
DS850 Right USB ports

DS850 Central Count: USB Port locations

3.5 Touch Screen Calibration

Calibration of the touch screen on ES&S election equipment ensures correct screen behavior and voter selections.

3.5.1 DS200 Touch Screen Calibration

1. On the Administration menu, touch **System Settings**.

2. On the System Settings menu, touch **Calibrate Touch Screen**.
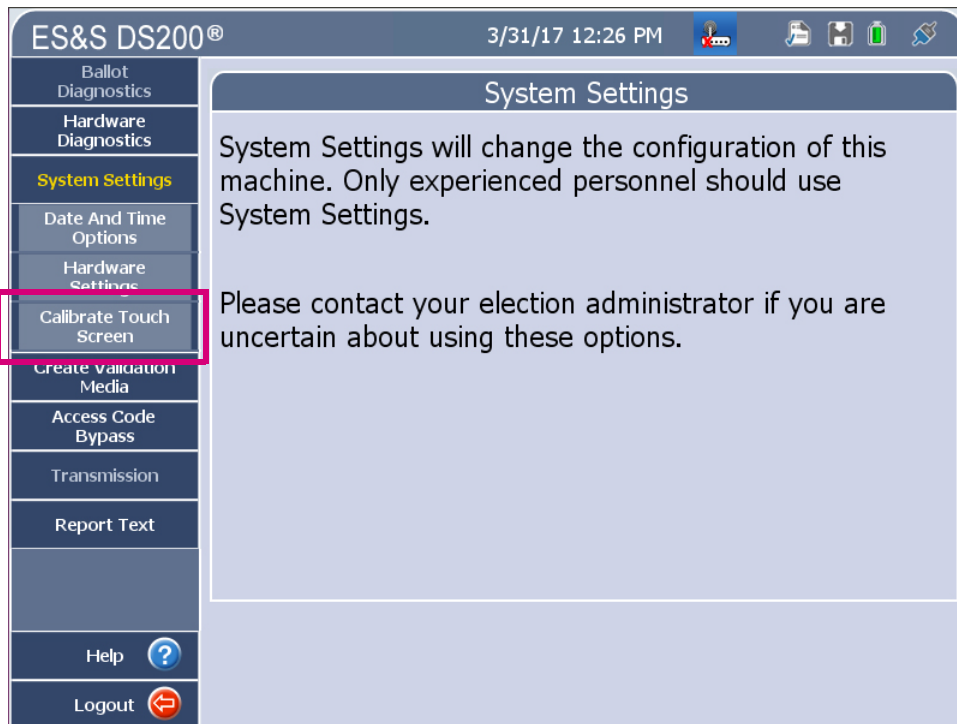
3. Touch **Continue**.

4. Use your fingertip or a touch screen stylus to touch the target in the upper-left corner of the screen.

```
Calibration is performed by touching a series of small circles as they
appear on the screen.

Touch the center of the first circle in the upper left hand corner.

Next, touch the center of the circle in the lower right hand corner.
```
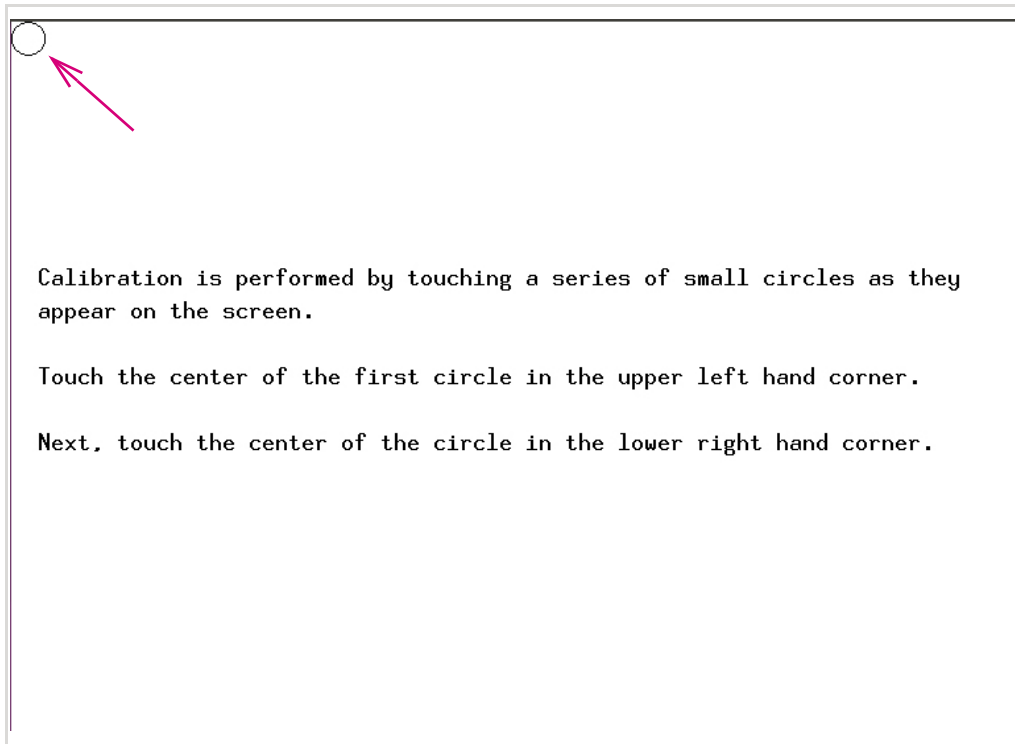
5. Touch the target in the lower-right corner of the screen.

6. Test the calibration by touching the screen and verify that the pointer follows your touch points.

7. After you have finished testing the calibration, touch **Save & Exit** to save your changes(or touch **Recalibrate** to repeat the process).

```
X:00005    Y:00016




    Test the calibration by touching the screen and see if the pointer will
    follow the touch points.

    Press the Recalibrate button on the screen to recalibrate the touch screen.

    Press the Save & Exit button to save the calibration and return to the menu.

    Calibration will restart after 30 seconds if no buttons are pressed.




    [ Recalibrate ]                          [ Save & Exit ]
```
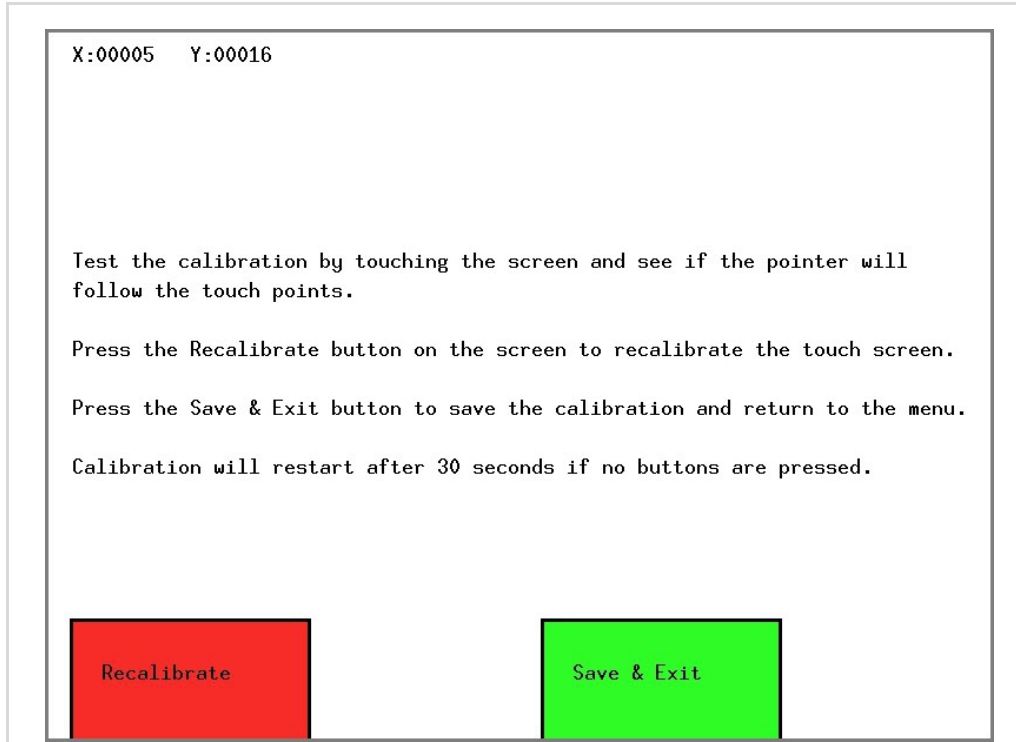
Note

If you do not touch either option within 30 seconds, you will have to recalibrate the screen before exiting.

8. On the confirmation screen, touch **OK**.

3.5.2 Central Count Touch Screen Calibration

1. On the Hardware menu, touch **Screen Calibration**.

The screen displays the following message:

> Touchscreen Calibration
> Press the point, use a stylus to increase precision.
>
> (To abort, press any key or wait)
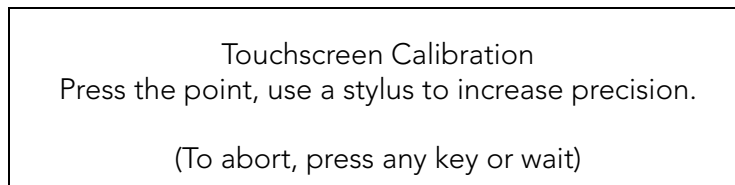
2. Use your fingertip or a touch screen stylus to touch the circle in the upper-left corner of the screen.
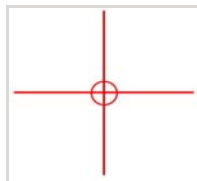
3. Touch the target in the lower-right corner of the screen.

If you miss the exact center of the target, the screen displays the message:

> Mis-click detected, restarting...
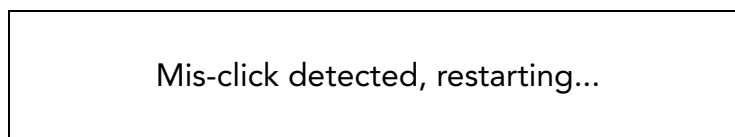
4. Test the calibration by touching the screen and verify that the pointer follows your touch points.

5. After you have finished testing the calibration, touch **Save & Exit** to save your changes(or touch **Recalibrate** to repeat the process).

```
X:00005   Y:00016




Test the calibration by touching the screen and see if the pointer will
follow the touch points.

Press the Recalibrate button on the screen to recalibrate the touch screen.

Press the Save & Exit button to save the calibration and return to the menu.

Calibration will restart after 30 seconds if no buttons are pressed.




  Recalibrate                              Save & Exit
```
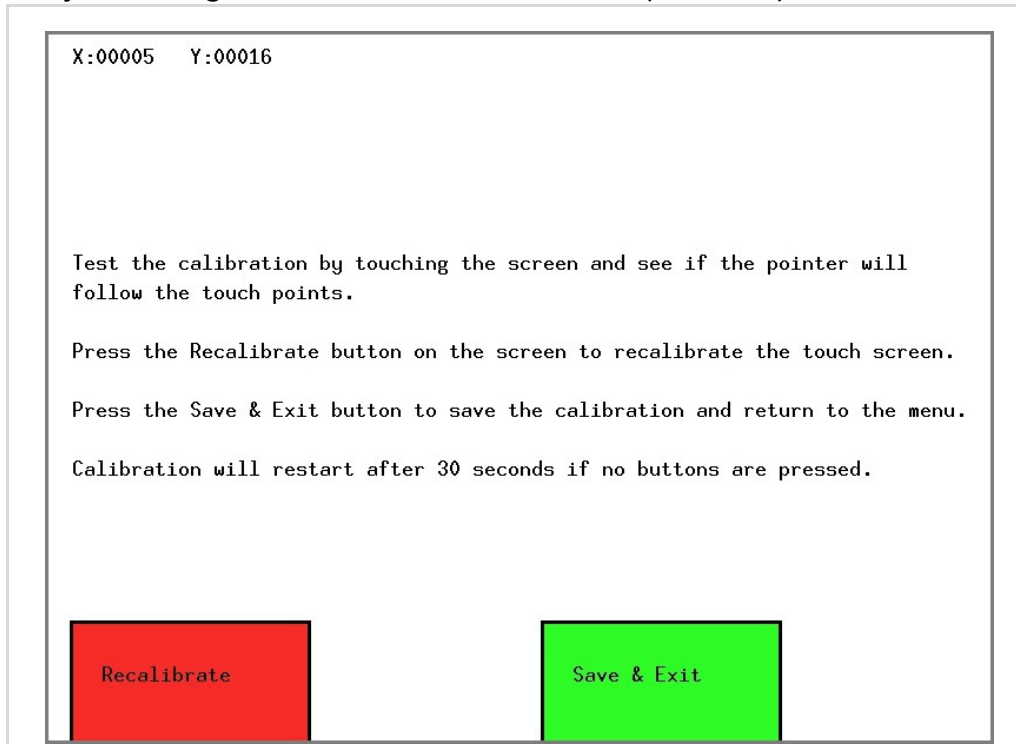
Note

If you do not touch either option within 30 seconds, you will have to recalibrate the screen before exiting.

6. On the confirmation screen, touch **OK**.

3.5.3 ExpressVote Touch Screen Calibration

ExpressVote touch screen calibration is accessed either during power-up or from the Main Menu.

On Power-up – When you power up the ExpressVote, the system displays a message for about 10 seconds, prompting you to touch the screen anywhere to start screen calibration.

From Main Menu – On the ExpressVote Main Menu, touch **Screen Calibration**.

1. On the Touchscreen Calibration screen, touch **Start**.

Touchscreen Calibration

Touchscreen calibration consists of three target screens.
Touch the crosshair target on each screen
to display the next target screen.

Start

Cancel
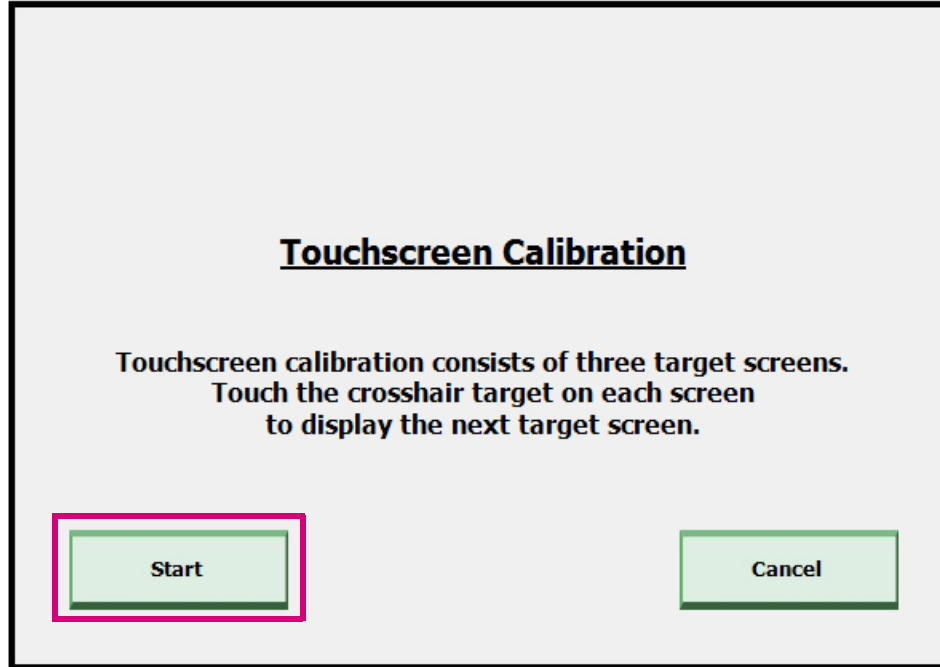
The system now displays a white screen instructing you to touch the screen anywhere to begin the calibration process.

2. Touch the screen.

3. Touch the center of the cross-hair target in each new position as the target moves around the screen.

4. If you accessed this function via the Main Menu, after the calibration process is completed successfully, the system briefly displays a confirmation screen, then redisplays the Touchscreen Calibration screen.

   • Touch **Redo** to restart the calibration process.

   • Touch **Exit** to return to the ExpressVote Main Menu.

3.5.4 ExpressVote XL Touch Screen Calibration

1. After powering on the terminal, press and hold the mode switch for ten seconds.
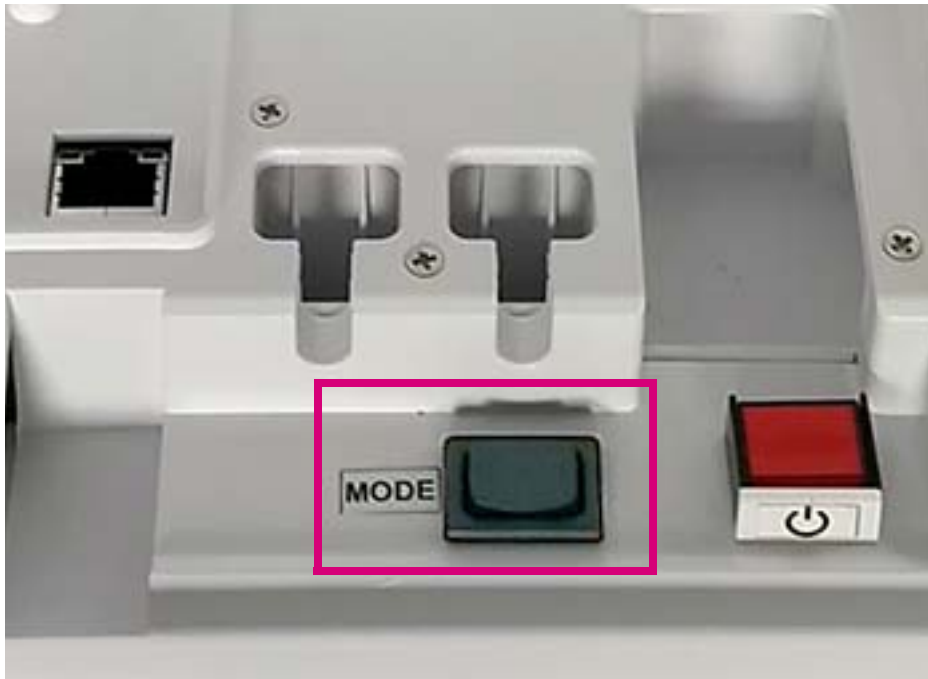
   The system enters screen calibration mode and displays a crosshair target symbol on a white background.

2. Touch the center of the crosshair target in each new position as the target moves around the screen.

   During the calibration process, the system displays a 15-second countdown in the center of the screen. Each time you touch a crosshair target, the countdown resets. If the countdown expires before you touch the next target, the system automatically exits the calibration routine.

3.6 Load Election onto Equipment

Important

Before installing the election definition onto the election equipment, the equipment must be cleared and initialized, as described in the preceding section.

In most jurisdictions, election officials install the election definition onto the election equipment at the election central warehouse before Election Day.

Warning

If you use DS200 tabulators in addition to the DS850 or DS450, be aware that the election definition flash drives for the Central Count and DS200 are not interchangeable.

Warning

Never force a flash drive into an equipment USB port. Inserting a flash drive improperly or into a blocked port will result in damage not covered under warranty.

3.6.1 Load Election onto ExpressVote

After testing is complete, election officials typically leave the ExpressVote unit in the following state, ready to be deployed on Election Day.

- The ExpressVote unit is powered off

- The election definition flash drive remains in the USB port

- The access compartment is closed and secured

When a poll worker powers on the ExpressVote at the polling place on Election Day, the system automatically loads the election definition from the inserted flash drive.

1. Power on the ExpressVote unit in **Voter** mode.

2. Insert the election definition flash drive into one of the two USB ports in the access compartment.

Important

The new election definition media must be the only flash drive inserted into any of the unit's USB ports.

3. On the Enter Election Code screen, use the on-screen keypad to enter the election security code, then touch **Accept**.
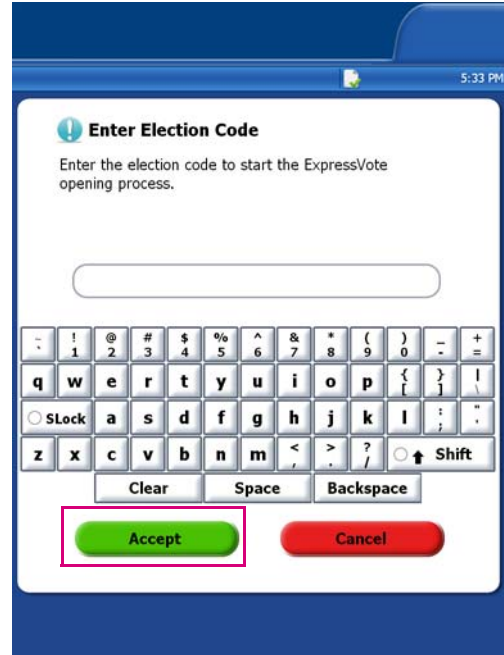
4. Leave the election definition flash drive inserted in the USB port, power down the ExpressVote, and lock the access compartment door.

3.6.2 Load Election onto ExpressVote XL

After testing is complete, election officials typically leave the ExpressVote XL unit in the following state, ready to be deployed on Election Day.

- The ExpressVote XL unit is powered off

- The election flash drive remains in the USB port

- The access compartment is closed, locked, and sealed

When a poll worker powers on the ExpressVote XL at the polling place on Election Day, the system automatically loads the installed election definition from the terminal's internal flash memory card.

1. Verify that no flash drives are inserted in any of the ExpressVote XL unit's USB ports.

2. Insert the election definition flash drive into one of the two USB ports in the access compartment.
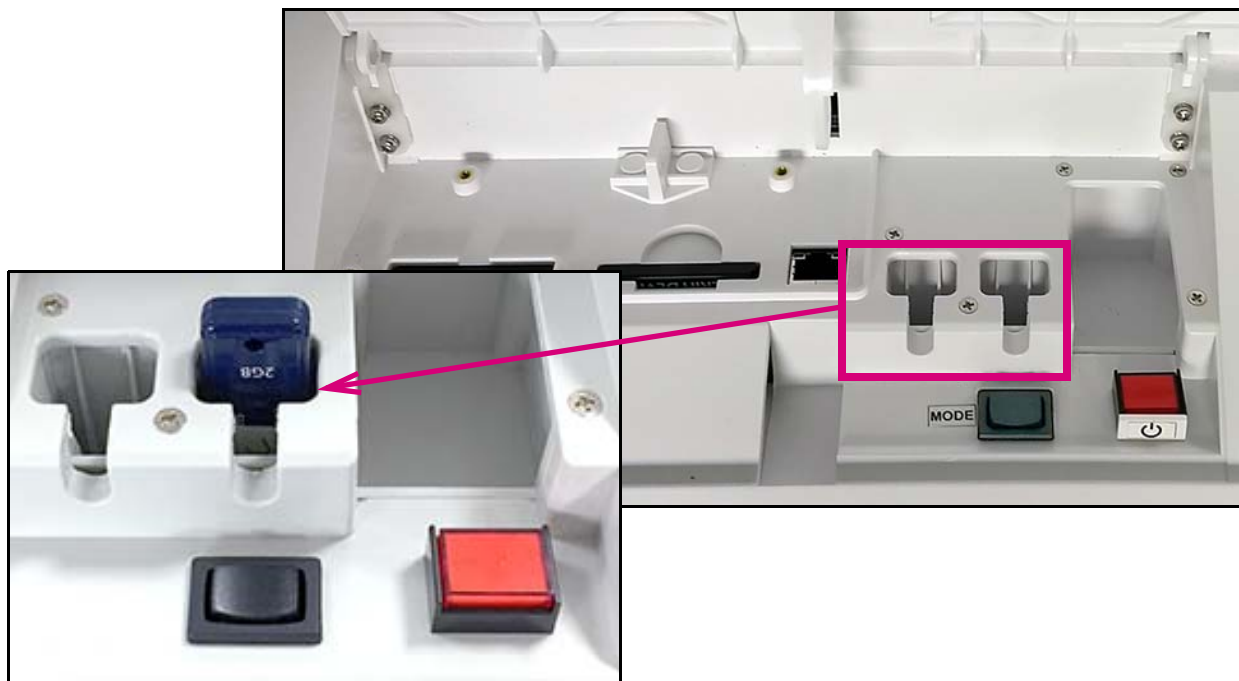
Important

The new election definition media must be the only flash drive inserted into any of the unit's USB ports.

3. On the Enter Election Code screen, touch the on-screen keypad to enter the election security code established via Electionware, then touch **Accept**.
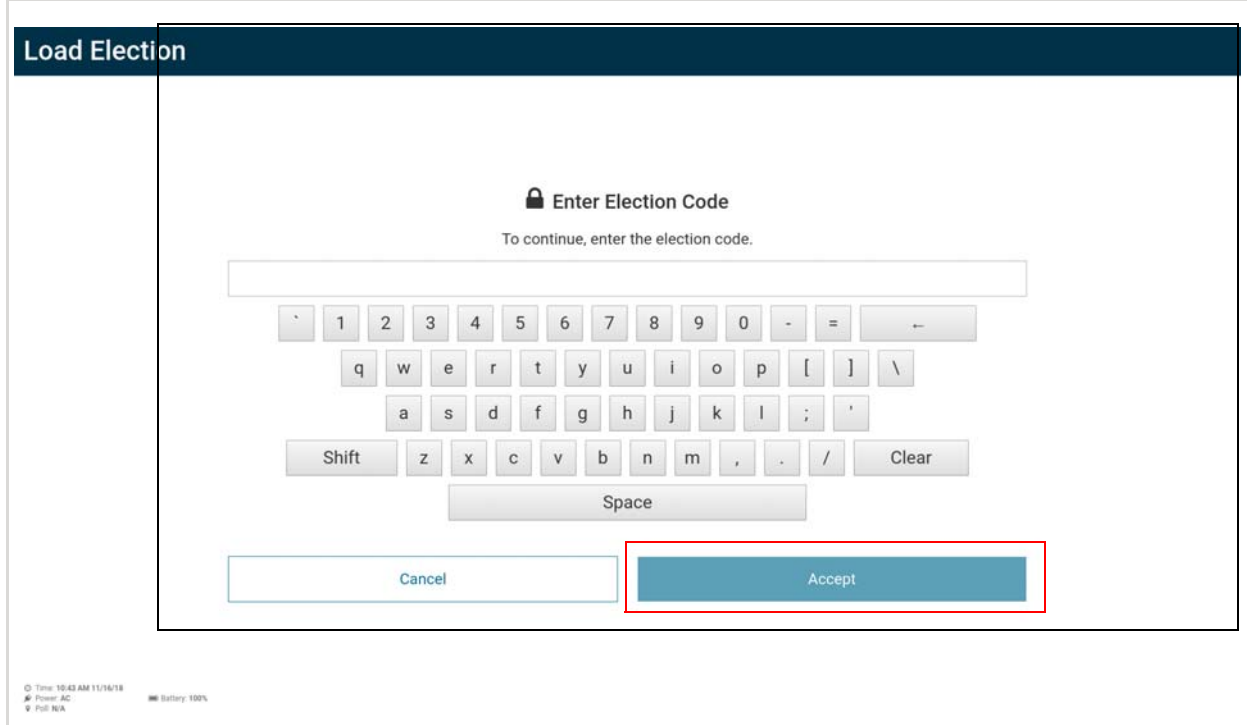
The screen displays busy indicators while the system performs the following functions.

- Verifies that the election code matches the installed EQC code

- Verifies that the Operations Log security signatures match the signatures on the election flash drive

- Verifies ballot audio and graphics

- Saves all election definition files to the internal flash memory card
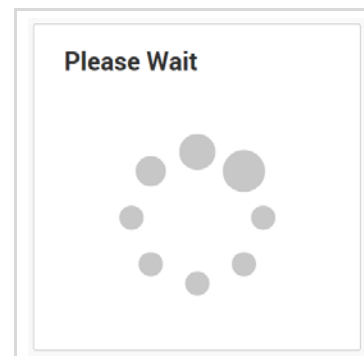
The ExpressVote XL system then displays the voter welcome screen, indicating that the ExpressVote XL is ready for voting.
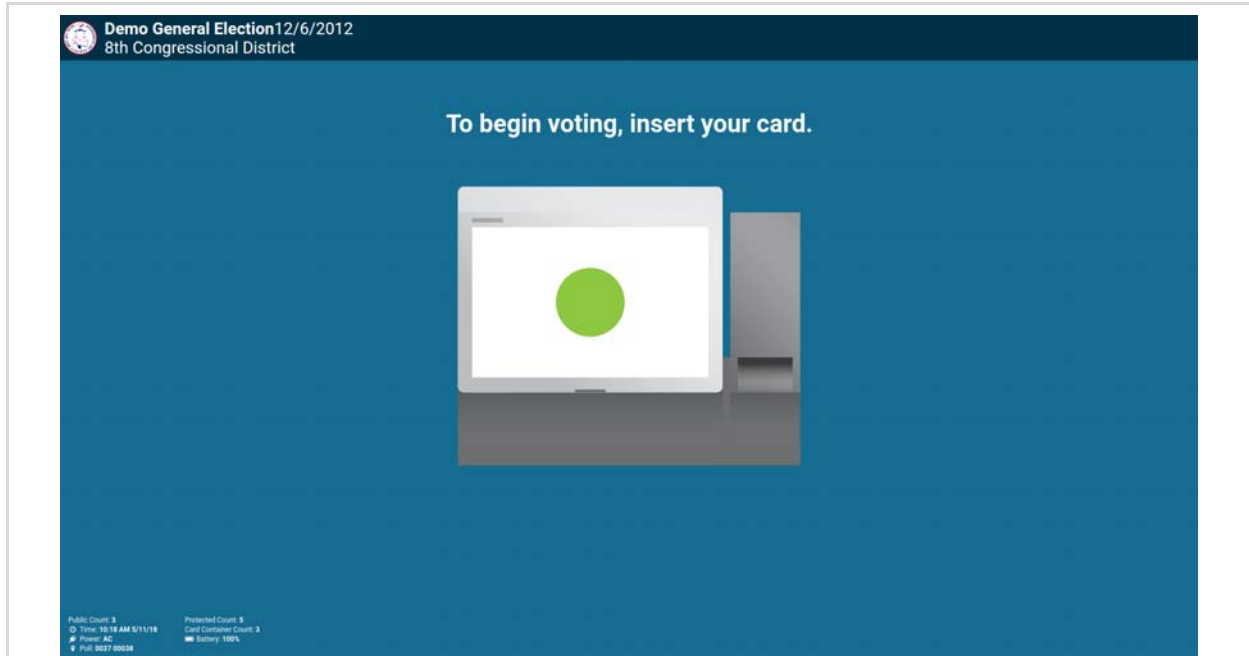
In Supervisor mode, the system redisplays the Poll & Device screen of the Supervisor Menu.
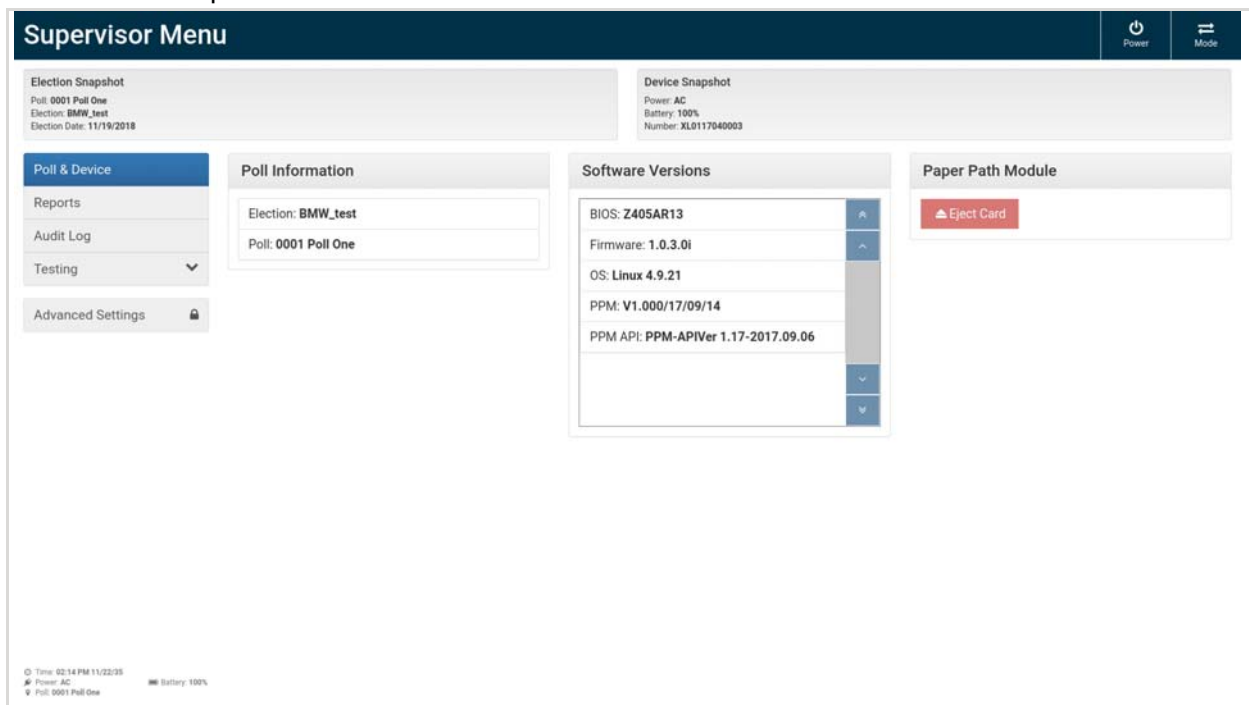
If the access compartment door is open, the system displays a full-screen alert. The access compartment door must be closed and the election flash drive must remain inserted in the ExpressVote XL while it is being used by voters to mark their vote summary cards.

4. Close and lock the access compartment door.

5. Power the terminal off.

3.6.3 Load Election onto DS200 Tabulator

If you do not have a definition loaded when you turn on the DS200, the machine displays the message "Election Definition Not Found."

1. Lift the access door on the front left of the DS200 to access the flash drives.
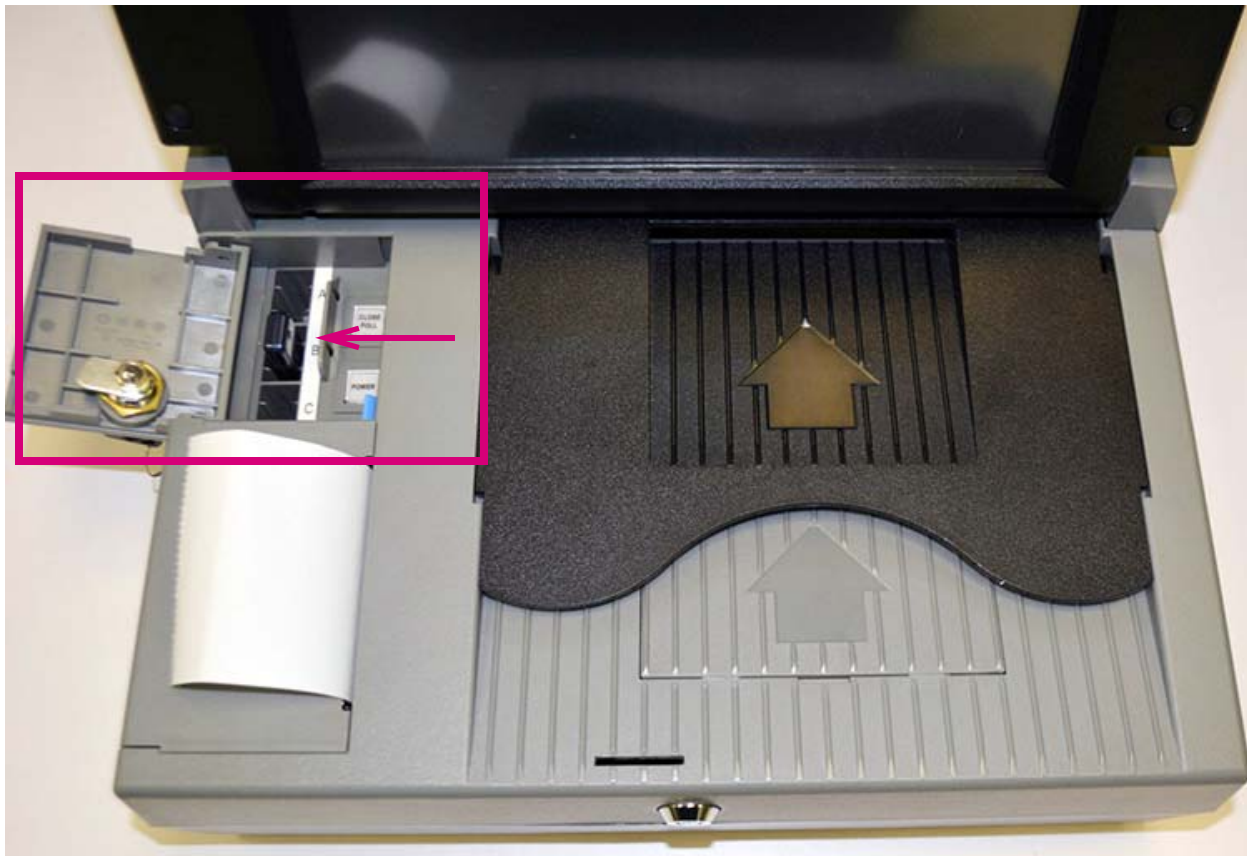
2. Insert the flash drive into USB ports A or B.

3. If the DS200 is powered off, turn it on. The Enter Election Code screen appears.
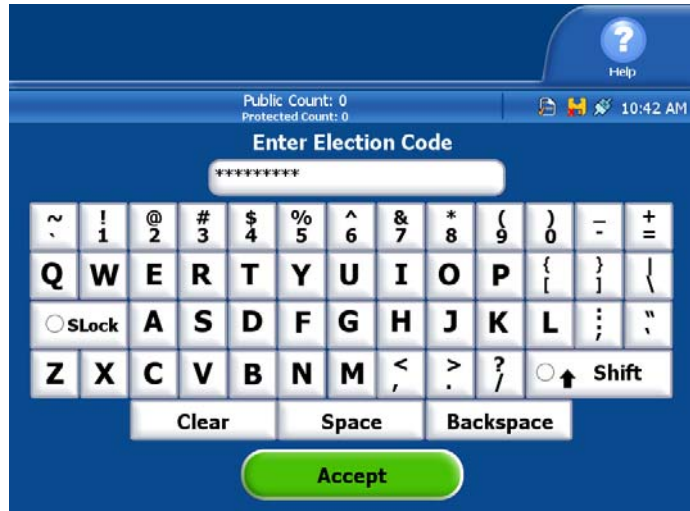
4. Enter your election code and touch **Accept**.

The DS200 automatically prints the Configuration Report, then displays a message that the election definition was found.
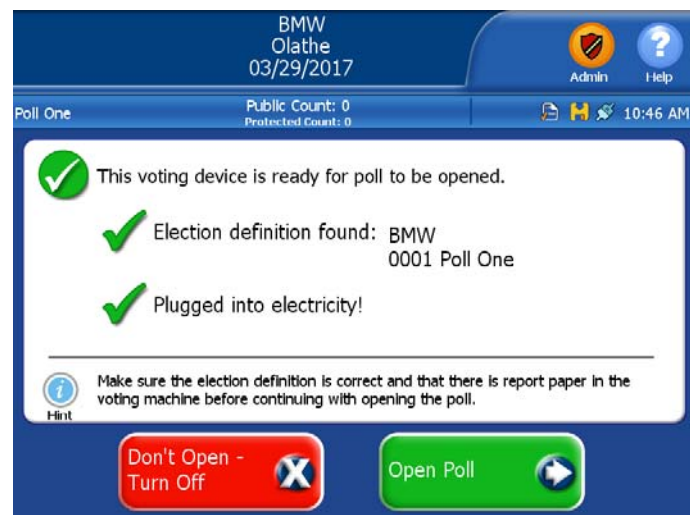
5. Touch **Don't Open - Turn Off** to shut down the machine.

6. Leaving the election definition flash drive installed in the USB port, close and lock the access door.

3.6.4 Load Election onto Central Count Tabulator

1. On the touch screen, touch **Election**.

2. On the Election menu, touch **Setup**.

3. On the Setup screen, touch **Load Election**.
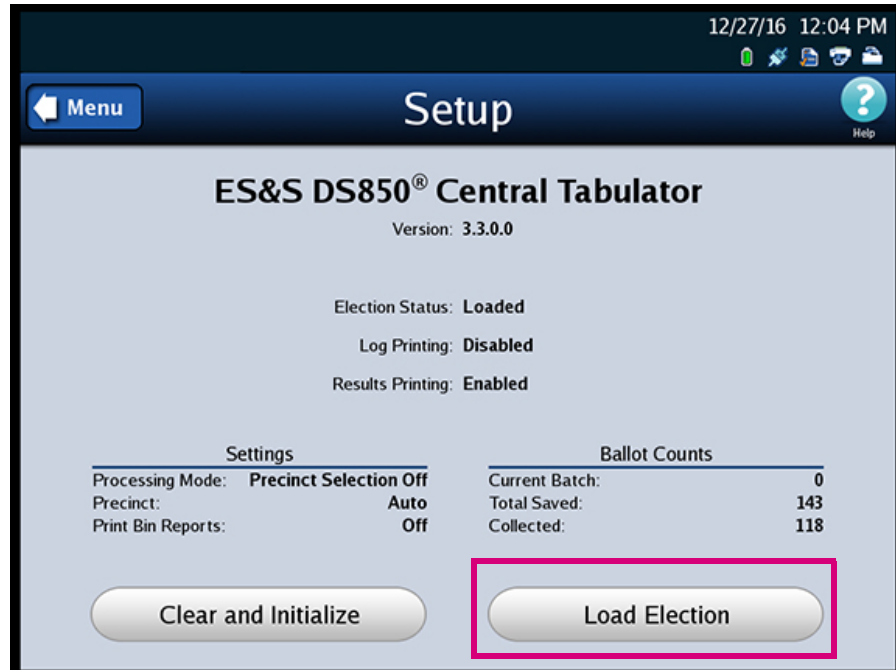
4. Insert the election definition flash drive into one of the Central Count USB ports.

5. At the prompt, enter the election code, then touch **Accept**.

6. When the Load Election screen reads "**A valid Election Definition was found**," touch **Yes** to start the load process.

7. When the Load Election screen reads "**The Election Definition was successfully loaded**," touch **Done**.

Chapter 4: Election Setup and Definition

The election definition media can be programmed by ES&S with client election data, or it can be created on-site by the client, using the EMS.

Election setup and definition programming procedures are provided in the following accompanying document:

- *EVS 6042 CA Election Programming Guide*

Chapter 5: Logic and Accuracy Testing

Logic and accuracy (L&A) testing is performed well before the election to verify that the election definition generated for each voting device matches the election being held, and that all contests and candidates are accurately reflected on each ballot style and on reports. L&A testing verifies that all voting positions can be voted, whether each contest can be voted for the maximum number of eligible candidates, and that the system is correctly reading and tabulating votes.

L&A testing consists of processing a test deck. A test deck is a stack of sample ballots already marked and scanned, with known results totals. In addition to predetermined totals, the test deck will also contain examples of ballot errors that can occur. All contests in all ballot types and/or ballot styles are tested in this manner. Any deviation from the predetermined results must be rectified before the tabulating equipment can be certified for processing that specific election.

If ES&S is coding the election, ES&S will provide a hand-counted test deck for each election.

If your jurisdiction programs its own election definitions, create a test deck that includes a sequential number of votes for each office on that ballot starting with 1 vote for the first candidate. For example, in an Office with 5 candidates the first candidate on that ballot will receive 1 vote, the second candidate 2, the third 3 and so on. Also include at least one completely blank ballot, and an overvoted ballot (mark more candidates than the number specified). Complete this process for all ballot types in your election and maintain accurate records of your test ballot selections.

5.1 DS200 Logic and Accuracy Testing

Test the scanner only after you install the election definition and configure the DS200.

5.1.1 Load Election Definition onto the DS200

Before loading the election definition, you must clear and initialize the tabulator. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize DS200 Tabulator, page 83

Load Election onto DS200 Tabulator, page 100

5.1.2 Check the Election Definition for Accuracy

The DS200 automatically generates an Initial State report when you start the scanner. Check the report for the following information:

- System Values: Make sure the date and time appear correctly on the report. If the information is not correct, change date and time from the System Setting screen.

- Election Information: Make sure that the jurisdiction name, polling place, and the number of precincts listed on the report are correct.

5.1.3 Test the Election

Use the following instructions to open the polls, scan test ballots, and close the polls as you will do on election day.

1. When the message "Election Definition found" appears on the screen, press **Open Polls**.

   The scanner checks available memory and scans the election definition for errors. Depending on options selected for the election definition, the scanner may also print a Status Report and/or a Zero Certification Report.

2. Close and lock the access panel to secure the election definition USB media device.

   The Welcome screen appears and the scanner is now ready for voting.

3. Insert the ballots into the scanner. The DS200 can scan ballots inserted in any orientation. As ballots are scanned, the public count will increase by one for each ballot inserted.

4. After you finish scanning test ballots, open the DS200 access door. Press and hold down the **Close Polls** button for about four seconds, then release.

5. Depending on your election definition, the DS200 may automatically print one or more of the following reports:

    - Status Report

    - Race Results Report

    - Certification Report

    - Audit Log

6. Verify the reports that are automatically printed match against your hand-counted test deck.

7. On the DS200 screen, touch **Shutdown**.

8. When prompted, touch **Continue Power Down** to turn off the DS200.

9. Remove the USB media device from the DS200.

5.2 Central Count Logic and Accuracy Testing

DS850 and DS450 central tabulators use the election definition created in Electionware and saved to USB flash drives to recognize ballot marks and tabulate results.

Use the test deck to verify your election definition and to test scanner operation. Be sure to follow the California Elections Code. To test the election you will zero totals on the scanner and turn off the sort options, then run your test deck and check the result reports.

5.2.1 Load Election Definition onto the Central Count

Before loading the election definition, you must clear and initialize the tabulator. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize Central Count Tabulator, page 84

Load Election onto Central Count Tabulator, page 102

5.2.2 Scan the Test Deck and Check Reports

Test each ballot type in this election using either your test deck or one that was provided to you from ES&S. After loading the election, take the following steps:

1. Print the Zero Report to verify that all voting results have been cleared from the scanner.

2. Press **Scanning** to display the Scanning menu.

3. On the Scanning menu, press **Scan Ballots**.

4. Load the ballots into the input tray, as follows:

   a. Adjust the length of the input and output trays to fit the length of your ballots.

   b. Slide the ballot guide out of the curved opening int he input tray.

   c. Place the ballots in the input tray.

Note ES&S recommends using a jogger to separate the ballots and align the ballot stack before you load them into the input tray. If the ballot stack is slightly curved, place it in the tray with the convex side up (so the stack looks like a frown).

d. Slide the ballot guide back into the opening in the input tray until the guide rests gently against the ballot stack.

e. If necessary, select the precinct to which the ballots belong.

5. When the Scan Ballots screen displays the message Ready to Scan, press **Start**. The tabulator outstacks any ballots with conditions specified in the election definition (such as ballots with overvotes or write-in votes). Ballots with readable marks are also outstacked.

6. When the ballots have been scanned, the **Save** button on the Scan Ballots screen is enabled. Press **Save** to save the current batch. When prompted to confirm the request, press **Save** again. A popup screen displays counts of the ballots in each bin. On the Scan Ballots screen, bin counts in the Saved column will be updated with the counts from the Current column.

7. Press **Done** if you are finished scanning, or press **Scan** to load more ballots into the input tray and continue scanning.

8. When you have finished scanning all test ballots, generate the Results Report and verify the counts on the report match the expected counts.

5.2.3 Export Data

Data saved to the scanner's internal memory can be exported to the election definition flash drive or to a blank flash drive. However, if a blank flash drive is used, it should be first fully formatted.

To export results, take the following steps:

1. Press **Election** to display the election menu.

2. From the Election menu, press **Results** to display the Results screen.

3. From the Results screen, press **Export Results**.

4. Insert a blank, formatted flash drive into one of the scanner's USB ports.

5. When prompted to do so, enter the election code then press **Accept**.

6. On the Export Results selection screen, select the export location (USB flash drive or Network Server Folder), then press **Export**.

7. On the Export Results confirmation screen, press **Confirm** to initiate the export process.

8. When the screen displays the message "The results were successfully exported," press **Done** to return to the Results screen.

9. Remove the flash drive and transfer your test results to Electionware.

5.3 ExpressVote Logic and Accuracy Testing

Pre-election L&A testing involves setting up the voting system for each of the precincts and early voting locations in the election, loading the election definition, opening the election, casting a known pattern of votes on each ballot (or card) style, closing the election, printing the vote totals for the precinct, and then comparing the printed vote totals with the known pattern of votes.

5.3.1 Load Election Definition onto the ExpressVote

Before loading the election definition, you must clear and initialize the unit. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize ExpressVote, page 80

Load Election onto ExpressVote, page 95

5.3.2 ExpressVote Cards for Digital Scanner L&A

Complete logic and accuracy testing requires DS200, DS450, and/or DS850 tabulators to verify that your ExpressVote cards can be scanned and tabulated correctly. After using the ExpressVote to generate printed vote summary cards that match the voting pattern for your logic and accuracy testing, use the DS200, DS450, and/or DS850 to tabulate those cards and verify that the voting results match the expected results for your test voting pattern.

To create a supply of printed vote summary cards for your logic and accuracy testing, you can manually vote each card individually, or you can use the **Voted Ballot Test** to print multiple vote summary cards from a single voting session.

5.3.3 Ballot Diagnostics

Use the Ballot Diagnostics screen to access the following diagnostic tests.

5.3.3.1 Continuous Print Test

The Continuous Print Test, also known as the "shoeshine test," runs the ExpressVote unit for an extended period of time without human supervision to ensure that the mechanical components of the ExpressVote's Paper Path Module (PPM) operate correctly.

To perform the continuous print test, complete the following steps:

1. On the System Maintenance Menu screen, touch **Ballot Diagnostics**.

2. On the Ballot Diagnostics screen, touch **Continuous Print Test**.
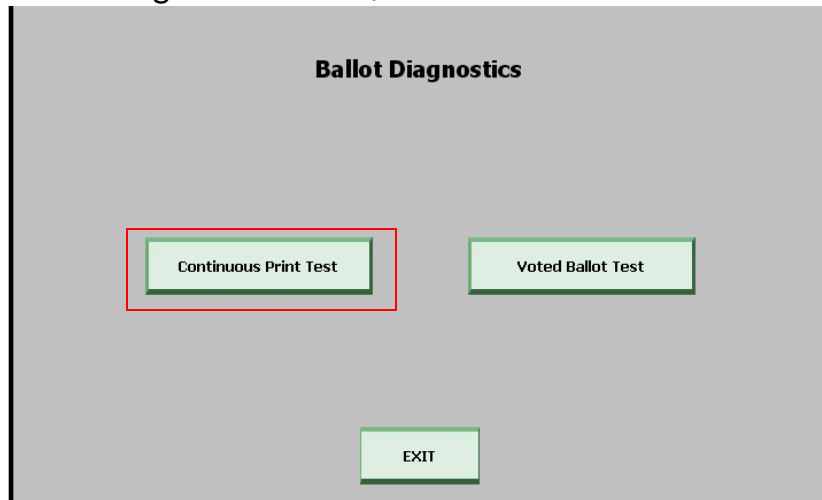
3. On the Continuous Print Mode screen, to change the default cycle count, complete the following steps in the following order.
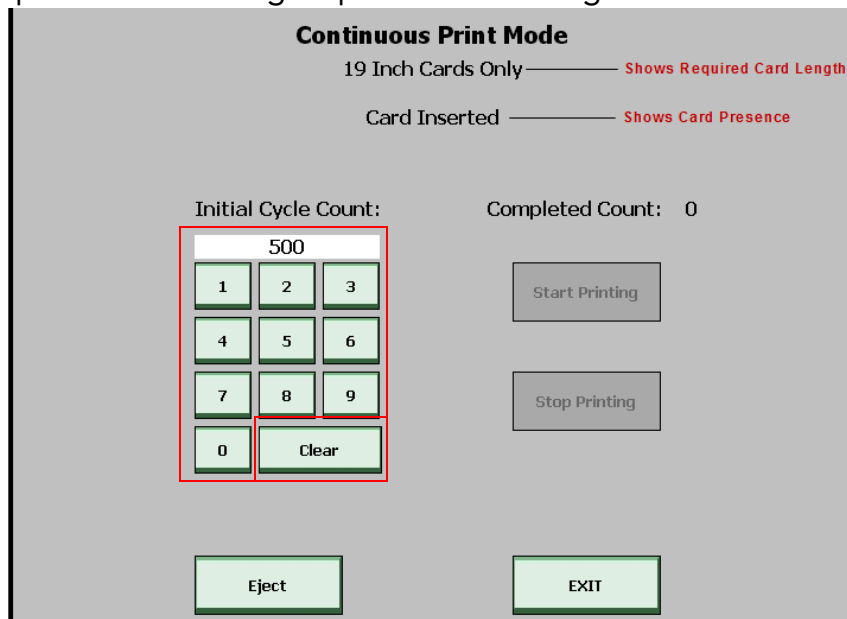
Note

The **Initial Cycle Count** field defaults to 500 print cycles.

- Touch **Clear**.

- Touch the on-screen keypad to enter the new count in the **Initial Cycle Count** field.

4.Insert a blank 19-inch card into the front slot of the ExpressVote unit.

5.Touch **Start Printing**.

The ExpressVote begins the Continuous Print Test, printing each cycle onto the same inserted card until the cycle count equals zero and the completed count equals the value you entered in step 3.

If a hardware fault occurs during the Continuous Print Test, the ExpressVote pauses the test and displays an error message.

Note

Touch **Stop Printing** to end the Continuous Print Test before the specified number of cycles is complete.

6.When the Continuous Print Test is complete, touch **EXIT** to eject the card and return to the Ballot Diagnostics screen.

-or-

Touch **Eject** to remove the used card and perform another Continuous Print test.

5.3.3.2 Voted Ballot Test

The Voted Ballot Test enables a user to vote a sample ballot summary card for the loaded election, verify and/or redo the sample, and then print a specified number of identical ballot summary cards.

1. On the System Maintenance Menu screen, touch Ballot Diagnostics

2.On the Ballot Diagnostics screen, touch **Voted Ballot Test**.
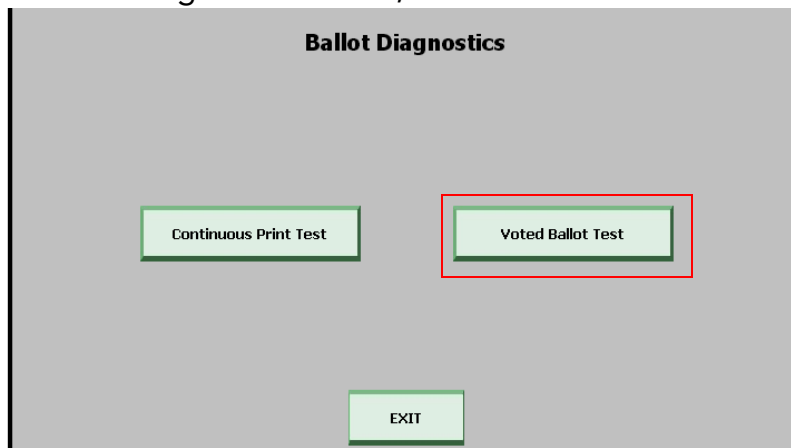
3. On the Enable Voted Ballot Test screen, touch to select the **Enable Voted Ballot Test** check box.

Enable Voted Ballot Test

To enable the option to mark multiple Activation
Cards for the same voted ballot, check the box below

☐ Enable Voted Ballot Test

When checked, select 'Done', switch to 'Voter Mode',
vote the desired ballot and mark the Activation Card.
Carefully examine this sample Vote Summary Card. If
it's okay, enter the number of Cards to mark and press
'Start'. Then follow the screen prompts to feed the
Cards (one at a time) into the ExpressVote unit. They
each will be marked exactly the same way as your
sample Vote Summary Card.

EXIT

4. Touch **EXIT**.

Note

If you do not touch **Exit** before proceeding with the next step, the system will not save your setting.

5. On the ExpressVote unit, set the mode switch to **Voter**.

Mode Switch
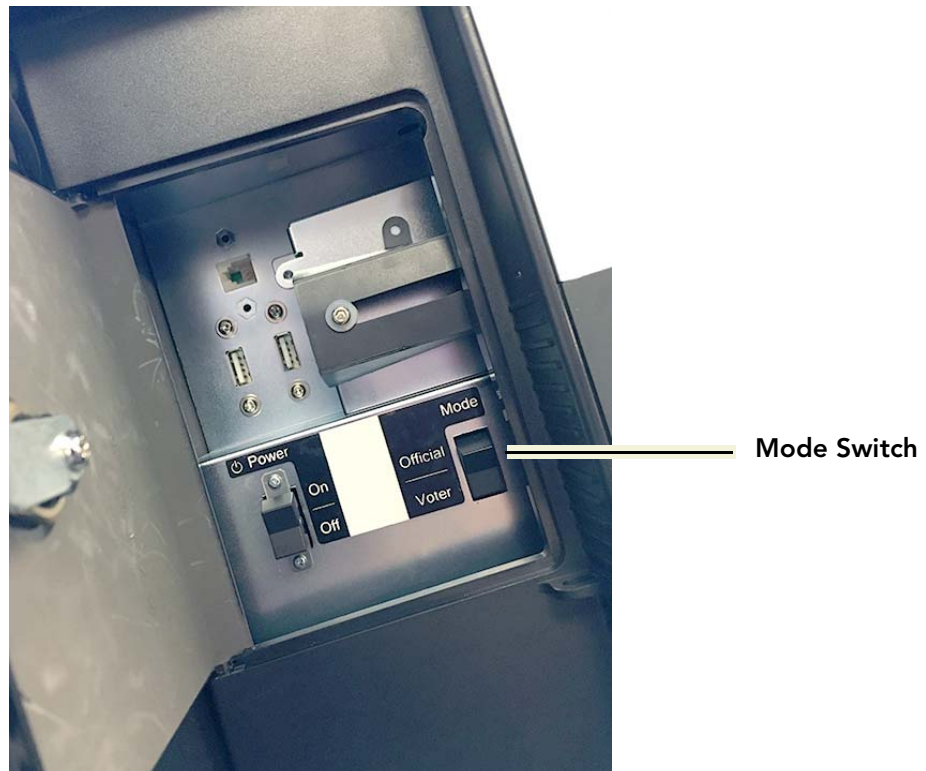
The system displays the Voted Ballot Test screen.

6. On the Voted Ballot Test screen, touch **Continue**.

7. On the Enter Current Security Code screen, use the on-screen keyboard to enter the correct security code.
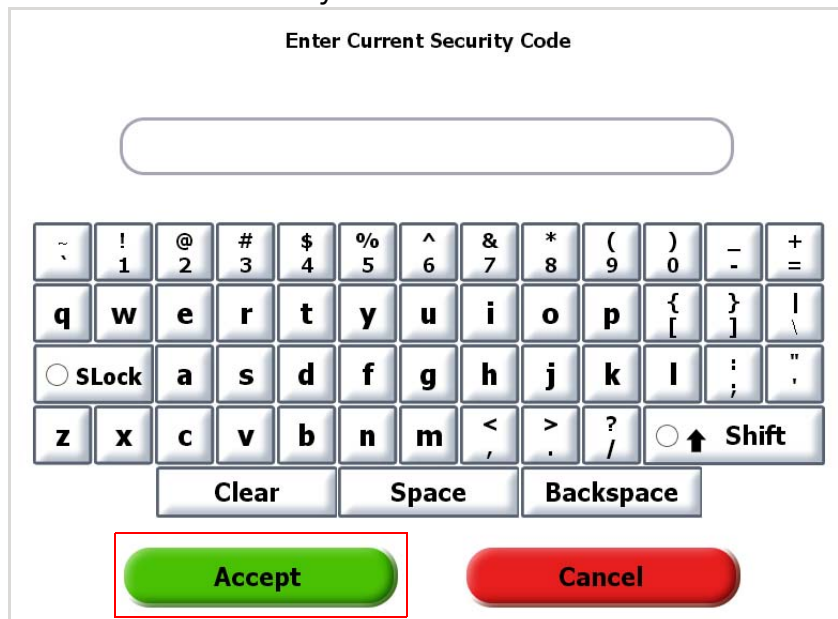
8. Touch **Accept**.

9. Insert the card into the front slot of the ExpressVote.

10. Complete a voting session.

11. When you have completed the voting process, remove and inspect the card to ensure that it is representative of the cards to be used in the test.

12. Depending upon the outcome of the card, do one of the following:

   • If the marked card is good, tap **Continue** to initiate the printing process. Proceed to the next step.

   • To prepare a new sample card, touch **Try Again**.

   • To exit the test, touch **Exit Testing**.

13. On the Voted Ballot Test screen, enter the initial card count.

14. Touch **Start Marking**.

   To suspend and resume the printing process, touch **Pause** or **Resume**.

   To stop the printing process, touch **Stop Marking**.

   To retest the same ballot, touch **Reset**, then re-enter the initial card count, then touch **Start Marking** again.

   When printing is complete, touch **Exit Testing**.

Note

You can insert the marked card(s) into an ES&S tabulator for further testing.

5.4 ExpressVote XL Logic and Accuracy Testing

Pre-election L&A testing includes setting up the voting system for each of the precincts and early voting locations in the election, loading the election definition, opening the election, casting a known pattern of votes on each ballot (or card) style, closing the election, printing the vote totals for the precinct, and then comparing the printed vote totals with the known pattern of votes.

5.4.1 Load Election Definition onto the ExpressVote XL

Before loading the election definition, you must clear and initialize the unit. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize ExpressVote XL, page 82

Load Election onto ExpressVote XL, page 97

5.4.2 Print Test Deck

This feature allows you to print vote summary cards for use in L&A testing for the DS200, DS450, and/or DS850.

You can print a test deck of vote summary cards automatically based on a test pattern you created in the Electionware Toolbox utility, if applicable.

You also can print a test deck of vote summary cards manually, without a test pattern, by conducting a voting session on the ExpressVote XL terminal in test mode.

Note

All test deck cards include the word "Test" printed on the cards.

After printing a test deck, scan your test vote summary cards on an ES&S tabulator as part of your pre-election L&A testing for both the ExpressVote XL and your precinct or central count tabulator(s).

To access the Print Test Deck function, complete the following steps.

1. On the Supervisor Menu, under Advanced Settings, touch **Logic & Accuracy**.

2. On the Logic & Accuracy submenu, touch **Print Test Deck**.
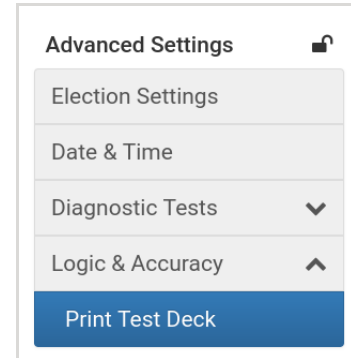
The system automatically displays the Logic & Accuracy - Print Test Deck start screen.
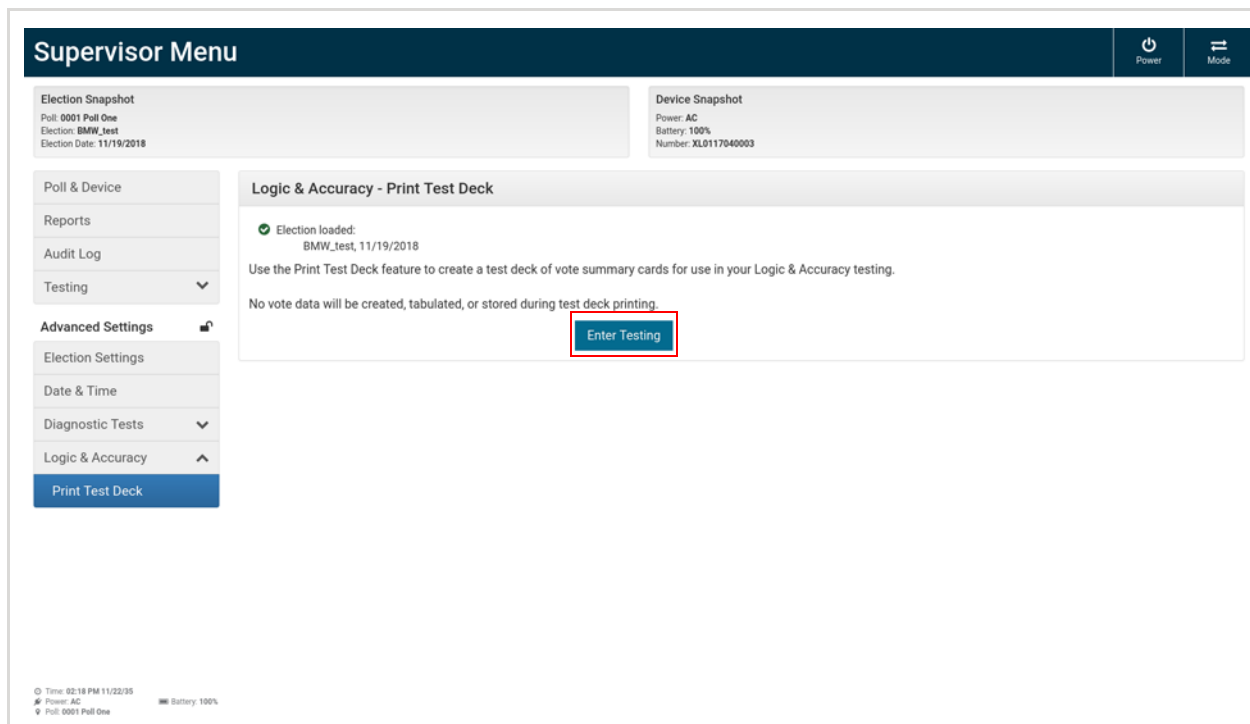
3. On the start screen, touch **Enter Testing**.

The system displays the Logic & Accuracy - Print Test Deck screen.
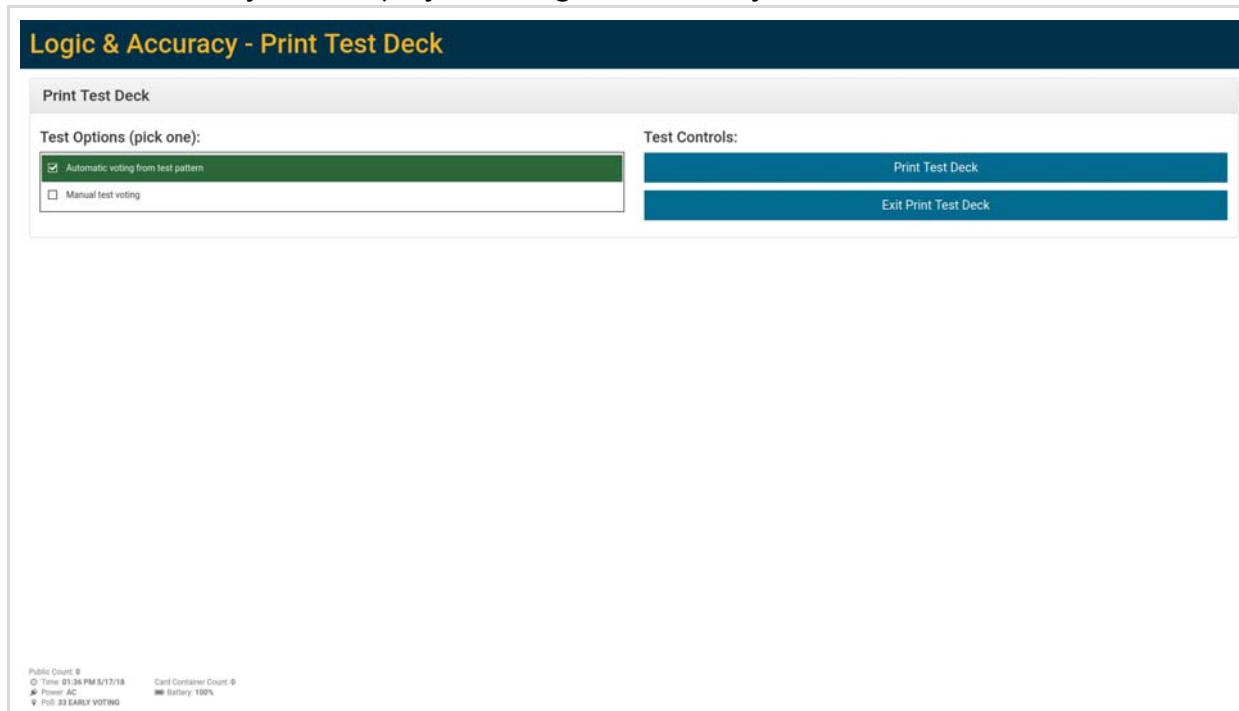
5.4.2.1 Print a Test Deck Automatically

To print a test deck automatically, you must use the Test Deck module of Electionware Toolbox to create a voting test pattern and add it to the election flash drive.The ExpressVote XL uses the test pattern to conduct a simulated voting session and automatically prints the number of vote summary cards the test pattern requires.

To perform the automatic voting test, complete the following steps.

1. On the Logic & Accuracy - Print Test Deck screen, under Test Options, ensure that the **Automatic voting from test pattern** option is selected.
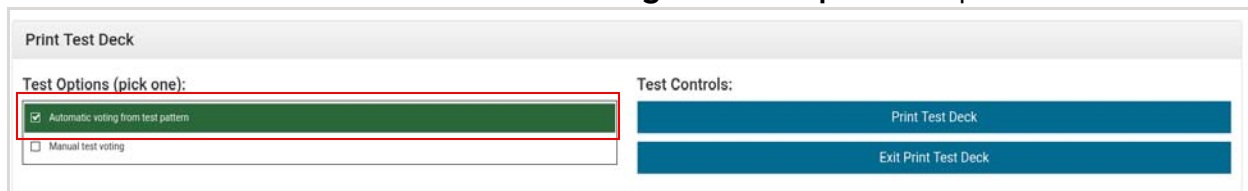
Note

If the election definition contains an automatic test pattern, this option is selected by default.

If the election definition does not contain an automatic test pattern, the automatic option is not available, and you must print the test deck manually. Refer to *Printing a Test Deck Manually, page 119*.

2. Under Test Controls, touch **Print Test Deck**.
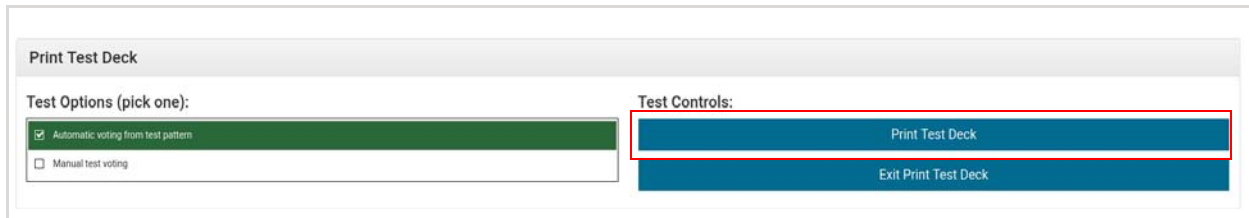
The system displays a counter window instructing you to insert a blank card to continue.

3. Insert a blank activation card.

The system automatically prints and ejects the vote summary card based on the installed test pattern, increments the counter window by one (1) card out of the total number of cards to be printed, and increments the protected count on the terminal by one (1).
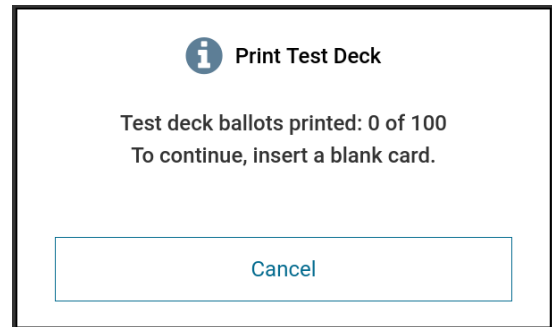
4. When prompted, remove the ejected card and insert a new blank card.

5. When the test deck is fully printed, touch **Continue**.

The system redisplays the Logic & Accuracy - Print Test Deck screen.

5.4.2.2 Printing a Test Deck Manually

To print a test deck manually, complete the following steps.

1. On the Logic & Accuracy - Print Test Deck screen, under Test Options, ensure that the **Manual test voting** option is selected.
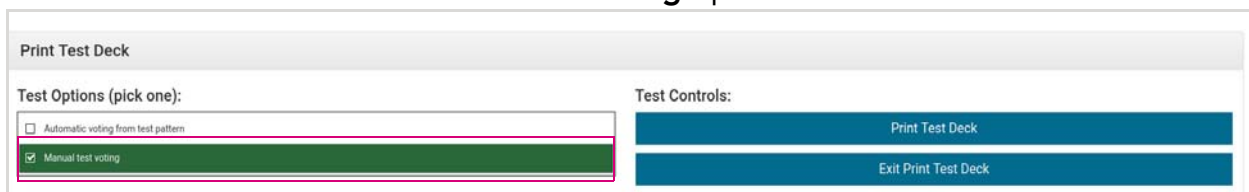
2. Under Test Controls, touch **Print Test Deck**.
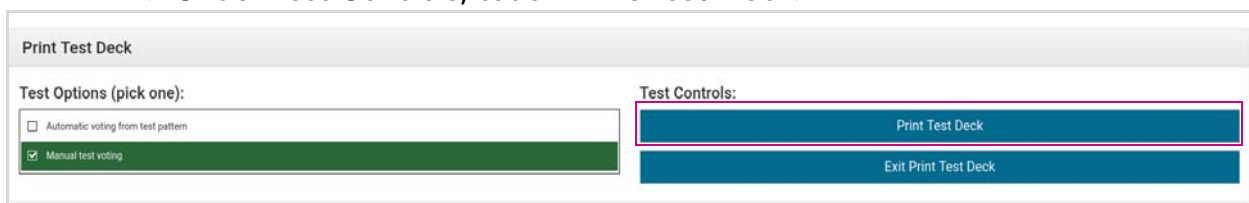
The system displays a full screen instructing you to insert a blank card or a card printed with an activation barcode.
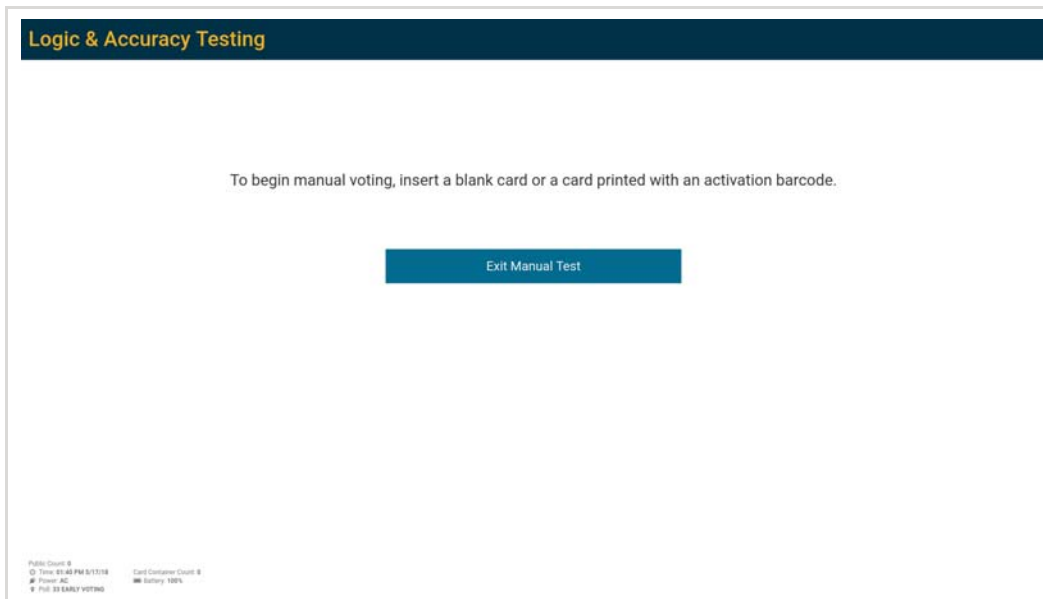
3. Insert a blank or pre-printed activation card, activate the ballot, and begin voting according to your predetermined L&A test pattern.

4. After verifying all vote selections, touch **Print Ballot**.

   The system displays a Print Ballot window instructing you to set the number of test deck cards to print based on the current voting session.

5. Touch the onscreen keypad to set the desired number of test deck cards.

6. Touch **Print**.

   The system prints the vote summary on the inserted card, ejects the card, and increments the protected count on the terminal by one card. All test deck cards include the word "Test" on the card.

   • If you set the test deck count to value of one (1) as shown, skip to step 8.

   • If you set the test deck count to a value greater than one (1), the system displays a counter window. Proceed to the next step.
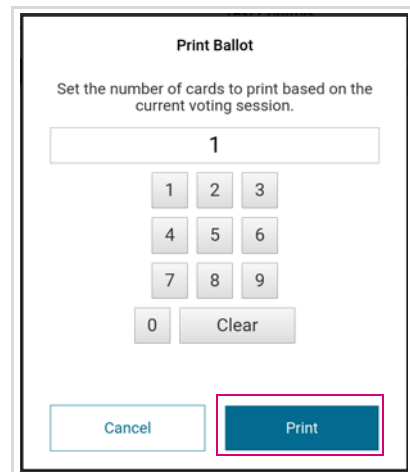
7. When prompted, remove the ejected card and insert a new blank card.
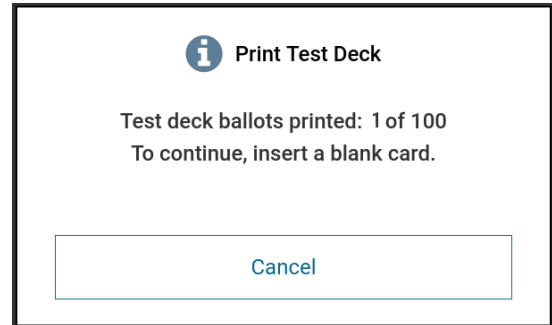
8. When the test deck is fully printed, the system redisplays the manual test start screen. Touch **Exit Manual Test**.
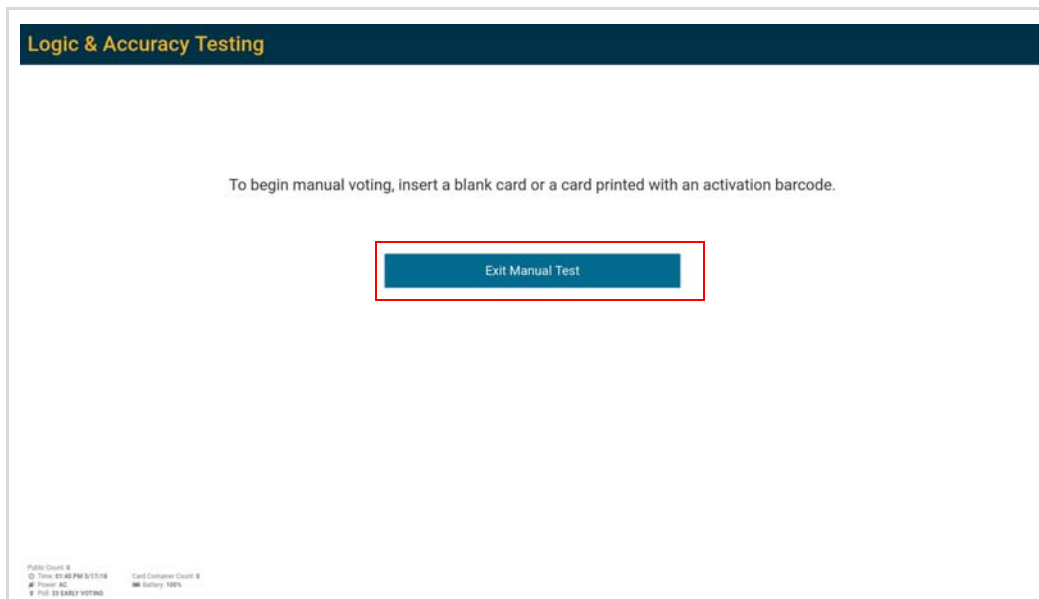
The system redisplays the Print Test Deck screen.

5.5 Backing Up Logic and Accuracy Testing

5.5.1 Backing Up Media

Back up all election media storage devices to an external storage device such as a USB flash drive or CD.

5.5.2 Backing Up EMS

Back up your election data files in Windows after you configure your election and generate output files from Electionware. Back up your election files to an external storage device such as a USB flash drive, compact flash card, or CD.

1. Right-click the **Start** button in Windows and select **Explore**. An Explorer window appears.

2. Type **c:\electionware** in the Address bar and press **Enter**.

3. Select your election folder and drag it to the corresponding drive letter of your storage device to copy your election database.

Note

Disk space may also be saved by using a file compression application such as WinZip.

5.6 Retention of Election Material

No operation or activity that results in a revision to voting data produced by the semiofficial canvass shall be performed without the presence of a properly constituted Election Observer Panel, Logic and Accuracy Board, or an equivalent administrative and technical control body authorized to verify the correctness of the operations and responsible for maintaining accurate and complete audit records.

5.6.1 Precinct Tabulator Election Material

Upon the certification of the election results, the guidelines in the California Elections Code apply to the handling, security, and disposition of unused ballots and other election materials. Memory cards are not deemed to fall within the purview of these Elections Code sections.

5.6.1.1 Checking Unused Ballots

Unused ballots will be processed in accordance with the California Elections Code.

Precinct officers will seal or deface unused precinct ballots, and election personnel in the office of the elections official will seal or deface unused vote-by-mail ballots. The elections official may inspect and count unused ballots as necessary to reconcile the ballot count during the official canvass.

5.6.1.2 Post Official Canvass Period Disposition of Election Materials

Following certification of the election results and upon expiration of the period for recount requests, the ballots may be moved to secure storage for the required ballot retention period, during which time, the ballot containers remain sealed. The elections official shall not open any ballot containers or permit any ballot containers to be opened except as permitted in the California Elections Code, or in the event of a mandated recount. Seals used for the foregoing purposes shall be numbered, destructible seals.

5.6.1.3 Certification by Unescorted Personnel

All unescorted persons present within the security area, including visitors, media representatives, and standby personnel, shall be clearly identified by a badge or other means, and a log of their arrival and departure times. All unescorted personnel shall be subject to restrictions established by the responsible elections official to ensure the efficiency and integrity of the vote tallying process.

5.6.2 Retention of Central Tabulator Election Materials

Consult the California Elections Code for guidelines on retaining election materials. The retention period for ballots and related election materials is six months for all elections if no federal elections are involved. The federal election retention period is 22 months. Extend retention periods in the case of a court challenge.

Chapter 6: Equipment Preparation

6.1 L&A Backup

Before the logic and accuracy results are cleared from the equipment, back up the results and send them, as well as the final vote count program files, to the Secretary of State.

6.2 Clear Logic and Accuracy Results

Clear election totals before and after running your test decks to ensure that your results are not corrupted on Election Day. You must clear your election totals before every election.

6.2.1 Clear Results from the DS200

After completing your logic and accuracy testing, you must clear the test results from the election definition USB flash drives before using them on Election Day.

1. Insert the flash drive into the DS200.

2. The Polls Closed screen appears. Press **Reopen Polls**.

3. The password entry screen appears. Use the screen keyboard to enter your override password and press **ENTER**.

Note

If you did not program the election, contact your election administrator or ES&S technical support for the scanner password.

4. The Reopen Polls screen appears. Press **Clear Counts** to remove all test vote results from the machine.

5. The Clear Counts screen appears. Press **Yes** to confirm that you want to clear all results.

6. When results have been cleared, the scanner is ready for polls to be opened for live voting.

6.2.2 Clear Results from the Central Count

1. Press **Election** to access the Election menu.

2. From the Election menu, press **Results**.

3. From the Results screen, press **Clear All Results**.

4. When prompted to do so, enter the override code and press **Accept**.

5. The Clear All Results screen appears. Press **Confirm** to begin the process of clearing all results from the scanner.

6. A confirmation message appears when the process is complete. Press **OK**.

6.2.3 Clear Results from Electionware

Loaded media results, images, CVRs, and equipment logs can be cleared from Electionware (removed from the election database) in order to delete test data or to start the results loading process over.

Warning

Click **Stop Load** *before* clearing any results.

To clear loaded results for the whole election, right-click **Election Results** in the Navigator, then click **Clear All Results**.
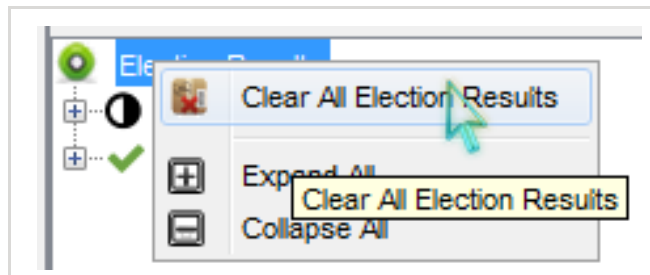
6.3 Hardware Preparation

6.3.1 Recommended Supplies

ES&S recommends maintaining a supply of the following items for each piece of ES&S equipment used in your jurisdiction. All of the listed items are available for order from ES&S. Contact Customer Service at (877) 377-8683 with any questions or orders. Allow four weeks for delivery.

6.3.1.1 DS200 Supplies

Table 6-1: DS200 Recommended Supplies

Supply	Description	Recommended Quantity
Paper rolls	3.13" by 80' thermal paper rolls. ES&S item number 2320.	2 full rolls per unit, minimum
USB flash drive (media device)	Flash drive used to store the DS200's election definition, ballot count, and ballot images. The standard memory capacity for each flash drive is 512MB to 8GB. Use only certified flash drives supplied by ES&S. ES&S item number 2610 for 2GB drive; 2396 for 4GB drive; 2397 for 8GB.	2 per unit
Ballot stamping device	Needed only if you want to mark ballots for further review, such as write-in votes. ES&S item number 2278	2 per unit
Seals	Tamper-evident seals used to secure the DS200, ballot box, and tote bin.	Determined by your jurisdiction's security requirements
Marking Devices	ES&S recommends roller ball pens for voters to mark ballots. ES&S item number 6100	No specific recommendation
Pressurized air cans	Pressurized air used to clean the DS200. ES&S item number ES-AR	1 can per unit
Lint-free cloth	Used for general cleaning purposes. ES&S item number ES-CLOTH	No specific recommendation

Table 6-1: DS200 Recommended Supplies

Supply	Description	Recommended Quantity
Isopropyl (rubbing) alcohol	Used to clean the DS200 rollers, Contact Image Sensors (CIS) and LCD screen. To clean the DS200 rollers, pour the alcohol into a spray bottle and dampen a lint-free cloth. Never spray cleanser directly on the DS200. You can also use alcohol wipes to clean the DS200. ES&S item number ES-AL ES&S also provides an Touch Screen Cleaning Kit, item number 6500	1 bottle per five units

6.3.1.2 Central Count Supplies

Table 6-2: Central Count Recommended Supplies

Supply	Description	Recommended Quantity
Audit log printer ribbon	ES&S item number RI-420.	1 per audit printer
Audit log printer paper	8.5" x 11" continuous feed, one-part paper. Use carbon-less paper to avoid smearing. ES&S item number ES-PP1.	2 boxes per audit printer
Laser printer toner cartridge	ES&S item number depends on which model of printer is used.	1 per laser printer
Laser printer paper	8.5" x 11" standard laser printer paper.	2 packages per printer

Table 6-2: Central Count Recommended Supplies (Continued)

Supply	Description	Recommended Quantity
USB flash drive	Flash drive used to store the election definition, ballot count and ballot images. These must be FAT32 formatted drives. Flash drives can be obtained from ES&S in a variety of standard memory capacities, ranging from 512MB to 16GB (16GB can be used for firmware validation only). ES&S item number 2610 for 2GB drive; 2396 for 4GB drive; 2397 for 8GB.	6 per tabulator
Seals	Wire and tamper-evident seals used to secure the tabulator and flash drives.	Determined by your jurisdiction's security requirements
Isopropyl rubbing alcohol	Used to clean the tabulator rollers, scanners and LCD screen. To clean the tabulator rollers, pour the cleanser into a spray bottle and dampen a lint-free cloth. Never spray cleanser directly on the tabulator. You can also use alcohol wipes to clean the unit. ES&S item number ES-AL.	1 bottle per tabulator
Touch screen cleaning kit	Spray bottle of precision cleaning solution and a soft microfiber cloth, housed in plastic case. The quick-drying cleaning solution is formulated to dissolve organic and inorganic contaminants that can accumulate on touch screen surfaces. ES&S item number 6500.	Optional
Pressurized air cans	Pressurized air used to clean the tabulator. ES&S item number ES-AR.	2 cans per tabulator

Table 6-2: Central Count Recommended Supplies (Continued)

Supply	Description	Recommended Quantity
Lint-free cloth	Used for general cleaning purposes. ES&S item number ES-RAG.	No specific recommendation
Marking Devices	ES&S recommends roller ball pens for voters to mark ballots. The following can be obtained from ES&S: • VL Ballot Pen (BIC Grip roller ball with black ink and a 0.7 mm tip), ES&S item number 6100. • Absentee Pen (flat contour, fits easily into an envelope for mailing), ES&S item number 00500.	No specific recommendation

6.3.1.3 ExpressVote Supplies

Table 6-3: ExpressVote Recommended Supplies

Supply	Description	Recommended Quantity
Anti-static cleaning wipes	Fellows 100 anti-static cleaning wipes	1 pack
Isopropyl alcohol	Used to clear the card rollers, CIS sensors, and LCD screen To clean the scanner rollers, pour the cleanser into a spray bottle and dampen a lint-free cloth. Never spray cleanser directly on the scanner. You can also use isopropyl alcohol wipes to clean the scanner	1 bottle (16 oz)
Lint-free cloth	Used for general cleaning purposes	No specific recommendation
Pressurized air	Used to clean the ExpressVote and clear away paper dust	2 cans (10 oz each)
Seals	Wire and tamper-evident seals used to secure the ExpressVote and card container	Determined by your jurisdiction's security requirements
USB memory device (flash drive)	Use only certified USB flash drives supplied by ES&S	1 for each EQC device, and 1 for each ExpressVote

6.3.1.4 ExpressVote XL Supplies

Table 6-4: ExpressVote XL Recommended Supplies

Supply	Description	Recommended Quantity
Pressurized air cans	10 ounce can ES&S item number ES-AR	1
Lint-free cloth	ES&S item number ES-CLOTH	1
Touch screen cleansing solution	ES&S recommends using the available Touch Screen Cleaning Kit; ES&S item number 6500	No specific recommendation
Isopropyl rubbing alcohol	16 ounce bottle; ES&S item number ES-AL	1
Paper Stock	Blank 19" activation cards	No specific recommendation
Paper rolls	3.13" by 80' thermal paper rolls; ES&S item number 2320	2 full rolls per unit, minimum
Mild detergent solution	NA	No specific recommendation
Cotton swabs	NA	No specific recommendation

6.3.2 DS200 Preparation

6.3.2.1 Tools for DS200 Maintenance

- Isopropyl alcohol 70% - 16 fl oz. bottle minimum

- Compressed air - 10 oz. can minimum

- Lint-free cloth

- #1 Phillips screwdriver

- #2 Phillips screwdriver

- T-10 Screwdriver with security center pin

Note

Magnetized screwdrivers are recommended.

6.3.2.2 Clean the DS200

Clean your scanner before and after each election.

1. Turn off the scanner and unplug the power cord.

Electrical

Always unplug the AC power cord and turn the scanner off before you clean a DS200 scanner.

2. Clean the ballot entry and exit slots with a can of pressurized clean, dry air or inert gas, which is available for order from ES&S. Aim the air can's spray tube into the ballot entry slot and blow out all the debris. Clean the ballot exit slot in the same way. Repeat the entire procedure and inspect the entrance and exit slots with a flashlight.

3. Use pressurized air to remove dust and debris from around the menu display.

4. Use a soft, lint-free cloth and water, or isopropyl alcohol (70%), to wipe down the scanner. Dampen, do not soak, the cloth with the cleaning solution. Do not spray cleaning solution directly onto the scanner.

5. Clean the LCD display window with the damp cloth. Be careful not to scratch the display panel.

6. Use the cloth and cleaning solution to clean the scanner's outer case. Start at the top and work down to the base.

7. Clean the scanner's stainless steel base plate with the cleaning solution. Wipe all traces of the cleaning solution off the scanner after you finish cleaning.

8. Unlock the rear access door on the back cover of the DS200.

9. Once this door is unlocked and back cover of the DS200 is raised, the ballot transport mechanism can be opened.

10. Lift up the latches on the left and right side of the ballot transport.

11. Lift up the top cover to access the ballot transport.

12. Use a lint-free cloth and isopropyl alcohol to clean the spring plates opposite the contact image sensors.

13. Clean the rubber rollers on the bottom surface of the ballot transport.
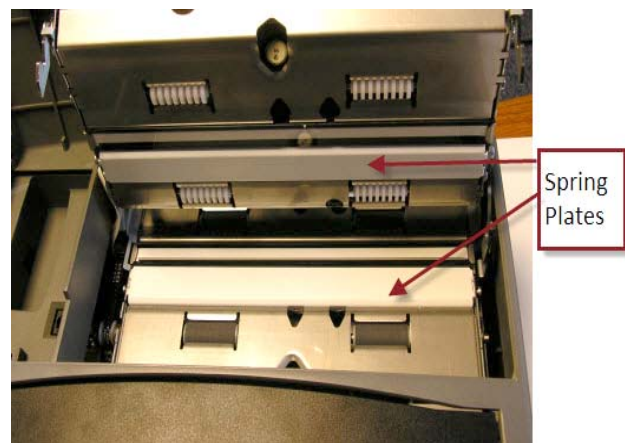
6.3.2.3 Clean the DS200 Ballot Box

Clean your DS200 ballot boxes either before or after each election. The ballot box requires no disassembly.

1. Use a cloth dampened with cleaning solution to clear dust and debris from the ballot box.

2. Remove the divider from the lower ballot bin before you clean the bottom section of the ballot box. Clean the inside of the bin first and then the outside. Wipe down the interior ballot divider and the box cover. Remember to periodically rinse the cleaning cloth.

3. Stand the ballot box upright to clean the recessed, scanner housing.

Warning

Make sure the power cord and the diverter motor connector are not damaged or dirty.

4. Turn the mounting pedestal upside down and clean the inside of the box. Use a soft cleaning brush or feather duster to clear dust and debris. Use a brush to clean the diverter vane, the diverter motor and the controller circuit board for the ballot diverter. Do not to bend or damage any of the sensitive components contained in the diverter motor assembly.

5. Use a brush to clean debris and dust from the ballot chute assembly. Do not use liquids to clean the inside of scanner mounting pedestal. Re-assemble the unit after you finish cleaning.

6.3.2.4 Replace the DS200 Paper Roll

Check the DS200 printer and change the paper roll, if necessary, for Election Day.

Note

A warning message may appear if the internal printer is out of paper.

1. Unlock the access door, located above the printer. This will provide access to the printer release lever.

2. Press the lever to unlock the printer door.

3. Open the printer door.

4. Drop the paper into the printer paper compartment.

Important

Make sure the glossy side of the thermal paper is facing the thermal printer.

5. Pull the end of the paper roll out toward the input tray of the DS200.

6. Close the printer door and press firmly on the door to make sure it locks into place.

7. Lock the access door above the printer.

6.3.2.5 DS200 Battery Maintenance

The DS200 uses an 18-volt, 5-amp lithium ion battery to power the scanner in case of an electrical power failure. A fully charged battery can power an "active" scanner for up to two hours and an "idle" scanner for up to three hours. The machine is "active" when counting ballots or printing reports. Estimated battery life is five years.

To check the charge for your backup battery, look at the light indicator on the back of your DS200 machine.

- If the light is flashing **green**, the battery is charged.

  - If the light is green and not flashing, the DS200 is plugged in and the battery is fully charged.

  - If the light is flashing at a slow rate, the DS200 is operating on battery power and the battery has 75 percent or more of its charge remaining.

  - If the light is flashing at a medium rate, the DS200 is operating on battery power and the battery has 50 percent of its charge remaining.

  - If the light is flashing at a fast rate, the DS200 is operating on battery power and the battery has 25 percent of its charge remaining.

- If the light is **amber**, the battery is charging. If the light is amber, allow the DS200 to charge until the light turns green. If the battery is not charged, it will take up to six hours to charge the battery.

  - If the light is flashing at a slow rate, the battery is 75 percent charged.

  - If the light is flashing at a medium rate, the battery is 50 percent charged.

  - If the light is flashing at a fast rate, the battery is 25 percent charged.

- If the light is **flashing red**, the battery is not taking a charge. This could be caused by:

  - A dead battery.

  - A bad connection to the battery.

  - No battery is in the DS200.

Note	If the DS200 has not operated on battery power and was stored with a full battery charge, the charge time required to fully recharge the battery will be minimal.

Warning	Removing the battery from the scanner exposes it to risks that are not present under normal operating conditions. Shorting the battery terminals together is especially hazardous even if the battery is "discharged" or "dead." Shorting the terminals can create sparks, melt wires, and possibly start a fire. Use extreme caution when handling the backup battery.

Note	The DS200 battery may be recycled. Please dispose of the battery properly.

Check Battery Charge

Turn on the DS200.

The battery power icon, located in the upper right area of the screen, displays the battery charge.The battery is charging whenever the power cord is plugged into the unit. If the battery does not show a full charge, continue to supply power to the unit until it reaches a full charge. The length of charge time required to fully charge the battery depends on the current status of the battery icon. Use the following charge guidelines to estimate charge time:

§ **Full battery charge**	If the battery shows a full charge, the DS200 does not need charging
75 percent charge	It should take about 2 to 3 hours of fully charge the battery.§
50 percent charge	It should take about 3 to 4 hours to fully charge the battery.§
25 percent charge	It should take 5 to 7 hours to fully charge the battery.§
No charge	It should take 5 to 7 hours to fully charge the battery.§

If the battery icon is blinking, the battery is disconnected.

You can also check the battery charge by looking at the light indicator on the back of the DS200.
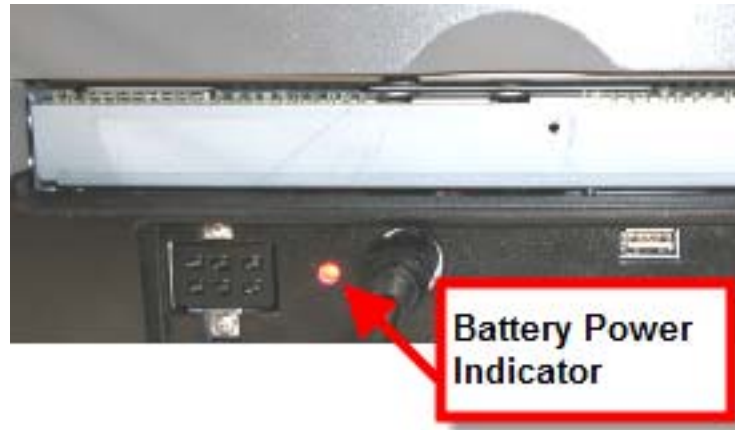
Refer to the following table for light indicator state definitions.

Light Indicator State	Battery Status
Flashing green	Fully charged
Solid green	DS200 plugged in, battery fully charged
Flashing slowly	DS200 operating on battery power, 75% or more charge remaining
Flashing medium pace	DS200 operating on battery power, battery has 50% charge remaining
Flashing rapidly	DS200 operating on battery power, battery has 25% charge remaining
Amber	Battery is charging. Allow to charge until light turns green before operation.
Flashing slowly	75% charged
Flashing medium pace	50% charged
Flashing rapidly	25% charged
Flashing red	Dead battery Bad connection to battery No battery connected

6.3.3 Central Count Preparation

To keep the tabulator in working order, ES&S trained staff must perform routine maintenance before each election. Before performing these tasks, unplug the scanner and raise the read head to avoid damaging the control panel.

Warning

Route /install the power cord to protect it from being walked on or pinched. Power the unit down completely before connecting or disconnecting the power cord. Remove the power cord before moving the unit. Place the power cord near an easily accessible outlet.

6.3.3.1 Tools for Central Count Maintenance

- Compressed air - 10 oz. can minimum

- Anti-Static lint-free cleaning wipes

- Isopropyl alcohol 70%

- Mild detergent solution

- Straight screwdriver

6.3.3.2 Clean the Rollers

The rollers move each ballot, picked from the input tray, over the transport path, through the scan area (upper and lower camera housing), and into one of the three output bins (the top, middle, or bottom bin). If the surfaces of the rollers are dirty or discolored, clean them.

To clean the rollers, apply isopropyl alcohol to a cotton cloth and clean the visible surfaces of the rollers, turning them as you clean to expose most of the surface area of the rollers.

Caution

Keep fingers, hands, and loose clothing clear of the rollers.

6.3.3.3 Clean the Cameras

To clean the cameras, wipe them with a dry, cotton cloth, or use a pressurized air can to clean out any debris or paper dust collected during scanner operation. It is important to hold the can upright so you do not expel propellant onto the sensors.

6.3.3.4 Clean the Scanner Case

Warning

Before cleaning the scanner case, disconnect the unit from its power source. Do not use full strength or harsh detergents, liquid cleaners, aerosols, abrasive pads, scouring powders, or solvents, such as benzene or alcohol. Liquids should never be applied directly to the scanner. Use a soft cotton cloth lightly moistened with a mild detergent solution. Ensure that the surface cleaned is fully dry before reconnecting the power.

6.3.3.5 Clean the Touch Screen

Spray the cloth with the cleaning solution and gently wipe the screen until clean. Then use a dry section of the cloth to dry any remaining cleaning solution from the screen.

6.3.3.6 Replace Log Printer Ribbons

Caution

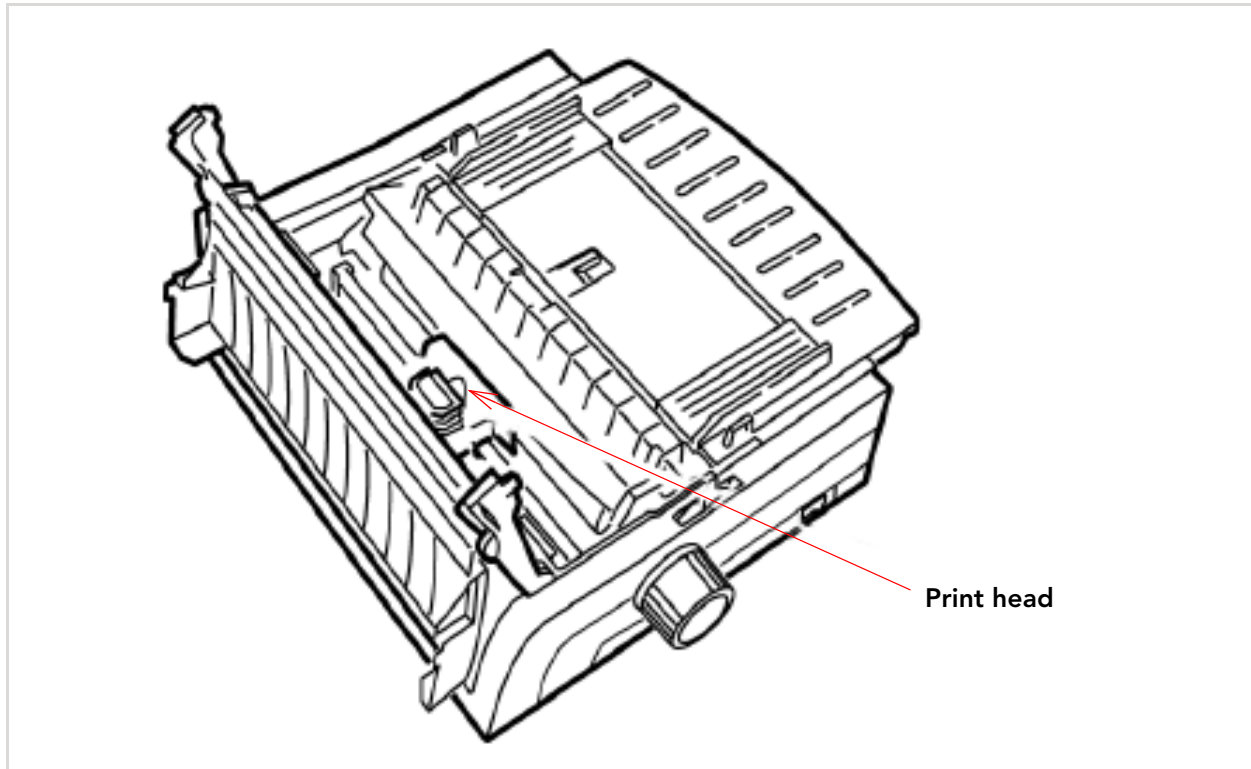Switch the printer off before opening or removing the access cover.
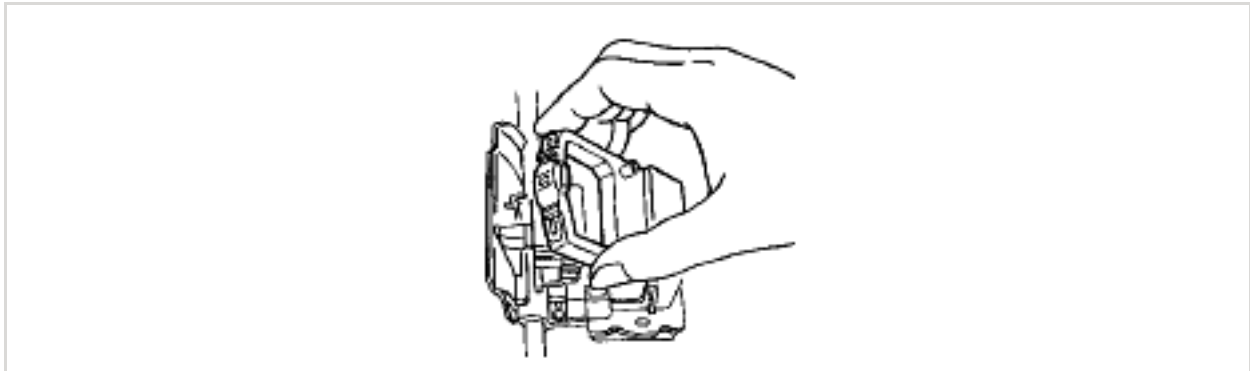
Caution

If you are replacing the ribbon, the print head may be hot.

Use only ribbons specifically designated for your printer model.

1. Open the access cover, then slide the print head to the center of the platen.

Print head

2. Lift the old ribbon cartridge at the end nearest the platen, then remove and discard it.
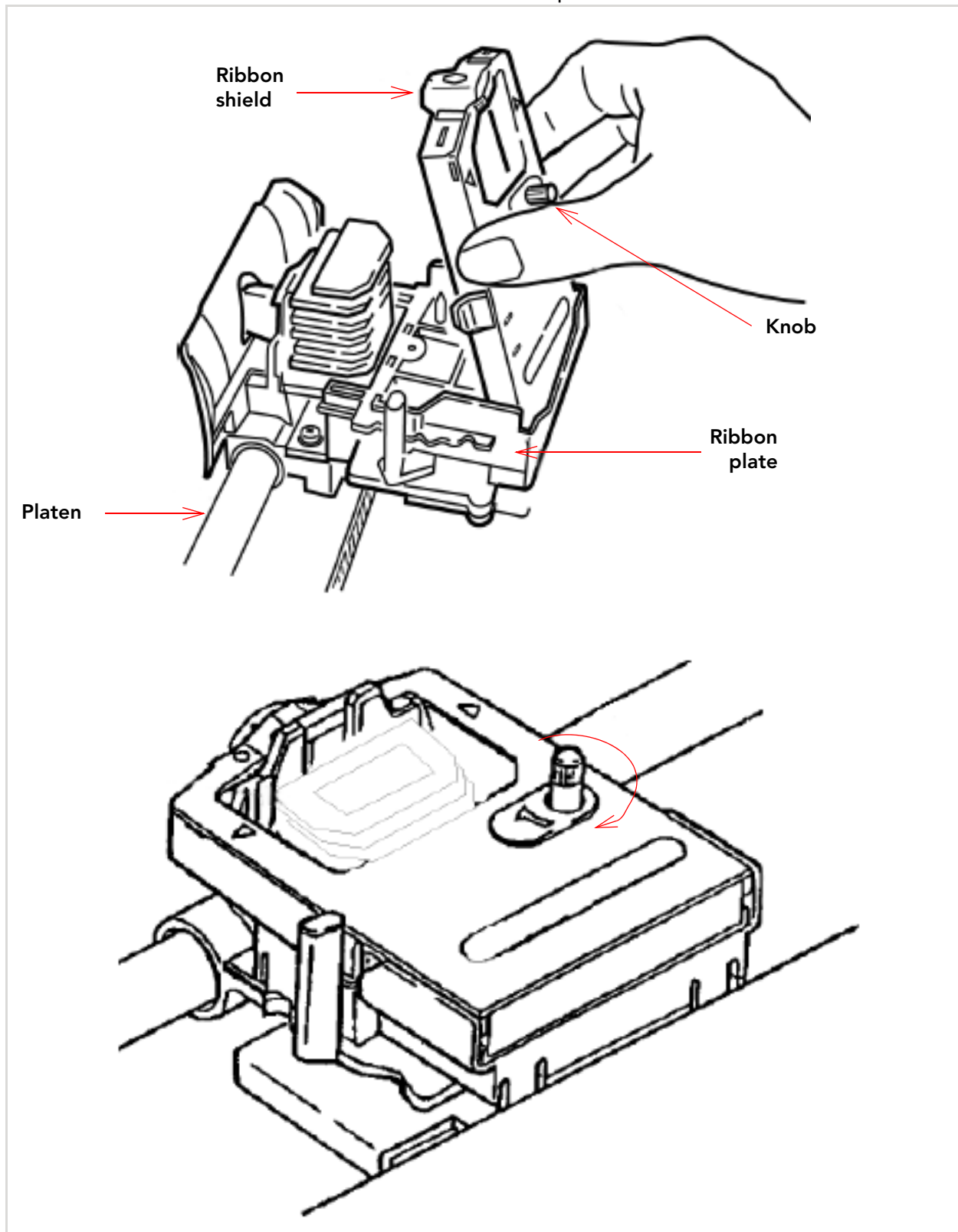

3. Remove the new cartridge from its packaging.

Important

Leave the ribbon shield on the cartridge.

4. Lower the front of the cartridge over the print head until it snaps into place, then turn the knob clockwise to take up the ribbon slack.

Ribbon shield

Knob

Ribbon plate

Platen

6.3.3.7 Replace Report Printer Paper

Note

If you are topping up the paper in a paper tray, it is recommended that you remove the remaining paper from the tray first, then add the new paper stock followed by the paper you removed. This ensures that the oldest paper is used first to help prevent paper jams.

1. Remove the paper tray from the bottom of the printer and place plain paper in the tray, keeping the level of the paper in the tray below the arrowheads on the paper guides.

   For loading A4 or Legal size paper, push the lever in the direction of the arrow, then extend the paper tray using the rear paper support.
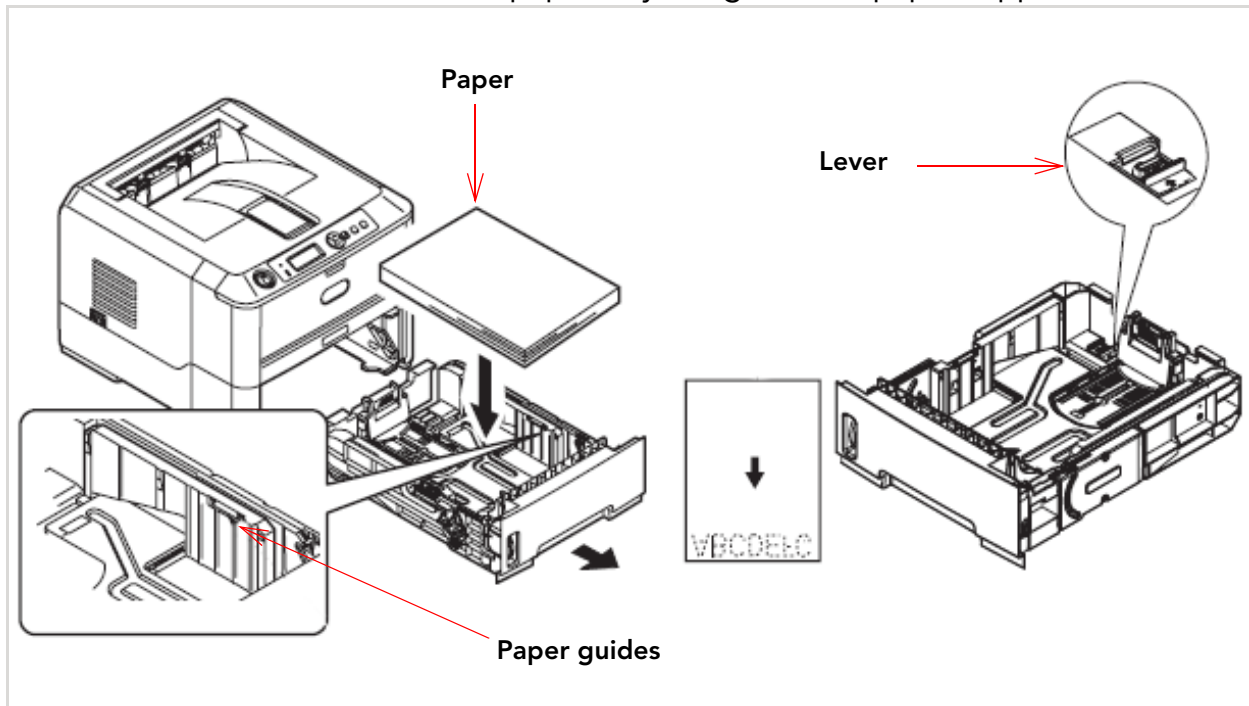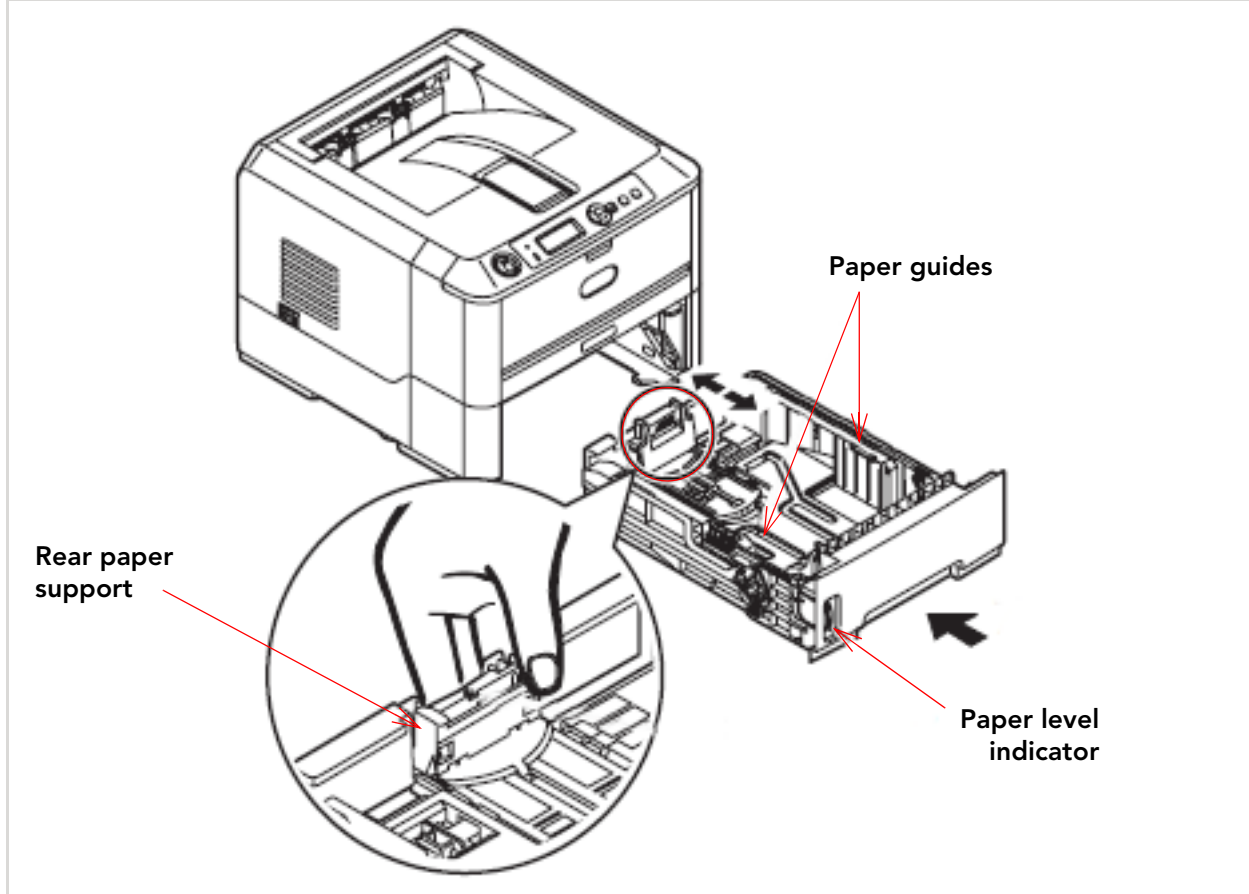

Note

Load letterhead paper facedown and top edge toward the front of the tray.

2. Adjust the rear paper support to the size of paper you are using by gripping the lugs, tilting and sliding the support forward or backward as necessary.

Paper guides

Rear paper support

Paper level indicator

3. Adjust the paper guides. It is important to adjust the paper guides correctly to ensure that the paper is not skewed in the print process. Paper jams may occur if this operation is not carried out correctly.

4. Replace the tray in the printer. The paper level indicator provides a visual indication of how much paper is left in the tray.

Note

If you have the optional second paper tray (Tray 2) and you are printing from the first (upper) tray (Tray 1), you can pull out the second (lower) tray to reload it. However, if printing from the second (lower) tray, do not pull out the first (upper) tray, as this will cause a paper jam.

Face-Up and Face-Down Printing

For face-down printing, make sure the rear cover is closed (the paper exits from the top of the printer). The output stacker on the top of the printer stacks printed pages face-down. Pages printed in reading order (page 1 first) will be sorted in reading order (last page on top, facing down).

For face-up printing, make sure the rear cover is open. In this condition, paper will exit via this path, regardless of driver settings.

Always use this tray in conjunction with the manual feed tray, multipurpose tray, or for heavyweight stocks, to reduce the possibility of paper jams.

6.3.3.8 Replace Report Printer Toner

When the toner is running low, TONER LOW is displayed in the LCD. After Toner Low appears, the printer will print about 100 more pages, then display Toner Empty and stop printing. Printing will resume after a new toner cartridge has been installed.

Warning

Never expose a toner cartridge to an open flame. It can cause an explosion and you can be burned.

Be sure to switch off and unplug the machine before accessing the interior of a machine for cleaning, maintenance or fault clearance. Access to a live machine's interior can cause electric shock.

It is recommended that you clean the LED array at the same time you change the toner cartridge.

The toner used in this printer is a very fine dry powder contained in the toner cartridge.

Have a sheet of paper on hand to place the used cartridge on while you install the new one.

Dispose of the old cartridge responsibly, inside the pack the new one came in. Follow any regulations, recommendations, etc., that may be in force concerning waste recycling.

If you spill any toner powder, lightly brush it off. If this is not enough, use a cool, damp cloth to remove any residue.

Caution

Do not use hot water, and never use solvents of any kind. They will make stains permanent.

Warning

If you inhale any toner or get it in your eyes, drink a little water or bathe your eyes liberally in cold water. Seek medical attention immediately.

If the printer has been powered on, the fuser may be hot. This area is clearly labeled.

1. Switch off the printer and allow the fuser to cool for about 10 minutes before opening the top cover.

2. Press the top cover release button and open the printer's top cover fully.

Note

The model B430dn appears in the figure above. The principles are the same for all models of this printer.

3. Pull the colored lever (1) on the right side of the toner cartridge toward the front of the printer to close the cartridge then remove the used toner cartridge (2).
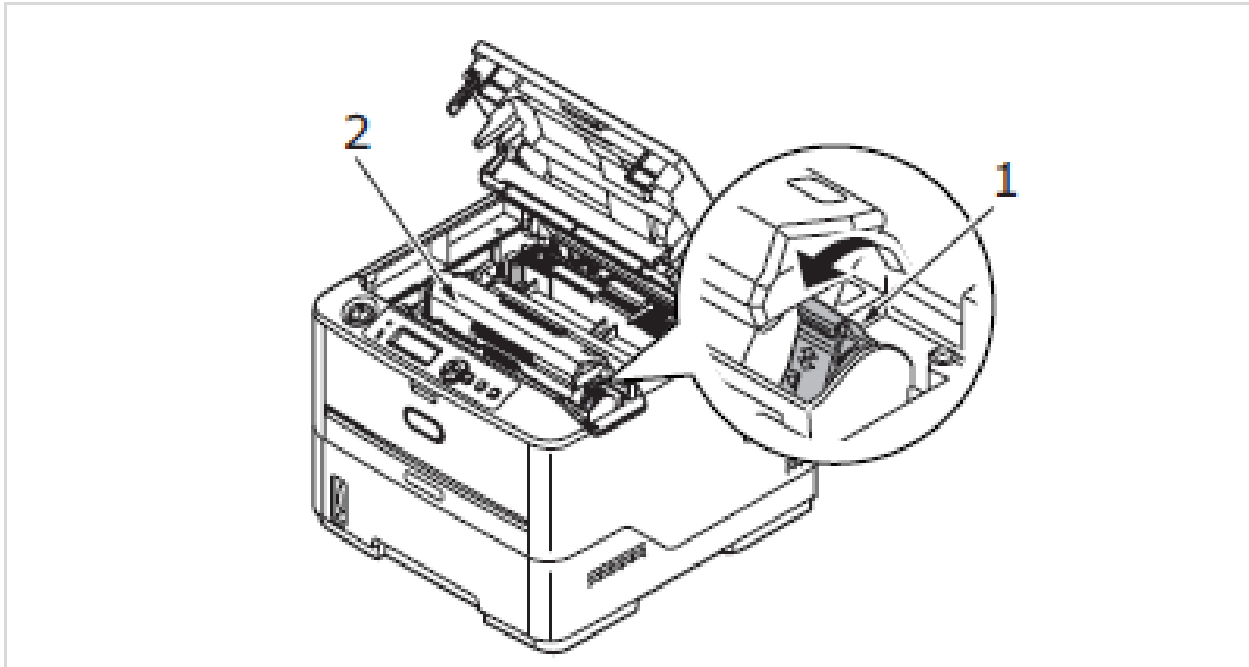

4. Clean the top of the ID unit with a clean, lint free cloth.

5. Put the cartridge down gently onto a piece of paper to prevent toner from marking your furniture.

6. Remove the new cartridge from its box but leave its wrapping material in place for the moment.

7. Gently shake the cartridge (3) from end to end several times to loosen and distribute the toner evenly inside the cartridge.
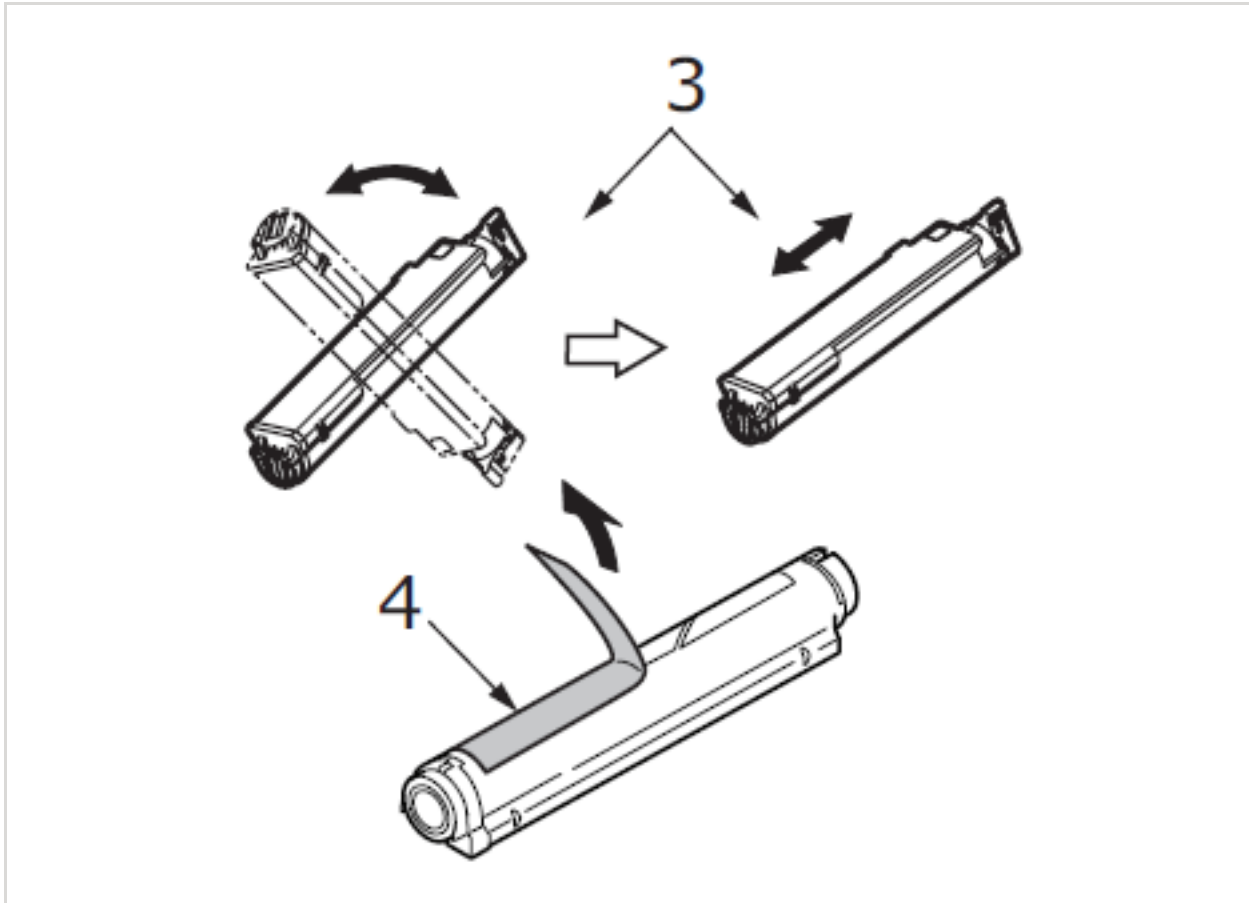

8. Remove the wrapping material and peel off the adhesive tape from the underside of the cartridge (4).

9. Holding the cartridge by its top center with the colored lever to the right (5), lower it into the printer over the image drum unit from which the old cartridge was removed.

10. Insert the left end of the cartridge into the image drum unit first. Align it under the tabs (6), and push it against the shiny pins in the drum unit. Then lower the right end of the cartridge down into the image drum unit (7).
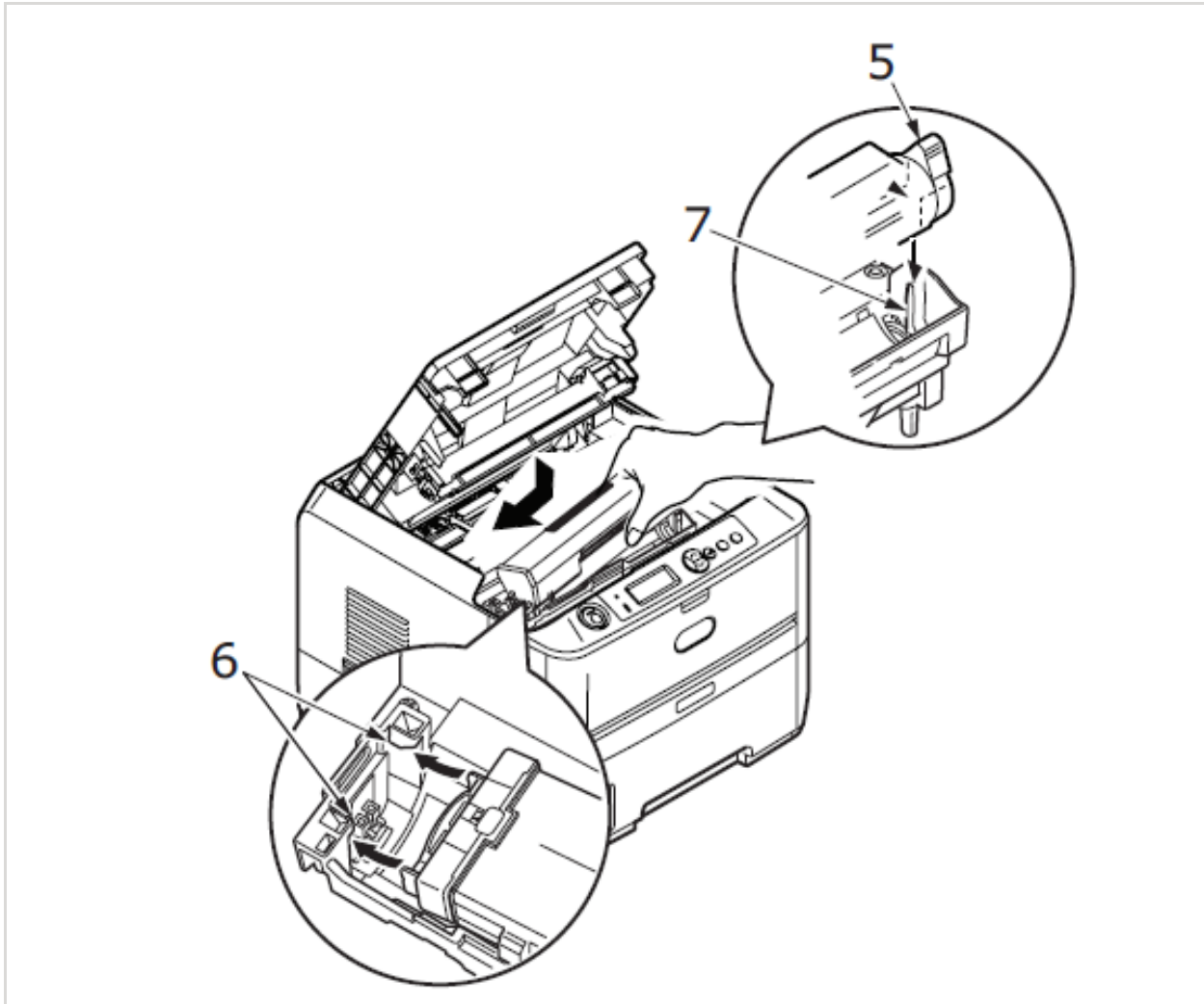
11. Pressing gently down on the cartridge to ensure that it is firmly seated, push the colored lever toward the rear of the printer (8). Push the lever all the way forward until the pointers on the drum and the toner are aligned (8a). This will lock the cartridge into place and release toner into the image drum unit.
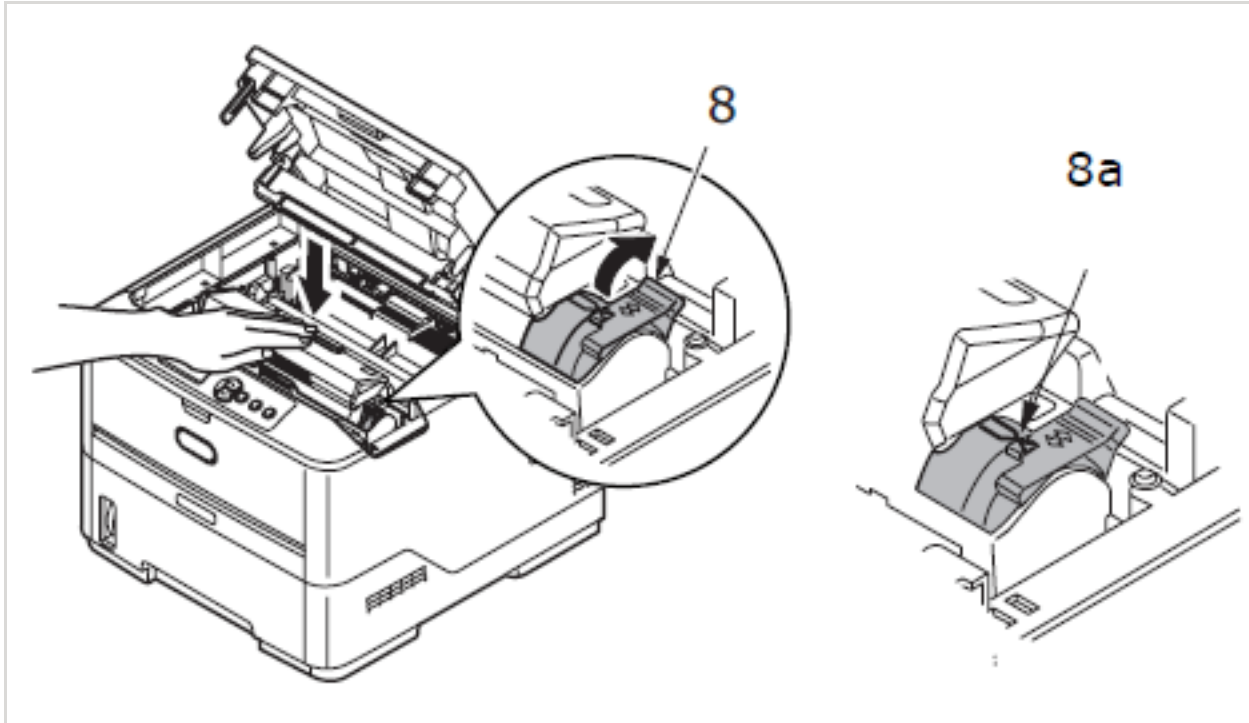
12. Gently wipe the LED array surface (9) with a soft tissue.
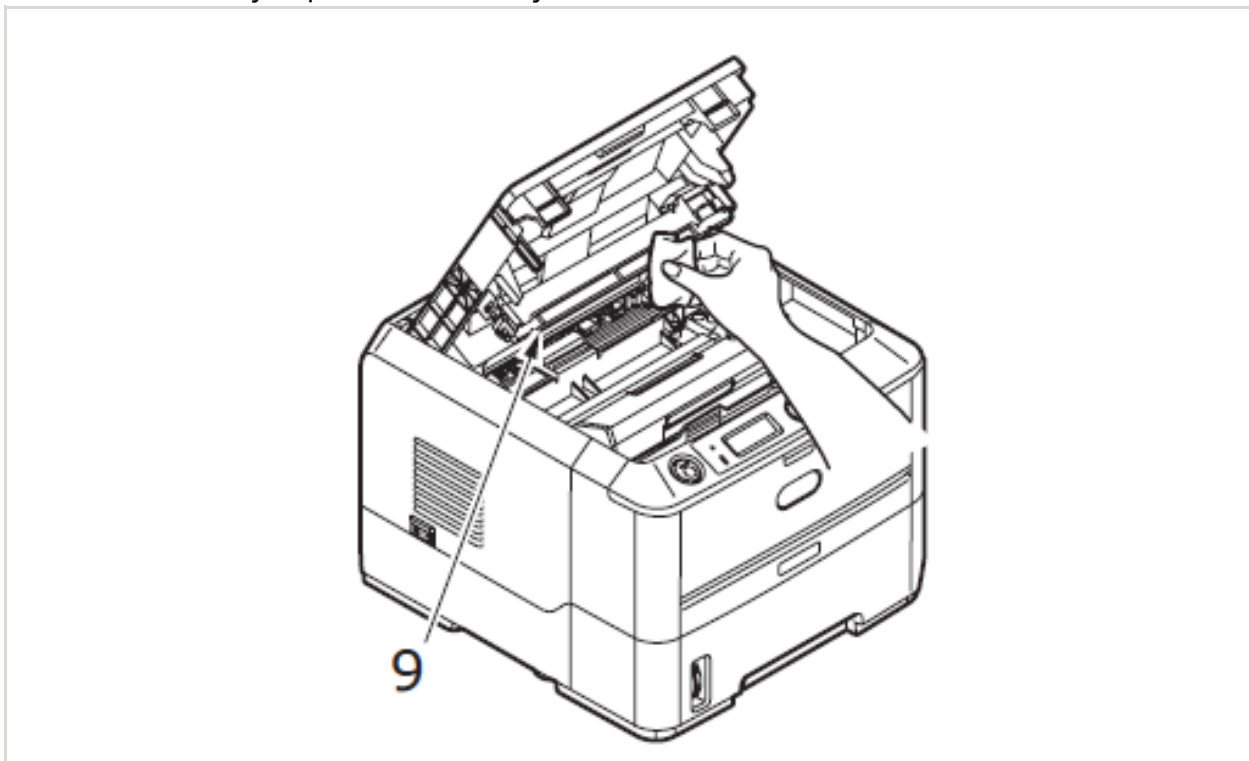
13. Close the top cover and press it down to latch it closed.

6.3.3.9 Install the UPS

Use an external Uninterruptible Power Supply (UPS) to protect against data loss. The UPS will provide continuous power to the machine, preventing it and any attached printers from being damaged in case of a power surge

Caution

Route the power cord for this product to protect it from being walked on or pinched. Power down the unit completely before connecting or disconnecting the power cord. Remove the power cord before moving the unit. Place the power cord near an easily accessible wall outlet.

Installation of the UPS involves connecting the bottom battery connector to the top battery connector.

1. Position the UPS so that the front panel hangs over the edge of the table

2. Press down on the front panel and slide it off.

3. Insert the bottom battery connector into the top battery connector. The picture below on the left shows the two connectors before they are connected; the picture below on the right shows the two connectors after they have been connected.

4. Replace the front panel.

5. Move the UPS into operating position.

6. Plug the UPS into a power outlet.

Connect the Central Count to the UPS

Plug one end of the scanner's power cord into the scanner, just below the power switch. Plug the other end of the power cord into one of the bottom receptacles on the UPS that provides battery backup. Connect the data communication cable to the UPS and one of the USB ports on the scanner. The data communication cable is used by the UPS to let the scanner know when the UPS is operating on battery power.

Turn On the UPS

Before turning on the UPS, make sure it is plugged into a power outlet. Then press the power switch. The green light visible at the top of this unit indicates that the UPS is powered on and that utility power is powering battery backup outlets.

Note

The first time the UPS is powered up, it will take eight hours for it to reach its full charge.

6.3.4 ExpressVote Preparation

ExpressVote maintenance should be performed only by an ES&S-certified technician.

6.3.4.1 Contact Image Sensor (CIS)

Tools

Key, isopropyl alcohol, lint free cloth

1. Unlock the transport access door.

2. Open the transport access door. The prop rod supports the door in the open position.

3. Carefully open the CIS (it will rotate toward you).

4. Clean the CIS with a fresh, unused cloth.

5. Close the CIS after inspection and cleaning.

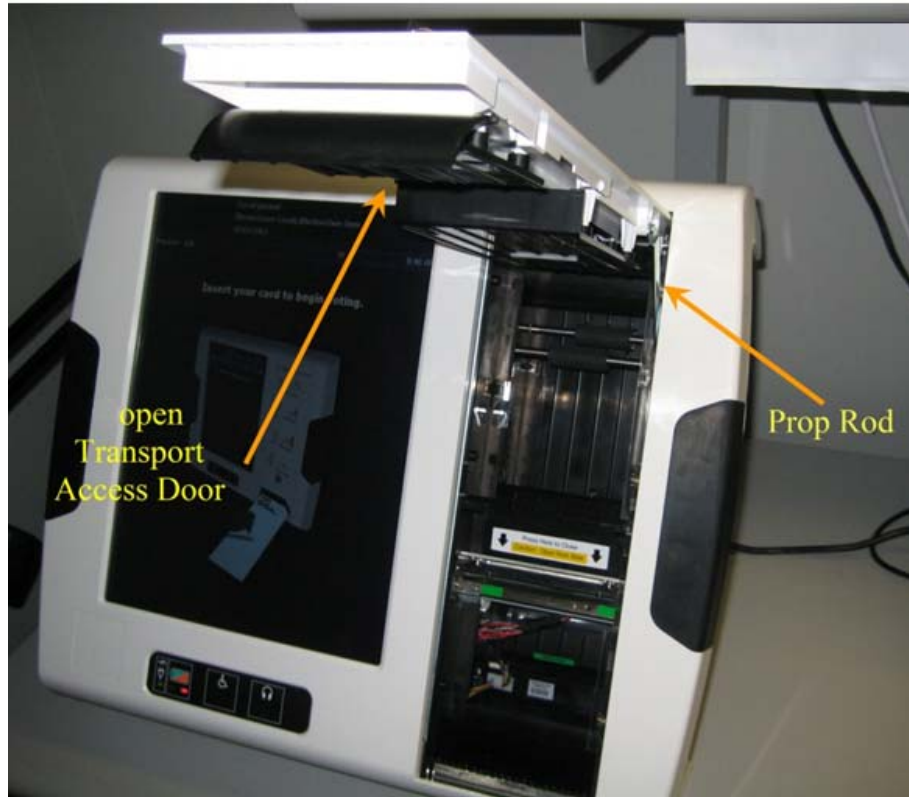### 6.3.4.2 Print Head

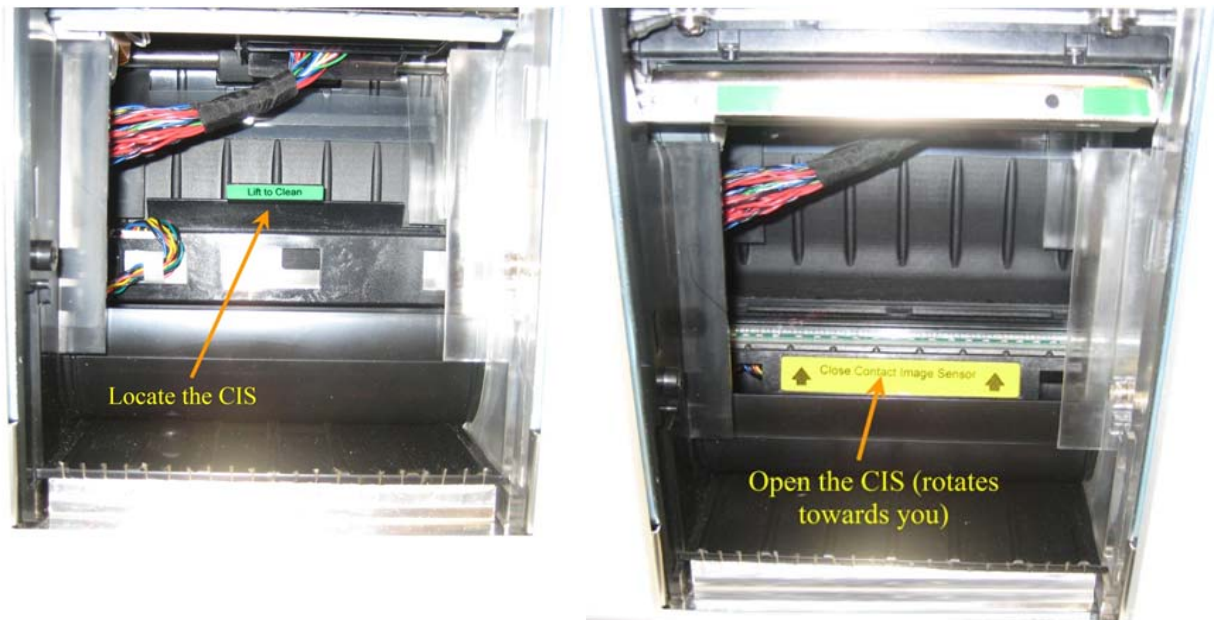| Tools	
	Key, isopropyl alcohol, lint-free cloth

1. Unlock the transport access door.

2. Open the transport access door. The prop rod supports the door in the open position.
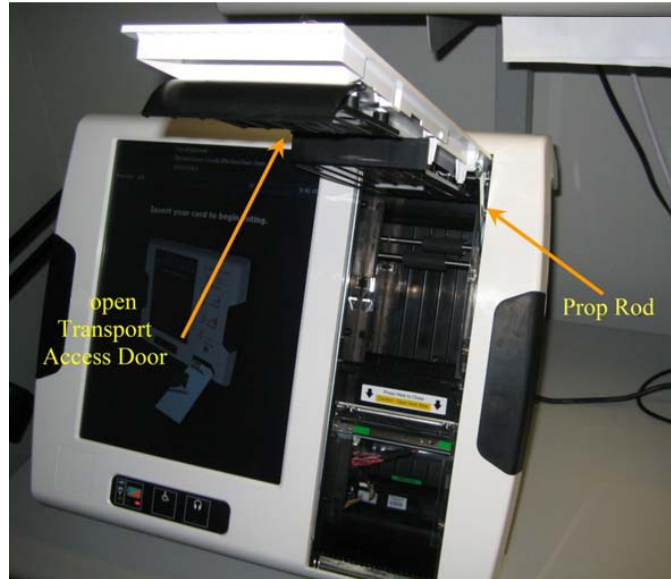
3. Locate the print head.

4. Open the transport side access door.
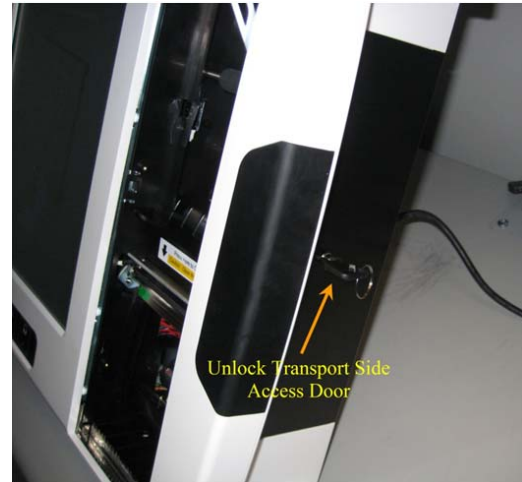
5. Locate and activate the platen release switch.

6. Raise the platen and clean the thermal print head with isopropyl alcohol and a lint-free cloth.

Allow the alcohol to dissipate for at least 5 minutes before closing the platen and printing.

Important

Do not apply alcohol to the platen roller. Wipe down the platen roller with a dry, lint-free cloth.

Platen roller   *Print head*

7. Close the platen head.

Caution

Place pressure on only the two green labels to avoid bending the platen.

6.3.4.3 Paper Path and Paper Sensors

Tools

Key, compressed air

To clean the paper path and sensors, take the following steps:

1. Open the front access door to expose the paper path.

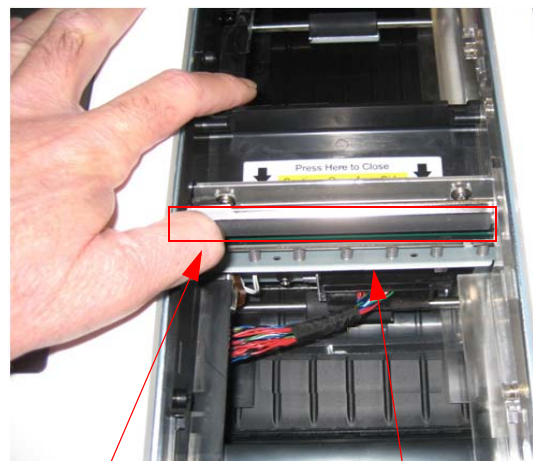2. Using compressed air and using short bursts, blow out the paper path to remove any paper dust or small fragments of ballots.

3. If there are larger pieces of the ballot left behind, gently remove them. Do not use any extraction tools as this may damage paper path sensors.

6.3.4.4 Transport Drive Rollers

Tools

Key, Phillips screwdriver, T10 security driver, lint-free cloth, alcohol

To clean the transport drive rollers, use isopropyl alcohol and a soft, lint-free cloth. Slightly dampen the cloth. Use the top roller to turn the other two drive rollers while wiping them with the cloth.

To clean the pinch rollers, remove the back cover and remove the two screws that hold each pinch roller to the paper path.

6.3.5 ExpressVote XL Preparation

ExpressVote maintenance should be performed only by an ES&S-certified technician.

6.3.5.1 Paper Path Module

The ExpressVote XL Paper Path Module (PPM) is a heavy-use component subject to friction and other normal operating wear. The preventative maintenance tasks described in the following sections help keep the PPM operating at maximum efficiency.

Accessing the PPM

The PPM maintenance tasks described in this manual require access to internal areas of the PPM. To access the required areas of the PPM, complete the following steps.

1. Power off the terminal and detach the AC power cord from the rolling cart.
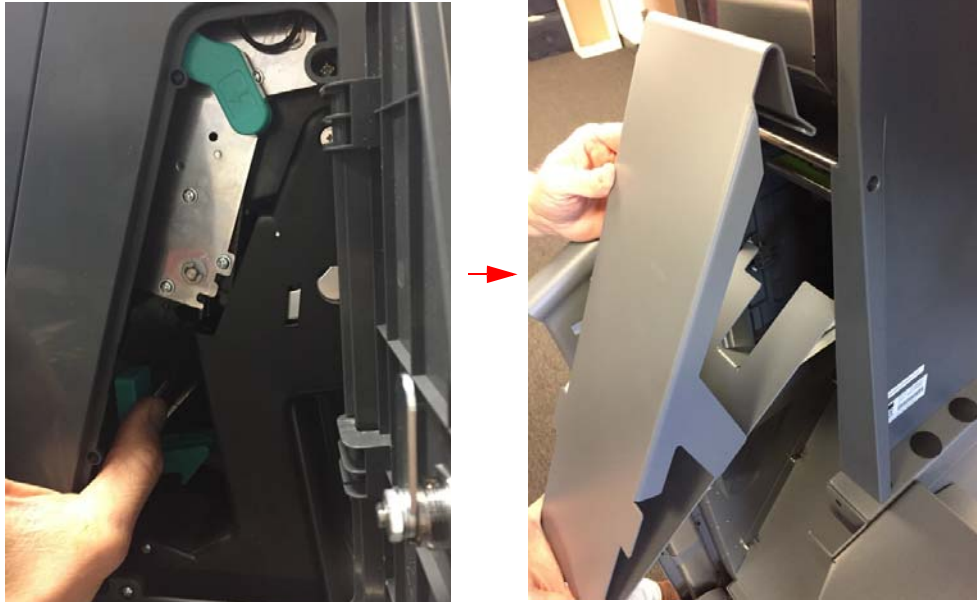
Electrical

For the safety of both operator and equipment, ES&S recommends completing this step before proceeding.

2. Use the supplied key to unlock and open the side access door of the PPM.

3. To remove the rear panel or, press the lower green release lever forward toward the front of the PPM, then lift the rear panel of its mounting hook in the rear of the PPM.

4. To open the front transport access panel, press the upper green release lever forward in the direction of the embossed arrow.

You can now access the paper transport and rear-eject areas of the PPM.

6.3.5.2 Cleaning the Contact Image Sensor and Print Head

The Paper Path Module (PPM) houses the Contact Image Sensor (CIS) and the thermal print head. Ensuring that the lenses of both components are clean helps the ExpressVote XL scan and print activation/vote summary cards with maximum efficiency.

To clean the CIS and the print head, complete the following steps.

1. To access the CIS/print head assembly, follow the steps under Accessing the PPM on the previous page.

2. To open the CIS/print head assembly, at the top right side of the transport carrier, press the green release lever down.
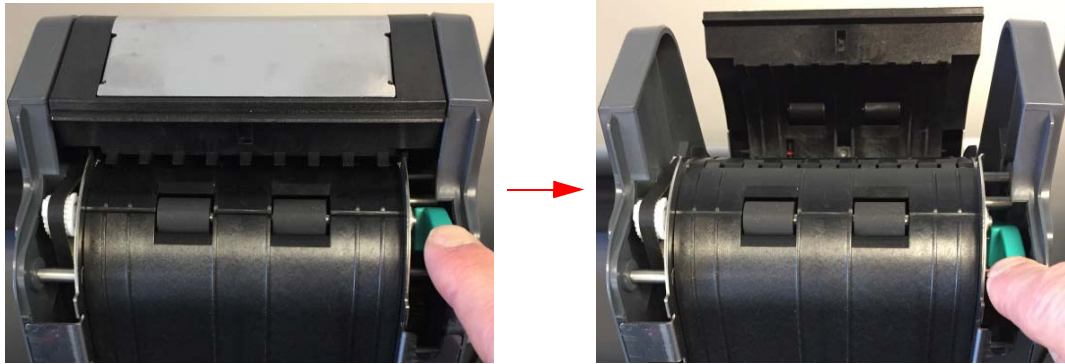
3. Using a lint-free cloth or swab lightly dampened with isopropyl alcohol, gently clean the lenses of both the CIS and the thermal print head.

Contact Image Sensor (CIS)

Print head

Caution

To prevent alcohol from dripping or running into unintended components of the paper path, do not saturate the cloth or swab.

Before proceeding to the next step, allow enough time for the alcohol to evaporate completely from the lenses of the CIS and print head.

4. Close the CIS/print head assembly. Press gently until the assembly clicks into place.

5. Close the transport access panel. Press gently until the panel clicks into place.

6. Close and lock the side access door.

6.3.5.3 Cleaning the Paper Path

To clean the paper path, complete the following steps.

1. To access the paper path, follow the steps in section <BlueLinks> Accessing the PPM.

2. Using compressed air and using short bursts, blow out the paper path to remove any paper dust or small fragments of debris.

3. If there are card fragments in the paper path that cannot be removed with compressed air, gently remove the debris manually.

Caution To avoid damaging the paper path sensors, do not use tools to extract paper fragments.

6.3.5.4 Cleaning the Transport Drive and Idle Rollers

To clean the transport drive and idle rollers, complete the following steps.

1. To access the paper path, follow the steps in section <BlueLinks> Accessing the PPM.

2. Using a lint-free cloth lightly dampened with isopropyl alcohol, gently clean the six (6) rubber transport rollers. Also, gently clean the idle rollers that meet the transport rollers in the paper path. These rollers are located on the top and bottom of the paper path window.

   Gently turn the rollers manually to clean the entire circumference.

Caution

To prevent alcohol from dripping or running into unintended components of the paper path, do not saturate the cloth or swab.

3. Allow enough time for the alcohol to evaporate completely from the transport and idle rollers, then close the paper path cover. Press gently until the cover clicks into place.

4. Close and lock the side access door.
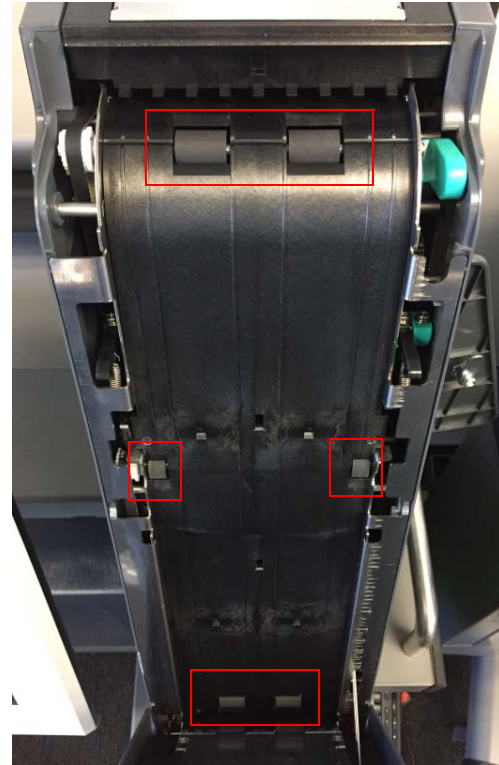
6.3.5.5 Cleaning the Touch Screen and Surrounding Bezel

Periodically cleaning the infrared touch screen and the surrounding bezel that covers emitter/detector. This will help to maintain a sanitary voting environment and to keep the terminal operating at maximum efficiency.

To clean the touch screen, spray the lint-free cloth with the mild screen cleansing solution and gently wipe the touch screen until it is clean. Use a dry section of the cloth to remove any excess cleaning solution from the screen.

Caution

Do not spray the screen cleansing solution directly on the screen. Dampen the lint-free cloth and wipe away fingerprints and dust.

6.3.5.6 Maintaining the Report Printer

You must periodically replace the thermal tape roll in the ExpressVote XL report printer. To replace the printer tape, complete the following steps.

1. Use the supplied key to unlock and open the access compartment.

2. To open the report printer, press the black release lever down.

| **Note** | The terminal chirps to indicate that the report printer door is open. If the printer door remains open for several minutes, the system may display an alert message indicating that a printer is not found; to dismiss this message, close the printer door. The system automatically reestablishes its connection to the report printer. |

3. Remove the old paper spindle.

4. Drop a new paper roll into the paper receptacle. Orient the new roll so that the free end of the paper tape comes up from the bottom of the roll and not down over the top of the roll.

5. Close the lid of the report printer so that the free end of the paper tape emerges from the front slot. Press gently until the lid clicks into place.

    The terminal stops chirping and automatically cuts the paper tape to a clean, straight edge.
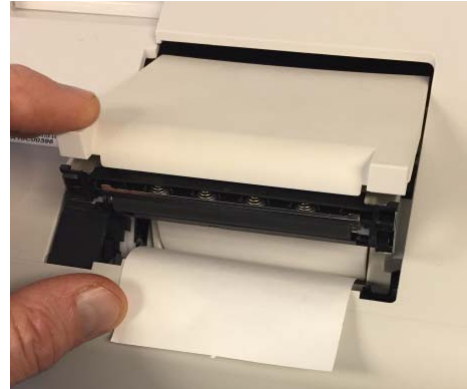
6. Remove the cut end of the new paper tape.

7. Close and lock the access compartment.

6.3.5.7 Checking Backup Battery Strength

Warehouse personnel can use the integrated battery meter on the top right-hand side of the ExpressVote XL rolling cart to check the voltage status of the backup battery when the cart is disconnected from AC power and the terminal is powered off.

To operate the battery meter, press the **ON** button. The meter bars illuminate green to indicate the backup battery strength as an approximate percentage of the total voltage capacity.

6.3.5.8 Corrective Maintenance

Replacing faulty or otherwise deficient equipment and components, along with upgrading system software and firmware, should be performed only by an ES&S Field Services technician. Contact ES&S for more information.

Chapter 7: Central Tabulation: Absentee and Mail Ballot Procedures

7.1 Ballot Handling and Folding

Many considerations go into properly folding ballots to be mailed to voters. The five main folding methods are depicted and discussed in *7.1.8 Folding Methods*, in this document. Refer to this section to ensure that your jurisdiction takes every measure to fold the ballots for optimum final ballot scanning.

Care in preparing folded ballots for high-speed scanning can greatly improve scanning productivity by reducing misfeeds, read errors, and jams in the transport or output hopper.

Ballot handling and preparation consists of the following steps:

1. Opening the envelopes

2. Removing the ballots from the envelope and unfold them

3. Inspecting the ballots

4. Back-bending the ballots

The following sections discuss each of these steps.

7.1.1 Opening Envelopes

Whether slicing envelopes open by hand or using an automatic letter-opening machine, care must be taken not to slice or otherwise damage the ballots.

Always slice the envelope **completely** so the ballot is not crumpled when it is removed from the envelope.

Open the ballots as early as jurisdictional rules permit to allow time to inspect and prepare the ballots.

7.1.2 Removal and Unfolding of Ballots

Take care to remove the ballots from the envelope without crumpling the ballot by catching it on an incompletely opened envelope. If an envelope is not completely open, then open it completely in order to remove the ballot without obstruction.

Jurisdictions that are new to this type of ballot prep for central count scanning, or wish to improve the performance of their scanning, should perform the back-bending procedure covered in Back-Bending Individual Ballots (next page) on each ballot as it is opened. As jurisdictions become proficient in preparing ballots in this way (as measured by the successful, jam-free scanning of ballots), they may find it faster to unfold the ballots into stacks and then back-bend the stacks.

7.1.3 Ballot Inspection

As ballots are opened and unfolded, they should be carefully inspected for the following issues:

7.1.3.1 Tears and slices

Whether damaged by the voter or letter opening process, **all** torn or sliced ballots should be repaired, remade, or hand-counted per your jurisdiction's rules and procedures. Scanning ballots with tears or slices can cause jams, further damaging the ballots and greatly decreasing scanning throughput.

Torn or sliced ballots that are not missing any of the paper can usually be taped, if allowed.

7.1.3.2 Damaged or missing timing or code channel marks

Such ballots should be repaired, remade, or hand-counted per your jurisdiction's rules and procedures.

7.1.3.3 Smudges, smears, stains or foreign material

Such damage can cause pick errors, double feeds, and jams, greatly decreasing scanning throughput.

Ballots that are damaged or soiled enough to risk scanning or feed problems should be repaired, remade, or hand-counted per your jurisdiction's rules and procedures.

7.1.4 Back-Bending Individual Ballots

Each fold on each ballot must be bent back in the opposite direction of the original fold to break the grain of the paper evenly in both directions. If done properly, the ballot will lie flat on a table and will not bend in either direction.

To quickly accomplish this, hold the ballot as shown on the following page, and bend it back with your thumbs and forefingers until the fold "breaks" across the entire fold.

This can also be accomplished by back-bending the ballot on the table top and gently running your fingers along the fold to break the fold.

Caution   Do not over-bend the ballot or crease it aggressively, as this will cause it to bend in the opposite direction or create an additional fold line that can lead to the "stair-step."
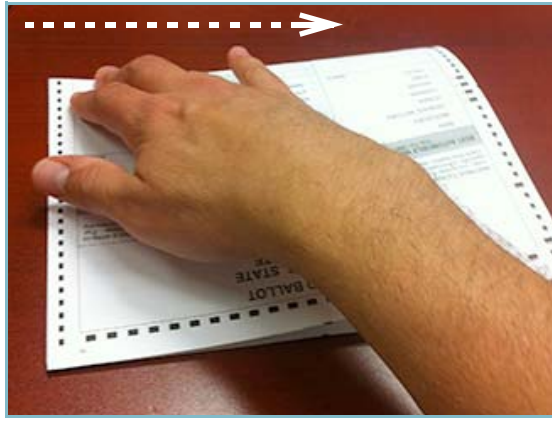
7.1.4.1 Crimps, stair-steps, or irregular folds

These include any large bump or feature that could cause a ballot to catch on another, resulting in a jam or misfeed. These ballots should be separated and repaired as follows.

The "stair-step" occurs when a second fold is made near the original fold. This can be caused by the voter improperly refolding the ballot(s) or by incorrect unfolding and back-bending (discussed later in this document).

Stair-steps can be resolved by running a flat, dull object like the top of a fingernail or a coin along the unwanted fold. Take care not to scuff or mark the ballot by using too much force.
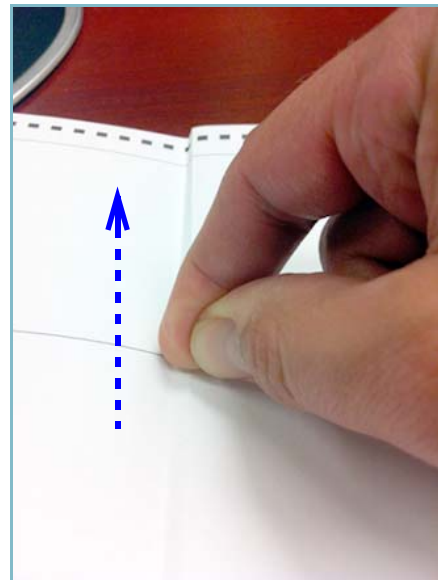
Additionally, the ballots can be carefully rolled lengthwise forward and then backward to reduce the step. This works best when a group of ballots is rolled together, as shown. When rolling the ballots, roll them equally in both directions to make sure ballots are flat and not curved.
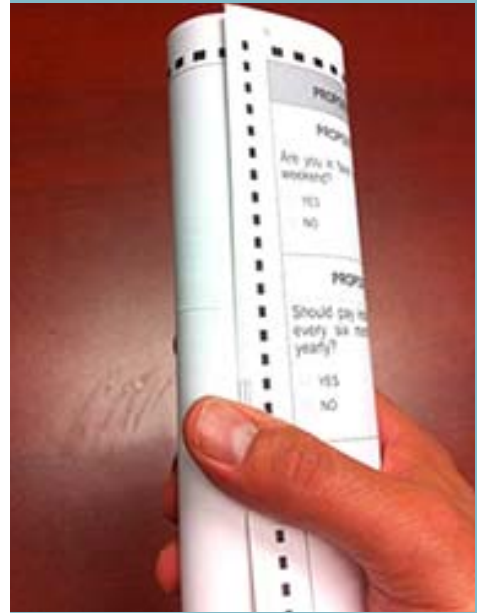
7.1.4.2 Crimped top or bottom edge

A crumpled or damaged top or bottom edge can cause a jam when the ballot enters or travels through a scanner. Such damage should be smoothed out by rolling or smoothing as much as possible.

When such ballots are scanned with a Central Count Tabulator, they should be run with the undamaged edge leading and the damaged edge trailing.

When such ballots are scanned with a DS200, they should be run with the damaged edge leading and the undamaged edge trailing.

If a ballot cannot be scanned without catching or jamming, it must be further smoothed, remade, or hand-counted per your jurisdiction's rules and procedures.

7.1.4.3 Orienting Ballots in Stacks

The Central Count can read ballots in any orientation, but it is generally recommended that ballots be laid in the same orientation as they are opened. A skilled Central Count operator will quickly determine the best orientation in which to process ballots, based on length, folds, and condition.

Orienting all of the ballots allows the operator to run them in the desired orientation and makes it easier to visually determine whether or not a stack of ballots has been sufficiently prepared. Ballot stacks that do not lie flat will require additional back-bending or rolling lengthwise until they are flat.

7.1.5 Back-Bending Stacks of Ballots

Ballots will generally be staged in stacks near the input hopper of the Central Count. As the ballots rest in stacks, a skilled operator can judge how well they have been prepared by how flat the ballots lie in the stack. If there is a significant bend in the ballots in the stack, a quick back-bend is suggested.

However, care must be taken when back-bending a stack of ballots. Ballot prep staff should begin with smaller stacks of 10 or fewer ballots. With experience, staff should gain the skill to back-bend larger stacks of 25 to 50 ballots.

The ballots should be carefully jogged manually on a table top or with a powered jogger.
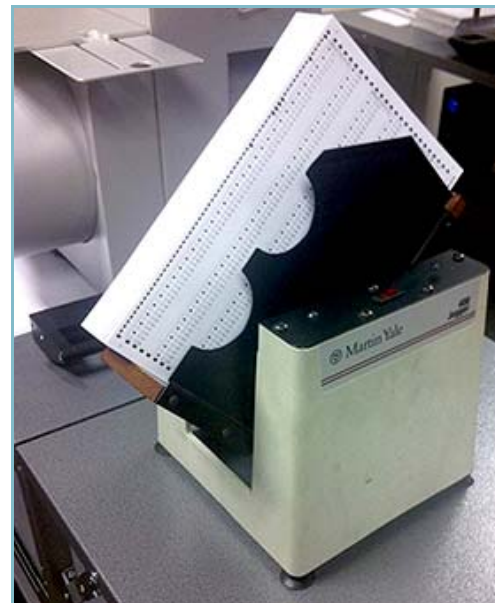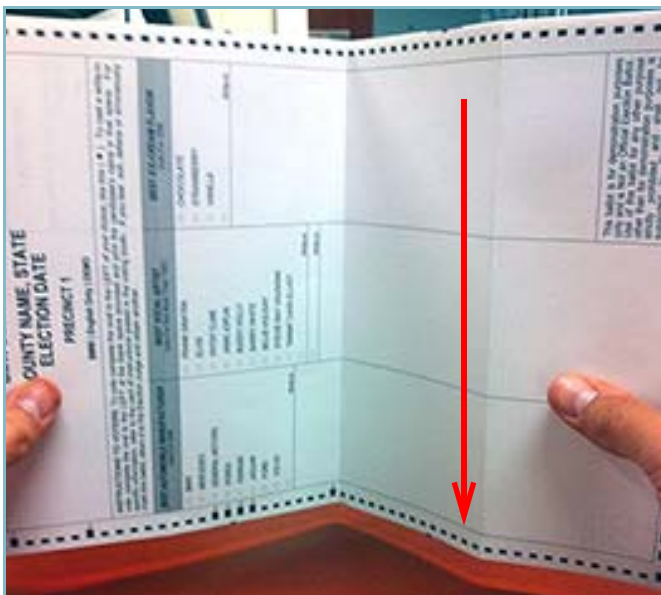
While back-bending the ballots, ensure that the folds line up (see "Correct" image below), and that the outer ballot does not wrap around the stack (see "Incorrect"). Bending the stack harshly with the ballots wrapping can introduce an additional fold and the unwanted "stair-step."

Correct

Incorrect

7.1.5.1 Inspecting stacks

The operator or person staging ballots for scanning should always inspect the stack of ballots for issues that were not caught by those opening and preparing ballots.

Lead & Trail Edge Inspection

Damaged or "crimped" ballots edges:

These are easily seen by inspecting the top and bottom edges of the stack.

Bent corners:

Bent corners, especially on the leading edge of the ballot as it travels through the scanner, can catch and cause jams. Straighten the edge and consider running this end on the trailing edge.

Side Edge Inspection

Either look at the ballots or flip through the stack as one would with copy paper being inserted into a copy machine. In this inspection, look for the issues previously described in Ballot Inspection. Remember to inspect or flip through both sides of the ballot stack.

Below are pictures of these issues, as seen in the stack.
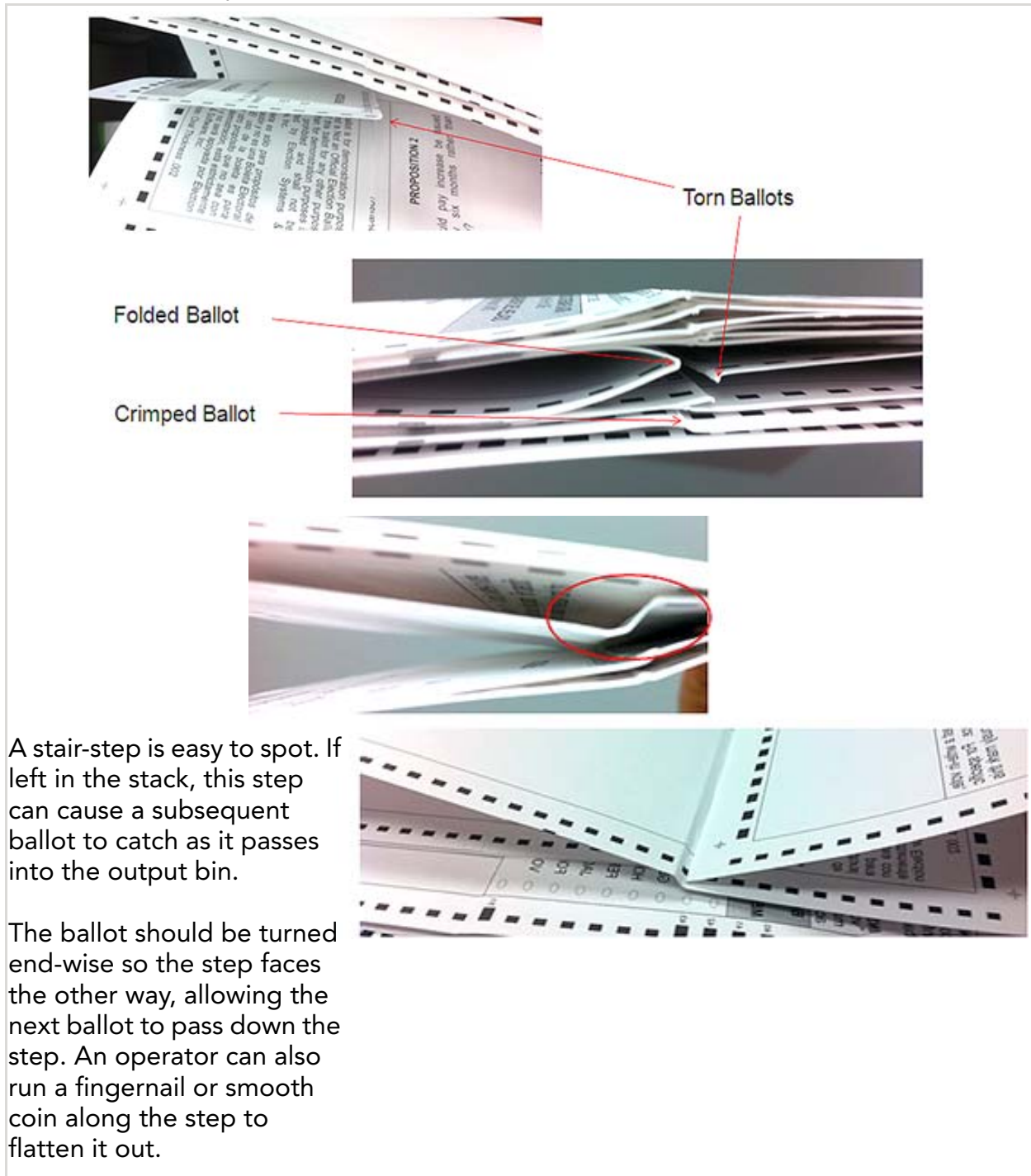
A stair-step is easy to spot. If left in the stack, this step can cause a subsequent ballot to catch as it passes into the output bin.

The ballot should be turned end-wise so the step faces the other way, allowing the next ballot to pass down the step. An operator can also run a fingernail or smooth coin along the step to flatten it out.

7.1.6 Avoiding Jams

Once ballots are properly unfolded and inspected, they should always be straightened and aligned using a ballot jogger so they can be read. Smaller stacks of ballots can be jogged by hand.

On the Central Count, begin with smaller stacks of about 50 ballots, then work up to 100-150 ballots. A skilled operator will find an optimum number of folded ballots that can be consistently run without jamming. This number will depend on factors such as the length of the ballot, the number of folds, the condition of the ballots, and the quality of the ballot preparation.

If jams become frequent, reduce the number of ballots in the stacks and carefully evaluate the ballot prep to eliminate the causes of the jams. Review the procedures and experiment with the proper amount of back-bending, rolling lengthwise, and number of ballots in a run.
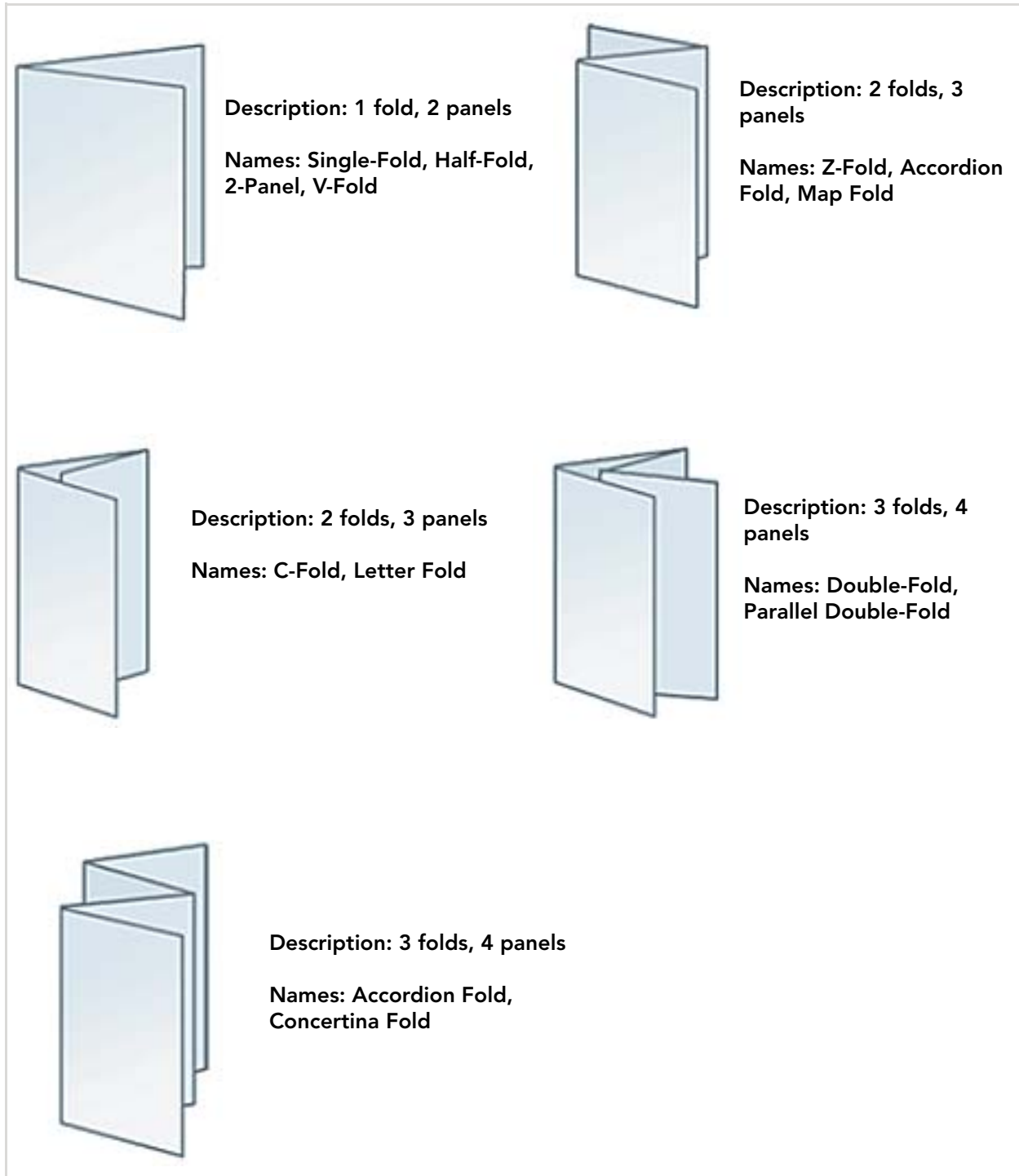
When jams occur, stop to identify and remove the offending ballot, to avoid repeated jams. If the ballot must be run, put in a run by itself, or in small batches of problem ballots.

7.1.7 Scanning Damaged Ballots

If a large number of ballots are crumpled or rippled from prior exposure to liquid, once they are dried and cleared of all foreign material, they can be run through the Central Count. They should be run in small batches. The pick delay can also be set to 1-2 seconds to run them more slowly, allowing time to remove a ballot from the output tray that would otherwise cause a jam with the next ballot.

7.1.8 Folding Methods

There are numerous types of folds that can be used for ballots that will be mailed to voters. These fold types, combined with the different lengths of ballots, can give jurisdictions a number of options. The most common ballot folds are below.

Description: 1 fold, 2 panels

Names: Single-Fold, Half-Fold, 2-Panel, V-Fold

Description: 2 folds, 3 panels

Names: Z-Fold, Accordion Fold, Map Fold

Description: 2 folds, 3 panels

Names: C-Fold, Letter Fold

Description: 3 folds, 4 panels

Names: Double-Fold, Parallel Double-Fold

Description: 3 folds, 4 panels

Names: Accordion Fold, Concertina Fold

The choice of a folding method is generally determined by cost and previous practice. Cost is often driven by the size of the envelope. A jurisdiction's equipment for handling a particular size of envelope can also be a factor.

Two rules can help when selecting folds for high-speed scanning.

Rule 1: Choose the least number of folds possible.

Most importantly: <u>Fewer folds</u> are best. A single fold is easier to handle than a double fold; a double fold is easier than 3 folds, and so on.

Rule 2: For multi-page elections, avoid double-fold and "C" folds.

It is important to avoid making additional folds or bends beyond those made in the initial fold process. Voters have to unfold the "by mail" ballots, mark their votes, and then refold them. When a voter refolds multiple ballots together, certain types of folds can create additional folds or creases, resulting in a "stair-step."

Generally, the ballots are folded and inserted individually into the envelope, and the folds are crisp and even.
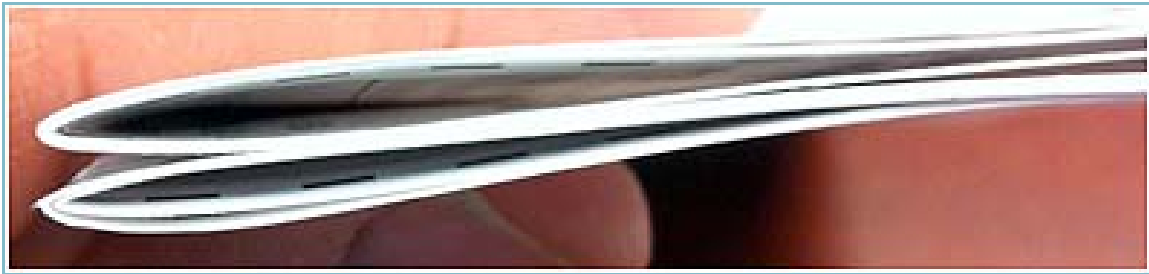
However, in the case of a double-fold, if the voter folds the ballots together, one of the folds can be rounded over the other ballot folds.

When this fold is opened, the result is a crimp or stair-step.

Alternately, ballots folded together in a Z or Map fold pattern have significantly fewer issues with rounded bends.

A single fold or any of the "Z" or accordion folds can greatly reduce the creation of this stair-step. Additionally, instructions on the ballots to refold and insert the ballots into the envelope one at a time would also reduce the frequency of ballots being folded over each other improperly.

Additional important points are as follows:

- Coordination is necessary between those doing the ballot layout and those doing the folder setup to ensure that folders never go through a timing track on the ballot and risk going through a voter response (oval) area.

- The roller pressure for the folder should be reduced to about 2–3 times the thickness of the ballot stock.

- Scoring the ballot is not recommended.

Consult ES&S Ballot Management Services for ballot stock, printing, and folding considerations.

7.2 Central Count Tabulator Operation

7.2.1 Load Election onto the Central Count

Before loading the election definition, you must clear and initialize the tabulator. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize Central Count Tabulator, page 84

Load Election onto Central Count Tabulator, page 102

7.2.2 Zero Report

Use the Zero Report to ensure all of your contests have zero votes before you begin scanning ballots. The report displays zeros for all contests, indicating that no ballots have been scanned. You cannot print this report after ballots have been scanned on the tabulator.

To preview or print the Zero Report:

From the Reports menu, in the Report Type field, press **Zero Report**.

Press **Preview** to the view the report on the touch screen, or press **Print** to print the report on the laser printer.

7.2.3 Bin Sorting

Programmers use Electionware to establish bin sorting settings as part of your election definition. The options on the Central Count's Bin Sorting menu enable you to override the election definition and establish different sort settings.

On the Configuration menu, select **Bin Sorting**.
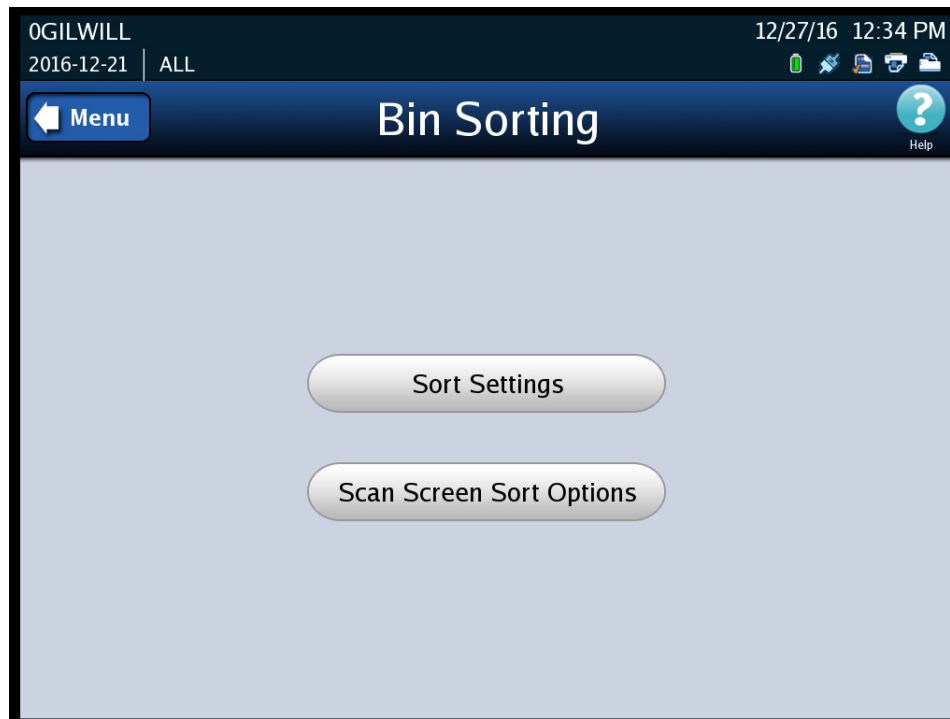
There are two options on the Bin Sorting screen:

- Use **Sort Settings** to specify which types of ballot conditions will be sorted to which output bins.

- Use **Scan Screen Sort Options** to display the SORT option on the Scan Ballots screen. This option enables you to temporarily override your bin sort settings so that only invalid ballots are outstacked.

Sort Settings

Use the Sort Settings option to specify to which output bins ballots will be diverted, based on selected ballot conditions. This option allows you to specify whether undervotes, overvotes, crossovers, blank ballots, and ballots with unclear marks are to be processed. If your ballots and election definition use the initials and/or review box options, you can specify how to process ballots with those boxes.

Table 7-1: Bin Sorting Options

Ballot Condition	Description
Write-In	This option sorts ballots with write-in votes. Also, if the Evaluate Unmarked Write-ins option is enabled in Electionware, the DS450 identifies and sorts ballots with write-in votes even if the target area next to the write-in line was not marked. Write-ins are typically sorted to the middle, processed, bin.
Overvote	This option sorts ballots having more than the allowed number of votes cast for one or more contests. How overvotes are sorted depends on your adjudication method; manual or electronic.
Undervote	This option sorts ballots that have one or more undervoted contests. This option does not sort blank ballots. Undervotes are typically sorted to the bottom, processed, bin.
Blank Ballots	This option sorts ballots that do not contain any votes, have been marked with a non-standard marking device for the DS450, or have been marked improperly (for example, the voter circled the candidate's name instead of filling in the appropriate oval).
Unclear Marks	This option sorts ballots with marks in ovals that the DS450 is unable to interpret. How unclear marks are sorted depends on your adjudication method; manual or electronic.
Cross Over	In an open primary, this option sorts ballots that contain votes in multiple parties.
Initial Box	This option sorts ballot that use Initials box(es) and requires that the box be initialed. If the Initials box is empty, the ballot is sorted accordingly.
Review Box	This option sorts ballots that use the Review box and requires the box to be blank. If Review box is marked, the ballot is sorted accordingly.
Invalid ID	Ballots that are not associated with the current election or ballot styles that are not associated with any of the election precincts are sorted to an unprocessed bin; typically the top bin but they can also be sent to the middle bin if the middle bin is configured as an unprocessed bin.
Unreadable	Ballots that cannot be read or interpreted (for example, if the voter makes marks on the code channel or the ballot is damaged) are always sorted to the top, unprocessed bin. This setting cannot be changed.

When the Central Count scans a ballot and processes it (diverts it into a bin configured as Processed), a cast vote record (CVR) is created for that ballot. When the batch is saved, the CVRs are marked to be included in results tabulation. Ballots not processed (diverted into a bin configured as Not Processed) are not marked for inclusion and are therefore not tabulated.

1. On the Configuration menu, touch **Bin Sorting** to display the Bin Sorting screen.

2. Touch **Sort Settings**.

   The Sort Settings view screen displays the current settings established by your election definition.

3. Touch **Edit** to change the settings for each bin.

4. When prompted, enter the Election Code, then touch **Accept**.

5. On the Sort Settings edit screen, select the bin into which you want each type of ballot to be sorted. Touch the top, middle, or bottom button for each type of ballot. You can select only one output bin destination for each type of ballot condition.

6. Touch **Save** to confirm the new settings and return to the Sort Setting view screen.

Note	The Cross Over option is available only in an open primary election. The Initials Box and Review Box options are available only if your ballot design and election definition include initials and/or review boxes.
Note	During logic and accuracy testing you may be required to disable bin sorting before scanning the test deck. Do not use the Sort Settings screen to turn off bin sorting. Instead, use the **SORT** option on the Scan Ballots screen to turn off sorting during testing and automatically restore your sort settings after testing.

Scan Screen Sort Options

If Scan Screen Sort Options is enabled, the **SORT** option is displayed on the Scan Ballots screen, as shown in the following example.

The **SORT** option is used to temporarily turn off all sorting to unprocessed bins. Your sort settings for processed bins are maintained. Touch the icon below the **SORT** heading to turn sorting on or off.

For example, during logic and accuracy testing, or when scanning a stack of ballots or cards you do not want to have sorted, touch the icon below the **SORT** heading to set the option to OFF.

After you save a scanned batch, the **SORT** option is automatically reset to ON.

When you scan runs of ballots with the **SORT** option set to OFF, only invalid or unreadable ballots are diverted to the top bin and not processed. All other ballots are processed and diverted to the bottom bin(s).

The **SORT** option does not appear on the Scan Ballots screen unless you enable it. Take the following steps to control whether the **SORT** option is available on the Scan Ballots screen.

1. On the Configuration menu, touch **Bin Sorting**.

2. On the Bin Sorting menu, touch **Scan Screen Sort Options**.

   The Scan Screen Sort Options settings screen appears.

3. Touch **Edit**.
   When prompted, enter the administration code, then touch **Accept**.

   The Scan Screen Sort Options selection screen appears.

4. Select **Enabled On Scan Screen** to display the Sort option on the Scan Ballots screen.
   Or, select **Disabled On Scan Screen** to remove the Sort option from the screen.

5. Touch **Save** to retain the new setting.

7.2.4 Scanning the Ballots

Warning

The ballot scanning process assumes that the scanner has been powered on, all pre-Election Day tasks have been completed, the election definition has been loaded, the user has the authority to scan ballots, and the scanner has been calibrated.

Note

Before you attempt to scan ballots make sure that the camera lid and rear panel are closed. The scanner does not allow functions that engage the motors to be performed when the camera lid or rear panel is open.

1. Touch **Scanning**.

2. Touch **Scan Ballots**. The *Scan Ballots* screen appears.
   In Mixed Precinct mode, the buttons at the bottom of the screen are dimmed. In By Style and Single Precinct modes, the Select Precinct button would be active.

3. Load the ballots into the input tray.

   a. Adjust the length of the input and output trays to accommodate the ballots.

   b. Slide the ballot guide out of the curved opening in the input tray, as shown in the picture on the right.

   c. Place the ballots in the input tray. The ballots can be in any orientation.

Note

ES&S recommends using a jogger to separate the ballots and to align the ballot stack before you place the ballots in the input hopper. If the ballot stack is slightly curved, place the stack in the input hopper with the convex side up. If the scanner cannot read a ballot because of its condition or because of the way in which it is fed into the scanner, the scanner will not process the ballot and will out stack the ballot to the Not Processed (top) bin.

   d. Slide the ballot guide back toward the opening until it rests gently against the ballot stack.

4. Once the ballots have been loaded, the Start button on the *Scan Ballots* screen turns green. Touch **Start** to begin scanning.

Note

If you are required to select a precinct and have not yet done so, the **Start** button will be dimmed. The only button you will be able to use is the **Select Precinct** button. Press **Select Precinct** to search for and select a precinct. After you have selected a precinct, the Start button will turn green.

While the ballots are being scanned, only the **Stop** button is available on this screen. If you need to stop the machine before the batch is finished, touch **Stop** to stop scanning. The number of ballots that have been scanned will appear in the Current column.

After the ballots have been scanned, only the **Save** button is active. The Current column on the screen indicates the number of ballots in each bin, as well as the total number of ballots scanned.

At this point, you can do any of the following:

- Generate Not Processed reports for any bins containing out-stacked ballots that were not processed, and delete not-processed counts from the batch.

Note

If ballots have been out-stacked to the top (not processed) bin, you have the option of generating the Not Processed Ballots report. You can also remove the ballots from the bin and reset the top bin quantity to zero, before you save the batch. The removed ballots can later be reviewed or re-scanned.

- Save the current batch.

- Delete the current batch.

- Scan additional ballots into the same batch before saving. Load more ballots into the input tray. Press **Start** to scan the additional ballots. When the ballots have been scanned, the numbers in the Current column will be updated.

Warning

If any of the output hoppers are full or nearly full and you wish to scan more ballots into the batch, make sure you keep any ballots you remove from the output bins segregated from other batches. Ballots removed but not yet saved as part of a batch must all be segregated by the bin from which the ballots were removed.

7.2.4.1 Out-Stacked Ballots (Not Processed)

The Current column on the scan ballots screen shows ballots out-stacked to the top (not processed) bin.

Current	
Top Bin	7
Middle Bin	65
Bottom Bin	85
❌ Total	157

Note

The red "X" at the bottom of the column is used to delete the entire batch.

Press the button to the left of the top red "X" to generate and display the Not Processed Ballots report.

To either review or re-scan the ballots out-stacked to the top bin, remove them and reset the count for the top bin to zero. To reset the count for the top bin, press the top red "X". If you select **Continue**, the Top Bin count is zeroed out.

Note

Ballots outstacked for "Image Unreadable" or "Ballot Long" conditions and that fail to be read after a second scan should be reviewed and processed using the adjudication procedures established by your jurisdiction.

7.2.4.2 Save the Current Batch

1. On the *Scan Ballots* screen, touch **Save**.

2. When you are prompted to confirm, touch **Save**.

3. After the data has been saved, touch **Done** or **Scan**. If you press **Done**, the Scanning menu is displayed. If you press **Scan**, the *Scan Ballots* screen is displayed, allowing you to scan another batch of ballots.

Note

If you press **Scan**, when the *Scan Ballots* screen opens, the quantities in the Current column will be all zeros, and the quantities in the Saved column will have been updated to include the quantities in the saved batch.

7.2.5 Exporting Data

When data is exported from the Central Count tabulator, all files are digitally signed and, aside from the Audit Log, all files are also encrypted. The Audit Log is not encrypted to enable you to read it directly from your PC.

Data can be exported to a properly formatted (FAT32) blank ES&S flash drive. Or, if the Central Count is networked to a local server, data can be exported directly to the server.

Additionally, when connected to a network server, the Central Count can be set to automatically export files as each batch is saved.

The Results menu provides options for exporting or backing up your election results data. A summary of each option follows, with additional detail in the following sections.

Export Files – Use this option to export the cast vote record (CVR) for new or all batches scanned and saved on the Central Count, as well as all saved ballot images. This data can be imported into Electionware.

Note

The saved CVRs for ballots that are sorted to the Processed bin(s) are marked for inclusion in the collection process. The saved CVRs for ballots that are diverted to the Not Processed bin(s) are marked for exclusion from the collection process.

Note

The election definition determines whether ballot images are captured and exported to the flash drive. This option is controlled in the Electionware Configure Module.

Backup – Use this option to create a backup of the election results, CVRs, and ballot images on a flash drive. The Backup Collect function will convert this backup data into results media that can be read into Electionware.

Export Audit Log – Use this option to export only the audit log to a flash drive.

7.2.5.1 Export Results

Touch **Election** to display the Election menu.

From the Election menu, touch **Results**.

Export Files

Use the **Export Files** function to export files to Electionware. You will have the option to:

- Export files for new batches or batches that have changed (saved or deleted) since the last export. Batches unchanged since the previous export will not be included in the current export.

- Export files for all batches.

This function exports the results collection data, election definition, packaged ballot data (including ballot images and CVRs) of all scanned ballots that were processed, and audit log to the selected location.

Important

When Export on Save is used, the Audit Log is not included with the files exported. The Audit Log can be exported separately after all batches are scanned and exported.

Exporting files for new batches vs. exporting all files

When ballots are adjudicated in Electionware, it is recommended to use the **Export files for new batches only** option to expedite adjudication.

Should an Electionware database error or other problem occur, you can clear the database and then, from the Central Count, **Export files for all ballots** to restore the files in Electionware. However, any adjudication completed up to that point will be lost and ballots will need to be re-adjudicated. You can resume exporting only new batches after the next new batch of ballots is scanned.

If adjudication is handled manually, files can be exported after all ballots are scanned using the **Export files for all ballots** option.

1. From the Results menu, touch **Export Files.**

2. If you are exporting to a flash drive, insert a properly formatted (FAT32) blank ES&S flash drive into one of the USB ports, if you have not already done so.

3. If the Central Count is networked, the Export Files will offer the option to export to either a flash drive or to a network server.

    You also will have the option to export files for new batches scanned since the last export or to export files for all batches scanned.

    a. Select a location for the exported files.

    • **ES&S Media Device**

    • **Network Server Folder**

    b. Select which files to export.

    • **Export files for new batches only**

    • **Export files for all batches**

    c. Touch **Export**.

4. If you chose to export new files, you will be prompted to enter the election code. If you selected all files, you will be prompted to enter the override code.

5. When the Export Files confirmation screen appears, touch **Confirm**.

    If you are exporting to a flash drive, it must be a properly formatted blank ES&S (FAT 32) device.

    If you are exporting to a network, the files are exported to the CLCTDATA folder on your network server.

    The Central Count exports the results collection data, election definition, gathered ballot data (including ballot images and cast vote records) of any scanned ballots that were processed, and the audit log to the selected location. While this is occurring, a pop-up screen indicates the batch data is being collected and exported.

6. The Export Files screen indicates when the data has been successfully exported. If you exported to a flash drive, it is now safe to remove the device. Touch **Done** to return to the Results screen.

7.2.6 Backup

The Backup option enables you to do the following:

- **Export** the CVRs and specified image files to a blank flash drive

  Use the Backup Export function to create periodic backup copies of the election data from all ballots processed up to that point. Keep ballots physically separated so you know which ballots belong to which backup flash drive.

- **Collect** results from a flash drive containing an exported copy of the CVRs and convert those to a format that can be used to read election results and data into Electionware.

  The Backup Collect function creates the same files as are created in the Export Files function, but uses a different process and may require more time to perform than the Export Files function, especially if there is a large amount of data on the Central Count.

  Use this function if a hardware or system problem prevents further scanning of ballots or if you discover an error in your procedures.

7.2.7 Results Report

The Results Report contains detailed election results and is available in multiple report levels.

If the election uses Reporting Groups to categorize different ballot sets, such as Absentee or Overseas, the Results Report displays the number of ballots cast for each of those Reporting Groups. If a Reporting Group is assigned to a type of ballot that is not scanned on the Central Count, the report displays zero ballots cast for that Reporting Group.

When you select **Results Report** on the Reports menu, the screen allows you to specify the reporting level, the detail level, and whether to report results for a selected precinct or for all precincts.

Select from:

- **Election Detail** - The report displays detailed contest totals for the whole election and includes overvote and undervote information.

- **Election Public** - The report displays contest totals for the whole election. Overvotes and undervotes are not included.

- **Precinct by Precinct Detail** - The report displays detailed contest totals for the selected precinct and includes overvotes and undervotes.

- **Precinct by Precinct Public** - The report displays contest totals for the selected precinct. Overvotes and undervotes are not included.

If you select the Precinct by Precinct Detail or Precinct by Precinct Public report level, you must also specify the precinct(s) to include.

- Touch **Select Precinct** to create the report for one selected precinct.

- Touch **Select All Precincts** to create the report for all precincts. You can print the report but not preview it on the screen.

7.2.8 Clear Election Results

Following the election, you can clear all election results from the Central Count or you can clear results from a single precinct at a time.

Touch **Election** to display the Election menu.

From the Election menu, touch **Results**.

Clear All Results

1. On the Results menu, touch **Clear All Results**.

2. When prompted, enter the Override Code and then touch **Accept**.

   The Clear All Results confirmation screen appears.

3. Touch **Confirm** to clear all election results.

4. When the results have been cleared successfully, touch **OK** to close the pop-up message.

   All counts displayed on the Scan Ballot screen, including the Last Export Total, are now zeroed out.

Clear a Precinct's Results

1. On the Results menu, touch **Clear A Precinct**.

2. When prompted, enter the override code, then touch **Accept**. The Select Precinct screen is displayed.

3. From the sequence of Select Precinct screens, search for and select the precinct with election results to be cleared.

4. When the Clear Precinct Results screen appears, touch **Clear Results** to clear the election results for the selected precinct.

   A pop-up message indicates the precinct's results are being cleared.

5. The Clear Precinct Results screen indicates when the results have been successfully cleared. Touch **Done** to close the screen.

   In the Saved column on the Scan Ballots screen, any processed ballot counts specifically for the cleared precincts are subtracted from their respective bin counts and added to the not processed count.

7.2.9 Shut Down Central Count Tabulator

After the post-election day maintenance has been completed, shut down and power off the Central Count, and then prepare the machine for physical storage.

1. Press **Exit** in the lower left-hand corner of the screen to display the Exit screen.

2. From the Exit screen, press **Shutdown Scanner** to access the Shutdown Scanner screen.

3. On the Shutdown Scanner screen, press **Shutdown** to shut down the scanner.

4. A message will confirm when it is safe to turn off the machine. Flip the power switch to the off position. The power switch is located on the left side of the machine.

5. After you have shut down and powered off the scanner, press the power switch on the UPS to turn it off.

Shut down – To shut down the tabulator, initiate the Shutdown process first and only turn the power switch off after the screen displays a message informing you it is safe to do so. The power switch is in the compartment on the left side of the machine and may be locked and sealed. Shutting down the machine without going through the Shutdown process can put your election data at risk.

Shut down and restart – Under certain circumstances, such as testing, you may want to shut the tabulator down and then restart it. After shutting down the unit, wait 30 seconds before restarting the machine.

Forced shut down – Shutting off the power switch without going through the on-screen shutdown procedure will cause the unit to perform a full data integrity check upon restarting, which can take several minutes.

Chapter 8: Early Voting Procedures

8.1 Ballot Preparation

Many considerations go into properly folding ballots to be mailed to voters. Complete information about ballot handling and folding is provided in *7.1 Ballot Handling and Folding*.

8.2 DS200: Early Voting

8.2.1 Load Election onto the DS200

Before loading the election definition, you must clear and initialize the tabulator. The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Clear and Initialize DS200 Tabulator, page 83

Load Election onto DS200 Tabulator, page 100

8.2.1.1 Check the Election Definition for Accuracy

The DS200 automatically generates an Initial State report when you start the scanner. Check the report for the following information:

- **System Values:** Make sure the date and the time appear correctly on the report. If the information is not correct, change date and time from the Systems Setting screen.

- **Election Information:** Make sure that the jurisdiction name, polling place, and the number of precincts listed on the report are correct.

8.2.2 Zero Report

After you power up the DS200, press **Open Polls**.

Depending on options set for your election definition, the DS200 prints a Status Report and/or a Zero Certification Report on activation.

8.2.3 Scan Ballots

The DS200 can scan ballots inserted in any direction or orientation. The DS200 emits two quick beeps when a ballot is accepted. Depending on the options set for your election definition, the DS200 will use one of the following methods for accepting or rejecting blank ballots, overvotes, and crossover votes:

- **Unconditional acceptance:** The scanner accepts and tabulates results for all ballots. Any contests that are blank, overvoted or cross voted will be logged as such and the remaining contests will be tabulated appropriately.

- **Unconditional rejection:** The DS200 automatically rejects crossover, overvoted or blank ballots. Voters must review and correct ballot selections before the scanner will accept the ballot.

- **Query the voter for correction:** The DS200 returns a questioned ballot to the voter and displays a screen message that describes the problem and prompts the voter to either review and edit the ballot or cast the ballot as it is. The voter presses **Correct Your Ballot** to correct the ballot or presses **Cast Your Ballot with Errors** to cast the ballot without editing selections. Once **Cast Your Ballot with Errors** is pressed, a thank you for voting message appears.

Poll workers should closely monitor system messages during voting.

8.2.4 Close Polls

Close your polling place for voting at the assigned time and then, use the DS200 **Close Polls** button to prepare scanner results for processing. You cannot print reports or process vote totals from the scanner's USB flash drive until you properly close the polls.

You can print election, event, and audit log reports after you close the scanner for voting.

1. Check the ballot auxiliary bin for uncounted ballots.

Note

Study your jurisdiction's procedures for handling uncounted ballots before Election Day.

2. Unlock the DS200 access door.

3. Press and hold down the **CLOSE POLLS** button, located above the power button, for about four seconds and then release to officially close the polls. Depending on your election configuration, the scanner may automatically print one or more of the following reports: Status report, Race Results report, Certification report and/or Audit Log report. Press **CANCEL** to stop printing reports at any time.

4. Press **Shutdown** to turn off the DS200.

5. Remove the USB flash drive from the DS200.

6. Deliver the USB flash drive and any printed reports to election headquarters.

8.2.5 Results Report

The DS200 generates a variety of results reports after the polls close. Depending on the options configured for your election definition, the scanner may automatically print reports when you close the polls or you can manually select reports from the POLLS CLOSED screen.

1. Close the polls to access the POLLS CLOSED screen and press **RESULTS REPORT** to reprint any automatic reports generated when the polls are closed. The types of reports generated depend on your election definition settings.

2. To print additional reports, return to the **POLLS CLOSED** screen and select from one of the following report options:

   - Precinct Report Media

   - Precinct Report Summary

   - Audit Log Report

   - Poll Report Media

   - Poll Report Summary

8.2.5.1 Transfer Results

If your jurisdiction uses Election Reporting Manager to generate election reports, transfer election results from your precinct counters to the PC running the reporting software.

1. Unlock the access door.

2. Remove the USB flash drive from the scanner.

3. Deliver the USB flash drive to election headquarters

Note

Deliver all write-in ballots to your election administrator as soon as possible after the polls close. Separate all of the write-in ballots from regular ballots.

8.3 ExpressVote and ExpressVote XL: Early Voting

For early voting, the ExpressVote and ExpressVote XL can be configured just as they would be for voting on Election Day.

You can create an All Precincts election definition in Electionware for use in early voting, and you can use the daily version of the Ballot Accounting report to manage your early voting.

Before loading the election definition, you must clear and initialize the unit(s). The clear and initialize process clears all data from the machine and loads the necessary encryption keys to load and run the election.

Refer to the following sections:

Instructions for opening the polls, voting, and closing the polls are all provided in (next page).

Chapter 9: Election Day Procedures

9.1 Precinct Supplies, Equipment Delivery, and Inspection

A complete listing of precinct supplies can be found in
6.3.1 Recommended Supplies.

9.1.1 Equipment Delivery

1. Perform a pre-election procedure to prepare the tabulators prior to shipment.

2. Complete the final inspection sheet (provided by the jurisdiction).

3. Log the equipment serial number and operating system version.

4. Place keys in an envelope with the final inspection sheet.

5. Remove the election testing media, then insert and secure the official election media devices. Verify that the media is coded for the correct location.

6. Check the printer paper and replace it if necessary.

7. Close the ES&S election equipment, securing the envelope containing final inspection sheet and keys.

8. Secure the equipment for transport to the polling places. Precinct tabulators must be mounted on their ballot bins.

9.1.2 Inspection

Instruct the appropriate precinct worker(s) to verify the delivery and condition of supplies to the polling places, prior to Election Day, as follows:

- Check all stacks of ballots to ensure that ballot style, serial numbers, and precinct numbers (if used) are printed correctly.

- Ballots shall be in the quantity and manner required by Elections Code, and demonstrator ballots marked for demonstration use only will also be included.

- In elections that contain partisan offices, ballots may, as directed by the Secretary of State, be appropriately tinted to reflect which partisan office appears on a specific ballot.

- Demonstration placards, signs, and "vote here" indicators shall be appropriately positioned.

- Voting system precinct supplies shall include ballot privacy sleeves, ballot marking devices, two sample ballots of each ballot style in each language required to be voted on in the precinct, and security seals.

    - All voters voting on paper ballots in a polling place must be provided a privacy sleeve for the ballot and instructed on its use, in accordance with CA Elections Code.

- A Certificate of Packaging and Sealing, in duplicate, together with a self-addressed stamped business reply envelope, addressed to the responsible elections official shall be delivered to the polling place.

- The elections official shall verify that one sealed precinct scanner nested in its ballot box has been delivered to the polling place. If multiple precinct processing will occur at the polling place, the device shall be located so it is equally accessible to the voters and precinct officers of each precinct. Keys to the unit and the ballot box will be included in the precinct supply kits and marked as such.

- Anti-static envelopes or appropriate containers and seals to facilitate safe and secure transportation of memory cards and election results tapes shall be supplied.

If multiple precinct processing within a single polling place is to be implemented, the functions hereinafter described shall be performed by the board workers of each precinct acting jointly insofar as is practical. Where forms are to be completed, the elections official shall provide them in such a format and so written as to facilitate notations by each precinct staff. Surrendered and delivered vote by mail ballots, spoiled ballots and provisional ballots shall be maintained separately by precinct.

9.2 Polling Place Procedures

A warning must be posted in each voting booth stating that, pursuant to CA Elections Code, tampering with voting equipment or altering vote results constitutes a felony, punishable by imprisonment.

Hourly, inspect the voting booths to ensure that there are no electioneering materials present, and that the booth/voting machine is otherwise suitable for voting.

Correct any defacement of the booth/voting machine according to jurisdictional practices and in conformance with California Election code.

Set up polling place voting devices with enough room for a voter in a wheelchair to approach the tabulator from the front as well as along the left and right sides of the voting device.

Important

Arrange voting booths with the following considerations: traffic flow, voter privacy, safety and accessibility.

9.3 Opening the Polls

Before the polls are open, the precinct workers will perform the following tasks.

1. Complete Oath of Office and Declaration of Intention forms pursuant to CA Elections Code.

2. Assemble voting booths and in each booth display a copy of the required materials.

3. Ensure that a pad of demonstration ballots, markers and suitable demonstration materials are available at the point of ballot issue.

4. Before the polls are open, the precinct board shall verify that the serial number on the scanner is the same number listed on the Voting Device Report. The board shall also verify that all seals have not been tampered with and the serial numbers match what is recorded by the County office.

5. Check that the memory card plate is secure.

6. Verify that no ballots remain in any of the ballot box bins from testing or previous elections.

7. Verify that the ballot slot cover on the auxiliary bin is closed and the bin is locked.

8. Close and lock all ballot box doors.

9. Ensure that the scanner is nested into the ballot box or bin, and that the power cord is properly routed.

10. Observe the poll opening time. If the recorded time is different from the actual time, note the time that the poll had opened and initial the marked time.

9.3.1 Open Polls on ExpressVote

If the terminal touch screen was locked with an override code to prevent unauthorized use, an election worker can unlock the terminal by entering the same override code.

Note

Ensure that all peripheral devices are connected to the appropriate USB port before powering on the ExpressVote unit.

1. Unlock and open the access compartment door.

2. Set the Mode switch to **Voter**.

3. Press the Power switch to the **ON** position.

   After completing the power up sequence, the system displays the Enter Election Code screen.

   Near the end of the powering up sequence, an on-screen calibration message appears, giving you a 10-second window to initiate calibration of the touch screen. If calibration is needed, touch any part of the screen to begin calibration. If not, simply wait for the countdown to end.

   Before allowing voters to use the ExpressVote, use the System Readiness report to verify that the terminal has been loaded with the correct election definition.

4. On the Enter Election Code screen, enter the election code that was defined in the Electionware Configure module.

Note

If the code is entered incorrectly, an error message will appear. After three failed attempts, another message appears and instructs you to remove the media device. Wait 10 seconds, then reinsert the device and try again.

Following successful verification, a Loading Election screen will appear.

After the election is successfully loaded, the Election Loaded screen appears.

5. Touch **OK**.
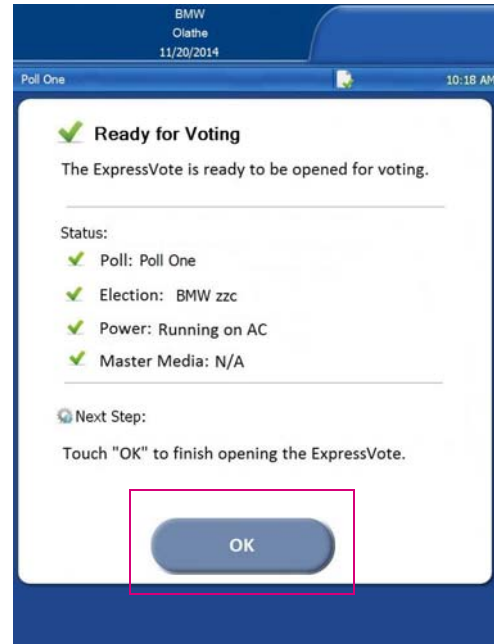
The card insertion screen indicates that the terminal is now ready for voting.
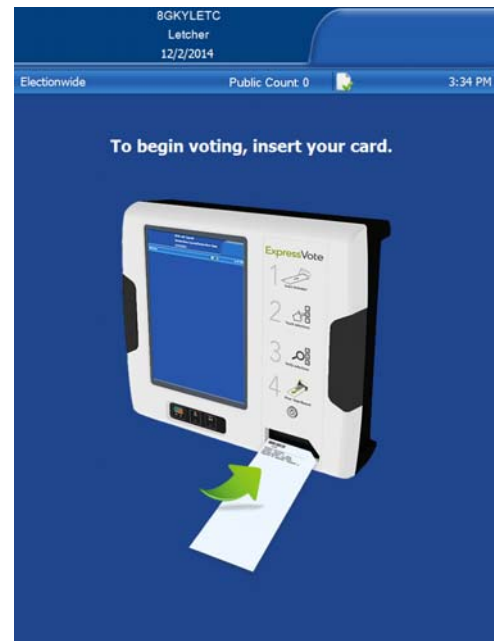
9.3.2 Open Polls on ExpressVote XL

1. Unlock and open the access compartment door.

2. Inside the access compartment, press and hold the power button until the unit begins the power-on sequence, then release the button.

3. On the Enter Election Code screen, touch the on-screen keypad to enter the election security code established via the Electionware Configure module.

4. Touch **Accept**.

If the ExpressVote XL access compartment door is open, the system displays a warning and sounds an audible alert.

To dismiss the alert and continue, touch the **Alert Button** for both consecutive alert screens.

After successfully loading the installed election definition and closing the access compartment door, the system automatically displays the welcome screen. The terminal is now ready for voting.
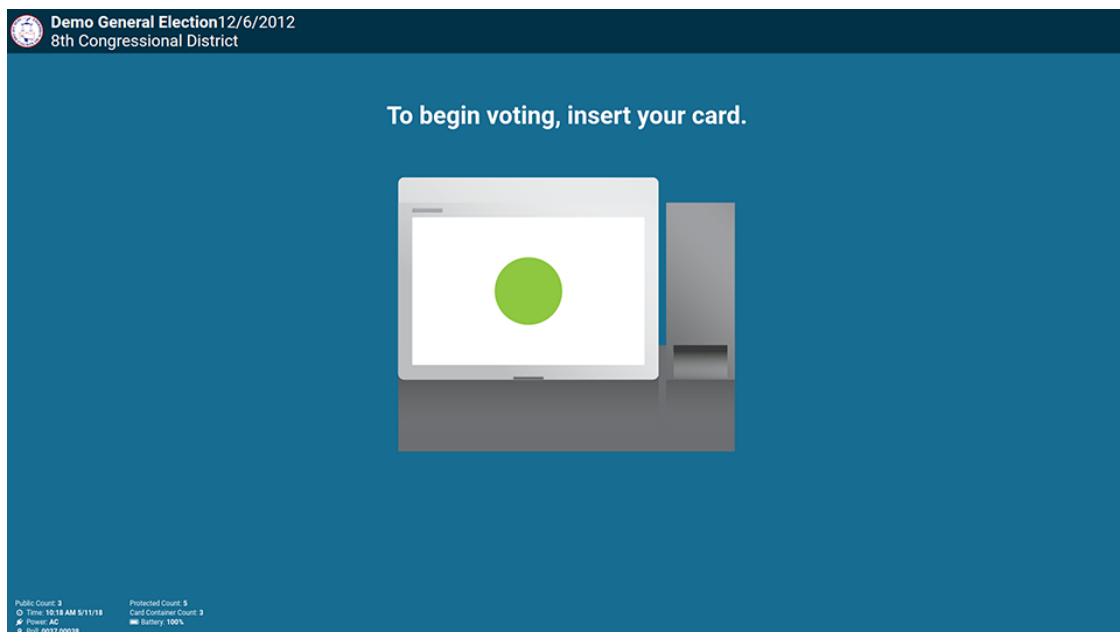
9.3.3 Open Polls on DS200

Before your polling location opens for voting, retest and check the system configuration for each of your scanners.

After you have configured, tested and loaded the election definition, and turned on the DS200, you are ready to open the poll for voting.

1. Enter the election code and touch **Accept**.
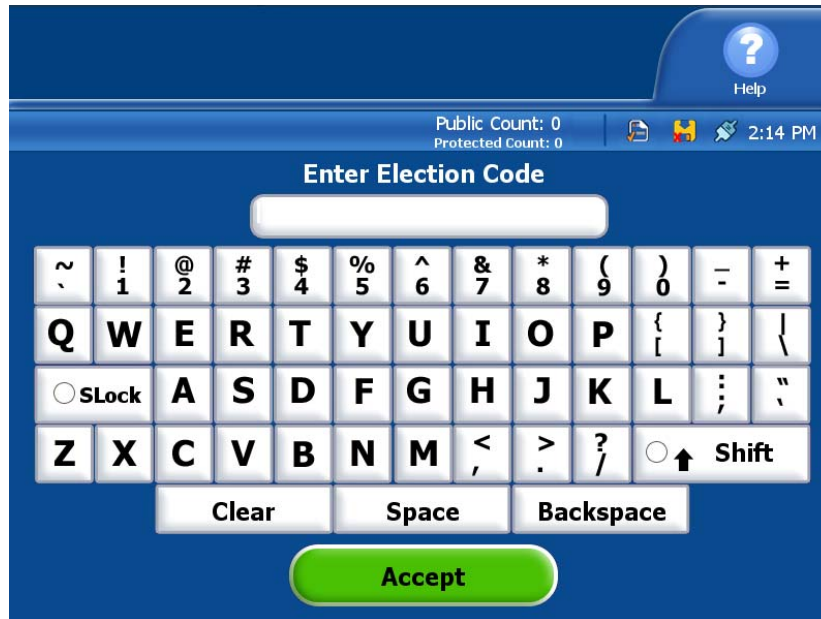
After the election code is accepted and the election is validated the following screen appears, confirming that the election has been loaded on the machine.

When the power cord is plugged into a 120V AC outlet and the unit is keyed on, all vote totals for all candidates must be zero. The public counter will display zero ballots cast.
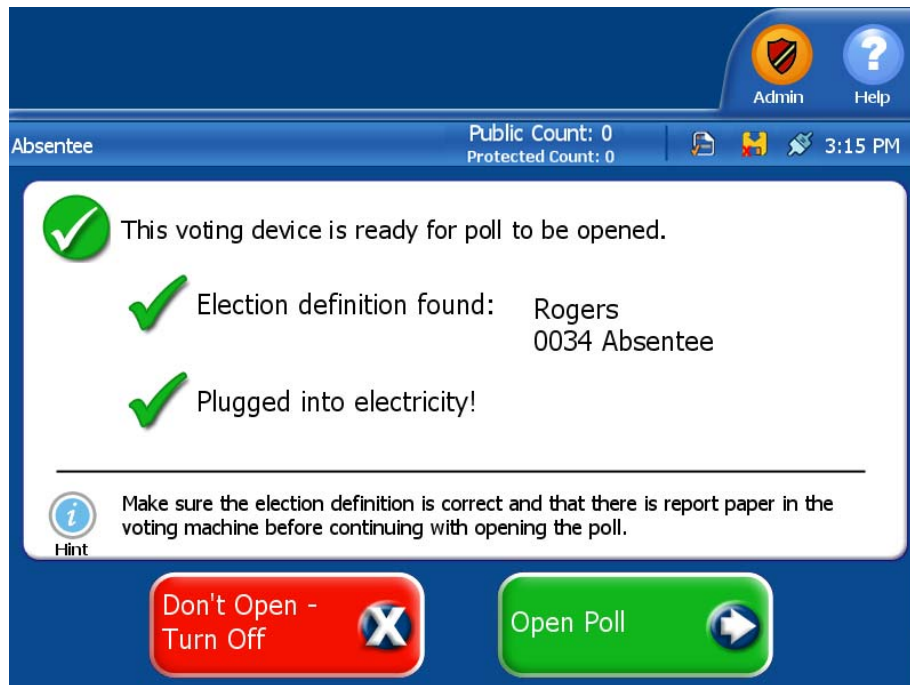
2. Touch **Open Poll** to open the polls for voting.

   After you touch **Open Poll**, the DS200 checks available memory and verifies the election definition and prints the startup reports (Ballot Status Accounting, Configuration, and Zero Totals reports).

Important

If the scanner does not print the Zero Tape, this must be reported to the elections official. Voting may commence, but ballots are to be deposited in the front auxiliary bin until corrective action is taken. Such action must be logged.

Verify that all offices and propositions appear on the Zero Tape. The tape is signed by two board members; it can be rolled up and placed in a secure place or posted in the polling place for public display. This process is repeated at the closing of the polls. This tape becomes a permanent record of the election as it was conducted at the precinct.
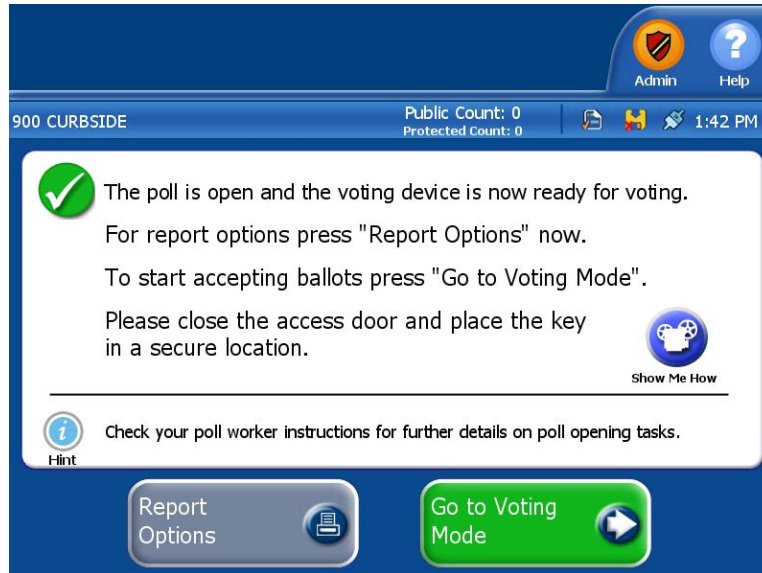
3. After the DS200 finishes printing the startup reports, press **Report Options** if you need to print additional reports.

4. Press **Go to Voting Mode**.

5. Close and lock the access panel.

After you remove the key, the DS200 is ready for live voting. Make sure that the public counter on the screen increases by one with the first page of each ballot cast, but do not make any further adjustments to the DS200 unless a system message appears.

9.4 Voting Procedures

The instructions in the following sections serve as your guide for assisting voters in using the ExpressVote and/or ExpressVote XL.

9.4.1 ExpressVote Voting

To begin voting, insert a blank activation card into the front card slot with the corner cut oriented to the front right. The ExpressVote scans the card.
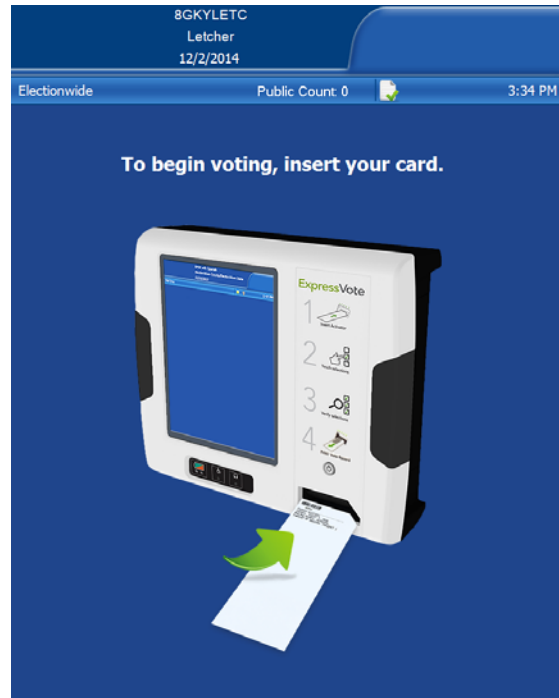
The next steps are determined by the features included in this election.

9.4.1.1 Printed Activation Barcodes

If the inserted activation card has a printed activation barcode, the system automatically displays the correct ballot for the voter's precinct and ballot style combination. The ExpressVote activation card printer can be used with an electronic poll book or the ExpressLink application to print activation barcodes.

9.4.1.2 Select from Multiple Precincts or Ballot Styles

If the election has multiple precincts and/or ballot styles, and the activation card does not have a printed activation barcode, the poll worker must select and confirm the correct precinct-ballot style combination to activate the correct ballot for the voter.

The poll worker can select the correct ballot at the ExpressVote, just before each voter votes. Or the poll worker can use an electronic poll book or the

ExpressLink PC application to perform this task when the voter arrives at the registration table.

9.4.1.3 Initials and Review Boxes Option

If the election definition is configured to use either the initials or review boxes options, activation cards must be pre-printed using ExpressLink.

If the election definition requires initials or review boxes and you run out of pre-printed activation cards during the election, an authorized election worker can override the initials or review boxes requirement.

9.4.1.4 Multiple Language Support

If the election supports multiple languages, the Select a Language screen appears. Voters can choose any of the supported languages by touching the desired button on the Select a Language screen. Based on language selection, the ExpressVote ADA system plays the appropriate audio language during the voting process and displays screens in the selected language.

9.4.1.5 Load Online Sample Ballot Selections with External Code Scanner

If the election supports Ballot Online (BOL) sample ballot voting and BOL scanning is enabled on this unit, the system displays the following screen before displaying the first contest screen.

- The **Have a barcode that contains your selections** option enables the voter to scan a printed QR code containing sample selections the voter made via the Ballot Online application before arriving at the polling place. The voter can review and/or change any of the sample selections via the ExpressVote terminal.
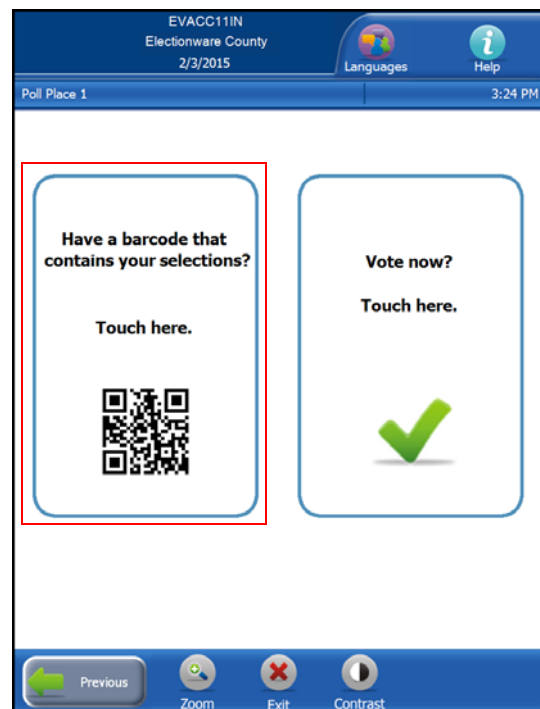
Note

The Ballot Online application is not a required part of this certified voting system; however, this application can be used to facilitate testing and to demonstrate system interoperability.

If the voter touches the **barcode** option, the system prompts the voter to scan the barcode printed on paper or displayed on a mobile device screen.

After the voter's BOL sample selections are loaded into the ExpressVote terminal, the system displays the Verify Selections screen.

- The **Vote Now** option enables the voter to proceed to the first contest screen without scanning a QR code.
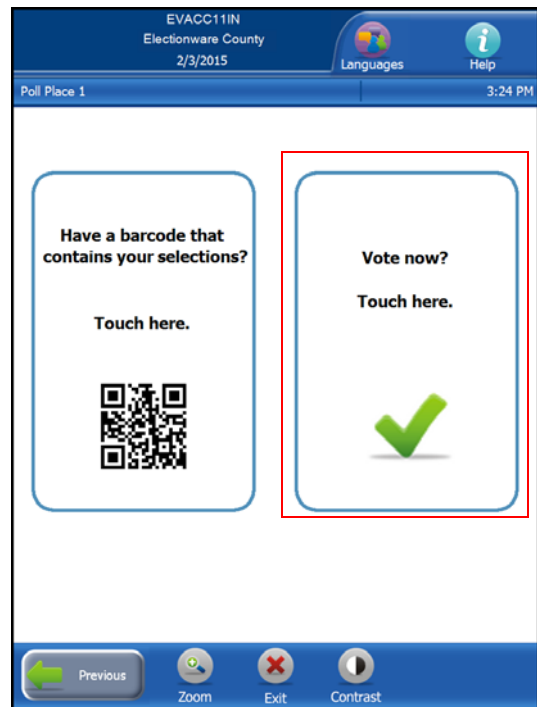
9.4.1.6 Vote Selections on ExpressVote Screen

If the voter did not use the external scanner to load sample selections from the BOL application, the system displays the first contest screen after the precinct, ballot style, and language are selected, if applicable.

The voter completes the following steps to make selections via the ExpressVote touch screen.

1. Touch to select the name of the candidate or other contest choice. A check mark appears next to the selection.

2. To navigate forward or backward on the displayed ballot, touch **Next** or **Previous**.

3. **Write-ins only:**
   For contests that allow write-in votes, touch the write-in selection on the contest screen. Use the on-screen keyboard to enter the write-in name, then touch **Accept**.

4. Continue voting until all contests in this election have been completed.
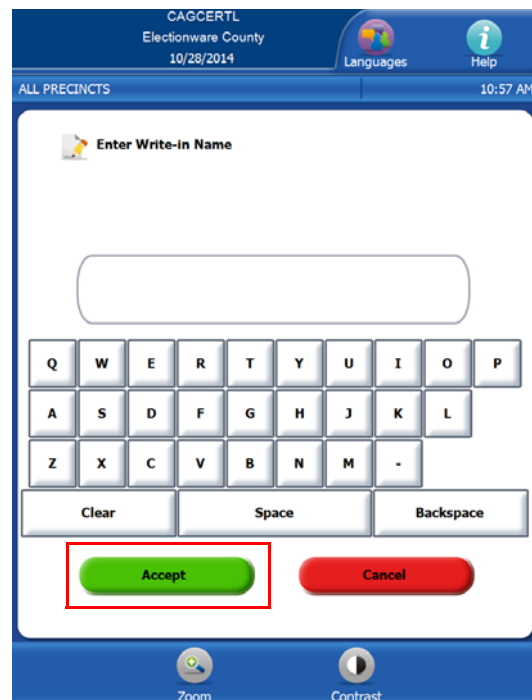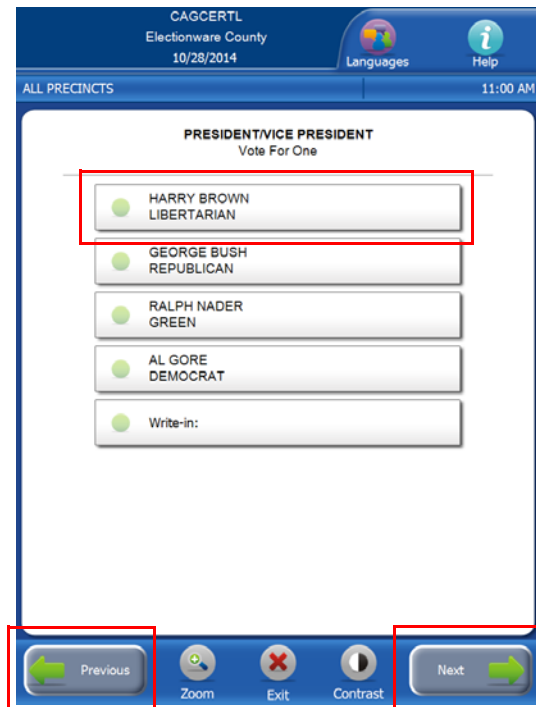
After all selections have been entered, and the last screen of the ballot has been viewed, the ExpressVote displays the Verify Selections screen.

Note

The ExpressVote automatically prevents overvotes.

Depending on the election definition, the ExpressVote may require the voter to view all choices in a contest, or may alert voters to undervotes or prevent undervotes in selected contests.

Visual and audio messages alert the voter of a condition that requires attention, such as an undervote.

9.4.1.7 Verify Vote Selections

After all selections have been entered, and the last screen of the ballot has been viewed, the ExpressVote displays the Verify Selections screen.

Voters can use the following steps to review, verify, and change their selections for each contest.

1. Touch **Next** and **Previous** as needed to review all selections.

Note

The system identifies undervoted contests with an exclamation mark (!) icon.

2. To change a selection, touch that contest listing. The system displays the vote selection screen for that contest.

3. If applicable, make the desired change to the contest selection.

4. After making any desired change(s), touch **Next** to return to the Verify Selections screen.
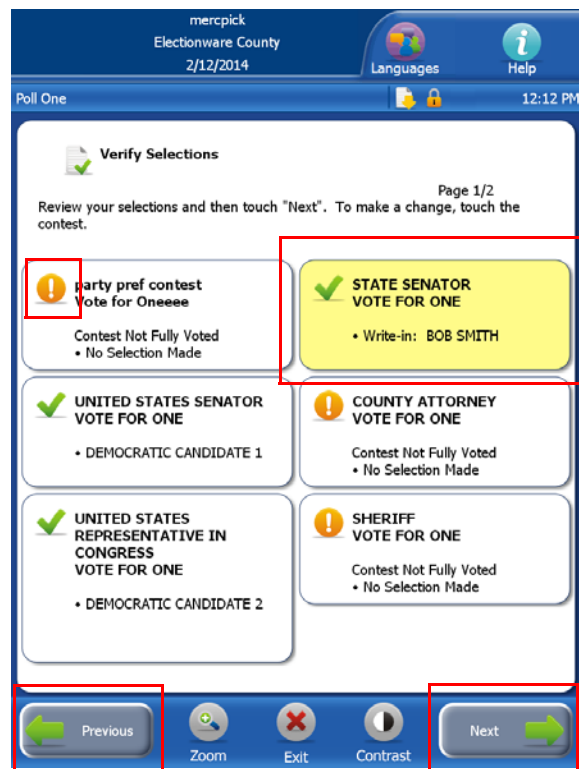
The system identifies changed selections with yellow highlighting.

Note

The voter must complete all desired changes before printing the vote summary card.

9.4.1.8 Completing the ExpressVote Voting Session

When the voter is finished using the Verify Selections screen, the ExpressVote displays the Print Card screen.

5. To continue, touch **Print Card**.
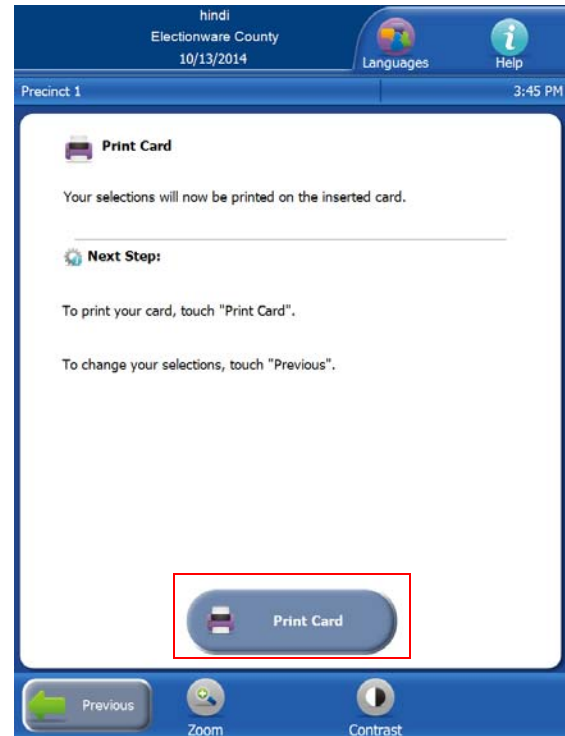
The screen displays a print status screen while the terminal prints the vote summary card.

Note

The ExpressVote prints the voter's selections on the inserted activation card. After printing, the inserted card is no longer referred to as an *activation card*. The inserted card is now referred to as a *vote summary card*.

If the ExpressVote is set to *disable* the Rear Eject option, the terminal returns the printed vote summary card to the voter. The voter must then insert the card into the DS200 tabulator, or into a secure card storage case for later tabulation.

If the ExpressVote is set to *enable* the Rear Eject option, after the vote summary card has been printed, the system displays the Printing Complete screen.

9.4.2 ExpressVote XL Voting

To begin voting, insert a blank or pre-printed activation card into the front card slot with the corner cut on the front right.
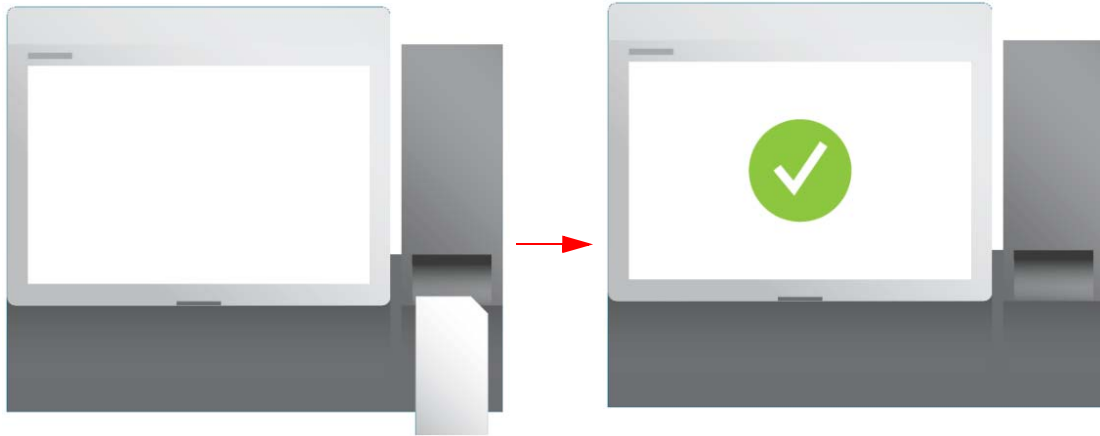
The ExpressVote XL scans the card. If the election contains a single precinct and ballot style, the system automatically selects the voter's correct ballot.

If there are multiple precincts/ballot styles, the next step depends on the number of ballot styles in this election, and whether the card is blank or has a pre-printed activation barcode.

9.4.2.1 Precinct and Ballot Style Selection for Blank Card

If the activation card is blank, and the election contains more than one ballot style, the ballot style must be manually selected to activate the correct ballot for the voter.

- If the election contains a single precinct with splits requiring multiple ballot styles, the system displays the Select Ballot screen. **Skip to** step 2.

- If the election contains multiple precincts, the system displays the Precinct Search screen.

1. On the Precinct Search screen, touch to select the voter's precinct.

If the election contains more precincts than can be displayed on a single screen, touch the **Next** and/or **Previous** buttons to navigate the entire list.

To filter the list of displayed precincts, touch the **Search** field. Use the on-screen keyboard that appears to enter the precinct name, or the first few characters of the precinct identifier or name, then touch **Search**. The system displays only precincts matching the entered search characters. Touch to select the correct precinct.

If the selected precinct has a single ballot style, the system displays the confirmation screen. **Skip to** step 3.

If the selected precinct has multiple ballot styles, the system displays the Select Ballot screen.

2. On the Select Ballot screen, touch the correct ballot style, then **Next**.
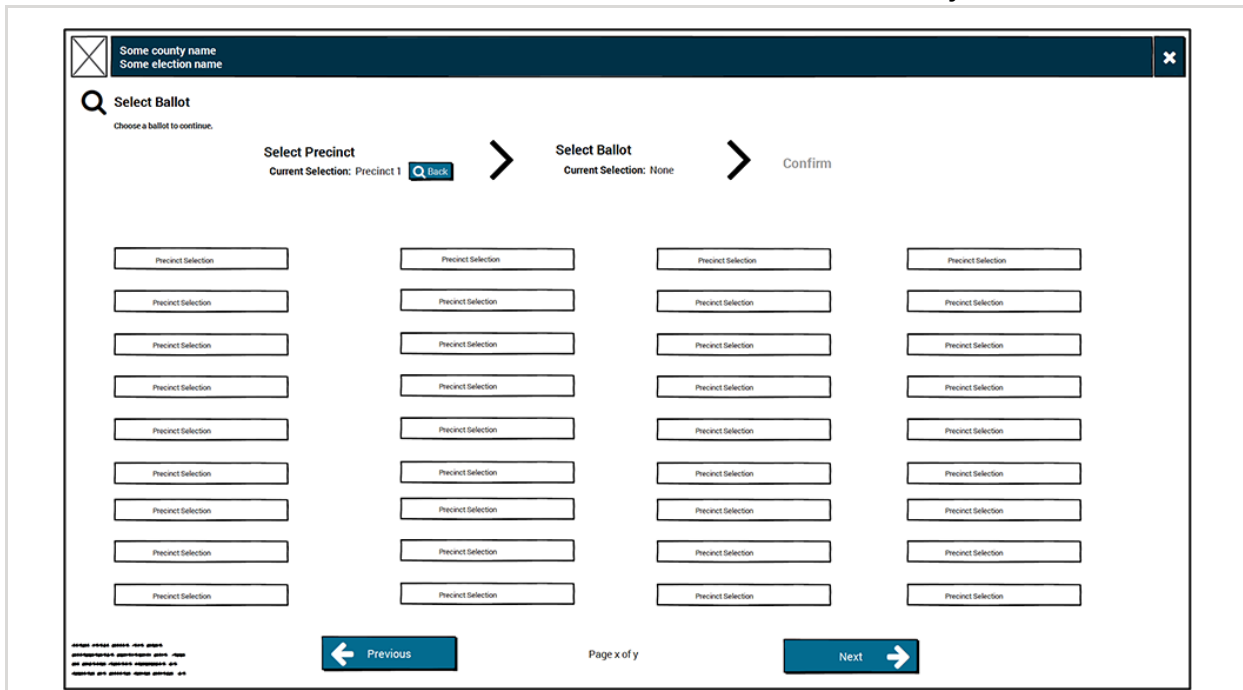
Note

Ballot styles appear on this screen in the order you established in Electionware. If the election contains more ballot styles than can be displayed on a single screen, touch **Next** and/or **Previous** buttons to navigate the entire list.

3. On the Confirm Selections screen, if your precinct and ballot style choices are correct, touch **Accept**.

9.4.2.2 Precinct and Ballot Style Selection for Pre-Printed Card

If the election uses activation cards with pre-printed activation barcodes, the system automatically selects the correct ballot for the voter.
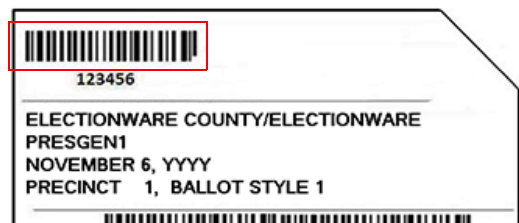
Locate Precinct and Ballot Style with Activation Barcode

If you use an electronic poll book or the ExpressLink application, the poll worker can look up the voter's correct precinct and ballot style when the voter arrives at the registration table in the polling place.

The poll worker inserts a blank activation card into the ExpressVote Activation Card Printer and prints an activation barcode on the card.

When the voter inserts this pre-printed card into the ExpressVote XL, the system selects the correct ballot for the voter.

9.4.2.3 Multiple Language Support

If the election supports multiple languages, after the ballot is selected, the system displays the Language screen.
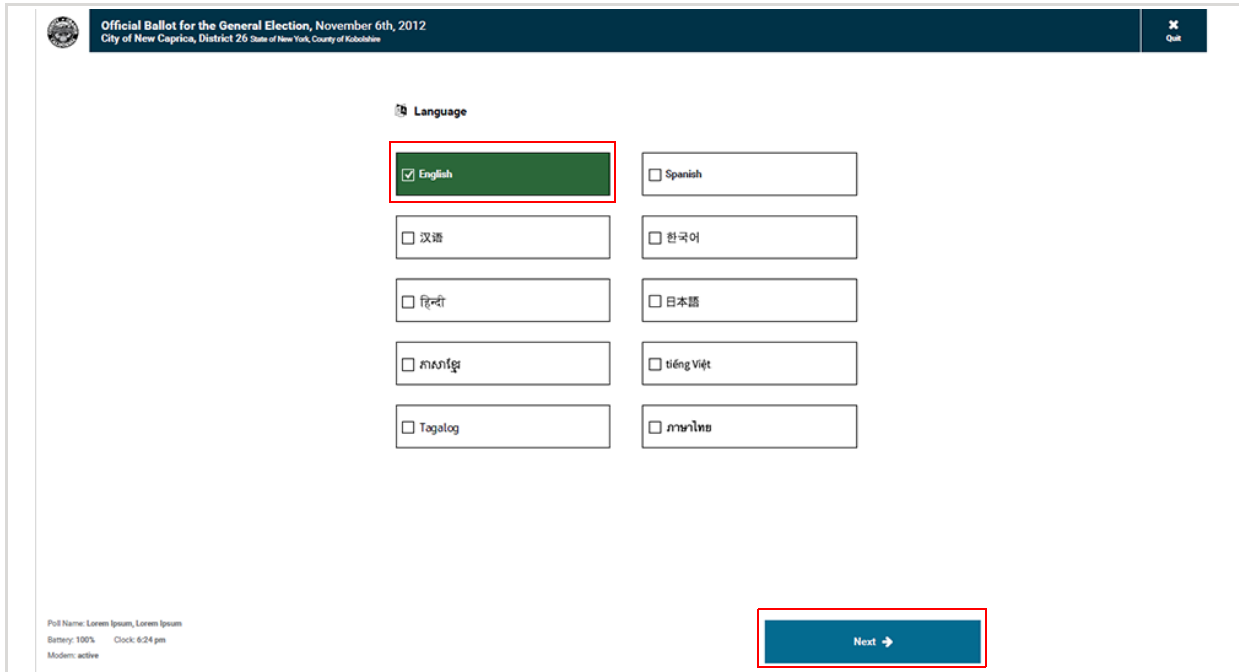
Touch to select the desired language, then touch **Next**. If applicable, the ExpressVote XL plays audio ballots in the selected language.

During a voting session, the voter can touch the **Language** icon in the upper right corner of the contest selection screen to display a language window and change the language selection.

The system saves the voter's place in the ballot. To resume voting, touch **Return to Ballot**.

Note If applicable, the ExpressVote XL plays audio ballots in the selected language.
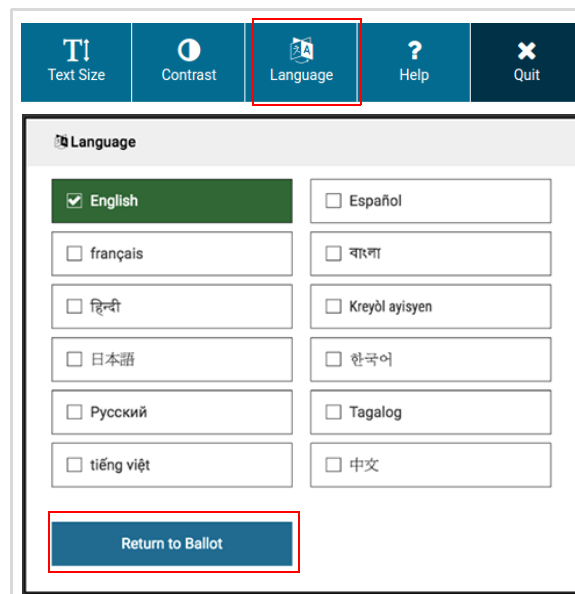
In a multi-language election, if your election definition is configured to display the optional voter instruction screen, the system displays this screen before displaying the activated ballot.
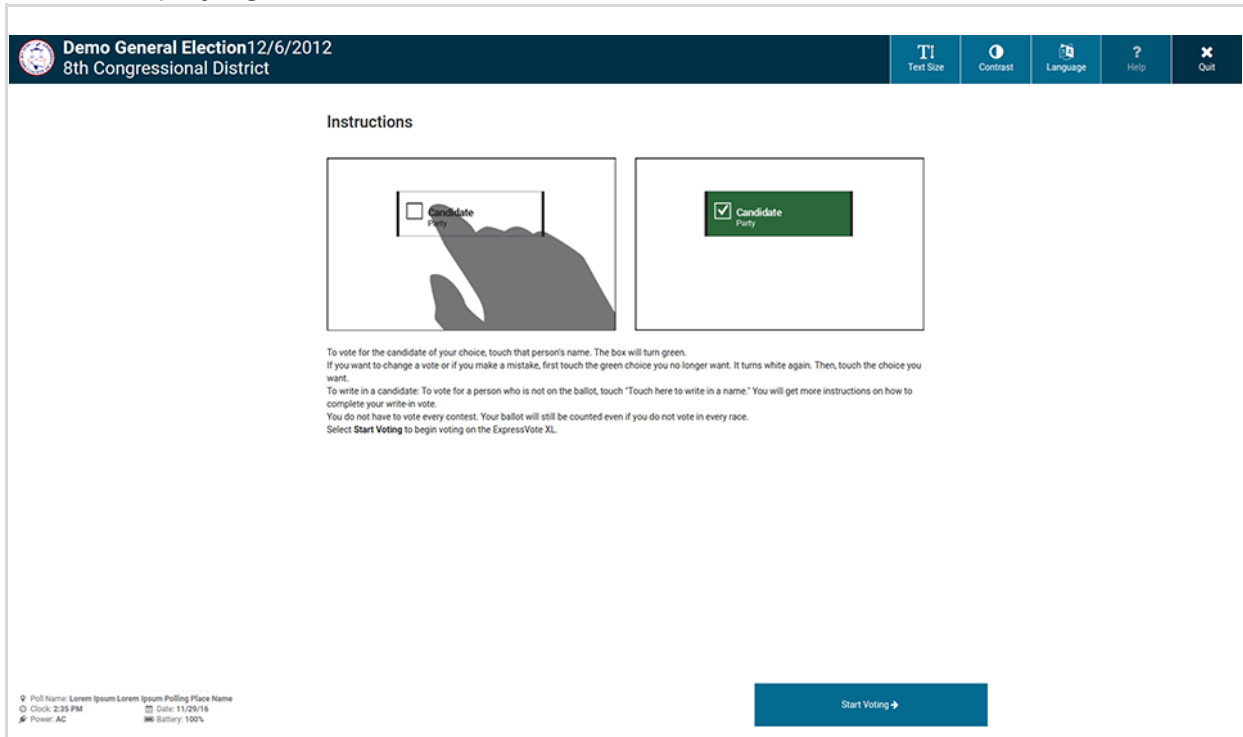
To display the selected ballot and begin making contest selections, touch **Start Voting**.

Note

In an election that includes audio, if the voter activates an assistive navigation device (presses a key or sips/puffs), an Assisted Voting window appears. Select **Continue** to use assisted voting, or **Return** to use the touch screen without audio.

9.4.2.4 Vote Selections

After the system displays the activated ballot, the voter completes the following steps to make contest selections via the ExpressVote XL touch screen.

Note

The ExpressVote XL automatically prevents overvotes.

The election definition determines whether the system alerts voters to undervotes or prevents undervotes in selected contests.

1. Touch to select the name of the candidate or other contest choice. The system displays a check mark and green highlighting to indicate the selection. To deselect the choice, touch the name or contest again.

Note

If an assistive device is used, each contest will appear on a single screen, and the voter uses the device to step forward and back.

Note

If the ballot is too large for a single full-face display screen, at the bottom of the screen, touch **Next Page** or **Previous Page** to navigate to the next or previous ballot page. The election definition may require the voter to view all ballot pages.

2. For contests that allow write-in votes, touch **Write-In**.

Use the on-screen keyboard that appears to enter the write-in name, then touch **Accept**.

3. Continue voting until all contests in this election have been completed.

Note

If the ballot has multiple screens, touch **Next** to advance to the next screen.

4. When all selections are made, review the screen to verify and/or change selections before printing the vote summary card. The voter must complete all desired changes before printing the vote summary card.

Note

If the ballot has multiple screens, all selections will be shown on a consolidated vote summary screen. If you want to change a vote, select the contest to be returned to that contest screen.

Note

If an assistive device is used, the **Review Selections** button will appear on the final contest screen. Select this option to view a consolidated vote summary screen. If the election uses audio, select each contest to hear your votes.

Changing a Selection During Voting

To deselect a contest choice, touch the name or contest again. The system removes the check mark and highlighting from the selection.

In a Vote for One contest, the voter can touch the screen to make a selection, then touch a different selection. The new selection automatically deselects the original selection.

In a contest that permits more than one selection, such as a Vote for Two contest, a voter who has already made the maximum number of allowed selections must deselect one of the original choices before making a new selection in the same contest.

9.4.2.5 Completing the Vote Session

After completing the on-screen review and verification of vote selections, the voter prints all selections onto the inserted activation card, then deposits the ejected card into either an ES&S precinct tabulator or into a ballot box at the election site for later scanning on an ES&S central count tabulator.

Note

After results are printed, the inserted card is no longer referred to as an activation card. The printed card is now referred to as a vote summary card.

5. After verifying all choices, in the lower right corner, touch **Print Ballot**.

6. The system displays a confirmation window indicating that you are about to print your vote summary card and that the process cannot be undone. Touch **Print**.
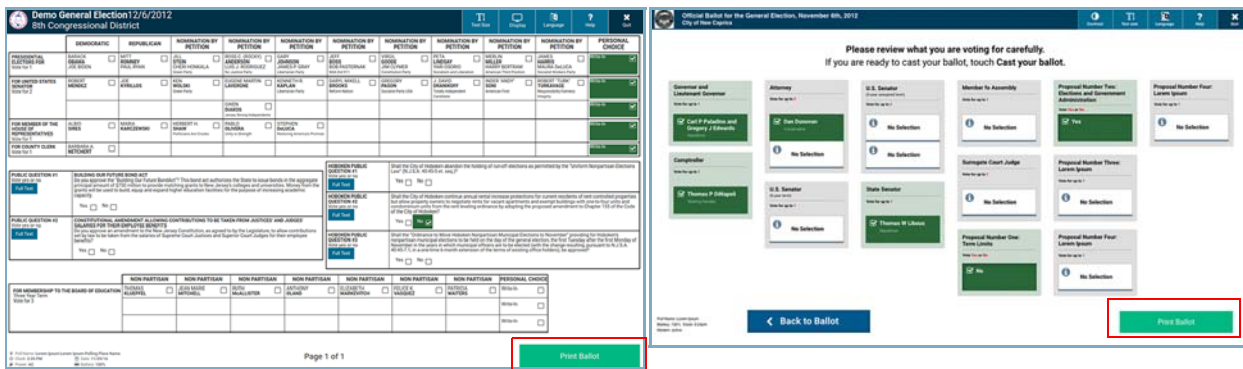
Print Ballot - Single-Screen

Print Ballot - Multi-Screen

Note

This selection prints the votes on the card. This action cannot be undone.

The system displays a busy window while printing the vote summary card.

When the printing process is complete, the system ejects the card from the front card slot and displays a thank you screen indicating that the vote session is complete.

7. Remove the ejected vote summary card.

The system displays the card insertion screen, indicating it is ready for the next voter.

9.4.2.6 Review Vote Summary Card via Audio Playback

A visually-impaired voter can use audio playback to review the printed vote summary card before ejecting it.

On the consolidated vote summary screen, after the voter selects **Print Ballot**, the Print Ballot screen appears.

1. On the Print Ballot screen, select **Print**.

Note

This selection prints the votes on the card. This action cannot be undone.

The system prints the card and parks it in the paper path to the right of the screen.

2. On the Review Printed Card screen, use the assistive device controls to select **Review Printed Card**.

Note

Alternatively, to complete the voting session and eject the printed vote summary card without additional review, select **Finish**.

After you select Review Printed Card, the system displays the consolidated vote summary screen.

3. On the vote summary screen, select each contest to hear audio playback of your vote selections.

4. When finished, use the assistive device controls to select **Finish**.

The system ejects the printed vote summary card, ends the vote session, and displays the voter welcome screen. The terminal is ready for the next voter.

9.4.3 DS200 Scanning

Voters will mark their ballots and, if applicable, enter their write-in entries in private voting booths. Once a voter has marked a ballot, he or she will insert the ballot into the DS200. The ballot insertion screen animation shows voters where to insert the paper ballot or ExpressVote card. The DS200 can scan ballots inserted in any direction or orientation.
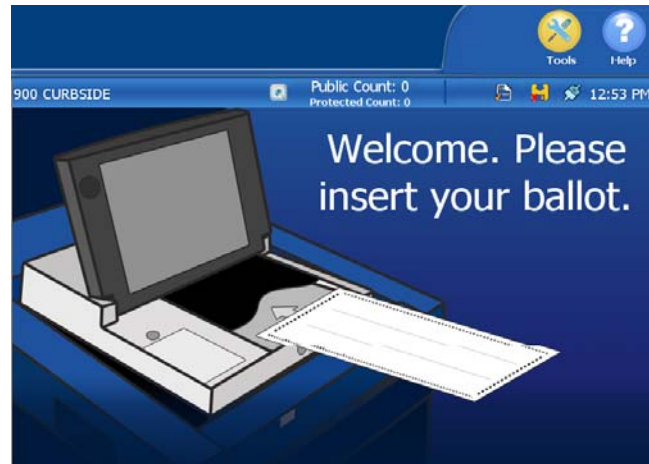
The DS200 can collect individual graphical ballot images of all ballots. Depending on the options set in Electionware, it will collect all ballot images, only those containing write-in votes, or none at all. These ballot images are stored with random names and timestamps assigned to each file to protect voter anonymity.

The DS200 does not divulge any information identifying how a voter marked a ballot when the ballot is cast. The only visible change in system status after a voter casts a ballot is the increment of the public count.

Note

The ballot box main compartment was designed to hold approximately 2,500 pieces of paper.

The auxiliary ballot compartment was designed to hold approximately 100 pieces of paper. To estimate the ballot capacity of the auxiliary compartment, divide this number by the number of pages per ballot.

From the ballot insertion screen, you can view the public count information. Touch the **Public Count** icon on the Public Count banner.
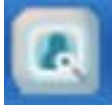
The system opens a pop-up window showing the number of paper ballots and ExpressVote cards that have been scanned.

Public Count Information

DS200 Ballots:	3
ExpressVote Cards:	0
Total:	3

Close

9.4.3.1 DS200 on Battery Power

An external DC power supply, which plugs into a standard120-volt AC outlet, supplies power to the scanner. If a power outage occurs, the DS200 contains an internal backup battery that can run the scanner for a minimum of two hours, depending on scanner activity. If the DS200 is plugged into a power source, the backup battery will be charged.

Observe the rear LED, located next to the Wall Power Adapter Cord Connector, if the LED is amber and blinking slowly this indicates that the Battery Pack is charging. If the LED is a solid green, the Battery Pack is completely charged.

9.4.3.2 Assist ADA Voters with DS200

Poll workers may be required to assist ADA (Americans with Disabilities Act) voters with using the DS200. For example, a poll worker may be asked by the voter to insert the ballot into the DS200, correct ballot-handling exceptions (such as undervotes, overvotes, mistakes), or assist with casting a ballot after exceptions have been resolved or accepted by the voter who is unable to interact with the DS200 interface.

Note

ExpressVote users can eject their ballot into a privacy sleeve, which can then be transported by the voter or assisting poll worker to the DS200 and inserted into the scanner. If there are no ballot handling exceptions, the DS200 deposits the ballot in the ballot box. If there are exceptions, the poll worker must confirm with the voter that the ballot is to be cast as is.

9.4.4 Provisional Voting

Pursuant to California Elections Code, a Provisional Ballot shall be issued to a voter not appearing on the polling place roster but requesting to vote. These ballots will be clearly distinguished by the County and should be kept separate from normal ballots. When voted, the ballot will be sealed in a signed envelope, similar in process and design as a vote-by-mail envelope, then deposited into the auxiliary bin of the ballot box. At the close of polls, this ballot shall be placed with the voted ballots, in its sealed envelop, for transport back to the County. Follow County-specific instructions for further detailed processing.

Before tabulating, the County will follow verification procedures to determine that voter's eligibility to vote in that election.

ES&S does not provide specific procedures for the system to handle provisional voters. This is a manual process for which the jurisdiction is responsible.

Provisional Voters – In Precinct

If the ballot was cast by a provisional voter registered to that precinct, the ballot shall be cast in its entirety and in its original form.

Provisional Voters – Out of Precinct

If the ballot was cast by a provisional voter not registered in that precinct, the ballot will be duplicated to a ballot specific to that voter's precinct. The duplication will reflect only the offices and propositions in which the voter is entitled to vote.

9.5 Closing the Polls

The following procedures and activities must be conducted in public view.

Close the polling place for voting at the assigned time.

Note

You cannot print reports, or process vote totals from the memory device until you properly close the polls.

You can print election, event, and audit log reports after closing the tabulator for voting. You can also transfer results to combine the tabulator totals with the final vote tallies from other polling places at a central counting location.

9.5.1 Close Polls: ExpressVote

For ExpressVote equipment, closing the polls consists of simply powering down the unit(s).

To shut down the ExpressVote at the end of the voting period, press the power switch into the **Off** position and hold until the unit begins the power-down sequence.

Power Switch

9.5.2 Close Polls: ExpressVote XL

For ExpressVote XL equipment, closing the polls consists of simply powering down the unit(s).
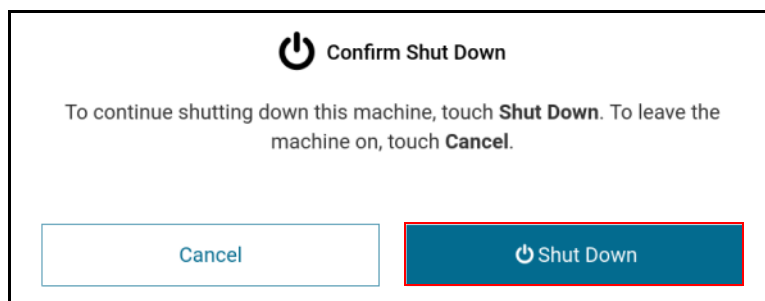
There are two methods for shutting down the ExpressVote XL: use the Power button, or use the Supervisor menu.

9.5.2.1 Shut Down with Power Button

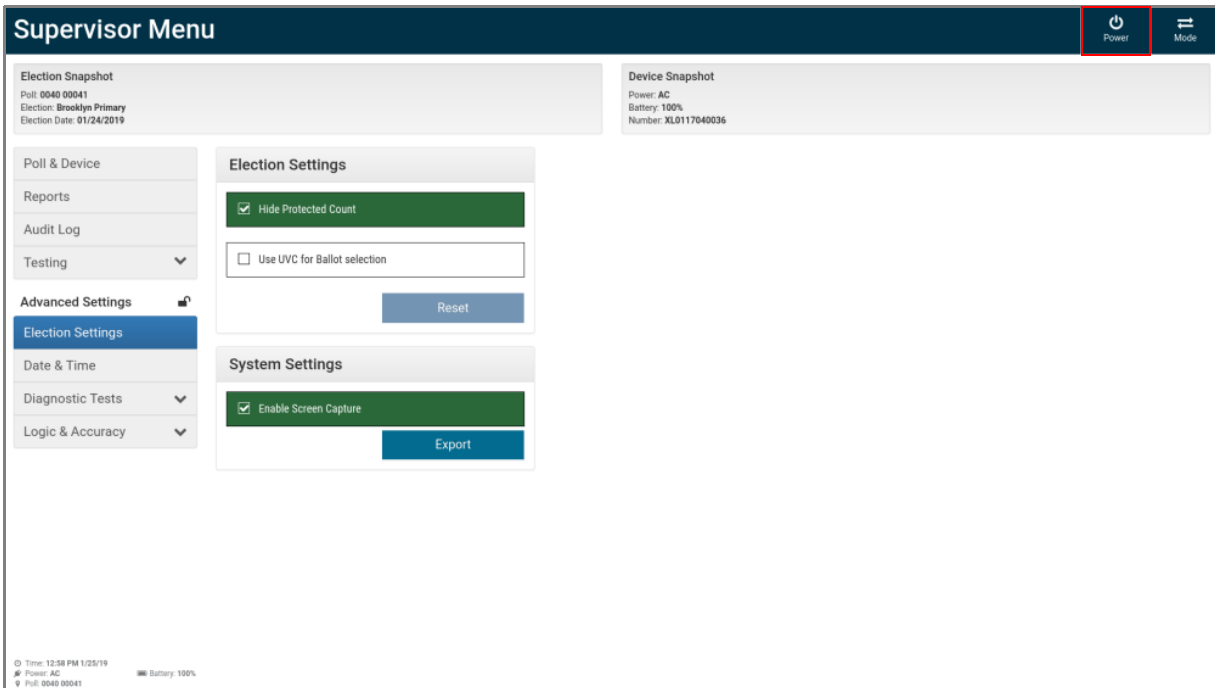Open the access compartment, then press and release the red **Power** button.

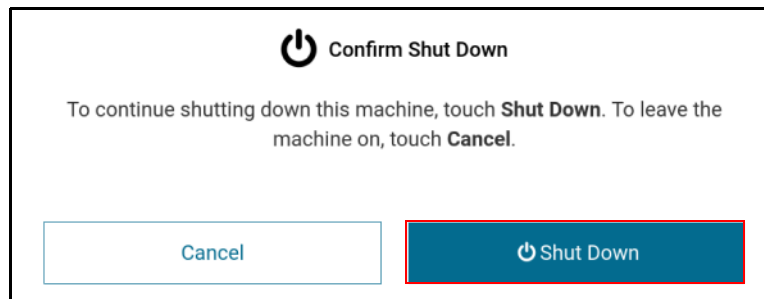On the Confirm Shut Down dialog box, touch the **Shut Down** button to power off the terminal.

9.5.2.2 Shut Down from Supervisor Menu

To shut down without unlocking the access compartment, navigate to the **Supervisor Menu** and touch the **Power** button in the upper right corner.
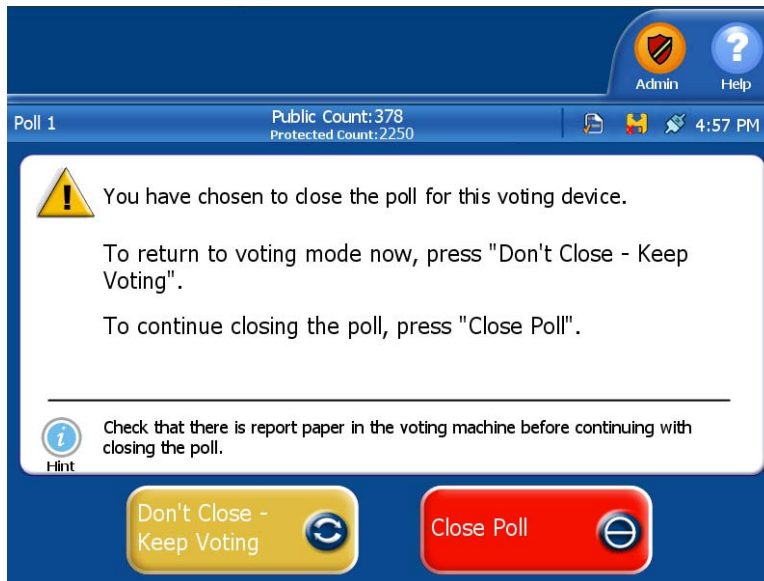

On the Confirm Shut Down dialog box, touch the on-screen **Shut Down** button to power off the terminal.

9.5.3 Close Polls: DS200

1. Check the ballot auxiliary bin for uncounted ballots.

2. Unlock the DS200 access door.

3. Press the **CLOSE POLL** button inside the access door and above the power button.

4. Press **Close Poll** to cease voting and close the polls.

   Depending on your election configuration, the DS200 may automatically print one or more of the following reports: Ballot Status Accounting Report, Results report, Configuration Report and/or Audit Log report.

When the DS200 has finished printing any reports, the screen confirms that the poll has been closed.
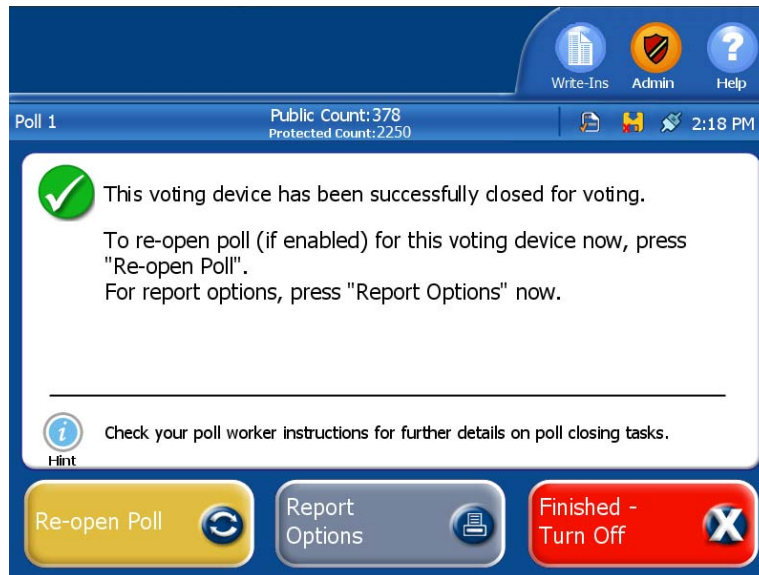
- To reprint any additional reports, press **Report Options**.

- To review write-in votes at this time, press **Write-Ins**.

5. Press **Finished - Turn Off** to turn off the DS200.

6. After the Power button light goes off, remove the USB flash drive from the DS200 and deliver it, and any printed reports, to election headquarters.

9.5.3.1 Uncounted Ballots

Save any ballots that were not counted during voting in the temporary ballot storage bin. After closing the polls, remove and scan the uncounted ballots to add the totals to the tabulator's memory.

### 9.5.3.2 Review Write-In Votes at Polling Place

After you close the polls, you can review the write-in votes that were cast on each DS200. You can use the screen to view the digitized images of ballot pages that contain write-in votes, or you can print the Write-in Review Report to view only the write-in portion of each of those digitized ballot images.

Chapter 10: Reporting

10.1 Overview

After the election, *Reporting* is used to import tabulated results, machine logs, cast vote records, and ballot images by reading the election media from the ES&S election equipment USB flash drives/networked results; review, export, and report election results and media device-related data; and review/adjudicate ballot images.

The Reporting module can display or export detailed status information about individual flash drives, and produce machine log reports. It can also clear loaded results files, in order to delete test data or to start the loading process over.
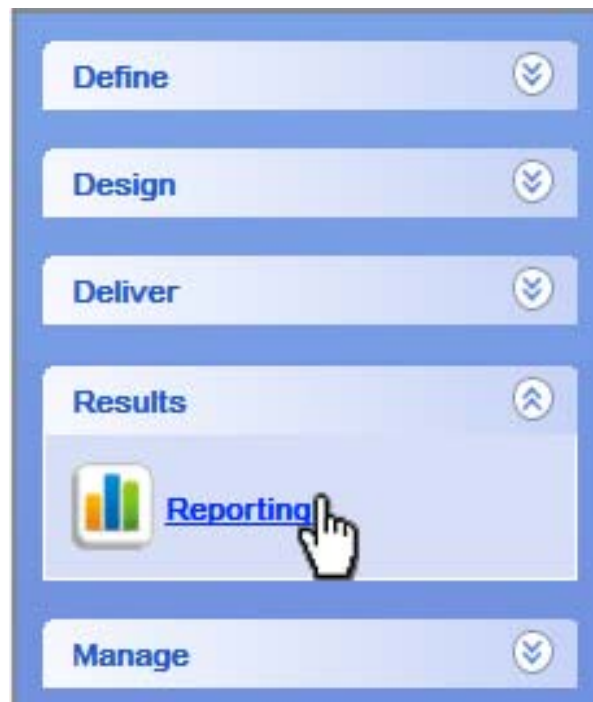
10.2 Loading Election Results

Load Results

The **Load Results** workflow opens the Load Results window.


When loading results, as a precaution, it is recommended that you log in as a Reporting User (not as an Administrator).

10.2.1 Load Results Workflow Summary

The process of loading election results can be summarized in six basic steps:

1. Select the **Load Results** workflow.

2. If applicable, select **Load Results from Network**.

3. Click **Start Load**.

4. Insert a results flash drive.

5. When the status says "complete," remove the flash drive.

6. Repeat steps 4 and 5 until all results flash drives have been loaded.
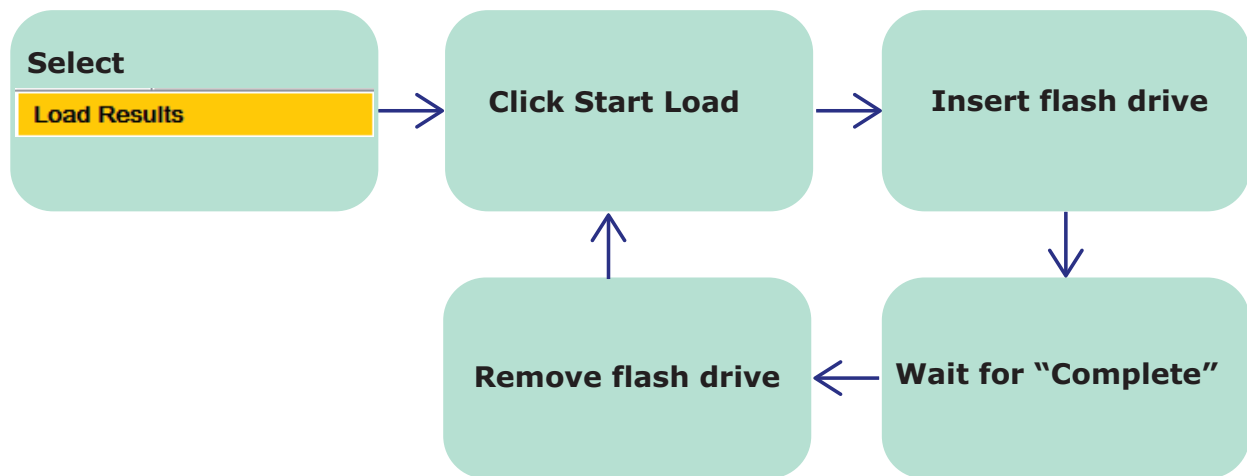
10.2.2 Moving Results Data to the Loading Location

If necessary, the election results data from the tabulator can be moved from one location to another to be loaded into Electionware.

Note

Only ES&S-certified USB flash drives can be used with Electionware.

1. On the computer, create a new folder, named for the flash drive to be copied (e.g., "DS850 Media 1").

2. In Windows, open the new folder.

3. Insert the media flash drive into the computer and open it in Windows.

4. Press **Ctrl** + **A** to select the full contents on the flash drive.

5. Press **Ctrl** + **C** to copy the selected contents.

6. In the new folder, press **Ctrl** + **V** to paste the full contents of the flash drive into the new folder.

Note

The file/folder structure of the copied contents must be kept exactly the same as it was on the original flash drive.

7. Eject the flash drive and close the new folder.

8. Right-click the new folder, point to **Send to**, then select **Compressed (zipped) folder**.

   A new ZIP file appears, with the same name as the original folder.

Important

The unofficial results must be protected and transmitted securely. The following encryption steps are critical to protecting the integrity of your data.

9. Encrypt the ZIP file using your election password.

   a. Right-click the ZIP file, point to **WinZip**, then select **Encrypt**.

b. In the Encrypt window, enter your election password, then re-enter it.

c. Click **OK**.

10. Send the encrypted ZIP file to the person administrating Electionware.

Administrator Instructions:

1. Copy the ZIP file to the computer running Electionware.

2. Right-click the ZIP file, point to **WinZip**, then select **Extract to**.

3. In the WinZip Extract window, select the desired location on the computer, then click **Unzip**.

4. In the Enter Password box, enter your election password.

5. Click **OK**.

    A new folder is created in that location, containing the unzipped files.

6. Insert a blank, FAT32-formatted flash drive into the computer.

7. Open the new folder. Press **Ctrl** + **A** to select the full contents of the folder.

8. Press **Ctrl** + **C** to copy the selected contents.

9. Navigate to the inserted flash drive. Press **Ctrl** + **V** to paste the full contents of the new folder onto the flash drive.

Note

The file/folder structure of the copied contents must be kept exactly the same as it was in the unzipped folder.

10. Load the results as instructed in *10.2.4 Load from Media and/or Network*.

10.2.3 Networked Central Count in Multi-Client Environment

Note

This section does not apply to standalone configurations or systems without a networked central count device.

If you have set up networked results processing from Central Count tabulators in Configure > Manage > Central Count Network Settings, the **Load Results from Network** check box will be enabled under Load Results. If you select this option, the system will automatically detect and load network results when you click **Start Load**.

Load Results:
Start/Stop Results Loading

☐ Load Results from Network   **Start Load**

If you are operating in a multiple-workstation network environment, when one station selects **Load Results from Network**, this option becomes disabled on all of the other machines. If the first station deselects the option, then the option is restored for all stations until another station selects it, as demonstrated in the following image.

Load Results:

Start/Stop Results Loading

☐ Load Results from Network   **Start Load**

Option available

Load Results:

Start/Stop Results Loading

☑ Load Results from Network   **Start Load**

Option selected

Option disabled for all other stations

Load Results:

Start/Stop Results Loading

☐ Load Results from Network   **Start Load**

10.2.4 Load from Media and/or Network

Controls for starting and stopping results loading are in the Start/Stop Results Loading box.

1. If applicable, select **Load Results from Network**.

2. Click **Start Load**. The Start Load button will change to Stop Load.

3. Connect the poll media flash drive to the Electionware computer.

The system will automatically load results from every connected poll media flash drive, as well as from the network, until you click **Stop Load**.

Caution

If you have been loading results and then need to re-generate ballot styles in Capture, all loaded results will be cleared from Electionware. It is recommended that you first back up the election before taking this action.

In the Load Results table view, as results are loaded from each flash drive, its load progress, and identifying information will appear in the Results Received panel.

The Results Received panel displays the last 200 batches loaded.

Icons displayed in the Upload Type column indicate the method of each upload at a glance:

- Network

- Flash Drive

- Wireless (where applicable)

If an error occurs while loading data, a description of the error will appear in the Errors panel at the bottom of the screen.

10.2.4.1 Log Files for Central Count Equipment

When loading results from Central Count tabulators (DS850® or DS450®), the method used to transfer the results will affect whether equipment logs are included with the import. If the log files are not included with the data, then they can be retrieved from the equipment.

- Export on Save (network-only): Logs not included

- Export Files for New Batches Only (network or flash drive): Logs included

- Export Results (network or flash drive): Logs not included

- Export Files for All Saved Batches (network or flash drive): Logs included

10.2.5 Viewing Poll Places, Media Flash Drives, and Machines

The Load Results Navigator displays the load status of each poll place in the election database. Poll place types and poll places are listed by name, and the abbreviation for the Reporting Group of each poll place appears to the right.

If a Reporting Group is marked as complete from the **Manage** menu, the right-click menu for its associated polling place will be disabled.

Click the plus sign to the left of a poll place type to display the list of polling places of that type.

Use the drop-down list to select your preferred view: **Precinct View** or **Detailed View**.

10.2.5.1 Precinct View

In Precinct View, click the plus sign to the left of a poll place to display each precinct associated with that poll place.
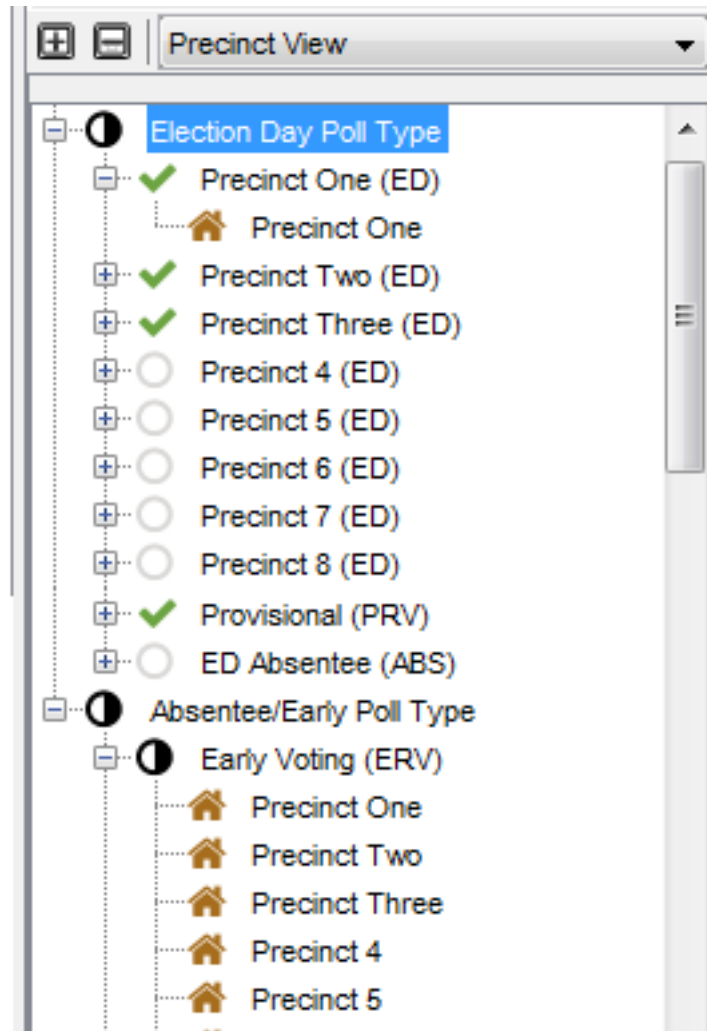
In Precinct View, you can clear loaded results at the Elections Results level and at the Poll type level. Refer to *10.2.5.4 Clear Results*.

10.2.5.2 Detailed View

In Detailed View, loading information appears differently, depending on the type of tabulation equipment that provided the results data.

Hover the mouse pointer over a media flash drive or machine to view related details in a tool-tip. The details will vary depending on load status.
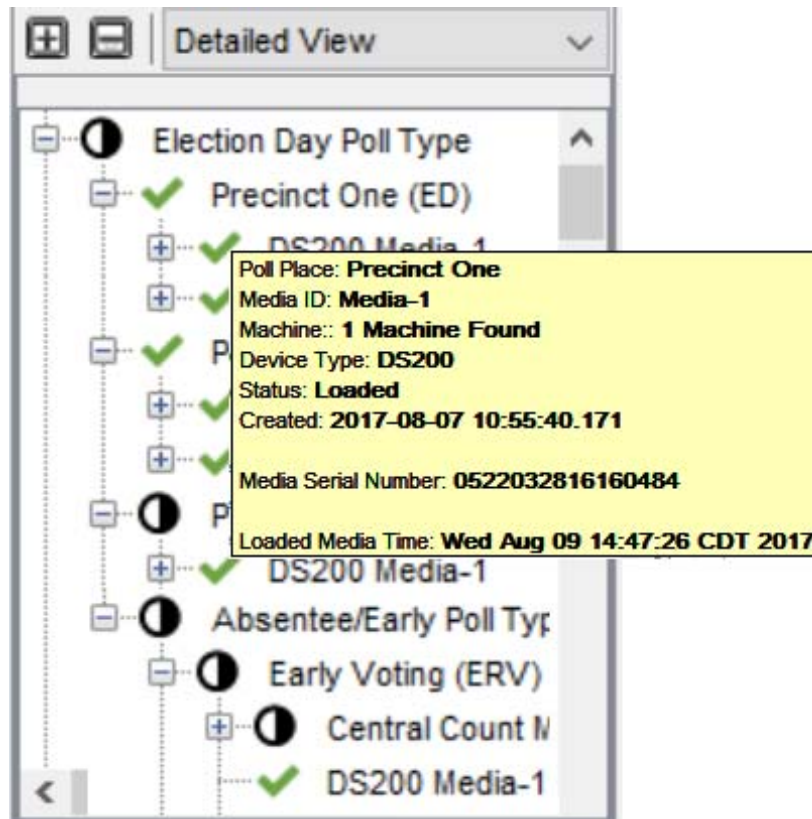
For the DS200 and Central Count tabulators, click the plus sign next to each poll to display the load status of each associated media flash drive. Each flash drive is listed by the Media ID number assigned by Electionware when the media was created.

10.2.5.3 Status Indicators

The Load Results Navigator indicates the load status of each poll place, using specific icons.

Polling Place Icons:

A poll place without all associated media loaded, or results that have been cleared, will have an empty circle, indicating a status of Not Completed.	⚪
A poll place type or poll place with some but not all associated media loaded will have a half-filled circle, indicating a status of Partially Completed.	◑
A poll place type or poll place with all associated media loaded, will have a green checkmark, indicating a status of Completed.	✔
Loaded DS200 media that was packaged externally (for the same election on a separate computer network) will have a circle with a green checkmark.	✅

Note	If a precinct tabulator (DS200) poll place results flash drive is loaded, then all precincts associated with that poll place, even those with zero ballots cast, are considered "Reporting" (either Complete or Partially Reported, depending on the number of tabulators using that precinct).
	If a central count tabulator (DS850/DS450) poll place results flash drive is loaded, then only precincts with ballots cast will be considered "Reporting."

Note	Once you start loading Central Count media, the Navigator will always show the Central Count entry as Partially Reported until you manually change its status to Complete.

Manually Changing a Poll Place Status

To change the status of a poll place to Complete, right-click the poll place, then click **Mark Poll Place as Completed Manually**.
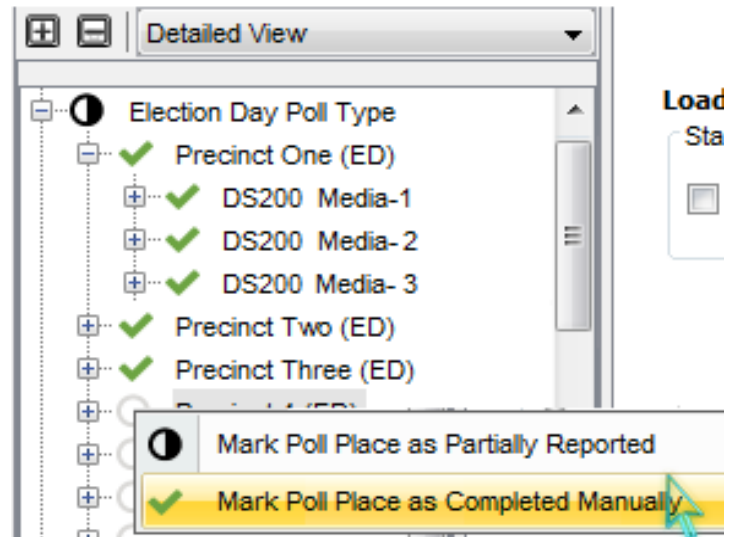
To change the status of a poll place to Partially Reported, right-click the poll place, then click **Mark Poll Place as Partially Reported**.
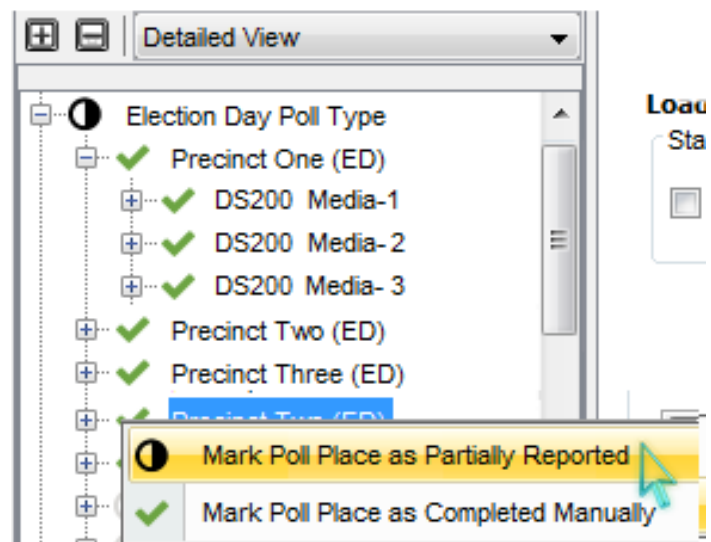
Note

When a poll place is manually reverted to Partially Reported, and subsequently completed through loading of results, the status must be manually changed to Completed, including collection media. This also applies to manual entry.

10.2.5.4 Clear Results

Loaded media results, images, CVRs, and equipment logs can be cleared (deleted from the database), in order to delete test data or to start the loading process over.

Warning

Click **Stop Load** *before* clearing any results.

To clear loaded results for a single flash drive, or the whole election, right-click the item in the Navigator, then click **Clear Results**.
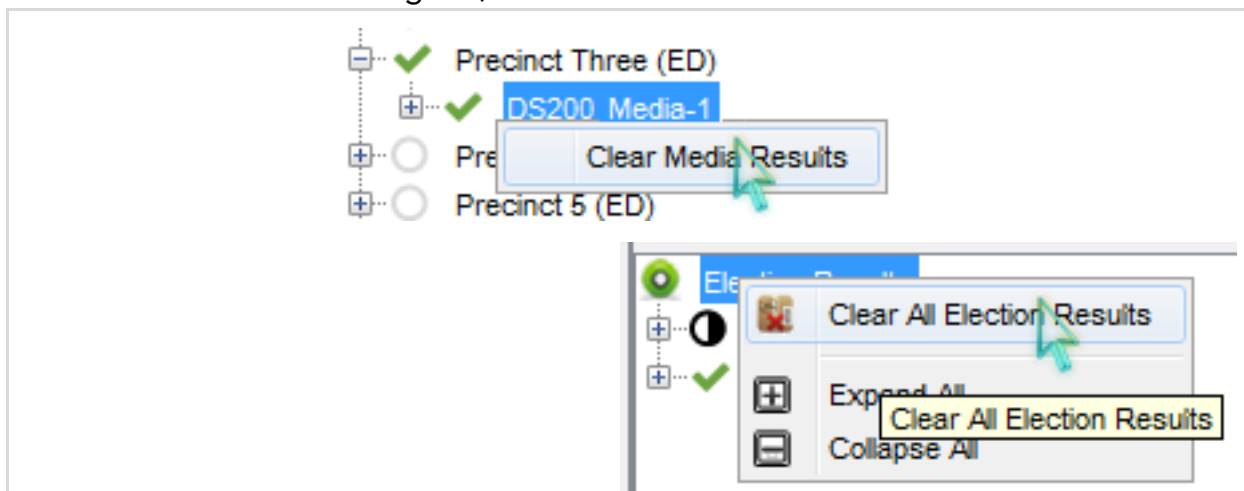
Once a poll place or flash drive is cleared, its Status on the Results Received pane will change to "Cleared," and its Navigator icon will reset to an empty circle (not started).

Caution

The Reset Election Media Status option in the Package module will clear the database of any results loaded from that device and *also* remove the device from the Reporting module Navigator.

Clearing Externally Packaged Media Results

Externally packaged DS200 results media that has been cleared will be indicated in the Navigator by an empty circle and an asterisk next to gray text.
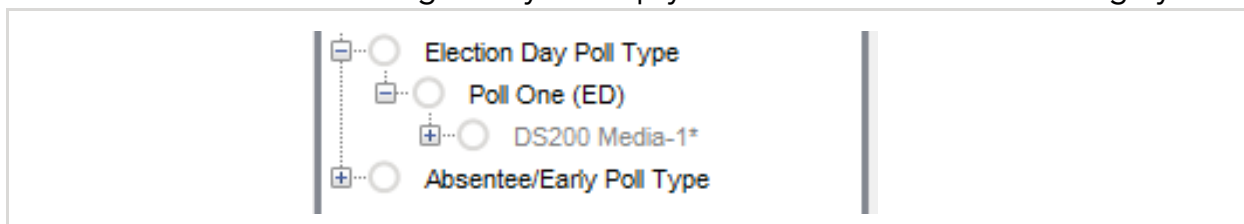
10.3 Semi-Official Canvass Results Export Files

Results export tasks are performed in the Electionware Reporting module.

The **Export Results** option on the **Tools** menu is available only when California is selected for the state Rules Profile in the Home module on the Election Information screen during the creation of the election.

In order to use this option, special steps are required in the Electionware coding of the election. These special election coding steps must be performed before attempting to create the California CalVoter Election Results Report Files.

The California CalVoter Election Results template files must be retrieved from the CalVoter II workstation for processing. The California CalVoter Election Results Report Files are created using California CalVoter Election Results template files as input.

The California CalVoter Election Results Report Files are generated using the Electionware Export Results feature.

1. From the **Tools** menu, select **Export Results**.
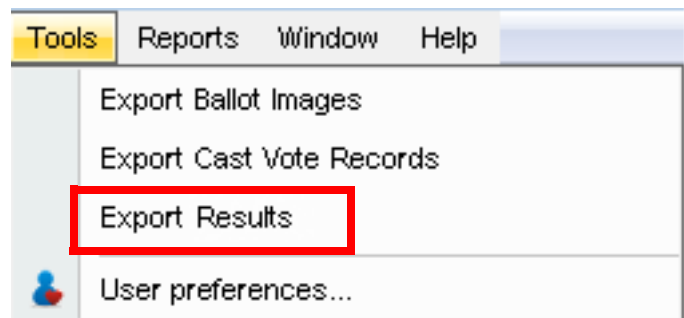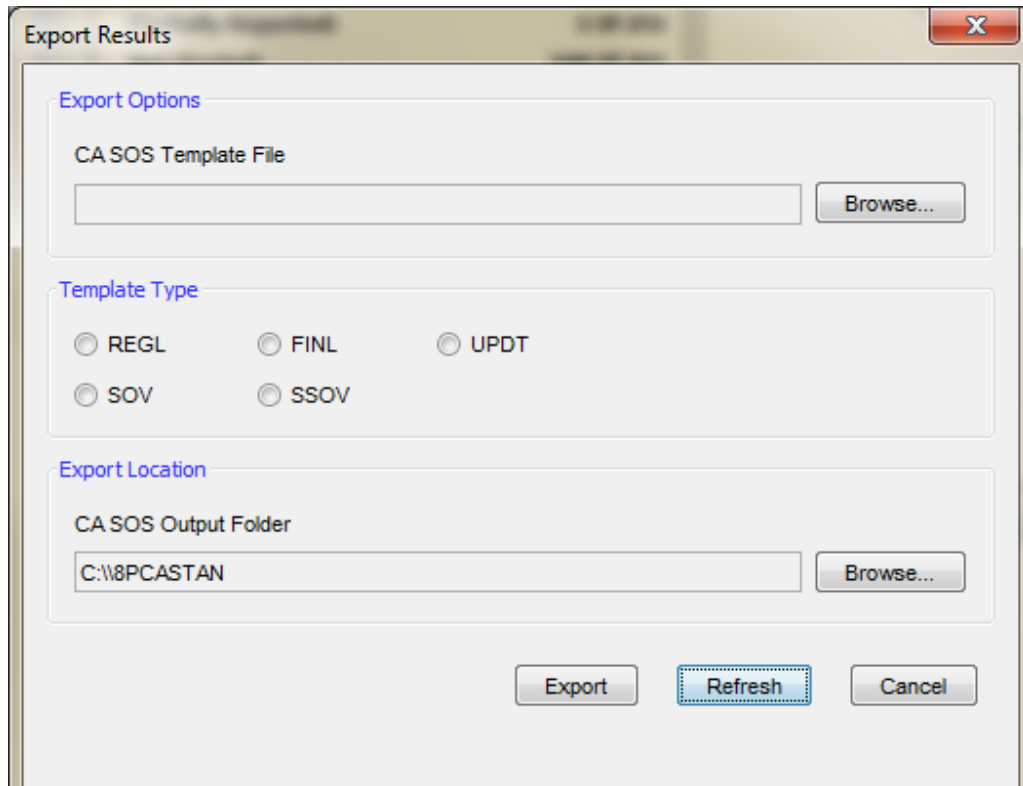
2. In the Export Results window, next to the CA SOS Template File box, click **Browse**.
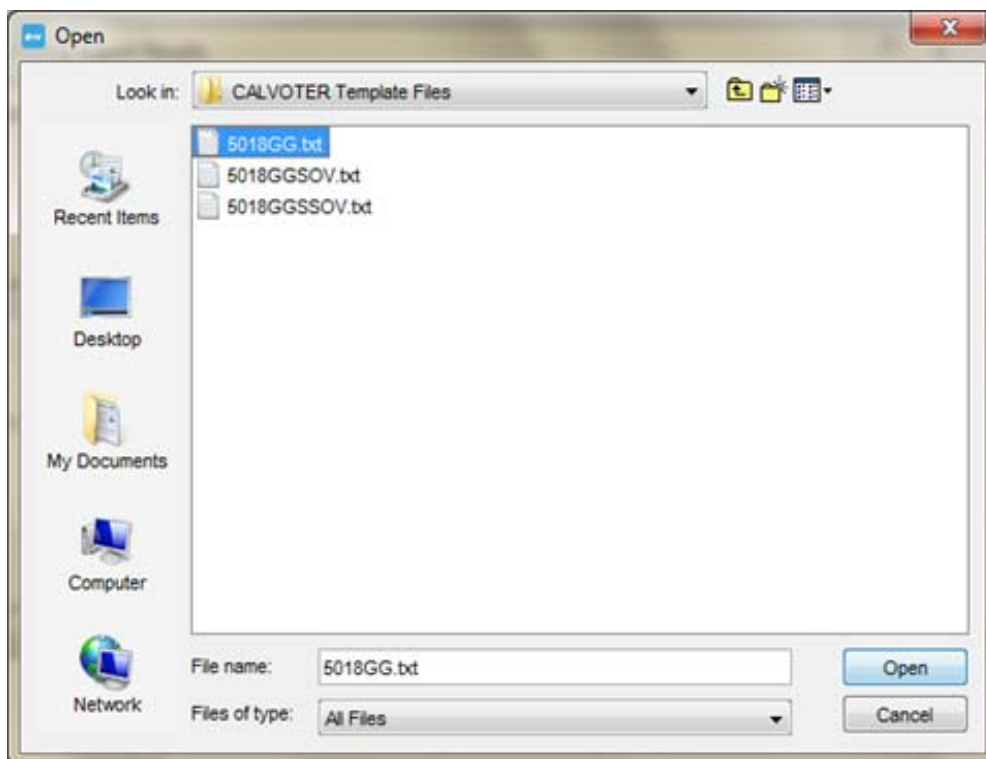
3. Navigate to select the appropriate California CalVoter Election Results template file and click **Open**.

    If you copied the CalVoter County template files into the "C:\CALVOTER Template Files" disk location, as suggested, you can browse to this disk location and select the appropriate template file.

    If you copied the CalVoter County template files into a different disk location, then browse to that location.

    The template file and its path appear in the CA SOS Template File box.

4. Under Template Type, select the export file template type.

   Each template type is to be selected for creation and submission of the associated election results file to the CA SOS. Each template type is briefly defined.

   • **Regular Report (REGL):** The regular report is used to update the CA SOS elections results database on a periodic basis. A regular report is to be submitted as the first California CalVoter Election Results Report File on Election Night. The regular report should be created and submitted on a time interval set by the California Secretary of State.

   • **Final Report (FINL):** The final report must include all precincts within the county and contain data for every contest/category and ballot measure in the election. A final report is to be submitted as the last California CalVoter Election Results Report File on Election Night. Successful submission of the final report indicates the completion of the election night reporting process by the county. If this report is not processed successfully, the county is not considered to have completed its election night process.

   • **Update Report (UPDT):** Update reports are used only after a successful final report has been submitted by the county. Update reports are considered as part of the semi-official canvass process. Counties only need to submit updates for contests/candidates or ballot measures that have changed.

   • **Statement of Vote (SOV):** The SOV reports the county-by-county votes cast for each candidate and measure in the template file.

   • **Supplement to the Statement of Vote (SSOV):** The Supplement to the Statement of Vote provides detailed information on how votes were cast within certain county districts in the template file for specific contests or issues in the current election.

5. In the Export Location frame, next to the CA SOS Output Folder box, click **Browse**.

   The initial value for the CA SOS Output Folder is the Election's Election Folder Name.

6. Navigate to the target disk drive or system directory to which the exported file is to be created. Highlight the directory and click **Select**.

   The selected disk drive or system folder path appears in the CA SOS Output Folder box.

7. Click **Export**.

The California CalVoter Election Results report file is generated and exported to the selected destination folder.

Note

To export the California CalVoter Election Results Report File to a USB drive, insert the USB drive into a port and browse to and select the USB drive as your CA SOS Output Folder export file location.

8. On the confirmation dialog box, click **OK**.
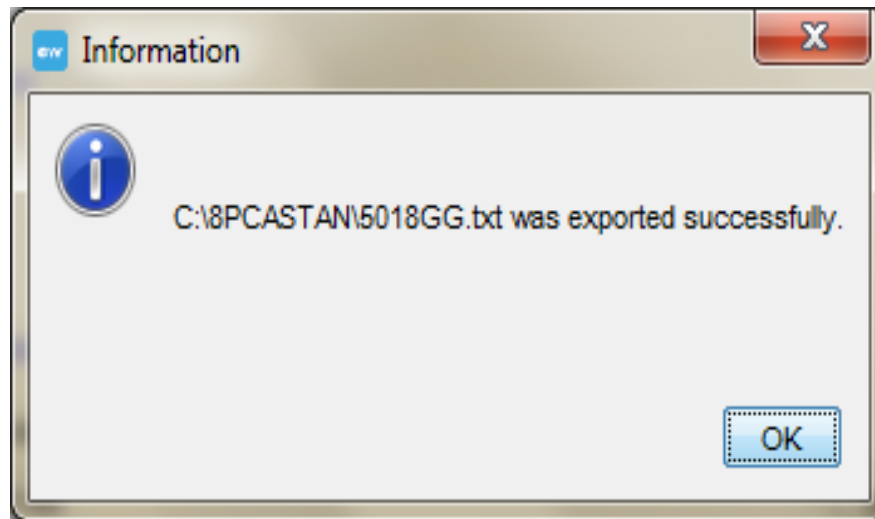
Note

If any other message appears in the Information screen, the export file creation was unsuccessful or the created file is incomplete. Access the Output – Events pane for more detailed information.

10.4 Results Reporting - Reports and Exports

Election Results

The **Election Results** workflow is used to generate paper and electronic tabulated results reports and export files.

The Reporting module can produce summary and custom table reports, as well as exports, each of which can be adjusted to fit your needs:

- **Summary Results:**
  By election, precinct, or precinct/split

- **Custom Table Results**
  (Canvass-style reports)**:**
  By precinct, precinct/split, poll places, ballot style, or district

- **Results Plain Text Exports** (similar to the ASCII export from Election Reporting Manager software):
  Summary or Precinct Detail

- **Results XML/Custom Exports:** Enhanced XML, Standard XML, or Custom

- **Results CSV Exports:** Precinct Detail
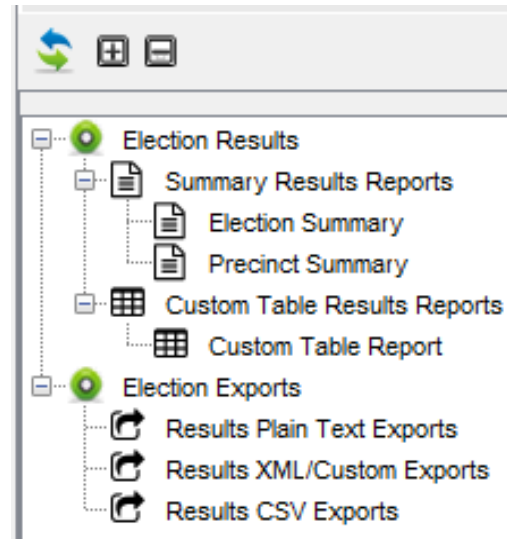
Note

If vote totals have been manually modified and saved, these totals are reflected in the Reporting module's reports and export files.

Note

The Election Summary report and Enhanced XML export file can show results down to the precinct/split level.

Plain Text exports and CSV exports can show results on the precinct level.

Note

Multiple templates of the same report type or export type can not be opened simultaneously in the report template designer screen.

Note

When splits within a precinct are combined, results reports will combine their results under the split with the lowest ID.

The Election Results workflow is accessible only when **Display Election Results** is selected in the Admin Settings.

Right-click a summary or table report in the Navigator to view, add, edit, or delete the report. Right-click **Plain Text, XML/Custom**, or **CSV Export** in the Navigator to add, delete, or export the file.
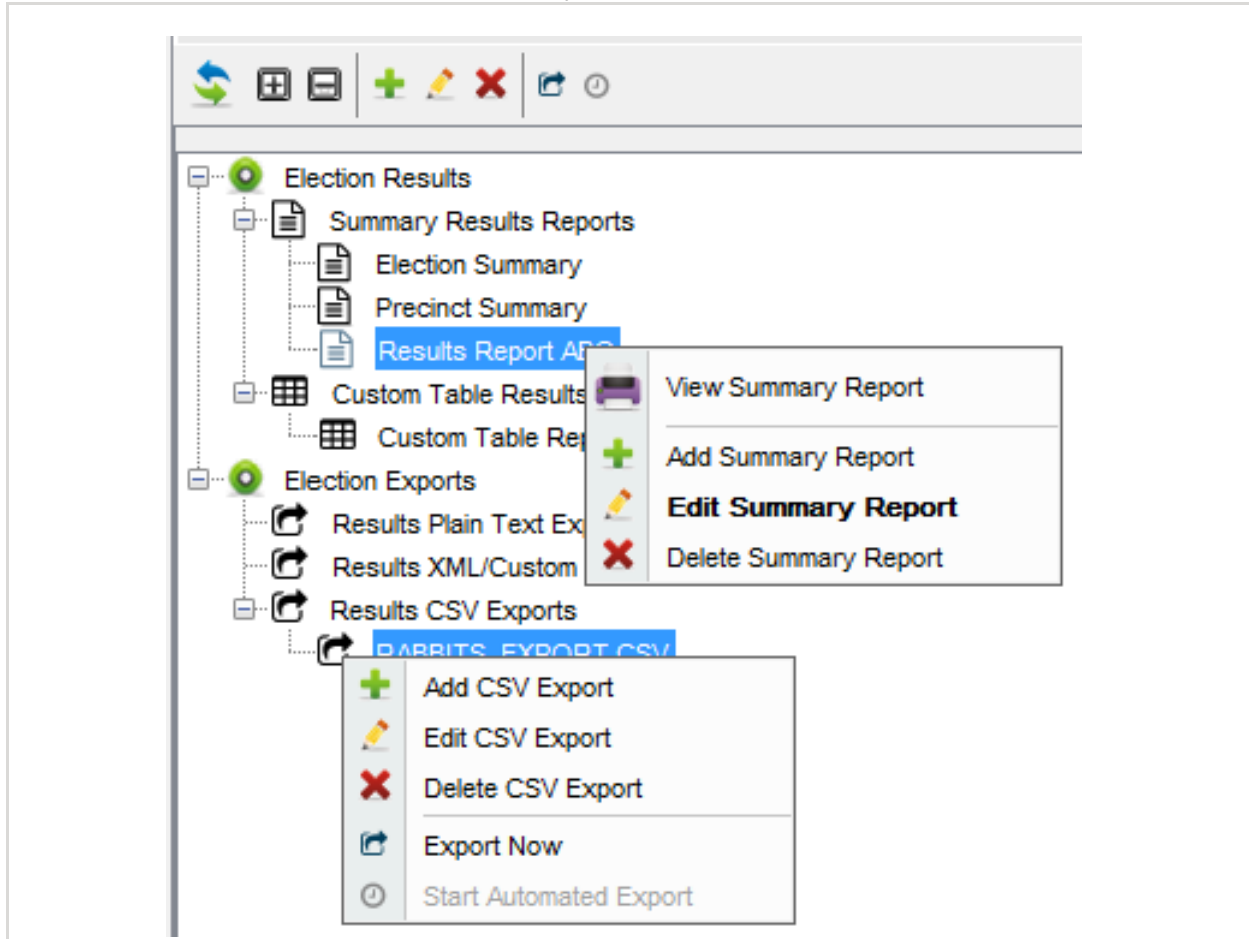
Important

If you need to keep the information in a report you are viewing, be sure to save the report before opening another report template.

In the heading of a generated report from **Election Results**, three header items come from the information entered during election creation: Long Name, Election Date, and County Name. This information can be changed in the report designer, if needed.

The Long Name heading (middle left) can be considerably longer than the other lines without appearing truncated in the generated report.

The file options under **Election Exports** include the option to automatically export an updated results file at specified intervals.

When using this option, keep in mind that the filename remains the same for each export, meaning the older file gets overwritten.

Consequently, if the exported file is open at the time of the next creation, the export will fail. To avoid this error, create a copy of the exported file and open the copy instead.

Note

For faster export speeds, ES&S recommends exporting to a PC directory rather than a USB flash drive.

10.4.1 Summary Results Reports

Note

If the report includes more than five reporting groups, the default orientation will be landscape.

Note

If the report includes precincts with suppressed contests, the report header will include the word "Suppressed."

441 0 - Suppressed

STATISTICS

Registered Voters - Total

Ballots Cast - Total

1. On the Navigator, right-click the desired report type (**Election Summary** or **Precinct Summary**) and select **Add** or **Edit**. The template appears in the designer screen.

2. Enter a report name of up to 80 characters.

3. As needed, enter the Report Heading text that will appear on the top left and top right of the report.

4. Reporting Groups

   Select which reporting groups to include in the report. If you select **Custom**, the Custom Selection button becomes active. Click this to open the Select Reporting Group(s) dialog box, where you can select the desired group(s) from the list.

Note

When selecting custom reporting groups in Electionware reports, the Precincts Reporting statistics will reflect all election precincts selected for the report.

To separate the reported results by individual group, select the **Show Group Details** checkbox.

5. Report Contents

From the list, select the type of report to generate: by election, precinct, or precinct/split.

An Election Summary report will include cumulative results from the entire election.

If you select one of the other report types, you may select to report **All** or a **Custom** list. The **Custom Selection** button opens the list.

6. Statistics and Contests

Statistics refers to precincts' status, total registered voters, ballots cast, and voter turnout. You can choose to include some or all of this information in the report. To include results for local contests as well as jurisdiction-wide contests, select the **Show Local Contests** checkbox.

You may select to report **All** or a **Custom** list. The **Custom Selection** button opens the **Contests and Statistics** lists.

Note

For a precinct report using statistics only (no contests), please use Custom Table Results Reports.

Note

For a recount election, select the races from the recount group to include only these races in the report.

7. Report Options

By default, all reports will include the Contest, Candidate, and Write-In Totals.

When you select any of the other Report Options, they will appear as active in the list to the right.

If Cross Endorsed Totals is selected, the report will contain the cumulative totals for each candidate.

Note

The option Show Cross Endorsed Totals is enabled only if the election contains cross-endorsed contests.

Note

For Summary Results Reports, the option Show Precincts Reporting by Contest is enabled only for the Election Summary report type (not for Precinct or Precinct/Split).

When **Show Precincts Reporting by Contest** is selected, the report will show how many precincts have been counted (both complete and partial) for the specific contest at the time of the report. This information will appear at the bottom of each contest on the report.

The first number represents the number of counted precincts, and the second number represents the number of precincts with this contest.

2 Precincts Reporting out of 3 Precincts with this contest

District Contest District 1
Vote For 1

	TOTAL
REP Mike O'Leary	64
DEM Mary-Ann Johnson	20
Write-In Totals	29
Precincts Reporting	2 of 3

3 Precincts Reporting out of 251 Precincts with this contest

BEST ICE-CREAM FLAVOR
Vote For 1

	TOTAL
CHOCOLATE	69
STRAWBERRY	27
VANILLA	72
Write-In Totals	184
Precincts Reporting	3 of 251

8. Candidate Options

Under Candidate Percentages, select the basis of calculation. To omit all percentages from the report, select **No cand % - no Over/Under**.
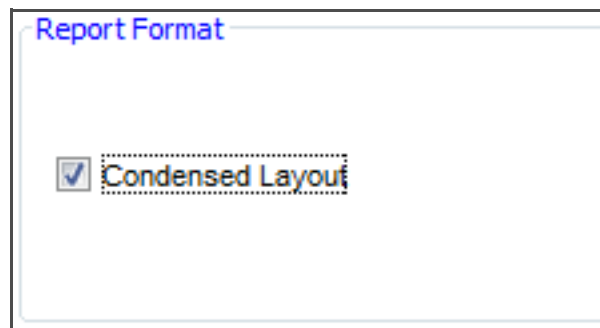
By default, candidates are listed in the order in which they appear on the ballot, but the **Candidate Order** setting enables you to make the winners appear on top.

If you selected to include candidate percentages, you have the option to add them as a bar chart by selecting **Show Bar Chart Percentages**.

9. Report Format

The **Condensed Layout** option reduces the length of the report by condensing the data, and also removes all shading except for the bar chart indicator.
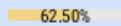
10. Save and view

> After making your selections, click **Save**. The report you created will now be listed in the Navigator.
>
> To preview the current report, click **View Report**.
>
> *Election Results: Sample page from Election Summary Report*

Summary Results Report
MERCUNIV
April 27, 2018

UNOFFICIAL RESULTS

Electionware County

NONPARTISAN CONTEST
Vote For 1

	TOTAL	VOTE %	Election Day	Absentee
NONPARTISAN CANDIDATE 2	3	37.50%	3	0
NONPARTISAN CANDIDATE 1	2	25.00%	2	0
Write-In Totals	0	0.00%	0	0
Not Assigned	0	0.00%	0	0
Total Votes Cast	**5**	62.50%	**5**	**0**
Overvotes	0	0.00%	0	0
Undervotes	3	37.50%	3	0
Contest Totals	8	100.00%	8	0
Precincts Reporting		3 of 4		

Resolution One 0001
Vote For 1

	TOTAL	VOTE %	Election Day	Absentee
Yes	1	20.00%	1	0
No	1	20.00%	1	0
Total Votes Cast	**2**	40.00%	**2**	**0**
Overvotes	0	0.00%	0	0
Undervotes	3	60.00%	3	0
Contest Totals	5	100.00%	5	0
Precincts Reporting		3 of 4		

Election Results: Sample page from Condensed Election Summary Report

Summary Results Report
MERCUNIV
April 27, 2018

UNOFFICIAL RESULTS

Electionware County

LIB SHERIFF
Vote For 1

	TOTAL	VOTE %		Election Day	Absentee
LIBERTARIAN CANDIDATE 1	0	0.00%		0	0
LIBERTARIAN CANDIDATE 2	0	0.00%		0	0
Write-In Totals	1	50.00%		1	0
Not Assigned	1	50.00%		1	0
Total Votes Cast	**1**	**50.00%**		**1**	**0**
Overvotes	0	0.00%		0	0
Undervotes	1	50.00%		1	0
Contest Totals	2	100.00%		2	0
Precincts Reporting	3 of 4				

NONPARTISAN CONTEST
Vote For 1

	TOTAL	VOTE %		Election Day	Absentee
NONPARTISAN CANDIDATE 2	3	37.50%		3	0
NONPARTISAN CANDIDATE 1	2	25.00%		2	0
Write-In Totals	0	0.00%		0	0
Not Assigned	0	0.00%		0	0
Total Votes Cast	**5**	**62.50%**		**5**	**0**
Overvotes	0	0.00%		0	0
Undervotes	3	37.50%		3	0
Contest Totals	8	100.00%		8	0
Precincts Reporting	3 of 4				

Resolution One 0001
Vote For 1

	TOTAL	VOTE %		Election Day	Absentee
Yes	1	20.00%		1	0
No	1	20.00%		1	0
Total Votes Cast	**2**	**40.00%**		**2**	**0**
Overvotes	0	0.00%		0	0
Undervotes	3	60.00%		3	0
Contest Totals	5	100.00%		5	0
Precincts Reporting	3 of 4				

Note

In summary reports, only the first two lines of contest and candidate names will appear; any additional content will be truncated.

On the Navigator, the pre-existing default reports are identified by a black icon, while the user-defined reports will appear with a gray icon.
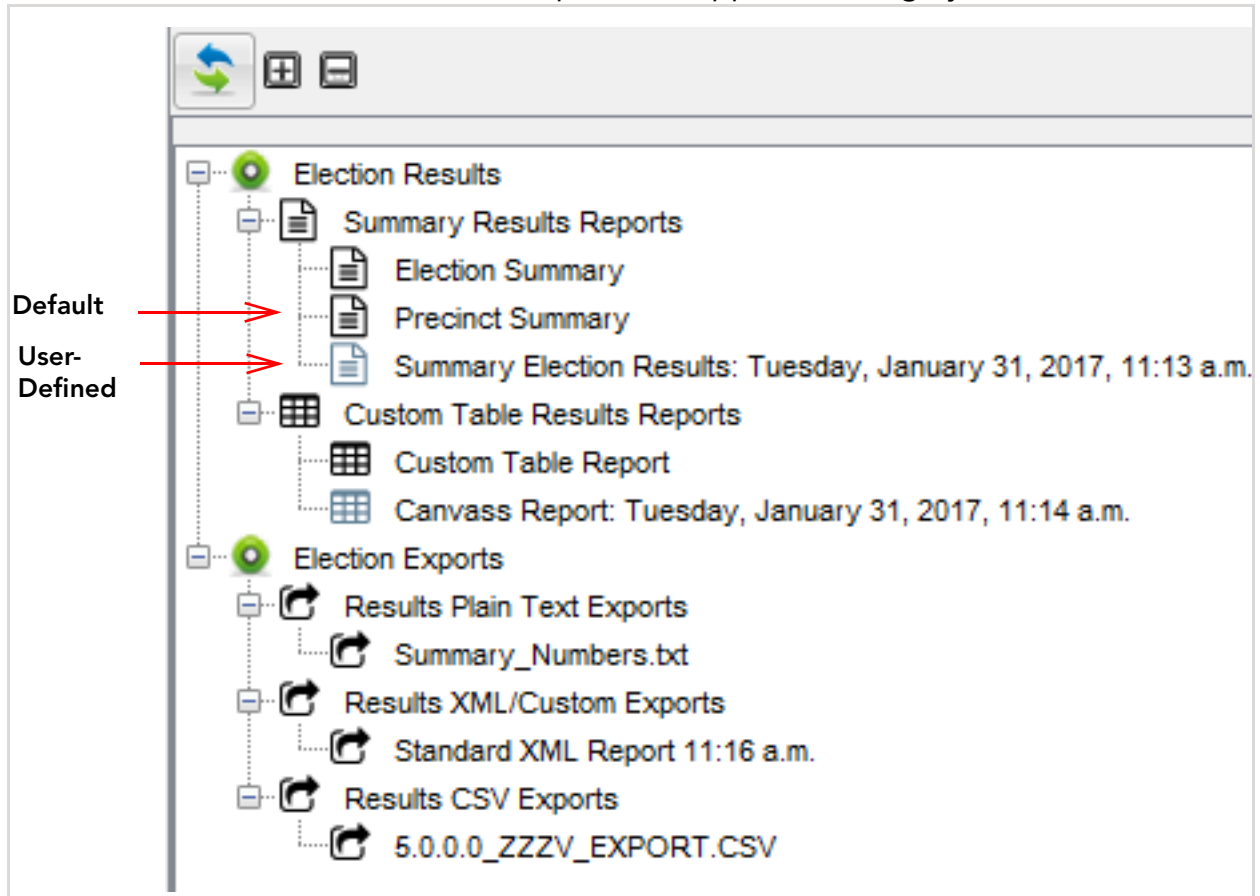
User-defined reports can be deleted, but default reports cannot.

10.4.2 Custom Table Results Reports

1. On the Navigator, right-click **Custom Table Report** and click **Add** or **Edit**. The template appears in the designer screen.

2. Enter a report name of up to 80 characters.

3. As needed, enter the Report Heading text that will appear on the top left and top right of the report.

4. Reporting Groups

   Select which reporting groups to include in the report. If you select **Custom**, the Custom Selection button becomes active. Click this to open the Select Reporting Group(s) dialog box, where you can select the desired group(s) from the list.

Note

When selecting custom reporting groups in Electionware reports, the Precincts Reporting statistics will reflect all election precincts selected for the report.

5. Report Contents

From the list, select the type of report to generate: by precinct, precinct/split, poll, ballot style, or district types.

You may select to report **All** or a **Custom** list. The **Custom Selection** button opens the list.

6. Statistics and Contests

Statistics refers to precincts' status, total registered voters, ballots cast, and voter turnout. You can choose to include some or all of this information in the report. To include results for local contests as well as jurisdiction-wide contests, select the **Show Local Contests** checkbox.

You may select to report **All** or a **Custom** list. The **Custom Selection** button opens the **Contests and Statistics** lists.
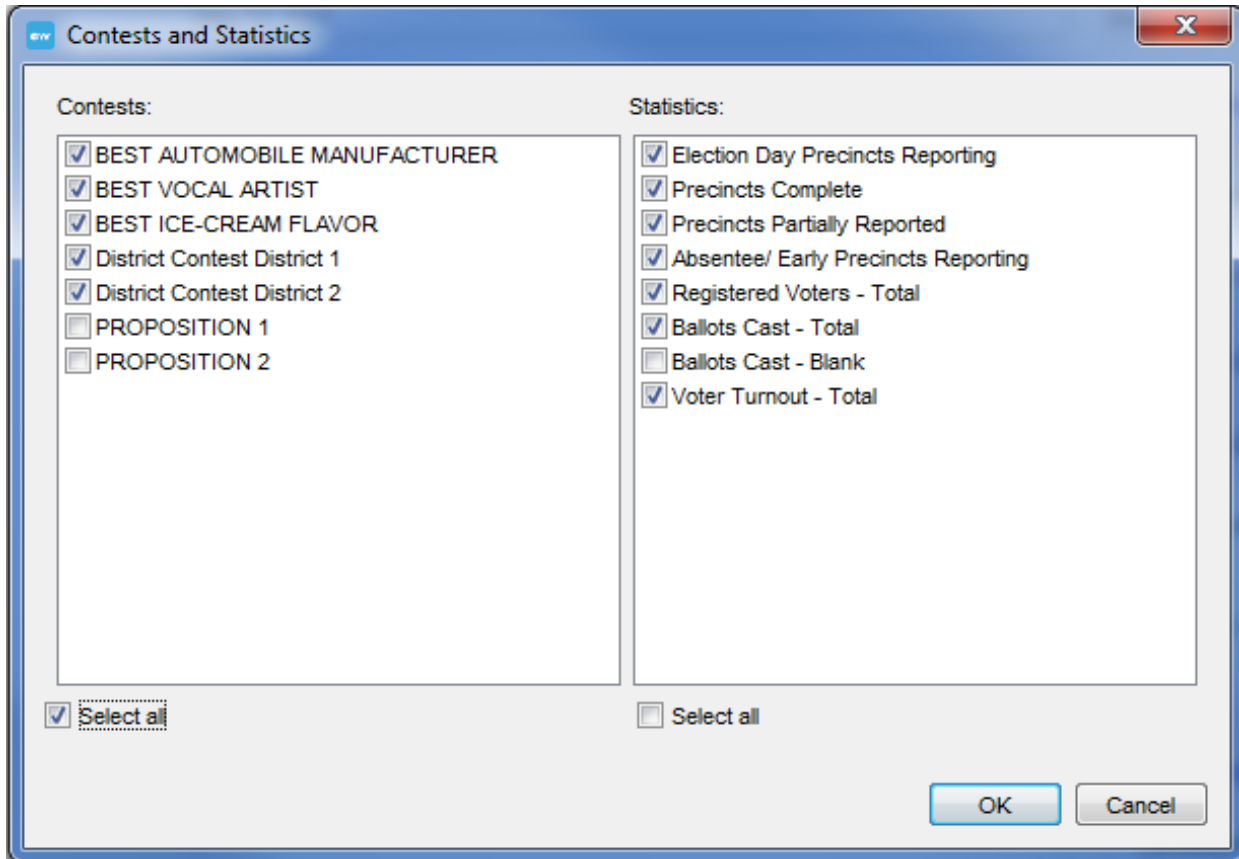
| Note | For an open primary election, if the Report Contents selection is set to Ballot Style, registered voter data will not be listed for Statistics. |

| Note | For a recount election, select the races from the recount group to include only these races in the report. |

7. Report Format

The **Condensed Layout** option reduces the length of the report by condensing the data, and also removes all shading except for the bar chart indicator.
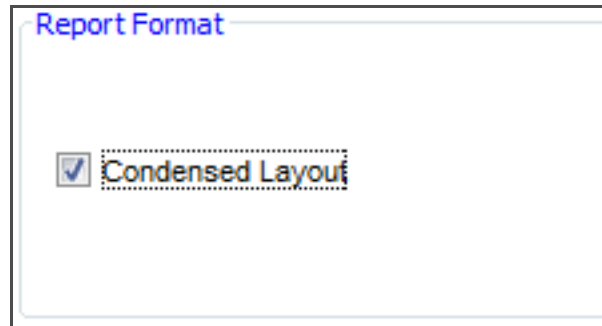
8. Report Options

By default, all reports will include the Contest, Candidate, and Write-In Totals.

When you select any of the other Report Options, they will appear as active in the list to the right.

If Cross Endorsed Totals is selected, the report will contain the cumulative totals for each candidate.

Note

The option Show Cross Endorsed Totals is enabled only if the election contains cross-endorsed contests.

When **Show Precincts Reporting by Contest** is selected, the report will show how many precincts have been counted (both complete and partial) for the specific contest at the time of the report. This information will appear at the bottom of each contest on the report.

The first number represents the number of counted precincts, and the second number represents the number of precincts with this contest.

2 Precincts Reporting out of 3 Precincts with this contest

District Contest District 1
Vote For 1

	TOTAL
REP Mike O'Leary	64
DEM Mary-Ann Johnson	20
Write-In Totals	29
Precincts Reporting	2 of 3

3 Precincts Reporting out of 251 Precincts with this contest

BEST ICE-CREAM FLAVOR
Vote For 1

	TOTAL
CHOCOLATE	69
STRAWBERRY	27
VANILLA	72
Write-In Totals	184
Precincts Reporting	3 of 251

9. Save and view

    After making your selections, click **Save**. The report you created will now be listed in the Navigator.

    To preview the current report, click **View Report**.

    Note

    If the report includes precincts with suppressed contests, the report header will include the word "Suppressed."

Election Results: Sample page from Custom Table Report

Custom Table Report   UNOFFICIAL RESULTS
MERCUNIV
April 27, 2018   Electionware County

	REP STATE SENATOR								REP COUNTY ATTORNEY					
	VOTE FOR 1								VOTE FOR 1					
	3 of 4 Precincts Reporting								3 of 4 Precincts Reporting					
	REPUBLICAN CANDIDATE 1	REPUBLICAN CANDIDATE 2	Write-in Totals	Write-in: Not Assigned	Total Votes Cast	Overvotes	Undervotes	Contest Total	REPUBLICAN CANDIDATE 1	REPUBLICAN CANDIDATE 2	Write-in Totals	Write-in: Not Assigned	Total Votes Cast	Overvotes
Precinct 1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Precinct 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Precinct 3	0	1	0	0	1	0	0	1	0	0	0	0	0	0
ABSENTEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**

Election Results: Sample page from Condensed Custom Table Report

Custom Table Report   UNOFFICIAL RESULTS
MERCUNIV
April 27, 2018   Electionware County

	REP STATE SENATOR								REP COUNTY ATTORNEY					
	VOTE FOR 1								VOTE FOR 1					
	3 of 4 Precincts Reporting								3 of 4 Precincts Reporting					
	REPUBLICAN CANDIDATE 1	REPUBLICAN CANDIDATE 2	Write-in Totals	Write-in: Not Assigned	Total Votes Cast	Overvotes	Undervotes	Contest Total	REPUBLICAN CANDIDATE 1	REPUBLICAN CANDIDATE 2	Write-in Totals	Write-in: Not Assigned	Total Votes Cast	Overvotes
Precinct 1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Precinct 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Precinct 3	0	1	0	0	1	0	0	1	0	0	0	0	0	0
ABSENTEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**

The custom report can be saved to a directory of your choice in PDF, RTF, HTML, XLSX, or CSV format.

On the Navigator, the preexisting default reports are identified by a black icon, while the user-defined reports will appear with a gray icon.
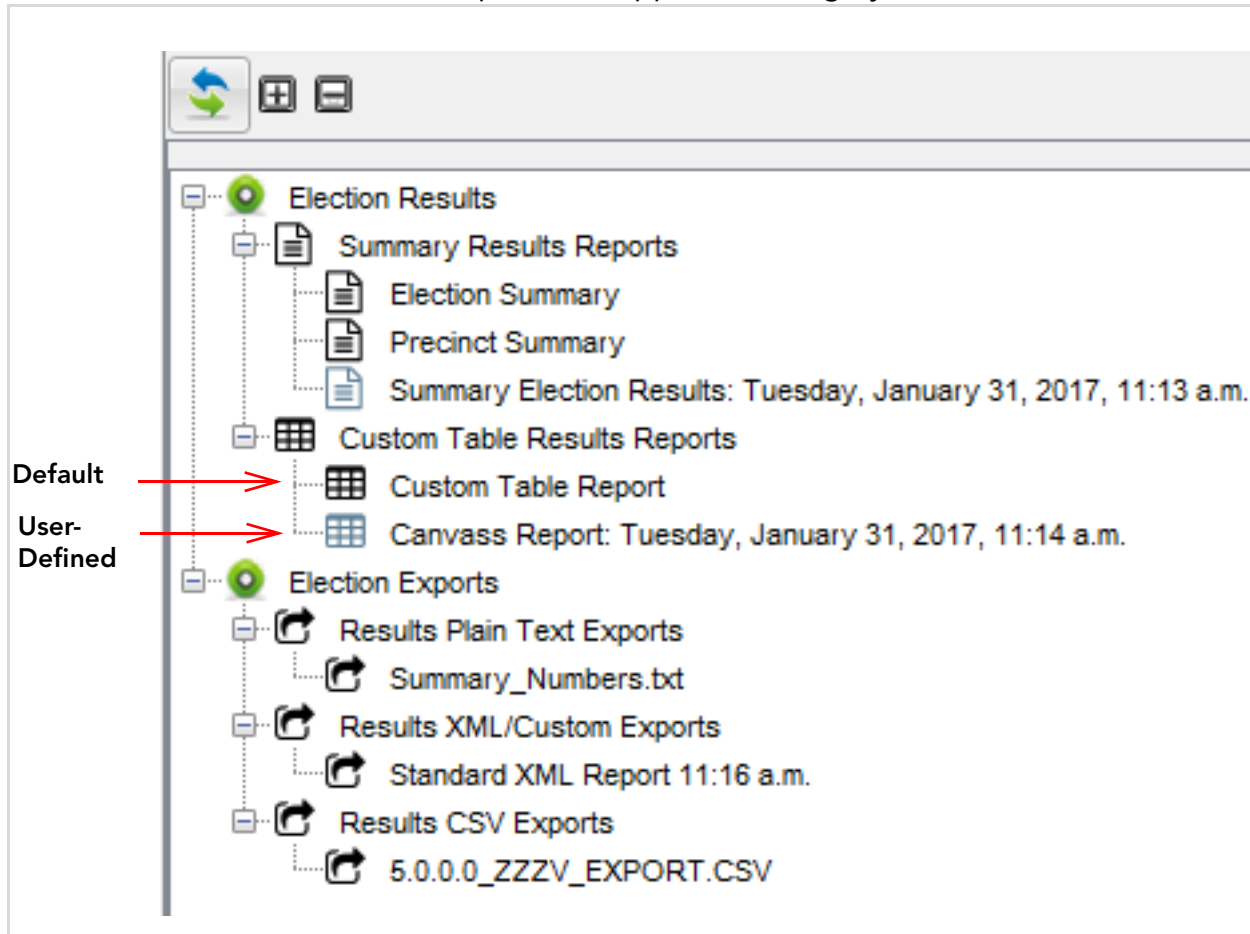
10.4.3 Results Plain Text Exports

The Results Plain Text Exports files contain election results data in a fixed record length, fixed data field length format. Records contain registered voter counts, ballots cast data, precinct data, contest data, candidate data, and votes. The file's records are sequenced by contest/candidate/precinct.
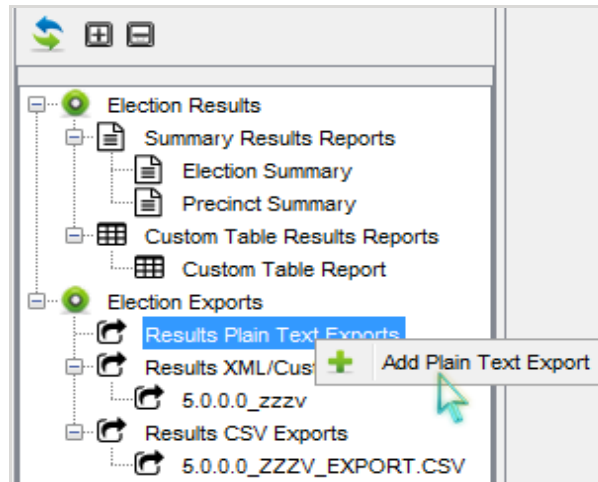
1. On the Navigator, right-click **Results Plain Text Exports** and select **Add Plain Text Export**.

The template appears in the designer screen.

2. Plain Text File Export Name

The default Plain Text Export File Name is displayed as Summary_Text.txt. The Plain Text Export File Name displayed is determined by the file content options you select, and will change if you select different options. The Plain Text Export File is available in eight formats.

Each format has a unique default filename, as shown in the following table.

Table 10-1: Results Plain Text Export Formats

Format Option Selected	File Name
Precinct Detail – Numbers Only - not using groups	Precinct_Numbers.txt
Precinct Detail – Numbers Only - using groups	Precinct_Numbers_Groups.txt
Precinct Detail – with Text - not using groups	Precinct_Text.txt
Precinct Detail – with Text - using groups	Precinct_Text_Groups.txt
Summary Results – Numbers Only - not using groups	Summary_Numbers.txt
Summary Results – Numbers Only - using groups	Summary_Numbers_Groups.txt
Summary Results – with Text - not using groups	Summary_Text.txt
Summary Results – with Text - using groups	Summary_Text_Groups.txt

You may override the default filename and save the file with your filename.

3. Export Location

Click **Browse** and select a destination folder for the export file.

4. Display Report By

Election Summary generates an election results summary file of all candidate votes by contest.

Precinct Detail generates an election results detail file with a record for each candidate's votes in each precinct. Records are in ascending order by contest, candidate, and precinct.

To include party codes, and contest/candidate/precinct names in the export, select **Text**.

To identify results by contest numbers and candidate numbers only, select **Numbers Only**.

5. Statistics and Contests

Statistics refers to precincts' status, total registered voters, and ballots cast. You can choose to include some or all of this information in the report. To include results for local contests, in addition to all other contests, you must select the **Show Local Contests** check box. To include only specific contests and/or statistics in the export file, perform **Custom Selection**.

You may select to report **All** or a **Custom** list. The **Custom** selection button opens the **Contests and Statistics** lists.
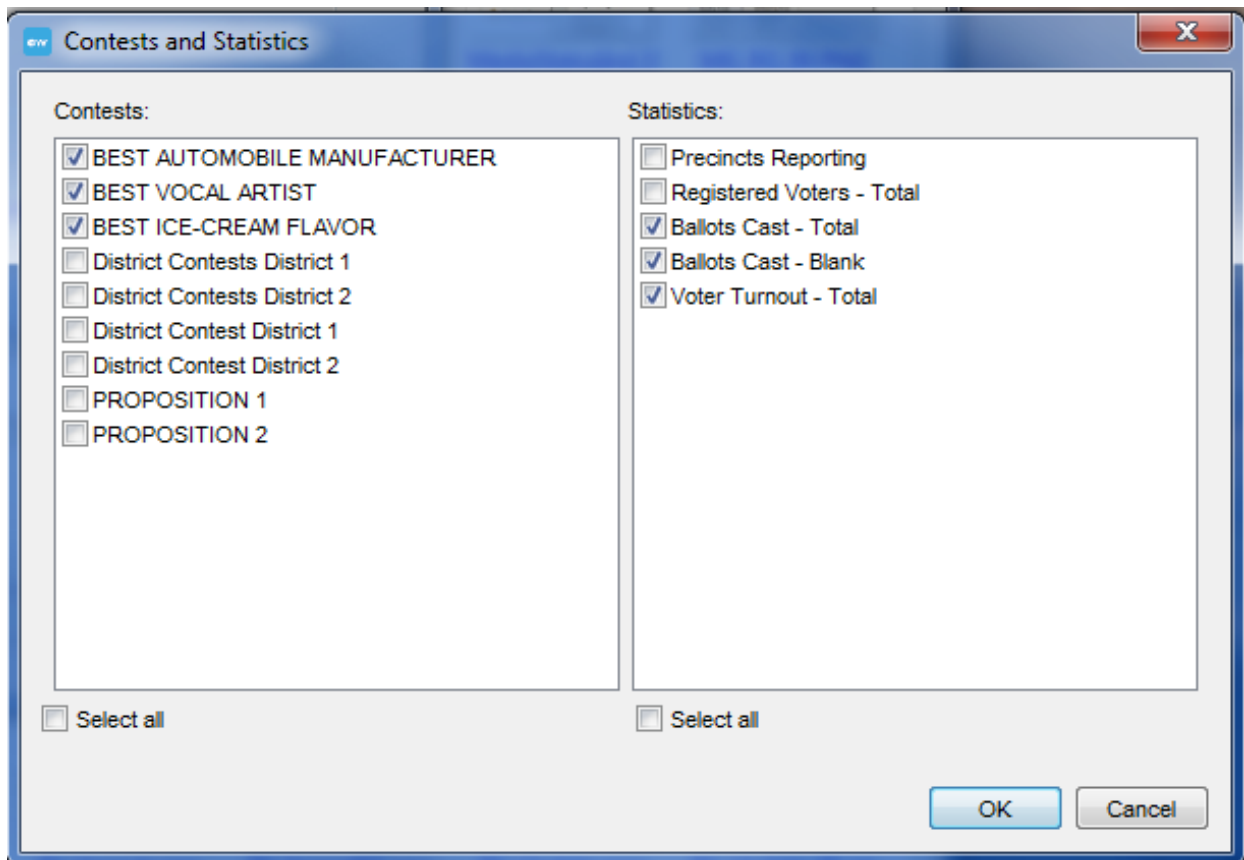
| **Note** | If no contests or statistics are selected in the Contests and Statistics dialog box, you will be prompted to make selections or select the **All** option. |

| **Note** | For a recount election, select the races from the recount group to include only these races in the report. |

6. Automated Exports

   To set up automatic generation and export of the results file, select the **Automated Exports** check box. The default export interval is 5 minutes.

7. Report Options

   Select any of the three options to include in the export file:

   • Show Group Details

   • Show Write-in Totals

   • Show Overvotes/Undervotes

8. After making your selections, click **Save**.

```
)00000000000000000000200000000000000000PRECINCTS COUNTED - TOTAL                          PRECINCTS COUNTED - TOTAL          00
)00000000000000000000020000029          REGISTERED VOTERS - TOTAL                          REGISTERED VOTERS - TOTAL          00
)00000000000000000000020000009          REGISTERED VOTERS - REPUBLICAN                     REGISTERED VOTERS - REPUBLICAN     00
)00000000000000000000020000009          REGISTERED VOTERS - DEMOCRATIC                     REGISTERED VOTERS - DEMOCRATIC     00
)00000000000000000000020000006          REGISTERED VOTERS - LIBERTARIAN                    REGISTERED VOTERS - LIBERTARIAN    00
)00000000000000000000020000005          REGISTERED VOTERS - NONPARTISAN                    REGISTERED VOTERS - NONPARTISAN    00
)00000000000000000000002001001          BALLOTS CAST - TOTAL                               BALLOTS CAST - TOTAL               00
)00000000000000000000002001001 REP      BALLOTS CAST - REPUBLICAN                          BALLOTS CAST - REPUBLICAN          00
)00000000000000000000002001001 DEM      BALLOTS CAST - DEMOCRATIC                          BALLOTS CAST - DEMOCRATIC          00
)00000000000000000000002001001 LIB      BALLOTS CAST - LIBERTARIAN                         BALLOTS CAST - LIBERTARIAN         00
)00000000000000000000002001001 NON      BALLOTS CAST - NONPARTISAN                         BALLOTS CAST - NONPARTISAN         00
)00000000000000000000002001001          BALLOTS CAST - BLANK                               BALLOTS CAST - BLANK               00
)00000000000000000000002001001 REP      REP UNITED STATES SENATOR                          REPUBLICAN CANDIDATE 1             01
)00000000000000000000002001001 REP      REP UNITED STATES SENATOR                          REPUBLICAN CANDIDATE 2             01
)00000000000000000000002001001 REP      REP UNITED STATES SENATOR                          Write-In                           01
)00000000000000000000002001001          REP UNITED STATES SENATOR                          OVER VOTES                         01
)00000000000000000000002001001          REP UNITED STATES SENATOR                          UNDER VOTES                        01
)00000000000000000000002001001 REP      REP UNITED STATES REPRESENTATIVE IN CONGRESS REPUBLICAN CANDIDATE 1                   01
)00000000000000000000002001001 REP      REP UNITED STATES REPRESENTATIVE IN CONGRESS REPUBLICAN CANDIDATE 2                   01
)00000000000000000000002001001 REP      REP UNITED STATES REPRESENTATIVE IN CONGRESS Write-In                                 01
)00000000000000000000002001001          REP UNITED STATES REPRESENTATIVE IN CONGRESS OVER VOTES                               01
)00000000000000000000002001001          REP UNITED STATES REPRESENTATIVE IN CONGRESS UNDER VOTES                              01
)00000000000000000000002001001 REP      REP STATE SENATOR                                  REPUBLICAN CANDIDATE 1             01
)00000000000000000000002001001 REP      REP STATE SENATOR                                  REPUBLICAN CANDIDATE 2             01
)00000000000000000000002001001 REP      REP STATE SENATOR                                  Write-In                           01
)00000000000000000000002001001          REP STATE SENATOR                                  OVER VOTES                         01
)00000000000000000000002001001          REP STATE SENATOR                                  UNDER VOTES                        01
)00000000000000000000002001001 REP      REP COUNTY ATTORNEY                                REPUBLICAN CANDIDATE 1             01
)00000000000000000000002001001 REP      REP COUNTY ATTORNEY                                REPUBLICAN CANDIDATE 2             01
)00000000000000000000002001001 REP      REP COUNTY ATTORNEY                                Write-In                           01
)00000000000000000000002001001          REP COUNTY ATTORNEY                                OVER VOTES                         01
)00000000000000000000002001001          REP COUNTY ATTORNEY                                UNDER VOTES                        01
)00000000000000000000002001001 REP      REP SHERIFF                                        REPUBLICAN CANDIDATE 1             01
)00000000000000000000002001001 REP      REP SHERIFF                                        REPUBLICAN CANDIDATE 2             01
)00000000000000000000002001001 REP      REP SHERIFF                                        Write-In                           01
)00000000000000000000002001001          REP SHERIFF                                        OVER VOTES                         01
)00000000000000000000002001001          REP SHERIFF                                        UNDER VOTES                        01
)00000000000000000000002001001 DEM      DEM UNITED STATES SENATOR                          DEMOCRATIC CANDIDATE 1             01
)00000000000000000000002001001 DEM      DEM UNITED STATES SENATOR                          DEMOCRATIC CANDIDATE 2             01
)00000000000000000000002001001 DEM      DEM UNITED STATES SENATOR                          Write-In                           01
)00000000000000000000002001001          DEM UNITED STATES SENATOR                          OVER VOTES                         01
)00000000000000000000002001001          DEM UNITED STATES SENATOR                          UNDER VOTES                        01
)00000000000000000000002001001 DEM      DEM UNITED STATES REPRESENTATIVE IN CONGRESS DEMOCRATIC CANDIDATE 1                   01
)00000000000000000000002001001 DEM      DEM UNITED STATES REPRESENTATIVE IN CONGRESS DEMOCRATIC CANDIDATE 2                   01
)00000000000000000000002001001 DEM      DEM UNITED STATES REPRESENTATIVE IN CONGRESS Write-In                                 01
)00000000000000000000002001001          DEM UNITED STATES REPRESENTATIVE IN CONGRESS OVER VOTES                               01
)00000000000000000000002001001          DEM UNITED STATES REPRESENTATIVE IN CONGRESS UNDER VOTES                              01
)00000000000000000000002001001 DEM      DEM STATE SENATOR                                  DEMOCRATIC CANDIDATE 1             01
)00000000000000000000002001001 DEM      DEM STATE SENATOR                                  DEMOCRATIC CANDIDATE 2             01
)00000000000000000000002001001 DEM      DEM STATE SENATOR                                  Write-In                           01
```
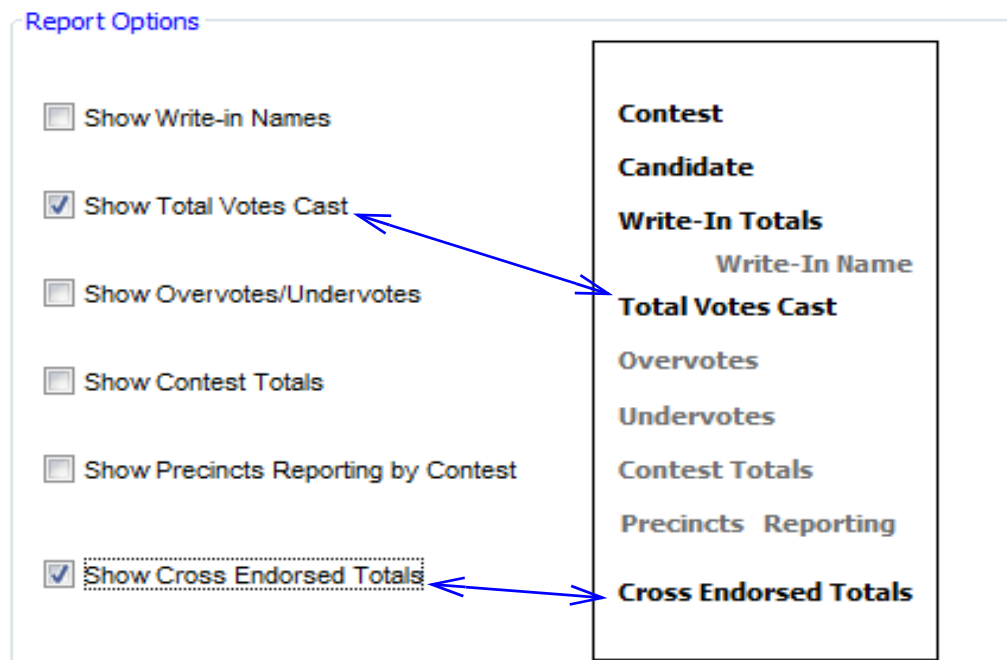
Note

The Plain Text Export contains only registered voter counts and ballots cast counts for precincts that have a status of Completed or Partially Completed.

Note

Once an export type has been saved, to immediately export a results file at any time, click the **Export Now** button.

Start Automated Export

If you selected Automated Exports, right-click the export on the Navigator and select **Start Automated Export**. The files will begin exporting at the interval you specified. To stop this auto function, right-click the export and select **Stop Automated Export**.

Note

If you close the election, or the Electionware program, automated exports will stop.

10.4.4 Results XML/Custom Exports

The Results XML/Custom Exports feature of the Reporting module provides two XML results file formats, and the ability to use Extensible Stylesheet Language (XSL) to create custom results files in a variety of formats (XML, HTML, plain text, or XSL).

The three XML results file format options are the Enhanced XML Results File, Standard XML Results File, and Custom.

- The Enhanced XML Results File is a comprehensive election results file containing all the Electionware results data items and calculated results data items normally required as input to a web election results reporting system.

- The Standard XML Results File is an election results file containing most of the Electionware results data items and calculated results data items normally required as input to a web election results reporting system.

- The Custom Results File feature uses XSL to create custom results files, providing a simple method to create customized election results files.

1. On the Navigator, right-click **Results XML/ Custom Exports** and select **Add XML Export**.

The template appears in the designer screen.

2. Export File Name

   Type the name of your export file. You may use any filename and any file extension.

   Note

   It is suggested you use your <Election Name>, followed by some additional text identifying the file as an Enhanced or Standard XML file, and use the .xml file extension, e.g., 8PILWILL_Enhanced.xml.

3. Export Location

   The default Export Location is displayed. You may click **Browse** and select an optional destination folder for the report.

4. File Format

    Select one of the three options:

    - **Enhanced XML:** The Enhanced XML File is a comprehensive, all-inclusive results file with the flexibility to show results on an election, precinct, or split level.

    - **Standard XML:** The Standard XML file is a summary election results file containing the results on an election or precinct level.

    - **Custom:** A Custom File Format (<filename>.XSL) is created using the Extensible Stylesheet Language. The Custom File Format file (<filename>.XSL) transforms the Electionware Results Enhanced XML File into a user defined customized election results file format (XML, HTML, plain text or XSL). When using the Custom format setting, you must select an existing <filename>.XSL file to reformat the EW Results Enhanced XML File. The <filename>.XSL file can be developed by you or developed for you by ES&S.

    a. Click **Browse** to locate and select an XSL file.

Note

The source input for all Custom Format Files is the Electionware Enhanced XML File.

5. Automated Exports

    To set up automatic generation and export of the results file, select the **Automated Exports** check box. The default export interval is 5 minutes.

6. Export Options

    To include adjudicated write-in candidates in the XML export files, select **Show Write-In Names**.

Election Results: Sample XML Export

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Owner id="" name="Comprehensive Electionware XML Results File - VERSION 1.0" xmlversion="5.0.0.0">
    <ReportTime>2017-03-15T15:49:13.369-05:00</ReportTime>
    <JurisdictionMap totalJurisdictions="1" reportingJurisdictions="1" percentReported="100.00">
        <Jurisdiction id="" title="Electionware County" typeId="2" altId1="" altId2="" totalBallotsCast="339" totalRegistration="0" totalCas
            <BStyle id="116" refPtyId="1" name="Precinct One" typeSeqSplit="01-0001-01" useForVoterCount="true" altId1="" altId2=""/>
            <BStyle id="117" refPtyId="1" name="Precinct Two SPLIT 1" typeSeqSplit="01-0002-01" useForVoterCount="true" altId1="" altId2=""/
            <BStyle id="118" refPtyId="1" name="Precinct Two SPLIT 2" typeSeqSplit="01-0003-01" useForVoterCount="true" altId1="" altId2=""/
            <BStyle id="119" refPtyId="1" name="Precinct Three" typeSeqSplit="01-0004-01" useForVoterCount="true" altId1="" altId2=""/>
            <Precinct id="6" blanksCast="10" ballotsCast="165" regVoters="0" castPercentage="0.00" counted="true" altId1="Precinct1" altId2=
                <PrecinctReportingGroup reportingGroupId="0" ballotsCast="165" blanksCast="10" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="10" refBStyleId="116" castPercentage="0.00" ballotsCast="165" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="1" ballotsCast="90" blanksCast="6" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="6" refBStyleId="116" castPercentage="0.00" ballotsCast="90" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="2" ballotsCast="45" blanksCast="2" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="2" refBStyleId="116" castPercentage="0.00" ballotsCast="45" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="3" ballotsCast="30" blanksCast="2" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="2" refBStyleId="116" castPercentage="0.00" ballotsCast="30" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="4" ballotsCast="0" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="116" castPercentage="0.00" ballotsCast="0" regVoters="0"/>
                </PrecinctReportingGroup>
                <TabulatorList elecDayReported="4">
                    <Tabulator machineId="0110340262"/>
                    <Tabulator machineId="0315411120"/>
                    <Tabulator machineId="EV0215380011"/>
                    <Tabulator machineId="EV0216310017"/>
                </TabulatorList>
            </Precinct>
            <Precinct id="54" blanksCast="0" ballotsCast="114" regVoters="0" castPercentage="0.00" counted="true" altId1="" altId2="" name="
                <PrecinctReportingGroup reportingGroupId="0" ballotsCast="114" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="117" castPercentage="0.00" ballotsCast="66" regVoters="0"/>
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="118" castPercentage="0.00" ballotsCast="48" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="1" ballotsCast="57" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="117" castPercentage="0.00" ballotsCast="33" regVoters="0"/>
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="118" castPercentage="0.00" ballotsCast="24" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="2" ballotsCast="38" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="117" castPercentage="0.00" ballotsCast="22" regVoters="0"/>
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="118" castPercentage="0.00" ballotsCast="16" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="3" ballotsCast="19" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="117" castPercentage="0.00" ballotsCast="11" regVoters="0"/>
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="118" castPercentage="0.00" ballotsCast="8" regVoters="0"/>
                </PrecinctReportingGroup>
                <PrecinctReportingGroup reportingGroupId="4" ballotsCast="0" blanksCast="0" castPercentage="0.00" regVoters="0">
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="117" castPercentage="0.00" ballotsCast="0" regVoters="0"/>
                    <PrecinctReportingGroupSplit blanksCast="0" refBStyleId="118" castPercentage="0.00" ballotsCast="0" regVoters="0"/>
                </PrecinctReportingGroup>
                <TabulatorList elecDayReported="2">
                    <Tabulator machineId="0110340262"/>
                    <Tabulator machineId="0315411120"/>
                </TabulatorList>
```

7. After making your selections, click **Save**.

Note

Once an export type has been saved, you can immediately export a results file at any time by selecting **Export Now**.

Start Automated Export

If you selected Automated Exports, right-click the export on the Navigator and select **Start Automated Export**. The files will begin exporting at the interval you specified. To stop this auto function, right-click the export and select **Stop Automated Export**.
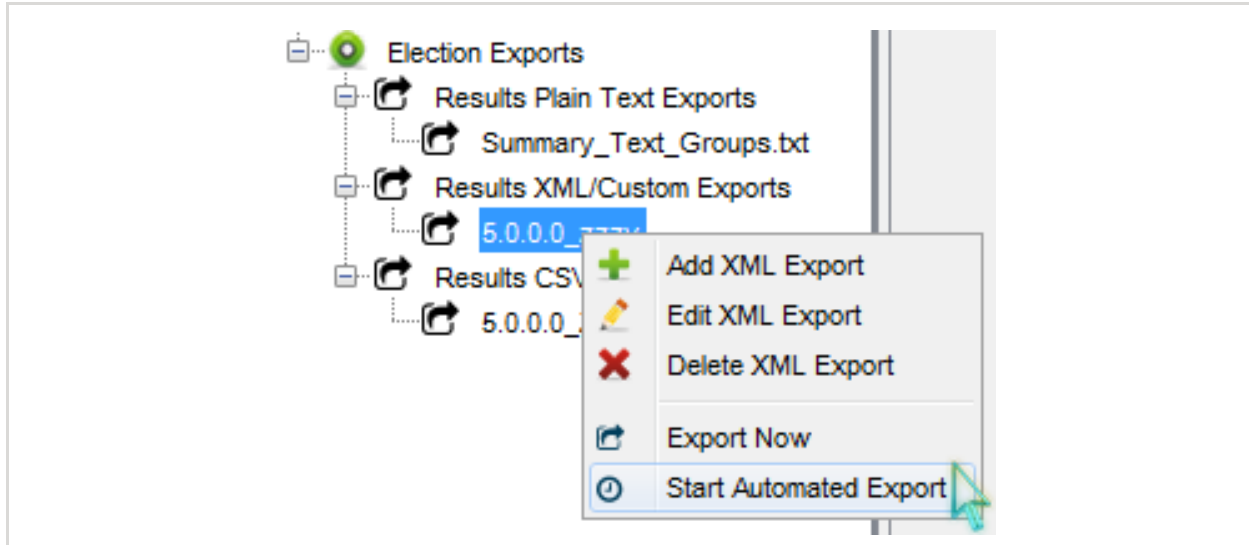
10.4.5 Results CSV Exports

Results CSV Export files are comma delimited Excel style spread sheet file containing precinct or precinct/group results for each precinct in the election. The first 3 rows contain the column header name text for each column. This is followed by record for each precinct or precinct/group in precinct code number order. The first 3 columns identify the County Code, Precinct Code and Precinct Name. This is followed by columns for each contest and candidate in the election in Electionware contest order and with all candidates in home rotation order. The content of each column is separated by a comma with end of line codes (CR/LF) at the end of each record. A column exists for every count in the election independent of what counts are applicable to a precinct. Values will only appear in columns that are applicable to the precinct. All other columns will contain zero.

1. On the Navigator, right-click **Results CSV Exports** and select **Add CSV Export**.

The template appears in the designer screen.

Note

Required values for Display Report By cannot be changed.

2. CSV Export File Name

    The default CSV Export File Name, <Election Name> _EXPORT.CSV is displayed, where < Election Name> is the Electionware Election Name and _EXPORT is default text, and CSV is the required default file extension.
    You may override the default filename and save the file format with your filename. The file extension *must* be CSV.

3. Export Location

    The default Export Location is displayed. You may click **Browse** and select an optional destination folder for the report.

4. Statistics and Contests

Statistics refers to precincts' total registered voters, and ballots cast. You can choose to include some or all of this information in the report. To include results for local contests, in addition to all other contests, you must select the **Show Local Contests** check box. To include only specific contests and/or statistics in the export file, perform **Custom Selection**.

You may select to report **All** or a **Custom** list. The Custom Selection button opens the **Contests and Statistics** lists.
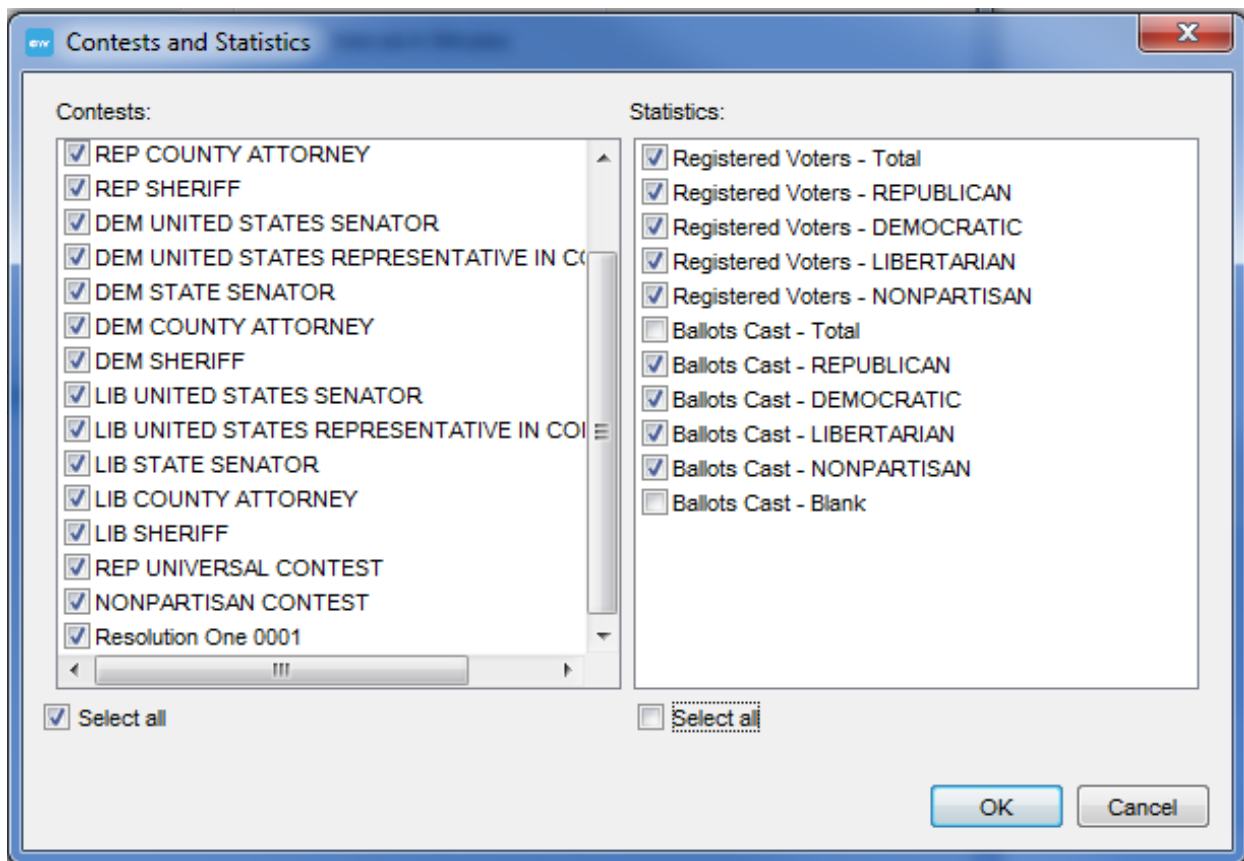
| Note | If no statistics and contests are selected in the Contests and Statistics dialog box, you will be prompted to make selections or select the **All** option. |

| Note | For a recount election, select the races from the recount group to include only these races in the report. |

5. Automated Exports

> To set up automatic generation and export of the results file, select the **Automated Exports** check box. The default export interval is 5 minutes.

Election Results: Sample CSV Export

	A	B	C	D	E	F	G	H
1	COUNTY NUMBER	PRECINCT CODE	PRECINCT NAME	REGISTERE	BALLOTS (	BALLOTS (	BEST AUT(	BEST A
2							NON	NON
3				VOTERS	BALLOTS (	BALLOTS (	BMW	MERCE
4	12061	1	Precinct One	55	87	6	6	
5	12061	2	Precinct Two	41	60	0	6	
6	12061	3	Precinct Three	12	15	3	3	
7		ZZZ	COUNTY TOTALS	110	162	9	15	

6. Report Options

> Select any of the three options to include in the export file:
>
> • Show Group Details
>
> • Show Write-in Totals
>
> • Show Overvotes/Undervotes

When Show Group Details is selected, the CSV Export File contains multiple rows for each precinct in group order.

7. After making your selections, click **Save**.

Note

The CSV Export contains rows for every precinct or precinct/group defined for the election.

Note

Once an export type has been saved, to immediately export a results file at any time, click the **Export Now** button.

Start Automated Export

If you selected Automated Exports, right-click the export on the Navigator and select **Start Automated Export**. The files will begin exporting at the interval you specified. To stop this auto function, right-click the export and select **Stop Automated Export**.
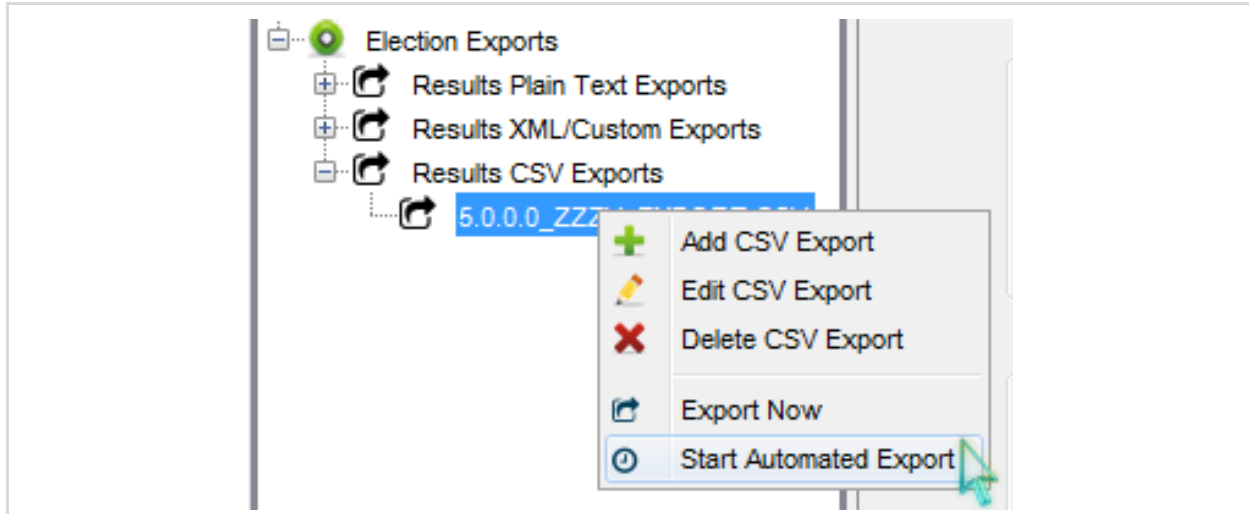
Chapter 11: Official Canvass and Post-Election Procedures

11.1 Purpose of the Official Canvass

The Official Canvass consists of a post-election audit of all of the voting precincts' returns and the vote-by-mail voter ballot returns. Its purpose is to validate the outcome of the election by verifying that there were not more ballots cast than the sum of the numbers of voters who signed the Precinct Roster/Index and who applied for, and were issued vote-by-mail voter ballots, as well as to account for all official ballots produced for the election. Additionally, the Official Canvass verifies that all required certificates and oaths were properly executed by the precinct board. Verification of the computer or tabulator count is accomplished by manually recounting the voted ballots from at least one percent of the voting precincts and comparing the manually tallied results to the tabulator and Summary System produced results. Each of the following Official Canvass functions must be performed by a minimum of three persons.

11.2 Election Observer Panel

Before processing ballots, the election administrator appoints election boards to carry out the following tasks.

11.2.1 Canvassing Precinct Returns

Canvassing precinct returns consists of the following tasks:

- Processing the provisional ballots returned from each precinct

- Verifying the eligibility of persons who cast ballots provisionally

- Opening the envelopes of eligible voters and removing the provisional ballots

- Examining the ballots for write-in votes

- Noting cause for rejection and damage identifying original or duplicate provisional ballots by precinct and delivering same to the designated official responsible for updating the ES&S tabulators (and/or computer tallies

- Writing the reason for rejection on the envelopes of ineligible provisional voters (these unopened envelopes are to be retained for the period prescribed by law)

- Processing the Statement of Votes (SOV) in the manner prescribed for Ballot Inspection Boards

11.3 1% Manual Recount Procedures

For the purpose of validating the accuracy of the computer count, a public, manual recount of the ballots cast in at least one percent of the precincts shall be conducted within fifteen days after every election in which the precinct tabulator system is used. This one percent precinct sample shall be chosen at random. If the random selection of precincts results in an office or ballot measure not being manually recounted, select and manually recount as many additional precincts as necessary so as to include all candidates or ballot measures not recounted in the original sample.

Precincts selected at random shall be chosen by an individual who is designated by the responsible elections official and who is not the same person, or a relative of the person responsible for election coding. Selected precinct numbers shall not be revealed to such personnel until the tally is complete.

In the event a precinct tabulator fails after the semiofficial or official ballot tally process has begun, the ballots from the last precinct tallied on the equipment prior to the failure shall be included in the automatic manual recount. If a discrepancy is discovered between the automated tally and the manual recount tally, each precinct's ballots which had been read and processed by the failed equipment, subsequent to the time the equipment last successfully completed logic and accuracy test, shall be tallied again.

The California Secretary of State requirements concerning the interpretation and counting of valid voting position marks, shall be followed during the automatic recount of ballots.

11.4 Ballot Review and Adjudication

Note

The availability of options for Ballot Review, enabling electronic adjudication, depend upon the license file provided with your copy of Electionware. If you have questions regarding your current license file, please contact ES&S.

The California Secretary of State requires defined procedures to determine voter intent and how to handle various incorrect markings.
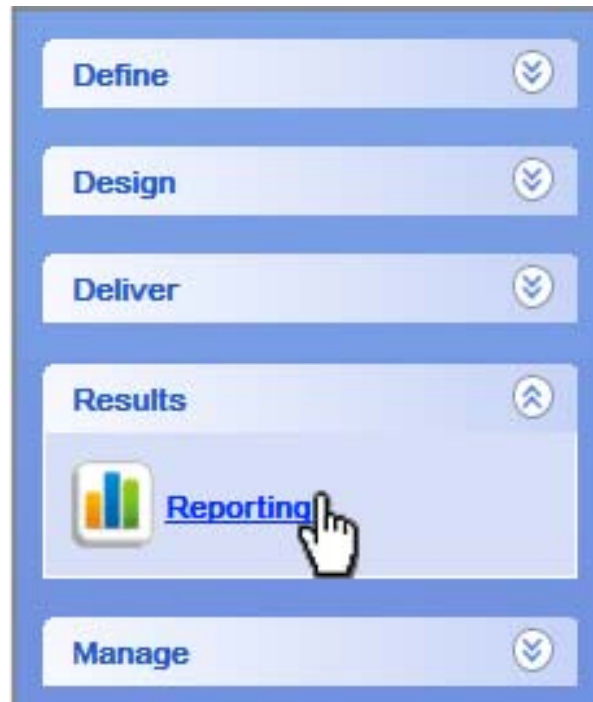
In the Electionware Reporting module, the **Ballot Review** workflow provides the adjudicator with the tools for listing scanned ballot images based on configurable filter criteria and adjudicating ballot exceptions.

Ballot Review

11.4.1 Ballot Filter List

When you open the Ballot Review workflow, the Navigator displays the filter list. Use any combination of filters to specify what ballot images will appear in Table View to be reviewed.

The filters fall under two broad categories, which in turn contain all applicable subcategories.

Adjudication Filters can consist of:

- Original Ballot Exceptions (None, Overvotes, Undervotes, Double Votes, Unclear Marks, Crossover Votes, Blank Ballots)

- Write-In Options (None, Unmarked, Marked)

- Ballot (Adjudication) Status (Not Reviewed, Approved with Changes, Approved with No Changes, On Hold)

- Batches
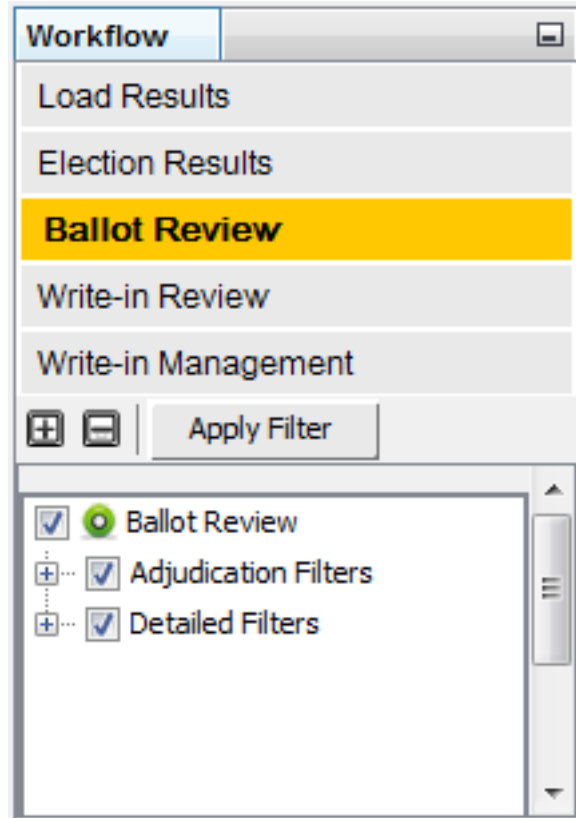
Note

Straight Party voting (found in Open Primaries) are not supported in the current version of Ballot Review.

Because the ExpressVote does not allow unclear marks and overvotes, ExpressVote multi-card elections are not supported in the current version of Ballot Review.

Detailed Filters can consist of:

- Ballot Types
  (Card/Paper)

- Precincts

- Polls

- Ballot Styles

- Contests

- Districts

- Parties

- Machines

By default, no filters are selected. Select the filters to be applied.

Each filter type can be expanded by clicking the **plus (+)** sign next to it, providing detailed filter options from which to choose.

If there are no selections made under Detailed Filters, the system behaves as if all are checked.
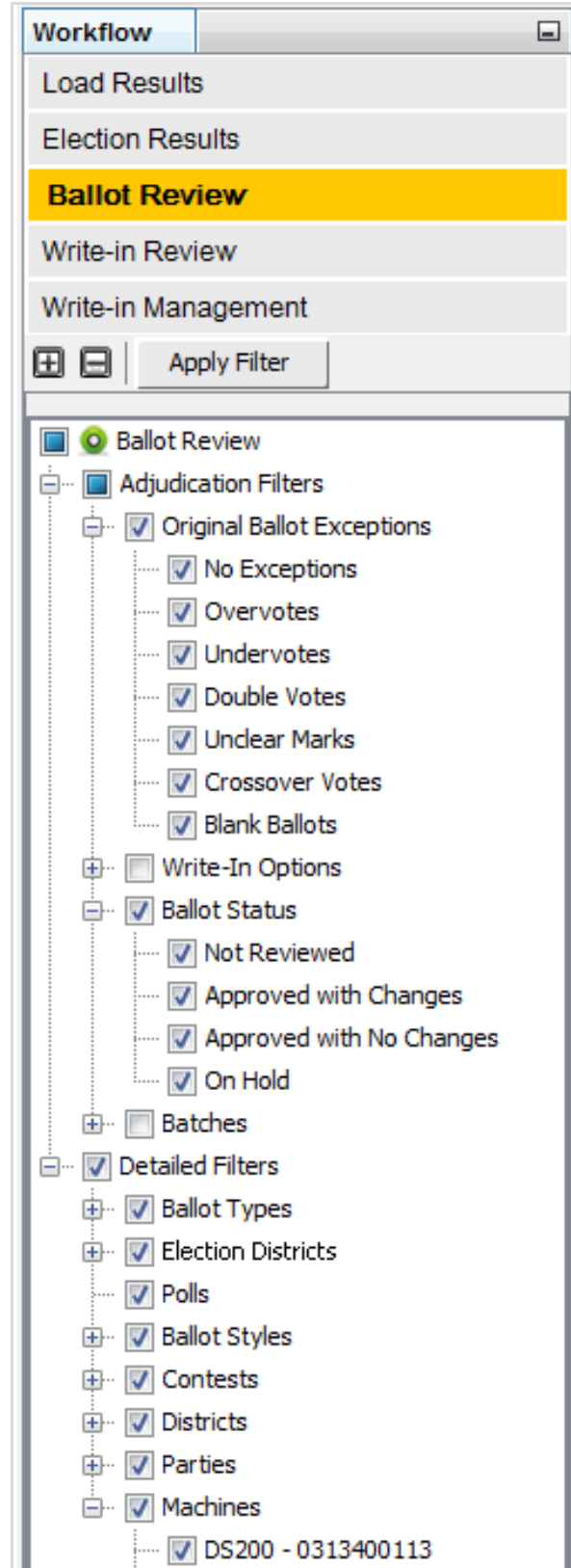
11.4.2 Ballot Review - Table View

After making your selections from the filter list, click **Apply Filter** to see the ballots listed in the Table View.

You can view, filter, sort, and search images within the Ballots - Table View screen, and select individual ballots to open in the Review window, where ballots can then be reviewed and marked for approval, holding, or modification.

11.4.3 Ballot Adjudication

Adjudication is performed in the Ballot Review pane. To open the scanned image of a ballot to be reviewed, double-click the ballot on the Table View. Or, to enable scrolling through images of all of the ballots, right-click the ballot and select **View All Ballots**. The Ballot Review pane opens in a separate window.

Ballot Information

Ballot Exceptions
Overvotes:	0	Write-in:	0
Unclear Marks:	0	Double Votes:	0
Undervote:	3		

Ballot Status

Not Reviewed

Ballot's Cast Vote Record
| Electionware CVR: | Tabulator CVR: |
| 14 | 4567000074 |

Contests To Review

BEST ICE-CREAM FLAVOR
No Changes
Original Contest Status: Undervote
Vote For 1
- ☐ CHOCOLATE
- ☐ STRAWBERRY
- ☐ VANILLA
- ☐ Write-In

PROPOSITION 1
No Changes
Original Contest Status: Undervote
Vote For 1
- ☐ Yes
- ☐ No

PROPOSITION 2
No Changes
Original Contest Status: Undervote
Vote For 1
- ☐ Yes
- ☐ No

Original Ballot Image

[🔍] [🔍] [100% ▼] [Actual Size]   [Front] [Back]   [More ▼]

Information refer to the card of instructions posted in the voting booth. If you tear, soil, deface or erroneously mark this ballot, return it the Election Judge and obtain another.

BEST AUTOMOBILE MANUFACTURER Vote for ONE	BEST VOCAL ARTIST Vote for no more than TWO	BEST ICE-CREAM FLAVOR Vote for ONE
○ BMW	○ FRANK SINATRA	○ CHOCOLATE
○ MERCEDES	○ ELVIS	○ STRAWBERRY
○ GENERAL MOTORS	○ PATSY CLINE	○ VANILLA
○ HONDA	○ JANIS JOPLIN	○ ___ Write-in
● FERRARI	● BUDDY HOLLY	
○ JAGUAR	● BARRY WHITE	
○ FORD	○ BILLIE HOLIDAY	
○ VOLVO	○ STEVIE RAY VAUGHAN	
○ ___ Write-in	○ "MAMA" CASS ELLIOT	
	○ ___ Write-in	
	○ ___ Write-in	

Ballot Options

Ballot Notes:

+ Add Note

[Approve Ballot]   [Put On-Hold]   [Edit Ballot]   [Return to Filters]

[Previous Ballot] 14 of 145 ballots [Next Ballot]

When a ballot that has not been adjudicated is opened for the first time on the Ballot Review pane, that ballot becomes locked for all other Reporting Users. The ballot's locked status will appear in the Ballot Information Pane for all other users.

When a ballot is locked, only an Administrator can take over control of the ballot. When an Administrator views a locked ballot, he/she is given the option to take over control of the ballot.
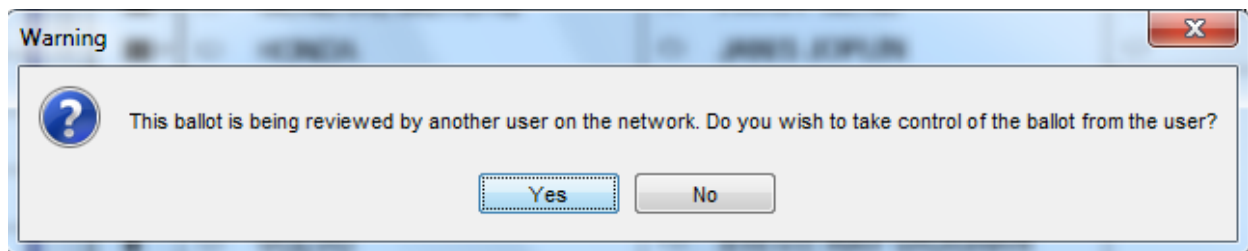
If the Administrator clicks **Yes**, the original user will be notified of the switch.

The Ballot Review workspace contains four distinct panes that contain the adjudication controls.

11.4.3.1 Ballot Information Pane

The Ballot Information pane displays information specific to the selected ballot.

Ballot Exceptions

Ballot exceptions displayed include: Overvotes, Unclear Marks, Undervotes, Write-ins, and Double Votes.

Ballot Adjudication Status

The ballot's current status appears at the center of the Ballot Information pane.

Not Reviewed – The ballot has exceptions and has not yet been reviewed and approved. Following adjudication, this status can be used as a filter in Table View.

Approved with Changes – The ballot has exceptions, and at least one contest has been updated with a vote count that is different from the tabulated vote count.

Approved with No Changes – The ballot has exceptions, but does not require correction to the marks as interpreted by the tabulator, and the entire ballot has been marked as approved.

On Hold – The ballot has been placed on hold for further review. Contest may or may not have been modified, but the ballot has not yet been approved.

Ballot Cast Vote Record

The Cast Vote Record (CVR) summarizes where and how the votes were tabulated, as well as other ballot-specific data such as ballot style, party, serial number, machine number, and whether the ballot was blank.

The Electionware CVR number is the series number also displayed at the bottom of the screen. The Tabulator CVR has a machine-generated serial number. Click this number to view the current CVR.

11.4.3.2 Contests to Review

The Contests to Review pane displays all contest conditions that were specified under **Admin Functions > Settings > Contests to Review**.

For paper ballots, when a contest is selected, that contest's heading will be highlighted on the scanned image with a blue bounding box.

A contest's current status is always indicated by the color and content of its status bar.
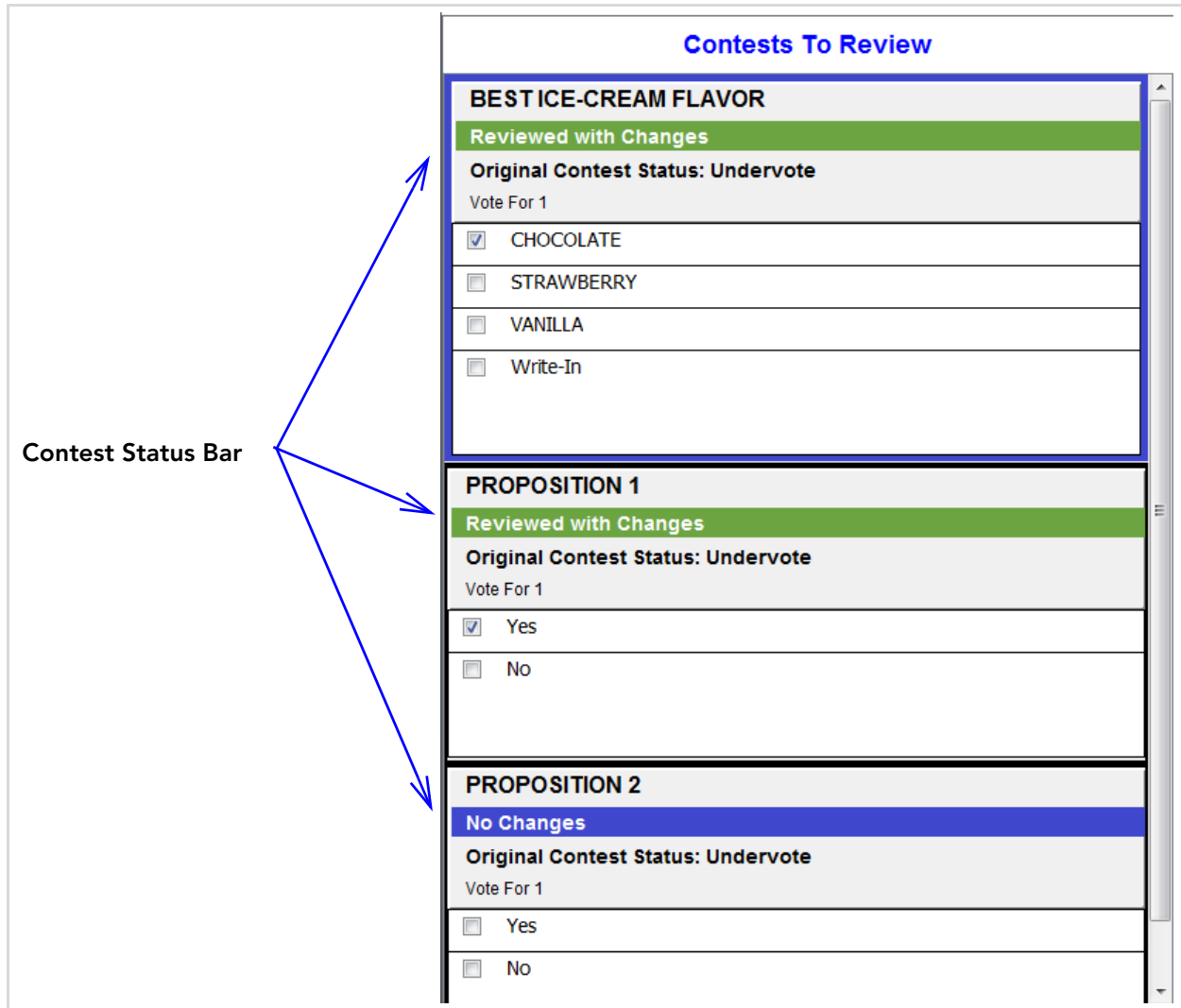
There are six possible statuses for a contest, depending on the actions of the adjudicator.

- **No Changes (Blue):** No changes have been made; approval pending.

- **Reviewed with Changes (Green):** A change has been made to the contest during review process.

- **On-Hold with Changes (Green):** Contest has been changed and then placed on hold.

- **On-Hold with No Changes (Blue):** Contest has had no changes, but is placed on hold.

- **Approved with Changes (Green):** Contest has been changed and then approved.

Note

State rules dictate whether marked (oval filled in) or unmarked (oval not filled in) write-ins are counted by the tabulator as a valid vote. If a ballot with marked or unmarked write-ins is approved with any votes modified by the adjudicator, the Ballot Status will change to "Approved with Changes" and all unmarked/marked write-ins on that ballot will be assumed to be reviewed and adjudicated.

- **Approved with No Changes (Blue):** Contest has had no changes and has been approved.

11.4.3.3 Original Ballot Image

The Original Ballot Image pane displays the scanned image of the ballot, and contains viewing controls for zooming in and out on the image, or viewing it to scale. Use the **Front/Back** buttons to view either the front or back of the ballot.

Highlight Ovals

This option is supported only for paper ballots.

The scanned ballot image appears in black and white. However, you can select **More > Highlight Ovals** to highlight the ovals so that unmarked or improperly marked targets are yellow and properly marked voted targets are green.
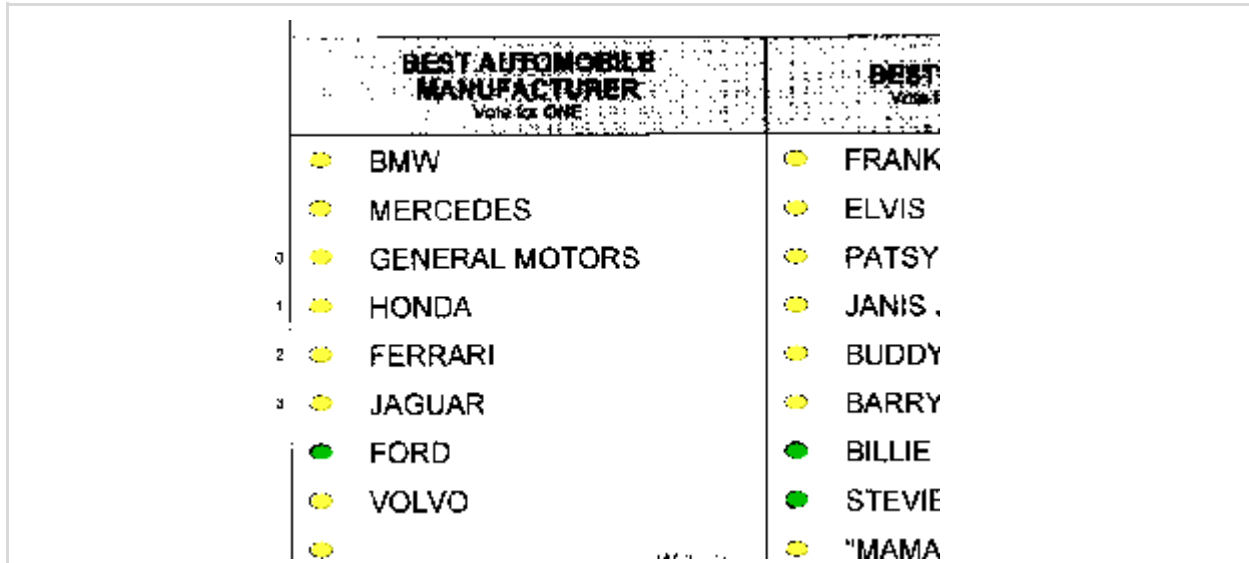
View CVR: Original and System-Generated

When you make changes to a ballot, the original CVR is retained, but the system generates a new CVR reflecting your changes. To view the original CVR, select **More > View Cast Vote Record > Original** (or click the **Tabulator CVR** serial number).

To view the newer CVR reflecting your changes, select **More > View Cast Vote Record > System Generated**.

Export the Ballot Image

The ballot image can be exported via the review pane in TIF format, to a specified directory for additional analysis, if necessary.

To export the ballot image, select **More > Print > Original Ballot**.

11.4.3.4 Ballot Options

The Ballot Options pane at the bottom of the screen contains the controls for adding notes about the current ballot, and for controlling its status.

Add Notes

To add notes about a ballot, click **+Add Note**. A small text editor allows you to add comments, up to 500 characters. Once saved, a note cannot be edited, but more notes can be added.

Adjudication Status Controls

The Adjudication Status at the top of the screen indicates the status selected by the user near the bottom of the screen, and can be used for sorting in Table View.

If the ballot has been reviewed and approved, select **Approve Ballot**.

To place a ballot on hold for further review, select **Put On-Hold**.

If the ballot has been approved, the **Edit Ballot** button becomes available. This enables an adjudicator to return to this ballot and make additional modifications if needed.

To close the Ballot Review workspace and return to the Table View, select **Return to Filters**.

Navigate Through Images

At the bottom of the screen, use the **Previous/Next** buttons to scroll forward and backward through the ballot images. To navigate to a specific ballot, enter its Electionware CVR number in the number field and press **Enter**.

11.4.4 Updating the Election Results

After adjudication is complete, the Reporting Administrator can commit the approved ballots, updating the election results with the new totals.

On the Admin Settings screen, under Approved Ballot Change, click **Commit Results**.
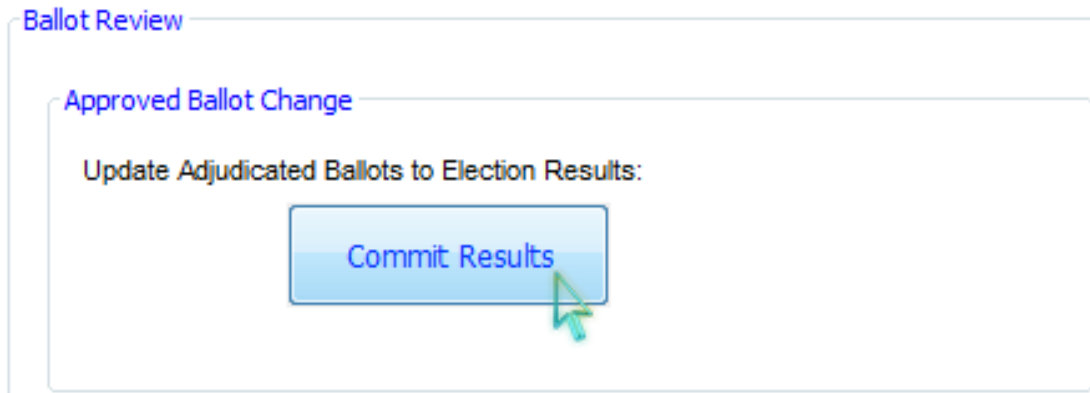
11.5 Write-in Review

Write-in Review

The **Write-in Review** workflow enables the user to track and tally voters' handwritten and typed write-in names assigned to valid write-in votes.

11.5.1 Write-in Filter List

When you open the Write-in Review workflow, the Navigator displays the filter list.

Use the filter list to specify what write-in images will appear in the Write-in Review table.

At least one Contests filter must be selected in order to populate the Write-in Review table.

By default, no filters are selected. Select the filters to be applied.

Images can be filtered by Contests, Precincts, Polls, Batches, Machines, and Ballot Styles.

Each filter type can be expanded by clicking the **plus (+)** sign next to it, providing detailed filter options from which to choose.

Workflow	☐
Load Results	
Election Results	
Ballot Review	
Write-in Review	
Write-in Management	

⊞ ⊟ | Apply Filter

- ☑ ⦿ Write-Ins
  - ☑ Contests
    - ⊞ ☑ REP UNITED STATES SENATOR
    - ⊞ ☑ REP UNITED STATES REPRESENT
    - ⊞ ☑ REP STATE SENATOR
    - ⊞ ☑ REP COUNTY ATTORNEY
    - ⊞ ☑ REP SHERIFF
    - ⊞ ☑ DEM UNITED STATES SENATOR
    - ⊞ ☑ DEM UNITED STATES REPRESENT
    - ⊞ ☑ DEM STATE SENATOR
    - ⊞ ☑ DEM COUNTY ATTORNEY
    - ⊞ ☑ DEM SHERIFF
    - ⊞ ☑ LIB UNITED STATES SENATOR
    - ⊞ ☑ LIB UNITED STATES REPRESENTA
    - ⊞ ☑ LIB STATE SENATOR
    - ⊞ ☑ LIB COUNTY ATTORNEY
    - ⊞ ☑ LIB SHERIFF
    - ⊞ ☑ REP UNIVERSAL CONTEST
    - ⊞ ☑ NONPARTISAN CONTEST
  - ⊞ ☑ Precincts
  - ⊞ ☑ Polls
  - ⊞ ☑ Machines
  - ☐ ☑ Ballot Styles
    - ☑ REP Precinct 1
    - ☑ REP Precinct 2
    - ☑ REP Precinct 3 Split 1

11.5.2 Write-in Review Table

After making your selections from the filter list, click **Apply Filter** to see the write-ins listed in the review table.

You can view, sort, and search images within the Write-in Review table, and select individual ballots to open in the Review window.

You can magnify a snippet image by hovering the pointer over it.

For a full ballot view displaying the write-in image, right-click the snippet and select **View Ballot** (or double-click the snippet). Use this feature if the message "See Ballot Image" appears in the column.

To rotate write-in snippets within the table, right-click the image and select **Rotate** (to rotate only one snippet) or **Rotate All** (to rotate all snippets in the table).

11.5.3 Display Scanned Ballots

To display the scanned image of a ballot, right-click the selected record in the Write-in Review table and click **View Ballot** (or double-click a single record).
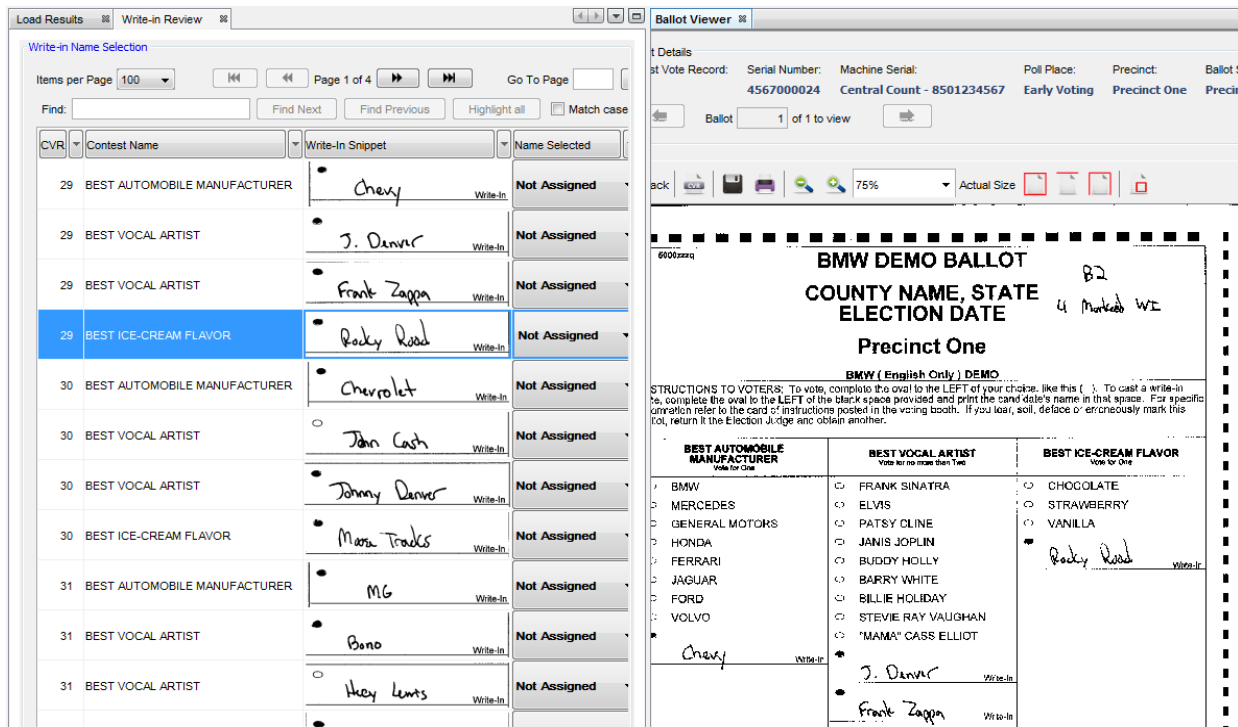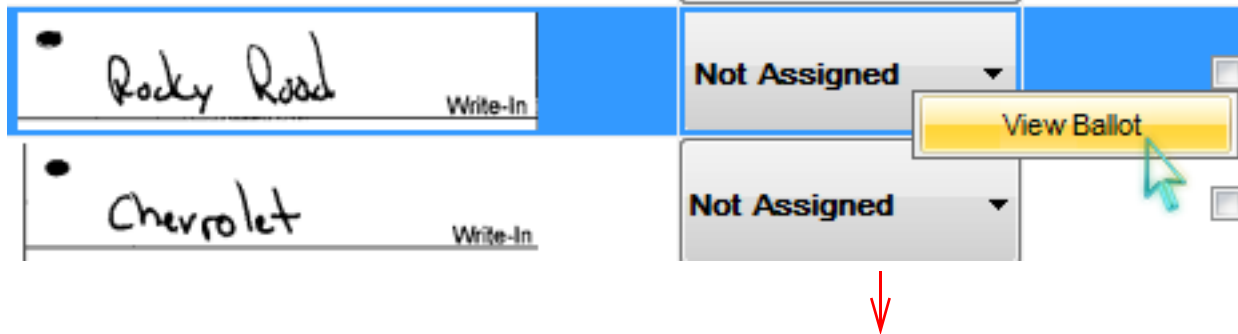
11.5.3.1 Ballot Details

Details about the displayed ballot appear in the Ballot Details box above the ballot image. The details include the ballot's CVR number and serial number, the serial number of the tabulator that recorded the ballot (Machine Serial), the Poll Place and Precinct associated with the ballot, the ballot style number, ballot type, and the number of times the ballot has been printed (Print Version).

Also in the Ballot Details box are ballot display controls that indicate the sequence number of the currently displayed ballot, the total number of ballots selected for viewing, and arrow buttons for paging forward and backward.

11.5.3.2 View, Save, or Print Ballot

Tools for saving, printing, and adjusting the ballot display are located above the ballot image, below the Ballot Details box.
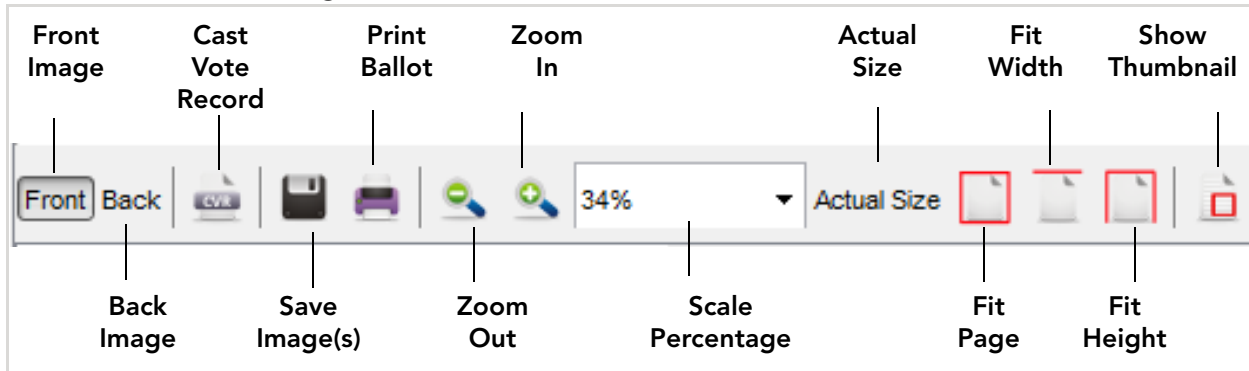
Click and drag the ballot image to reposition the display within the viewing frame.

To examine a specific location on the ballot image in detail, select a high zoom percentage from the **Scale Percentage** list, then click **Show Thumbnail**. A thumbnail of the ballot's scan image appears in the Pan View window. Click and drag the red focus box in this window to the area of the ballot you wish to examine.
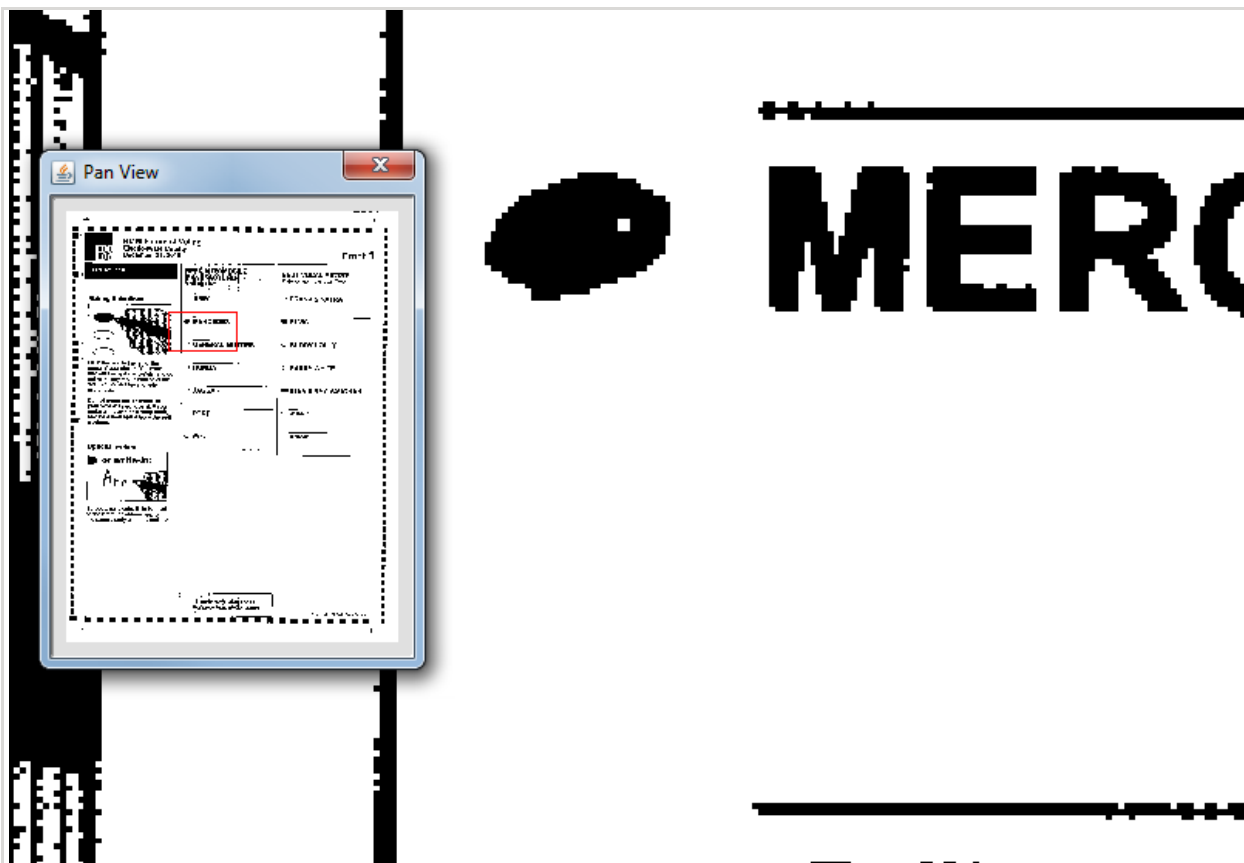
11.5.3.3 Cast Vote Record
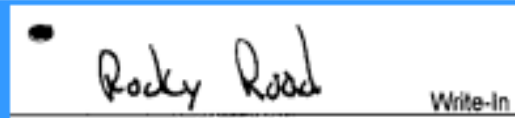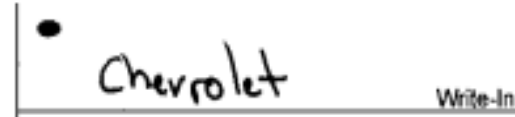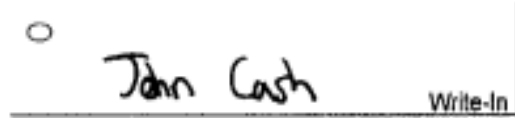
A ballot's Cast Vote Record summarizes where and how the votes were tabulated, as well as other ballot-specific data such as ballot style, party, serial number, machine number, and whether the ballot was blank.

To generate and display the ballot's corresponding Cast Vote Record report, click the **CVR** button.

Use the Report Screen Toolbar to save, print, or change the view of the displayed record.

11.5.4 Assign Write-In Names

Use the Write-in Review table to assign names to the scanned write-in snippets. In the Name Selected column, click the drop-down list next to the image and select the name to be assigned.

At any point while managing write-ins, to view consolidated write-in name totals for all users on the network, as well as total write-ins still unassigned, generate a Write-in Names report.

11.5.5 Add New Write-In Names

You can enable Reporting Users to add write-in names to a contest in the table, which can in turn be assigned to valid write-in records. The ability to add new write-in names is enabled/disabled from **Manage > Admin Functions > Settings**.
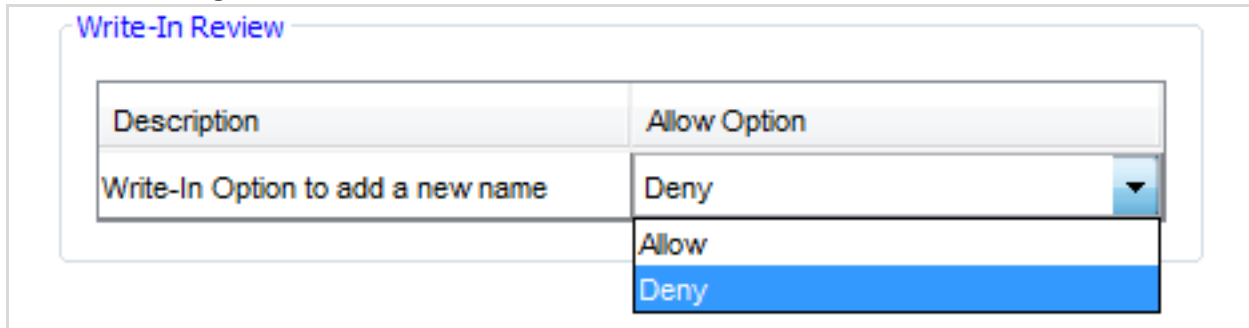
Write-in names can be added either from the **Write-in Management** workflow or directly on the **Write-in Review** table.

11.5.5.1 Write-in Review: Add Name

To quickly add a new write-in name while viewing the Write-in Review table, click the drop-down list next to the image, then select **(Add a New Name)**.

In the Add a New Name dialog box, enter the new name, then click **OK**.

After the new name has been added, it will appear as an option for all instances of that contest.
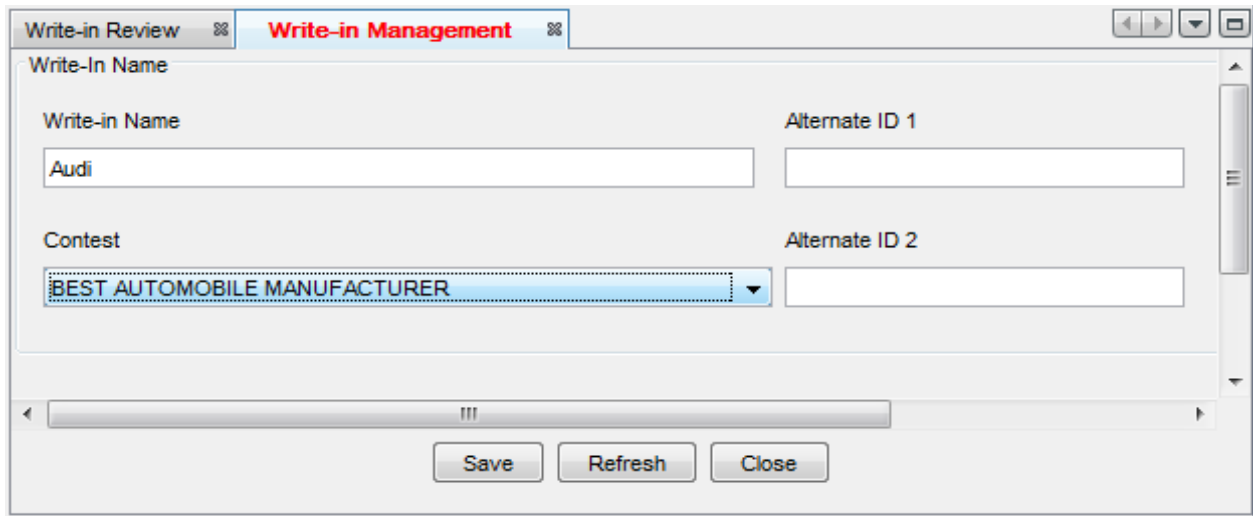
11.5.5.2 Write-in Management: Add Name

The **Write-in Management** Navigator lists the contests with write-in votes.

This workflow offers the option to add Alternate IDs, if applicable, and to quickly change the contest to which the new name will be assigned.

1. To add a write-in name to a contest, right-click the list in the Navigator, then select **Add Write-In**.

2. On the Write-in Management tab, enter the first and last name under Write-in Name.

3. From the **Contest** list, select the contest to which the new name will be assigned.

4. If applicable, enter Alternate IDs for the new name and contest, using numeric characters only.

5. Click **Save**. The new name will now appear in the Write-in Management navigator, and as an option on the Write-in Review table.
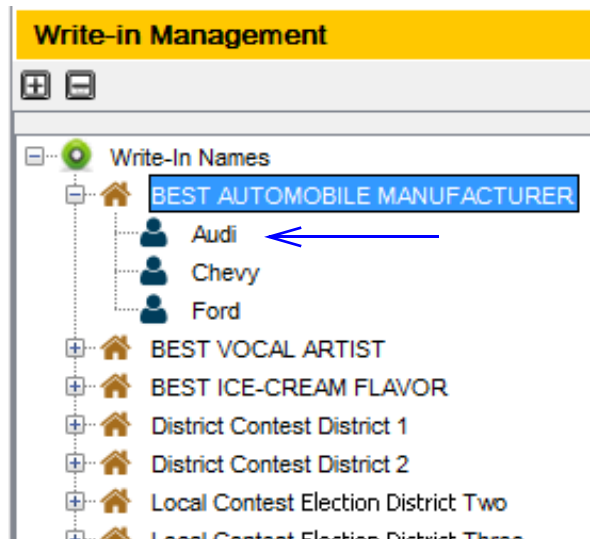
After the new name has been added, it will appear as an option for all instances of that contest.

11.5.6 Bulk Edit

To save time, you can edit multiple instances of a single contest that have similar write-in names.

1. On the Write-in Review table, select the **Multiple Selection** check box for all instances of the contest that appear to have the same write-in name.

2. Click **Bulk Edit** (upper right above the table).
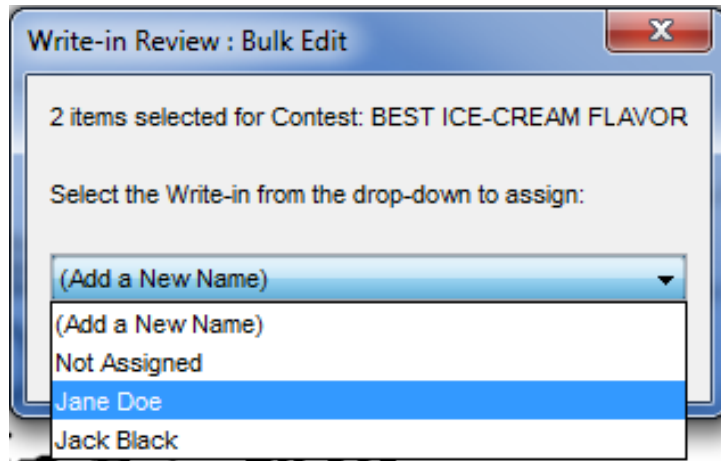
3. In the Bulk Edit dialog box, select the write-in name to assign (or add a new name to assign), then click **Save**.

   The saved write-in name will now be assigned to all of the records you selected.

11.6 Exporting Ballot Tables, Images, and CVRs

From the Reporting Module, the ballot images, CVRs, ballot tables, and write-in tables can all be exported to a directory of your choice.

11.6.1 Export Ballot Review and Write-in Tables

The Write-in Review and Ballot Review data can be exported as a CSV or XLSX file. The records included in a table export file are determined by the filter(s) applied in the Navigator.

1. To export the table, click **Export** at the top of the Table View tab.

2. In the export window, browse to the target folder. Enter a filename for the file in the File name: field. Select the preferred file format from the **Files of type:** menu. Click **Save** to export the file.

3. When the export is complete, a confirmation dialog will display the location and name of the new file. Click **OK**.

   To view the exported data, browse to the new file and open the file. It will appear in the form of a spreadsheet.

11.6.2 Export Ballot Images

All ballot images can be exported in a ZIP file.

1. From the **Tools** menu, select **Export Ballot Images**.

There are three items that can be optionally included in the export:

- Non-Geographic Precinct Ballots

- Cast Vote Records (CVR)

- Watermark

To be exported, at least one item and one district must be selected.
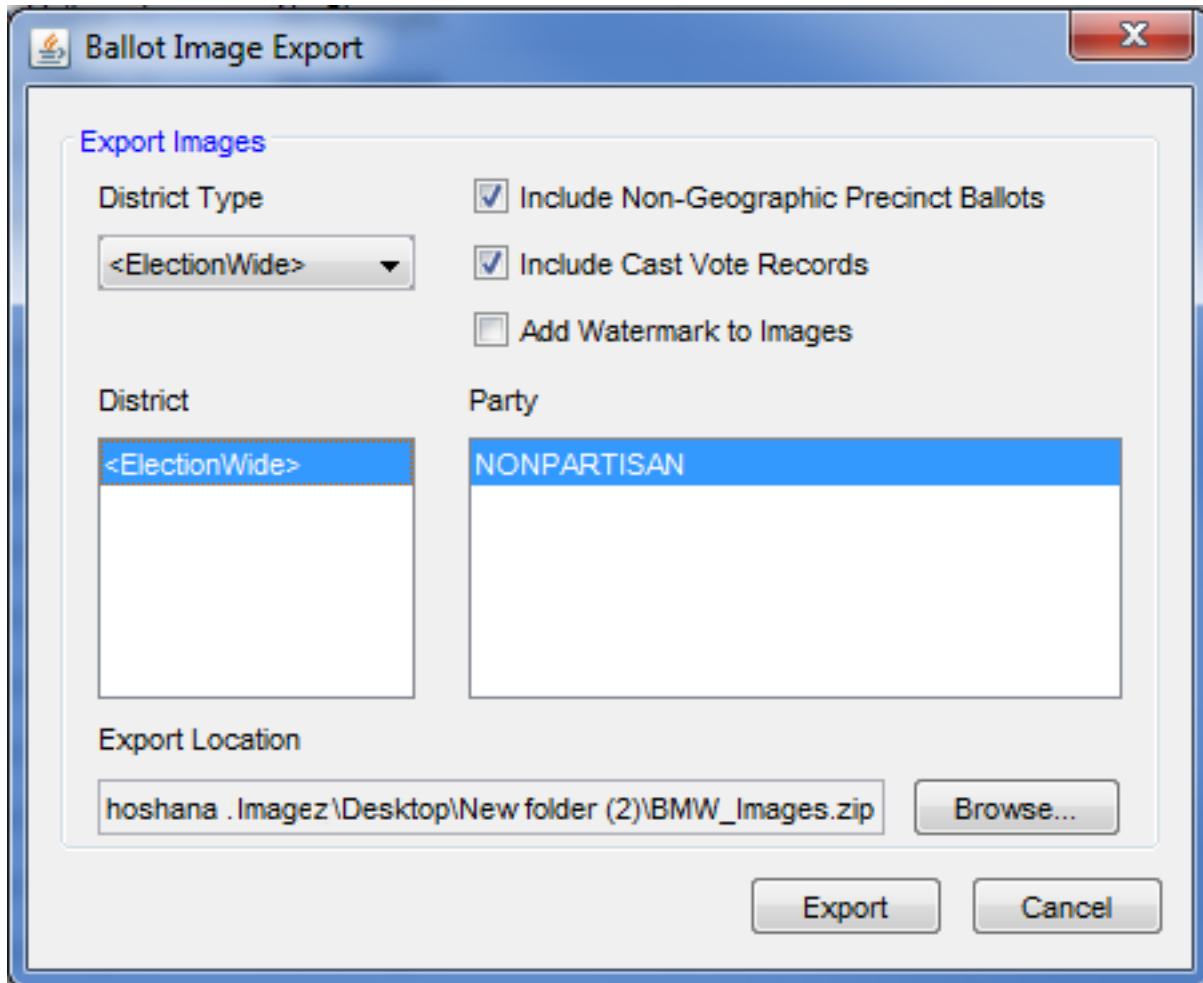
2. In the Ballot Image Export window, specify ballot, and optionally, CVR export parameters:

- To include absentee and early voting ballot images, select **Include Non-Geographic Precinct Ballots**.

- To include CVRs with the exported ballot images created in Electionware using Non-Geographic Precincts, select **Include Cast Vote Records**.

- The watermark identifies the printout as a ballot copy that is not intended for scanning. To include this on exported ballots, select **Add Watermark to Images**.

- From the **District Type** list, select a district type.

- The contents of the **District** list are determined by the selected District Type. Select the appropriate district(s).

- Select the party or parties from the **Party** list.

3. Browse to the target folder in which to save the file. Enter a filename for the ZIP file, then click **Save**.

4. The Ballot Image Export window reappears, with the location and filename in the Export Location box. Click **Export**.

5. When the export is complete, a confirmation dialog box will display the number of images exported, the specified export parameters, and the location and name of the ZIP file. Click **OK**.

Ballot images (and optionally CVRs) are exported as individual PDF files within the *.zip archive. These PDF files are sorted in folders, by precinct and party.

Each file is identified by CVR number, followed by the letter "i" if the file is a ballot image, or the letter "c" if the file is a cast vote record.
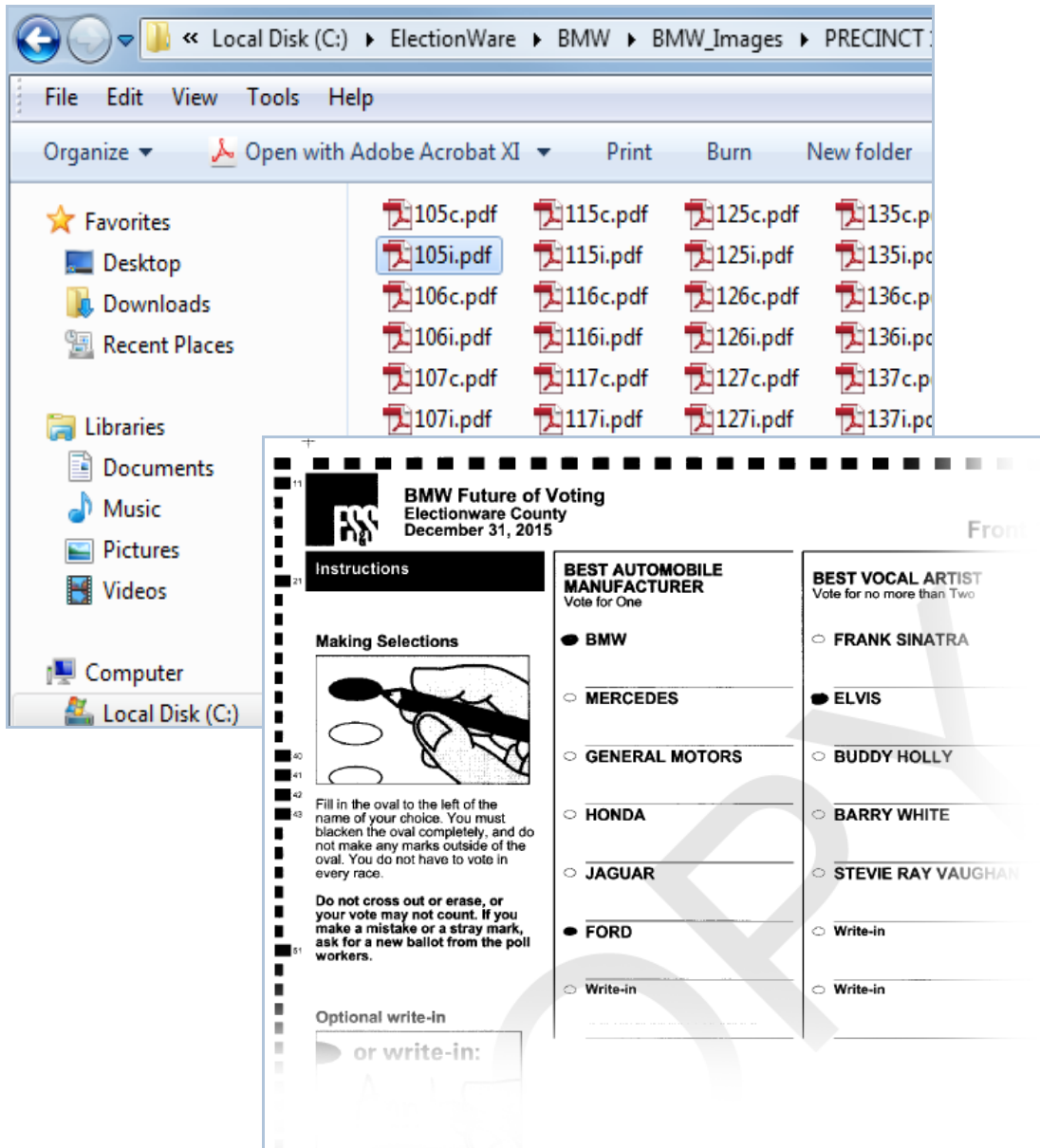
11.6.3 Export CVR Data (Write-In Images Optional)

CVR data for selected races, and optionally write-in images, is exported as a CSV or XLSX file.

Note

Reporting group data is not included in the exported file.

1. From the **Tools** menu, select **Export Cast Vote Records**.
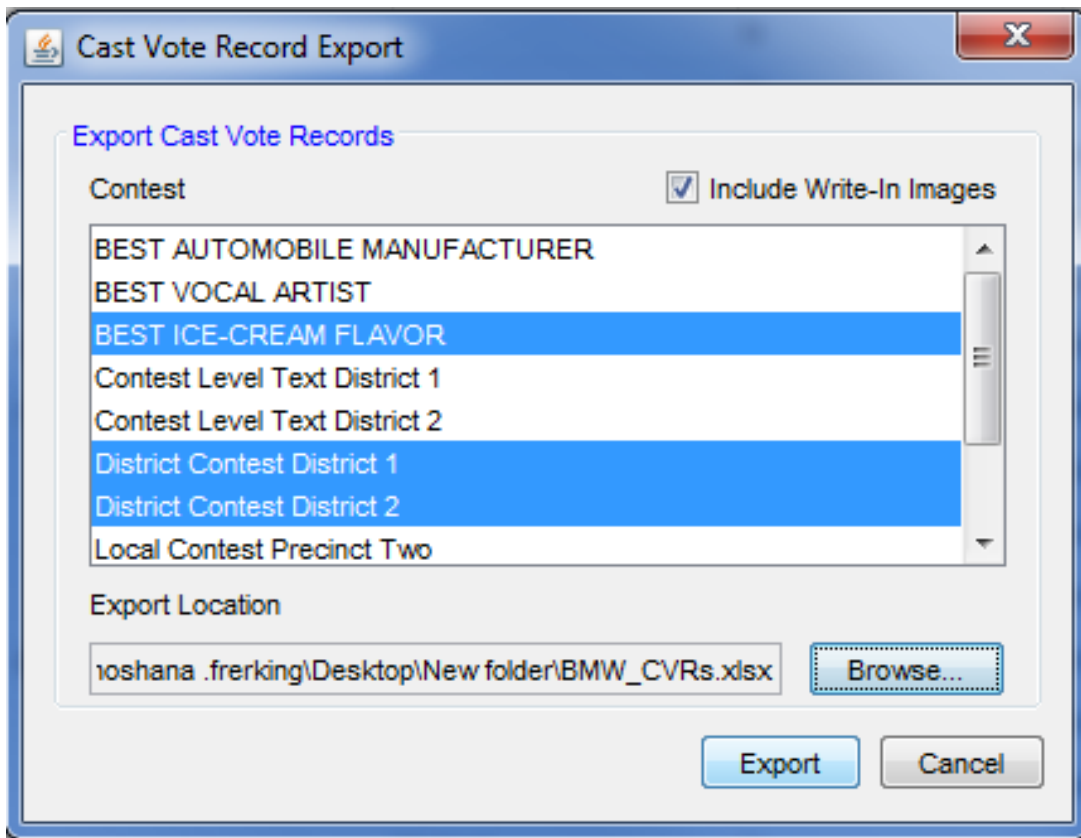
2. In the Cast Vote Record Export window, select the contests to be exported.

3. To export thumbnail images of write-in votes in the CVR file, select **Include Write-In Images**.

4. Browse to the target folder in which to save the file. Enter a filename, then click **Save**.

5. The Cast Vote Record Export window reappears, with the location and filename in the Export Location box. Click **Export**.

6. When the export is complete, a confirmation dialog box will display the number of records exported. Click **OK**.

	A	B	C	D	E
1	Cast Vote Record	Precinct	Ballot Style	BEST AUTOMOBILE MANUFACTURER (16)	BEST ICE-CREAM FLAVOR (19)
2	105	PRECINCT 1	PRECINCT 1	overvote	*Write-in* Dreamer
3	106	PRECINCT 1	PRECINCT 1	MERCEDES (26)	CHOCOLATE (42)
4	107	PRECINCT 1	PRECINCT 1	FORD (31)	CHOCOLATE (42)
5	108	PRECINCT 1	PRECINCT 1	BMW (25)	VANILLA (44)
6	109	PRECINCT 1	PRECINCT 1	MERCEDES (26)	STRAWBERRY (43)
7	110	PRECINCT 1	PRECINCT 1	BMW (25)	STRAWBERRY (43)
8	111	PRECINCT 1	PRECINCT 1	JAGUAR (30)	STRAWBERRY (43)
9	112	PRECINCT 1	PRECINCT 1	JAGUAR (30)	VANILLA (44)
10	113	PRECINCT 1	PRECINCT 1	BMW (25)	STRAWBERRY (43)
11	114	PRECINCT 1	PRECINCT 1	BMW (25)	STRAWBERRY (43)
12	115	PRECINCT 1	PRECINCT 1	MERCEDES (26)	*Write-in* Coen
13	116	PRECINCT 1	PRECINCT 1	BMW (25)	STRAWBERRY (43)
14	117	PRECINCT 1	PRECINCT 1	JAGUAR (30)	CHOCOLATE (42)
15	118	PRECINCT 1	PRECINCT 1	BMW (25)	CHOCOLATE (42)
16	119	PRECINCT 1	PRECINCT 1	overvote	*Write-in* Dreamer
17	120	PRECINCT 1	PRECINCT 1	MERCEDES (26)	CHOCOLATE (42)
18	121	PRECINCT 1	PRECINCT 1	MERCEDES (26)	CHOCOLATE (42)
19	122	PRECINCT 1	PRECINCT 1	BMW (25)	STRAWBERRY (43)
20	123	PRECINCT 1	PRECINCT 1	MERCEDES (26)	STRAWBERRY (43)
21	124	PRECINCT 1	PRECINCT 1	JAGUAR (30)	STRAWBERRY (43)
22	125	PRECINCT 1	PRECINCT 1	MERCEDES (26)	*Write-in* Coen
23	126	PRECINCT 1	PRECINCT 1	overvote	*Write-in* Dreamer
24	127	PRECINCT 1	PRECINCT 1	MERCEDES (26)	*Write-in* Coen

Important

If the exported spreadsheet includes write-in images, do not sort the data. Write-in images are not sortable, and will remain in place.

11.7 Post-Election Logic and Accuracy Testing

All post-election logic and accuracy testing of election equipment must come under the direction of the county. When imposed, this test will analyze the calibration requirements as specified for election use.

Follow the same procedures described in *Chapter 5: Logic and Accuracy Testing*.

11.8 Final Reporting of Official Canvass

11.8.1 Ballot Security and Reporting Results

Use the following instructions as a general guideline for reporting results. Consult the California Elections Code for specific regulations governing the reporting of results.

1. Complete the official canvass and add any write-in votes or other totals to the final vote count. Then, post the final vote count at the counting location for public inspection.

2. Prepare a certified statement of the election results and submit the statement to the governing district within 28 days of the election. Show results on a precinct by precinct basis. Include the following information on your statement of results:

   • The total number of votes cast

   • The number of votes cast at each precinct for each candidate and for and against each measure

   • The total number of votes cast for each candidate and for and against each measure

   • The number of votes cast in each city, assembly district, congressional district, senatorial district, State Board of Equalization district and supervisory district located in whole or part of the county.

3. Send a copy of the results to each of the following:

- All candidates participating in your statewide election.

- All of the candidates voted for in the following offices:

    - Member of the Assembly

    - Member of the Senate

    - Member of the U.S. House of Representatives

    - Member of the State Board of Equalization

    - Justice of the Court of Appeal

    - Judge of the superior court

    - Judge of the municipal court

    - All persons voted for in a presidential primary

- The vote given for persons for electors of President and Vice President of the United States.

- All statewide measures.

Note

For procedures to run the required reports, refer to *10.4 Results Reporting - Reports and Exports*.

11.9 Backup and Retention of Election Materials

11.9.1 Acronis Backup and Recovery

Acronis software is used for hard disk image backup. These processes require an Acronis boot disc for operation, and a portable USB hard drive or flash with a minimum of 32G available storage to save your backup files. Multiple backups of the hard disk images are recommended. Store all backup materials in a secure location.

To create the Acronis boot disc, follow the instructions provided in your Acronis documentation. During boot disc creation, if needed, you can install device drivers on the disc. Drivers can also be loaded from a separate drive after bootup.

Dell PERC H730 RAID controller drivers are available for download on the Dell Support Website, and should be preloaded on the disc.

11.9.1.1 Accessing Acronis

1. Turn on the computer.

2. When the computer is fully running, press the appropriate key for the Boot Manager.

   - • EMS Server: **F11**

   - • EMS Workstation: **F12**

Note

If you have password protected the BIOS, you must enter the password to enter the Boot Manager.

3. Insert the Acronis boot disc into the computer's DVD-ROM drive.

4. Select the DVD-ROM drive as the boot device.

5. At the prompt, press any key to boot from the disc.

   Acronis will begin loading the Windows 7 environment. This process takes several minutes.

6. When loading is complete, the Acronis Welcome screen appears. Click **Disk Management**.

11.9.1.2 Backup Procedures

Full system backup can be performed on the EMS server, and also any EMS workstation, as needed.

1. Access the Acronis program as previously instructed.

2. Connect the removable storage device that will be used to save the backup image. After a few seconds, the new disk will appear in the directory list.

   If the disk does not appear after a few seconds, refresh the window. If it still does not appear, remove the drive and connect it to a different USB port.

3. Click **Back** to return to the Welcome screen.

4. Click **Back up now**.

5. Under "What to back up," click **Items to back up**.

6. In the Data to Back Up window, select **Disks/volumes**.

7. The computer will display any connected disks. Each disk node can be expanded to show its contents.

   Select the check boxes next to only the computer's internal disk drives. Deselect the removable storage device.

Note

The drive letters that appear in Acronis Windows 7 may be different from the drive letters in standard Windows. The drives can generally still be identified by their capacity and interface type.

8. Click **OK**.

9. Under "Where to back up," click **Location**.

10. Expand the Local folders node, select your backup drive, then select the desired path. (You can create sub-folders on the drive by clicking **Create folder**.)

11. At the bottom of the window, enter a Name for the backup image file. The name can not end with a number.

12. Click **OK** twice.

    The backup process lasts at least 20 minutes.

13. When the backup is complete, click **Close**.

Note

Ignore the warning that appears under Status.

14. Remove the Acronis boot disk and backup drive from the computer.

15. Close the Acronis window.

    This causes Acronis to shut down and the system to reboot.

11.9.1.3 Recovery

The following steps are for hard disk image recovery.

1. Access the Acronis program as previously instructed.

2. Connect the removable storage device containing the backup image. After a few seconds, the new disk will appear in the directory list.

   If the disk does not appear after a few seconds, refresh the window. If it still does not appear, remove the drive and connect it to a different USB port.

3. Click **Back** to return to the Welcome screen.

4. Select **Recover**.

5. Remove the Acronis boot disk and backup drive from the computer.

6. Close the Acronis window.

   This causes Acronis to shut down and the system to reboot.

7. Under "What to recover," click **Select data**.

8. Click **Browse** and navigate to the folder containing the backup images.

9. Click **OK**.

10. Select the backup archive.

11. Next to Backup contents, select **Disks**.

12. Select all of the available disks.

13. Click **OK**.

14. Under "Where to recover," click **Clear all**.

15. Click **Recover `Disk 1' to**.

16. Select the destination disk for Disk 1, then click **OK**.

17. Click **Recover `Disk 2' to**.

Note

On the EMS workstation, there is only one disk to recover, so this option will not be available.

The recovery procedure will lasts at least 20 minutes.

18. When the restoration is complete, click **Close**.

11.9.2 Precinct Tabulator Election Materials

Upon the certification of the election results, the guidelines in the California Elections Code apply to the handling, security and disposition of unused ballots and other election materials. As noted in various sections of this document, memory cards are not deemed to fall within the purview of these Elections Code sections.

11.9.3 Central Tabulator Election Materials

Consult the California Elections Code for guidelines on retaining election materials. The retention period for ballots and related election materials is six months for all elections if no federal elections are involved. The federal election retention period is 22 months. Extend retention periods in the case of a court challenge.

Chapter 12: Manual Recount Procedures

Note

Poll workers are not permitted to participate in any post-election manual count auditing of precinct results from a precinct in which they were poll workers.

12.1 Manual Recount for Precinct Tabulators

A manual recount of an optical or digital scan voting system is straightforward in that the names of all contests, candidates, and issues appear on the ballot face. The votes/marks on the ballot are a secret, permanent record of the election and become part of the Election Audit Trail CHECKPOINT of the voting system.

The ballots are manually tallied for the office(s) to be recounted, and these results are compared to the tabulator-generated Precincts Results Tape for that precinct. Should the totals not agree, then the ballots are reviewed for any ballot marking anomaly that would cause the ovals on a particular ballot to not be scanned.

Once these differences are resolved, the next precinct is manually tallied. This process continues until all precincts have been tallied manually.

Chapter 13: Security

Election administration security must be a part of a jurisdiction's overall security plan to prevent lapses in adjacent or interconnected departments and processes from compromising the election function.

Election administrators must implement strong physical controls, including employee background checks, identity verification, locks, security guards, badges, alarms, backup power, printed reports, and similar measures to control access to computers and related equipment.

Pre-election security should include proof of content on all ballots, equal distribution of poll workers among all political parties, location of all ballots, and ensure privacy at all voting booths.

Post-election security should include examination of audit logs attached to the tabulators, examination of final reports, and ensuring that all election equipment and ballots are returned to secure physical storage locations.

Note

Complete guidelines for Election Management System (EMS) security are provided in the *EVS 6042 CA Installation* documents.

13.1 EMS Equipment Security Best Practices

The Election Management System (EMS) consists of network switches, servers, client workstations and/or standalone workstations. Each of these devices has integrated ports that represent a potential threat to the security of the system. The security of these devices may be increased by implementing the following EMS recommendations.

ES&S recommends locking/sealing all ports (USB serial or RJ-45) both when a connection is present and when not in use. Unused ports, as well as attached peripherals and RJ-45 cable connections, should be sealed as described in the following sections.

The following image demonstrates all EMS lock recommendations for the server as well as the client workstation.

13.1.1 Connection Lock and Seal Recommendations

Implement the following recommendations for all ports that are in use.

13.1.1.1 USB Serial Connection

Important

The USB Port (In Use) Lock Seal is used in conjunction with the EMS Wire Seal. Ensure that you have both items before attempting to apply this seal.

Note

One EMS Wire Seal may be used with multiple USB Port (In Use) Lock Seals. Repeat steps 1-2 for each unused USB serial port before proceeding.

1. Insert the "fangs" of the seal into the notches inside the USB port and hold in place.

2. While holding the seal in place, insert the USB serial connection. This connection will be tight.

3. Repeat steps 1-2 for each USB serial port in use before proceeding.

4. Thread the wire portion of an EMS wire seal through the hole in the USB Port (In Use) Lock Seal.

5. Repeat step 4 for each USB Port (In Use) Lock Seal.

6. Thread the wire back through the hole in the EMS Wire Seal.

7. Snap the cap into place to complete the seal.
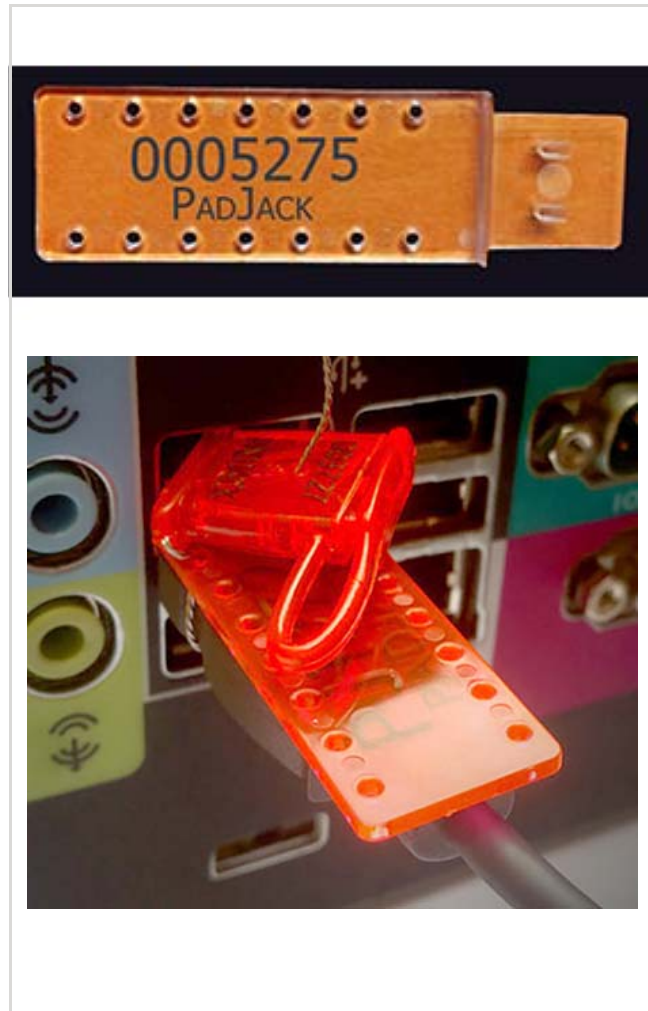
13.1.1.2 RJ-45 Cable

Important

The RJ 45 Cable Lock Seal is used in conjunction with the RJ 45 Cable Lock Key. Ensure that you have both items before attempting to apply this seal.

1. Insert the RJ 45 Cable Lock Key and rotate clockwise 90°.

2. Insert the cable plug into the RJ 45 Cable Lock Seal.

3. Rotate the key back to the original position and remove it.

4. Insert the cable/seal combination into the RJ 45 port. Press until the connection clicks.

5. To remove the cable and seal, insert the RJ 45 Cable Lock Key and rotate clockwise 90°.

6. Remove the cable plug from the port.

13.1.2 Empty Port Lock and Seal Recommendations

Implement the following recommendations for all ports that are not in use.

13.1.2.1 USB Serial Port

Important

The USB Port (Empty) Lock Seal is used in conjunction with the EMS Wire Seal. Ensure that you have both items before attempting to apply this seal.

Note

One EMS Wire Seal may be used with multiple USB Port (Empty) Lock Seals. Repeat steps 1-3 for each unused USB serial port before proceeding.

1. Separate the two pieces of the USB Port (Empty) Lock Seal.

2. Insert the "fangs" of part "A" into the notches inside the USB port.

3. Insert part "B" so that "A" slides in "B" and the holes align. Press until the seal clicks into place.

4. Repeat steps 1-3 for each unused USB serial port before proceeding.

5. Thread the wire portion of an EMS wire seal through the hole in the USB Port (Empty) Lock Seal.

6. Repeat step 6 for each USB Port (Empty) Lock Seal.

Part B   **Part A**

7. Thread the wire back through the hole in the EMS Wire Seal.

8. Snap the cap into place to complete the seal.

13.1.2.2 RJ-45 Port

1. Grasp the end of the RJ-45 Port (Empty) Lock Seal that displays the serial number.

2. Orient the seal to match notch in the port.

3. Insert the seal into the empty RJ 45 port until the seal clicks into place.
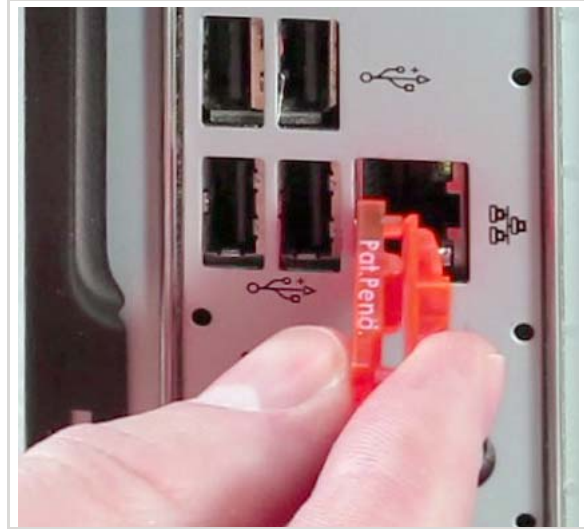
13.1.3 BitLocker USB Flash Drive Recommendations

BitLocker Drive Encryption is a full disk encryption feature included with specific versions of Windows and is designed to protect data by providing encryption for entire volumes. Enabling BitLocker drive encryption is optional based on the selected voting system configuration. See the Setup & Configuration Guides for details.

Note

BitLocker drive encryption is optional; if your environment does not utilize BitLocker, disregard this section.

Warning

Electionware contains functionality which includes the ability to format blue Delkin USB flash drives. To prevent accidentally formatting the USB flash drive containing your TPM Password and BitLocker Keys, ES&S highly recommends using a red Delkin USB flash drive.

The TPM Password and BitLocker Keys created using the encryption procedures in the Setup & Configuration Guides are exclusive to the system by which they are created. Creation and retention of these items is mandatory for the operation of an encrypted disk EMS Client. ES&S recommends storing all the described item types on one USB flash drive. The loss of this USB flash drive will result in the inability to access the encrypted system. ES&S also recommends the duplication of this USB flash drive for redundancy and backup purposes. See the Setup & Configuration Guides for BitLocker USB flash drive duplication procedures.

Additionally, a chain of custody for all equipment, software, physical or encryption keys and passwords is strongly recommended.

When not in use, the BitLocker USB flash drive should be stored in a safe, secure place such as a locked drawer, filing cabinet, or vault.

Item Type	Item Description
TPM Password	The TPM Password contains the credentials established when Ownership of the TPM is taken. This procedure is exclusive to the hardware that creates it.
BitLocker Recovery Key	The BitLocker Recovery Key is designed to recover an encrypted system if an unexpected event enables the BitLocker Recovery Mode. If the system encounters an event, such as multiple failed password attempts or BIOS level changes this may occur. BitLocker Recovery Keys are proprietary to the designated system it was created by.
BitLocker Startup Key	A BitLocker Startup Key is required to access the operating system of an encrypted disk. Without a BitLocker Startup Key, the system is inaccessible to the user. BitLocker Startup Keys are proprietary to the designated system it was created by.

13.2 Physical Security Devices and Supplies

Physical access control must be implemented for all election-related equipment, software, and supplies including, but not limited to, tabulators, PCs, software, media, ballots, logbooks, locks and seals, and keys. Secure warehouse storage and staff work areas must be maintained, with controlled access limited to authorized personnel, to store all voting related equipment, software, and supplies.

It is the responsibility of the jurisdiction to provide a secure physical and procedural environment for the storage, handling, preparation and transportation of the system hardware.

ES&S voting and tabulation equipment has access doors to protect external communication and data ports. These access doors can be locked with an administrator key and further protected with the installation of tamper-evident seals.

Each model of equipment is either powered on and off by an administrator key, or by a power switch protected behind a lockable access door. Certain system screens require entry of a code to prevent unauthorized access to sensitive functions. Carrying cases and ballot bins are equipped with locks and locations for security seals.

ES&S supplies a variety of tamper evident devices for use to secure your ES&S voting equipment. Visit **myES&S Supply Store** at http://shop.essvote.com for more information about all the available devices.

Each type of label or seal includes an identification number. Election officials should keep a record of the security seal numbers of the labels and seals in use as verification of the chain of custody of sensitive materials.

Note

Jurisdictions are required to use Securevue Tamper Evident Labels when affixing a sticker seal to a plastic surface. (Item #800-0112, pictured below.)

When the time and date are reset or new firmware is uploaded, the security code should be reset by the designated election official and kept private.

Upon request, members of the public must be permitted to observe and inspect, without physical contact, the integrity of all externally visible security seals used to secure voting equipment in a time and manner that do not interfere with the conduct of the election or the privacy of any voter.

13.2.1 ExpressVote Lock and Seal Recommendations

In addition to the security measures detailed below, label seals may be affixed to all openings or screws to introduce an extra layer of security.

The access compartment door can be locked and sealed with tamper-evident devices. Access to this compartment should be controlled, monitored, and logged at all times. Follow your jurisdiction's rules regarding security seals.

Because the access compartment door needs to be opened to access the Power and Mode switches, ES&S provides additional protection in the form of a protective slide to cover the USB flash drive ports. This device prevents unauthorized removal of the election definition flash drive while the compartment door is open.

When you receive a new ExpressVote unit, a metal protective slide is already installed. The protective slide may be constructed of metal or plastic. Contact your ES&S representative if you prefer a plastic protective slide. Complete the following procedures to secure this protective slide during voting.

A protective slide inside the access compartment helps to secure any installed USB flash drives, such as the election definition flash drive.

1. Use a T10 star-shaped screwdriver to loosen and tighten the retaining Torx screw on the slide.

2. Insert the necessary USB flash drive(s) into either of the two USB ports in the access compartment on the left side of the ExpressVote unit. Once inserted, position the protective slide over the USB flash drive(s) and tighten the retaining screw.

3. On Election Day, secure with spring lock seal through the loops on top of the slide.

Torx Screw

Secure Seal

4. Close the access compartment door. Use the medium barrel key to lock the door.

5. Secure with a spring lock seal.

6. Use a medium barrel key to lock the right side paper path access door.

7. Apply label seal to right side access door.

8. When the ExpressVote is configured on a standard table, secure the rear USB port by affixing a tamper evident label seal.

9. Ensure that the access door to the printer transport (on the front of the unit) is closed and locked with the medium barrel key to prevent access to the printing path.

Keyed Lock

13.2.1.1 ExpressVote Rolling Kiosk Lock and Seal Recommendations

1. At the back of the rolling kiosk, close the plastic door and fasten the screw on the USB compartment.

2. Secure the compartment by affixing a label seal.

3. Attach the secure card container onto the back of the rolling kiosk. Attaching the secure card container in this manner engages the positive lock connection to the rolling kiosk, preventing external card insertion.

4. Ensure a spring lock seal is applied to the front of the secure card container. This seal prevents access to the vote summary cards during voting.

5. During secure card container transport, security measures should be applied to prevent tampering with the back of the secure card container.

   • The primary security measure is to apply a security label to the metal flap.

   • The secondary security measure is to apply a spring lock seal to the side.

   Both measures prevent access to the vote summary cards.

   With these security measures in place, vote summary cards may not be added or removed from the secure card container without detection.

6. On the accessory panel, close the center panel door to
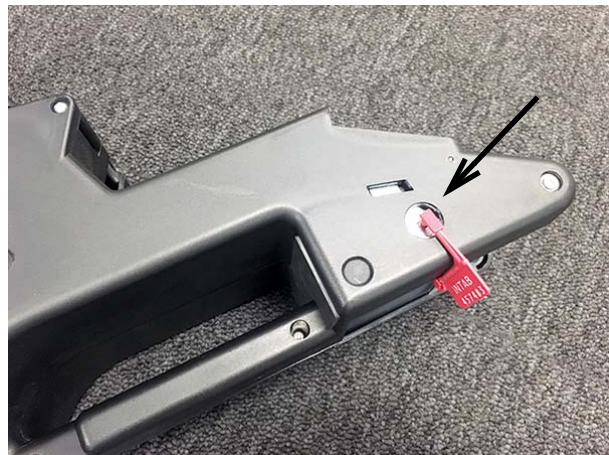
prevent access to the secure card container release button. Lock the center panel door with the medium barrel key.

Note

The key lock secures the center panel over the USB port, as well as the side panels over the optional printer and scanner. This lock also secures the cover of the docking station over the ExpressVote, when lowered.

Keyed Lock

13.2.2 ExpressVote XL Lock and Seal Recommendations

In addition to the security measures detailed below, label seals may be affixed to all openings or screws to introduce an extra layer of security.

1. Cover the internal flash memory storage cards behind a screw down panel and secure with a spring lock seal.

Secure Seal

2. The screw down panel has added security due to tamper resistant Torx screws.

Close the access compartment door and secure with a medium barrel key.

Once the access compartment lid is closed, a molded plastic tab protrudes through a slot in the back of the terminal. This tab includes an attachment point for a spring lock seal.

Secure the utility compartment at the back of the unit by locking the door with a medium barrel key. To provide additional security, attach a spring lock seal to the attachment point.

Secure the paper path module by locking the door with a medium barrel key. To provide additional security, affix a label seal to the door.

There is a compartment in the upper-right corner on the back of the unit. This compartment does not house any security risks; therefore, standard screws are used. Additionally, locks and seals are not required.

13.2.2.1 ExpressVote XL Secure Card Container Seal Recommendations

1. Ensure a spring lock seal is applied to the front of the secure card container. This seal prevents access to the vote summary cards during voting.

Secure Seal
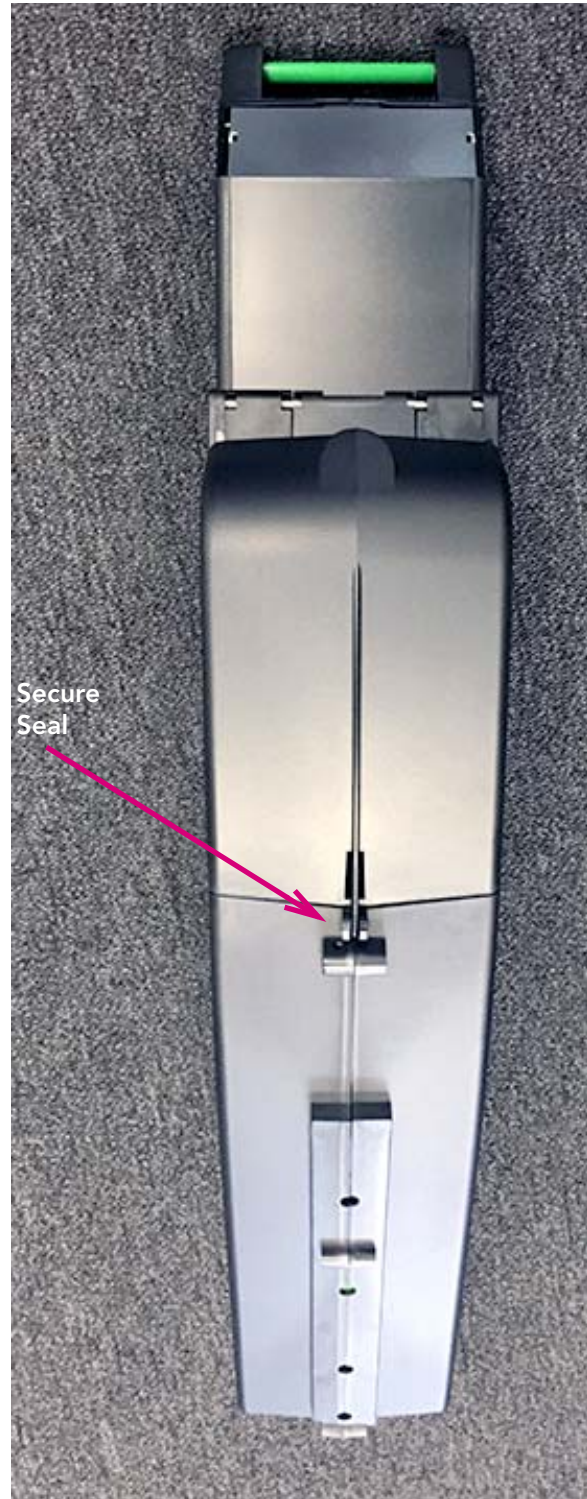
2. Attach the secure card container onto the back of the ExpressVote XL rolling cart. Attaching the secure card container in this manner engages the positive lock connection to the rolling cart, preventing external card insertion.

3. During secure card container transport, security measures should be applied to prevent tampering with the back of the secure card container.

   The primary security measure is to apply a security label to the metal flap.

   The secondary security measure is to apply a spring lock seal to the side. Both measures prevent access to the vote summary cards.

With these security measures in place, vote summary cards may not be added or removed from the secure card container without detection.

13.2.3 DS200 Lock and Seal Recommendations

In addition to the security measures detailed below, label seals may be affixed to all openings or screws to introduce an extra layer of security.

1. Insert the election definition USB flash drive and secure with a wire seal.

2. Close the access door and lock with a medium barrel key. Place a label seal on the smooth plastic area as shown at right.
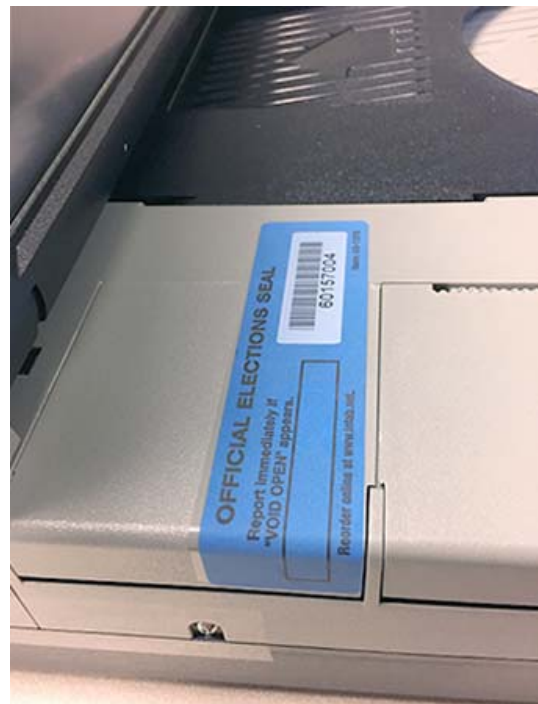
3. If your election rules require a backup USB flash drive, insert the backup USB flash drive in the rear compartment. Thread the wire seal through both the backup USB flash drive and the loop provided in the rear compartment to secure the backup USB flash drive.

4. Ensure that the rear access door is locked with a medium barrel key and affix a label seal on the smooth plastic area as shown. Depending on the selected hardware configuration, the rear access door covers the RJ-11 modem and wireless modem antenna, as well as the backup USB flash drive.
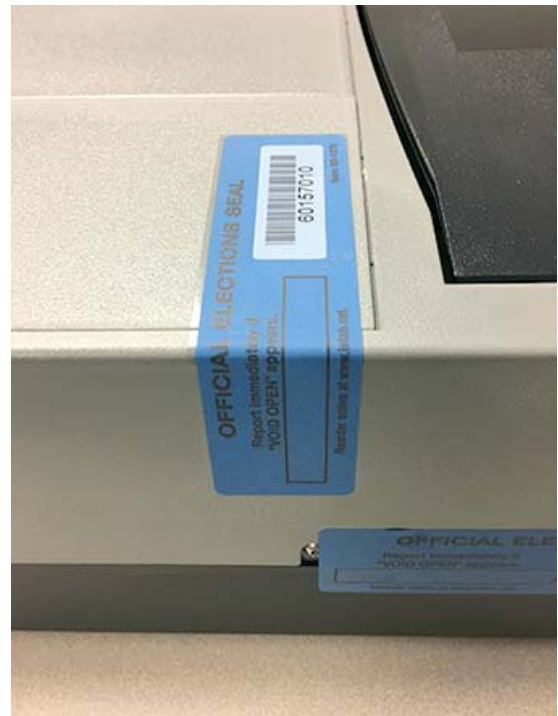
5. Close the touch screen display and secure the lock with a medium barrel key. A label seal may be placed vertically on the smooth plastic area from the main section of the unit to the display as shown.

6. A label seal may be placed on the left side seam where the top of the unit joins to the base.

7. A second label seal may be placed on the right side seam where the top of the unit joins the base.

8. Further security is built into the DS200 with tamper resistant security Torx screws.

13.2.3.1 DS200 Plastic Ballot Box Lock and Seal Recommendations

1. To secure the carrying case to the ballot box, engage the keyed locks on the sides of the box between the handles, then place one wire seal on each side of the box between the handles (two wire seals).

2. To secure the ballot box, assure that both the auxiliary compartment and main compartment doors are closed. Engage the keyed locks and place one wire seal on each door (two wire seals).

3. To secure the DS200 inside the carrying case, lock the front door and place a wire seal through the lock bracket.

4. To secure the carrying case lid, close both lid latches and lock the lid using the lock between the two latches. Place at least one wire seal at the lid latch. There are two locations for seals at each latch (four wire seals). Only one wire seal should be necessary to secure the lid.

5. Further polling site security may be attained by using the integrated anchor point on the DS200 plastic ballot box.

Note

ES&S does not recommend any specific lock for this application due to the unknown anchor points at your polling sites. Check with your local hardware, sporting goods or computer supply store for options.

13.2.3.2 DS200 Tote Bin Lock and Seal Recommendations

Note

The tote bin should be secured when removing and/or transporting.

Securing the DS200 Tote Bin Using the Pull-Tite Seal

1. Close the tote bin before removing it from the lower compartment of the plastic ballot box.

2. To secure the tote bin, use a plastic ballot box key to fasten the top front and top rear locks.

3. Thread the free end of the Pull-Tite seal up through the mounting slots on the tote bin body and lid.

4. Insert the free end of the seal into the receiving end.

5. Pull the Pull-Tite seal tight so that the tote bin is secure.

6. Repeat this process on the opposite side of the tote bin.
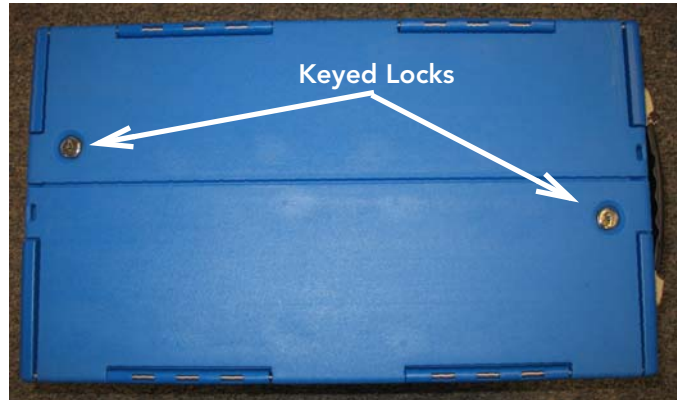
Securing the DS200 Tote Bin Using the Cable Tie seal

1. Close the tote bin before removing it from the lower compartment of the plastic ballot box.

2. To secure the tote bin, use a plastic ballot box key to fasten the top front and top rear locks.

3. Insert the receiving end of the cable tie onto the plastic retainer.
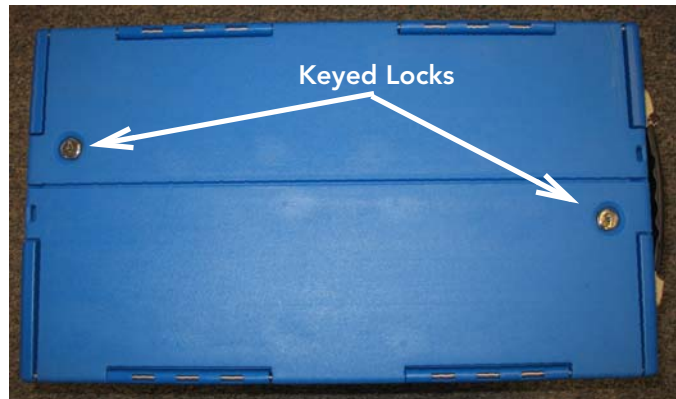
4. Orient the cable tie so that the stamped serial number is facing the floor, then thread the free end of the cable tie up through the mounting slots on the tote bin body and lid.

Note

Pre-bending the end of the cable tie may simplify this step.

5. Pull the cable tie across the top of the closed lid, then thread the end of the cable tie down through the mounting slots on the opposite side of the tote bin body and lid.

6. Pull the cable tie back across the top of the tote bin to the receiving end of the cable tie.

7. Insert the free end of the cable tie into the receiving end.

8. Pull the cable tie tight so that the tote bin is secure and the stamped serial number on the cable tie is visible.
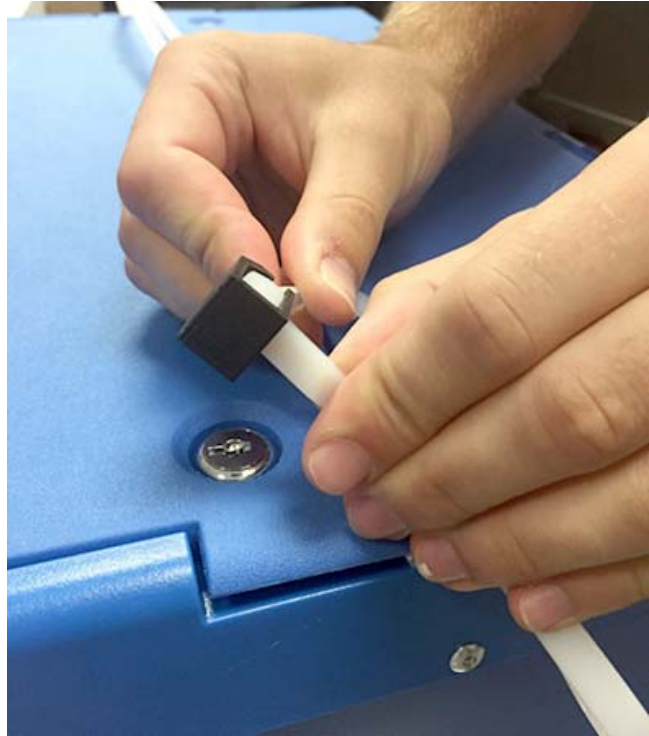
13.2.3.3 DS200 Collapsible Ballot Box Lock and Seal Recommendations

1. Attach the lid to the collapsible ballot box. Slide the tabulator onto the collapsible ballot box rails and secure the lock on the ballot box lid with a DS200 collapsible ballot box key.
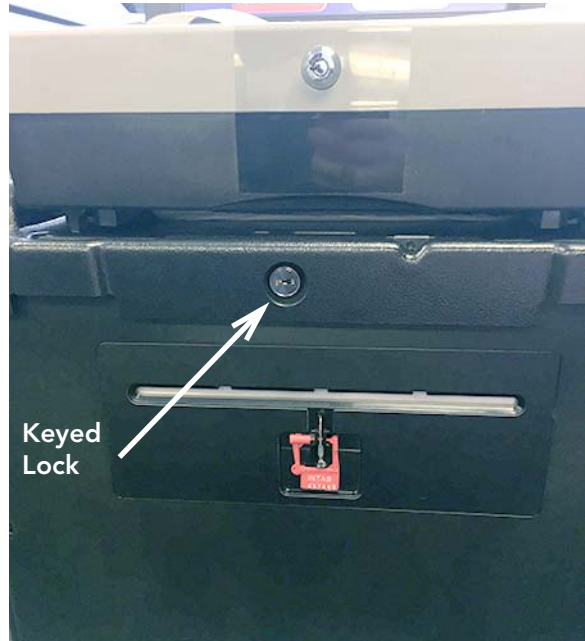
2. Access to the auxiliary ballot compartment is limited by the auxiliary slot cover. Ensure that the auxiliary slot cover is positioned according to jurisdictional needs (open/closed) and secure with a spring lock seal.
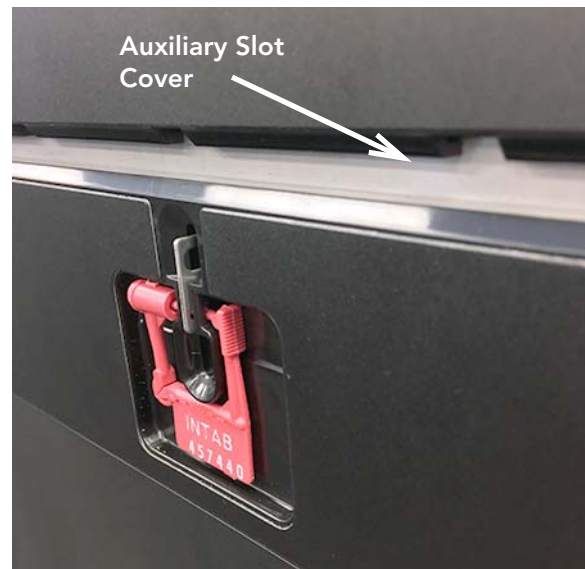
3. Route a spring lock seal through the metal tab that protrudes through a slot in the lid at the front of the box.

4. Access to the main ballot compartment is limited by spring lock seals that are routed through holes on the four silver latches – two in the front and two in the back – at the base of the box.

5. Route a spring lock seal through the metal tab that protrudes through a slot in the lid at the back of the box.

13.2.4 DS450 Lock and Seal Recommendations

1. Secure the rear panel of the DS450 with six thumbscrews.

2. Install a wire or plastic seal in the location provided.

3. Apply tamper-evident labels across the housing and rear panel on the top, bottom, and both sides, as shown.

Note Per the VSTL, this seal is mandatory for the safe and secure operation of the DS450.

4. On the right side of the DS450, a clear access door protects the USB ports. Secure this door using the integrated key lock, a label seal, and a wire or padlock seal.
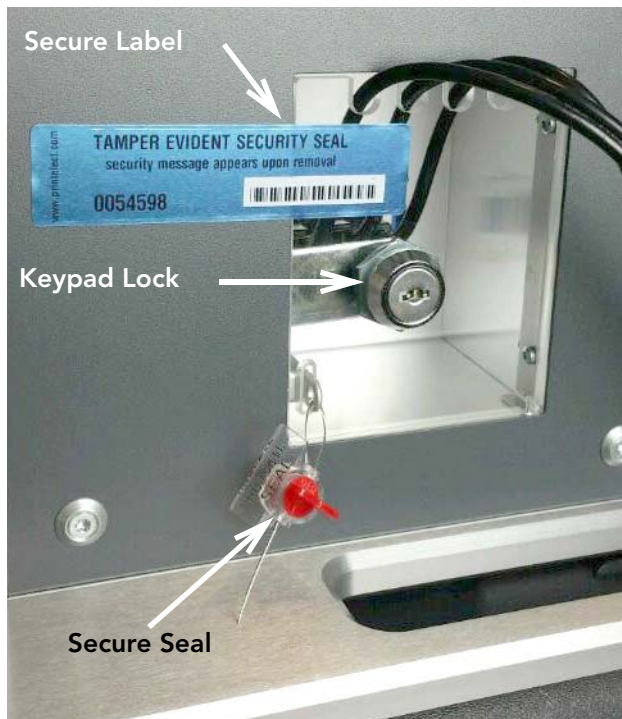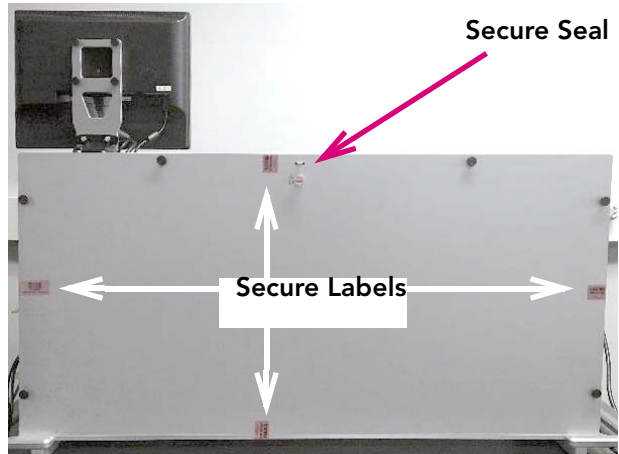
5. On the left side of the DS450, a clear access door protects the power switch, power cord, network port, and USB port. Secure this door using the integrated key lock and a wire or padlock seal. A label seal also may be applied.
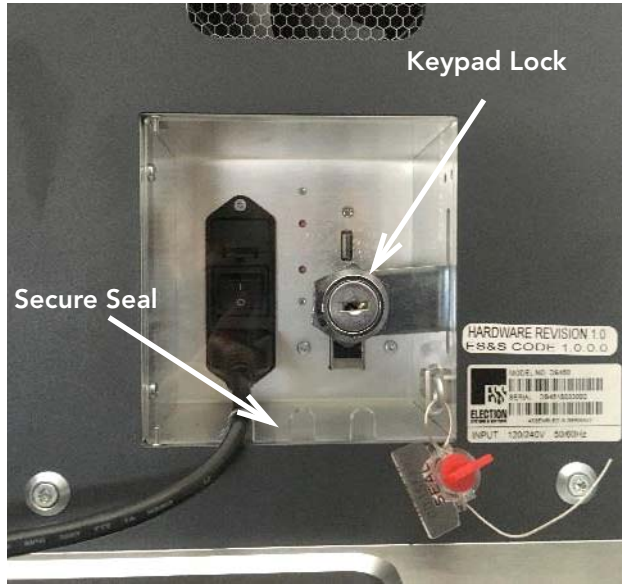
Further security is built into the DS450 with tamper-resistant security Torx screws.

13.2.5 DS850 Lock and Seal Recommendations

1. Secure the rear of the tabulator by locking both door locks. Apply a wire seal through the opening provided in the lower right corner of the door.

Keyed Locks   **Secure Seal**
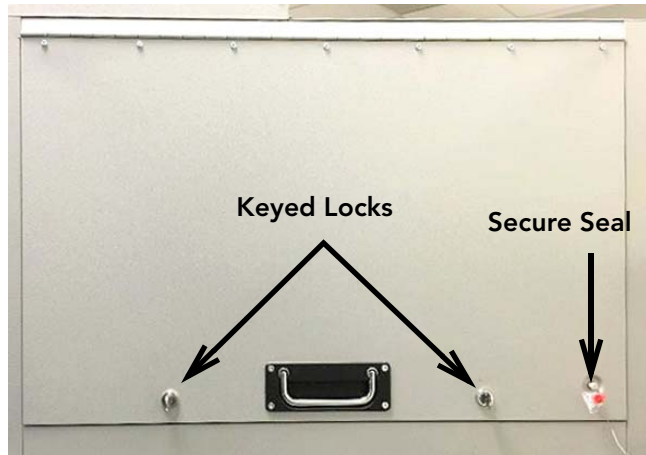
2. On the left side of the DS850, a clear access door protects the power switch, power cord, network port and USB port. Secure this door using the integrated key lock and a wire or padlock seal.

Keyed Locks

Secure Seal
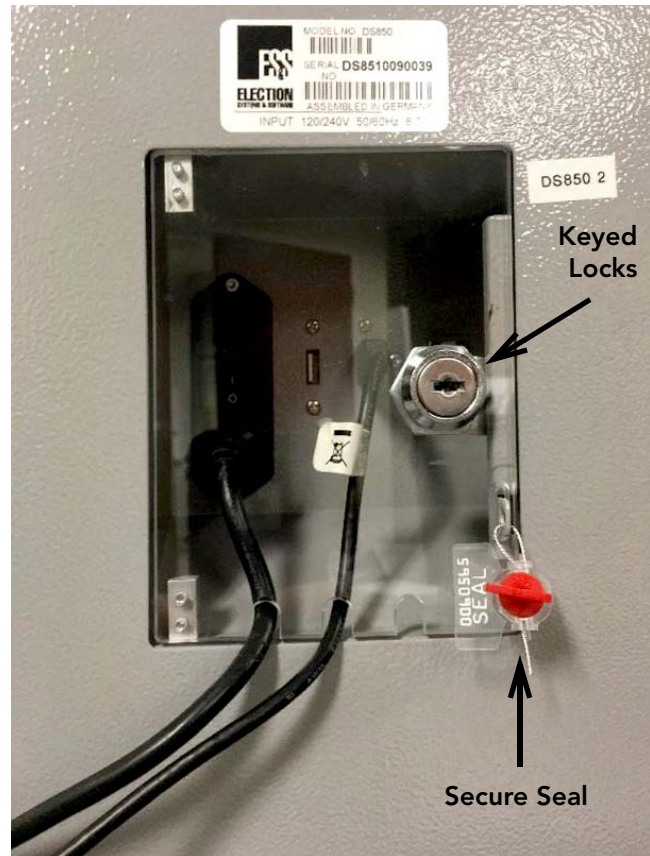
3. On the right side of the DS850, three clear access doors protect the USB ports. Secure these doors using the integrated key locks and wire or padlock seals.

Keyed Lock

Secure Seal

Keyed Lock

Secure Seal

Keyed Lock

Secure Seal
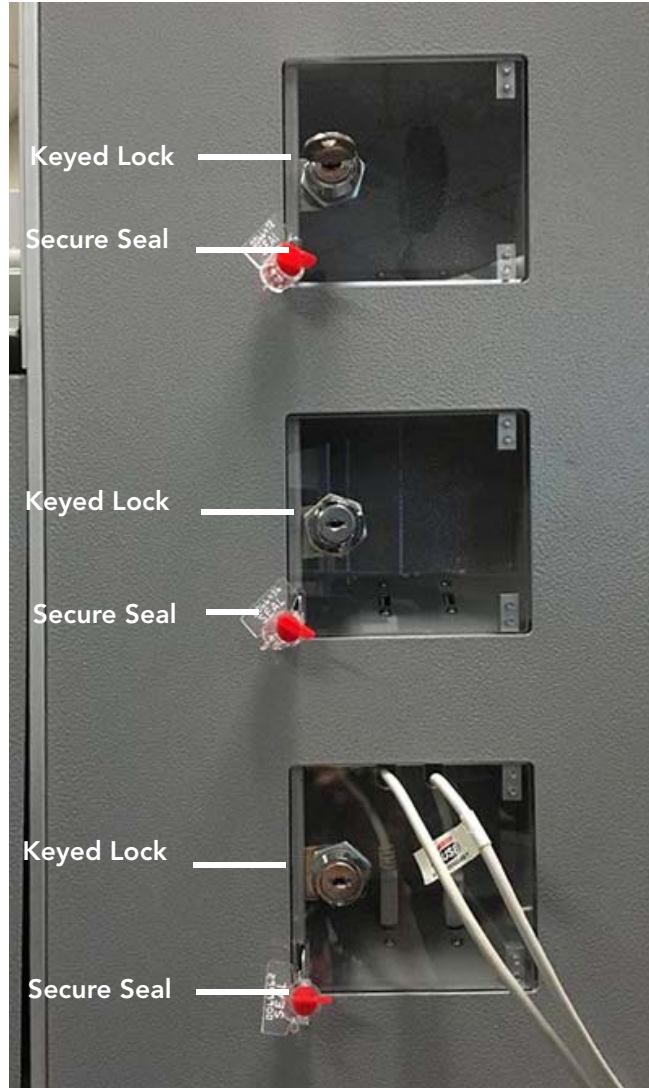
Further security is built into the DS850 with tamper-resistant security Torx screws.

13.3 Logical Security of System and Components

The EMS operates on a hardened, stand-alone (non-networked) computer. This involves completely erasing the hard drive, removing all unnecessary files, and disabling any network adapters on the system.

Note

Complete hardening procedures are provided in the *EVS 6042 CA Installation* documents.

Election administrators should use Windows security procedures to adopt a strict access control policy.

System audit logs must be backed up and stored in a manner that allows the logs and data to be:

- Protected from tampering or destruction

- Used in a regular audit regiment to detect and prevent errors or fraudulent activity, and

- Used in any forensic investigations of suspected errors or fraudulent activities that may occur.

Data backups must be coordinated with the Disaster Recovery or Contingency Planning procedures of the jurisdiction. All system logs and application data must be backed up to write-once, non-modifiable media such as a CD or DVD. A full backup of the data should be done periodically to prevent log file data from being dropped or aged off due to retention limits.

The frequency of backups depends on the size of the jurisdiction staff and level of activity. Shorter intervals of 1-7 days are recommended initially, until a use level can be established and longer periods allowed without risk of data loss. Where large amounts of work are completed such that the loss of the resulting data would jeopardize the accuracy or timely completion of the election process, more frequent backups will be necessary. During heavy election use, ES&S recommends a daily backup stored in a safe and secure environment, and a weekly duplicate backup stored in an alternate but equally safe and secure location.

Backups should be performed by qualified system administrators under the supervision of the appropriate elections officials. All backup functions should be performed in a manner consistent with the policies for separation of duties and logged.

13.4 User-Level Security

To ensure the separation of roles and responsibilities, security accounts/ roles should be defined such that each level of Electionware user has only sufficient privileges to perform the tasks of that role and no more. The user roles are designated by the Electionware System Administrator.

- A **System Administrator** has access to all functionality in Electionware.

Note

During installation, a default system administrator is added to Electionware to enable you to log in and add other users.

- A **System User** has access to all of the functionality in Electionware, except for the Setup module, and specific functions in the Reporting module. In the Reporting module, the System User cannot make changes to the Admin settings or reporting groups, clear results, or manually change a poll place status.

- A **Ballot Producer** has limited access and can only print Ballot On Demand (BOD) ballots in the Print module.

- A **Media Creator** has limited access and can only create media in the Package module.

- A **Reporting Administrator** has limited access to the Setup and Home modules, and full functionality within the Reporting module.

- A **Reporting User** has access to only the Home and Reporting modules, with specific tasks enabled, such as backing up an election and loading results.

- A **Ballot Reviewer** has limited access within only the Reporting module. They can review and adjudicate ballots, and assign write-in names.

Roles and accounts should be reviewed and updated before each election to reflect personnel or responsibility changes, or immediately upon termination or demotion of personnel such that specific roles must be taken away from the individual.

The following checklist provides suggestions to help ensure the security of your elections. Always follow the processes and laws for your jurisdiction.

- No single individual should control all election procedures. The election supervisor should systematically distribute different responsibilities among individuals in order to cover all phases of the election process.

- Access control policies should based on industry best practices and the jurisdiction's unique requirements and should be consistent across all areas that interact or are physically or logically connected to any system or area that is involved with election procedures.

- Perform background checks on all key election personnel.

- Immediately log and report any, and all, security incidents. The ES&S user guides and operator's manuals provide more information about ES&S software and hardware.

13.4.1 Password Security

- The System Administrator, under the supervision of the Election Administrator, should manage Windows® PC passwords.

The California Secretary of State requires the following password practices:

- In general, a password should be as long as possible while still being easy to remember.

Note

One way to do this is create a password based on an easy-to-remember phrase. For example, the phrase might be: "This May Be One Way To Remember" and the password could be: "TmB1w2R!" or "Tmb1W>r~" or some other variation. (Do not use either of these examples as passwords!)

- Do not use an easily guessed password, such as:

  - Names of family, pets, friends, co-workers, etc.

  - Computer terms and names, commands, sites, companies, hardware, software.

  - Birthdays and other personal information such as addresses and phone numbers.

  - Word or number patterns like aaabbb, qwerty, zyxwvuts, 123321, etc.

- Never write down passwords or store them online.

- Change passwords on a regular basis. ES&S recommends either every 90 days, for each election, or any time there is reason to suspect that an account has been compromised or tampered with.

- Passwords should contain a combination of alphabetic, numeric, and punctuation characters, as allowed by the specific application.

- Do not share user names or passwords.

- Lock all software each time a user leaves the protected area. Set screen savers to lock workstations after a period of inactivity, not to exceed 10 minutes, requiring the Windows password to be re-entered.

- Users should log off of any application or account when they expect to be away for any appreciable length of time.

13.4.1.1 User Passwords in Electionware

In Electionware, the System Administrator should control application-level authentication via the Setup module.

In the Password field, enter the password the new user will use to access Electionware. Re-enter the same password in the Confirm Password field.

The password must be at least eight characters long, and must contain at least one character from three of the following four classes:

- Uppercase letters (A-Z)

- Lowercase letters (a-z)

- Numerals (0-9)

- Punctuation symbols ' ~ ! @ # $ % ^ & * ( ) = + , . / \ < > ? ; : " [ ] { } |

13.5 Anti-Virus Protection

The specified configuration includes commercially available and standard virus detection software. Virus detection software must be installed and enabled on all three of the referenced PCs at all times, and removable media must always be scanned by the configured PC to prevent virus entry and propagation.

Important

Install Symantec virus protection software according to the instructions provided in the *EVS 6042 CA Installation* documents.

Important

The virus protection software and update files should only be updated if tested and approved for use with the EVS system.

13.6 Essential Software Updates and Changes

- **Operating System –** Before each election, a qualified system administrator under the supervision of the appropriate elections official should contact ES&S for any operating system updates available from the third party vendor and tested and approved for use with the EVS system. Depending on the scope of the updates and any regulatory approval required, ES&S will issue procedures for installation of the updates.

- **Applications and Third Party Software –** All applications and third party software are not to be updated unless specifically required by ES&S and approved by Federal and State Certification, or by an exception granted by the Secretary of State's Office.

13.6.1 Audit Records for Changes

ES&S recommends that a physical log be kept of all activity related to installation, configuration, and modification of any and all system components, in addition to the logging of storage, transportation, and overall chain of custody. Logging should include at a minimum:

- Printed name of the person performing the task

- Full signature or signed initials of the person performing the task

- Task performed

- Reason for performing the task

- Date and time of the task performed

- Printed name of the person witnessing, verifying, or authorizing the task (if applicable)

- Full signature or signed initials of the person witnessing, verifying, or authorizing the task (if applicable)

Note

The entries in this log must be complete.
Example: "System Maintenance" is not an acceptable entry. The entry should state who accessed the system, exactly what maintenance was performed and why it was necessary, when the maintenance work began, and when it ended.

Completed log pages should be reviewed by the appropriate elections official, initialed and stored physically by secure means for a minimum of 22 months or as directed by State Election law.

13.7 Security Procedures for Central Processing

The following security measures are recommendations based on industry best practices.

- When ballots are prepared and stored for processing, each box should be logged with contents (such as precinct/ballot type number, date packed, etc.).

- Store ballots in a climate-controlled environment and under pass code security or lock and key.

- When ballots are retrieved for processing (from a storage or collection area), two elections officials are required to monitor the transfer of ballots from the storage area to the tabulation equipment.

- Transfer custody of the ballots from the elections officials to the individuals responsible for tabulation.

- Upon completion of tabulation process, ballots are required to be:

  - Logged as scanned with the tabulation operators' initials and date\time.

  - Logged and sealed in a storage container.

The central tabulation room should be secured at all times with a minimum of two elections officials having access rights to the room (one of whom must be an employee of the jurisdiction). Access to the room should be monitored or logged at all times. All access rights to the room and its components will be restricted to the individual's rights or duties. Any need for change of access rights outside an individual's normal realm of duty or job function shall be maintained and logged by the jurisdiction's chief elections official.

13.7.1 Central Count Tabulators: Restricting Access

If an election definition has been loaded on the DS850 or DS450, with the User Access feature enabled, you can lock the tabulator to prevent unauthorized users from modifying the configuration or performing other functions from the touch screen.

The tabulator can only be unlocked again with the correct election code.

13.8 Security Procedures for Polling Places

13.8.1 ExpressVote

The election definition flash contains drive the poll-specific data, including the candidates, contests, and card variations for an individual precinct or an entire jurisdiction.

The election definition includes format styles and touch screen menu settings. For example, the election definition can configure the ExpressVote to query the voter when he or she undervotes a contest and then attempts to move to another contest, or to prevent the voter from overvoting a contest. The election definition also contains the visual and audio ballot files and navigation prompts. The system uses the election definition flash drive to store the audit log and other specific election information.

The election definition flash drive is secured in the ExpressVote unit during the election. When you insert the election definition flash drive into an available USB port on the ExpressVote terminal, the system compares the encrypted keys loaded from the EQC flash drive with the keys stored on the election definition flash drive to validate the election definition. If the keys do not match, the system aborts the election loading process. If the keys do match, the system prompts the election official to enter the election security code.

The system accesses data on the election definition flash drive when the device is first inserted into an ExpressVote USB port. Operations and Systems Log data stored on the election definition flash drive any time a card is inserted into the ExpressVote terminal or the user interacts with the on-screen menus in Official mode.

13.8.2 ExpressVote XL

The internal flash memory storage card (CFast) containing the installed election definition, Audit Log information, and election totals is secured under a secure panel inside the locking accessory compartment. When using the ExpressVote XL as a marker, or as an exclusive-collection tabulator, the election flash drive also is housed in the locking accessory compartment.The ExpressVote XL records errors and major events and tags these incidents with the date and time the incident occurred based on the ExpressVote XL's real-time clock settings. Audit trails are stored on the internal flash memory storage card and saved to the inserted USB flash drive during the poll closing process. The Zero Totals Report, which is printed before polls are open on Election Day, is used to indicate that all results from testing or from the previous election have been removed from the machine, and that all totals are set to zero when the polls are opened.

The secure card container for printed vote summary cards is equipped with locks that prevent access to the printed cards.

When the ExpressVote XL is used as a tabulator, the internal CFast card stores vote data for each ballot cast including an image of each side of the ballot page. To ensure security and protect voter anonymity, the vote data is stored with random file names assigned to each ballot image file. The system automatically saves Cast Vote Records (CVRs) of each ballot cast.

13.8.3 DS200

The following items are critical to tracking, auditing, and reporting the ballot counting process and must be maintained:

- For the election definition phase, diagnostic proof listings of candidates and active vote positions for each ballot style, ballot type or precinct must be maintained.

- The number of ballots read within each precinct, by type, including totals for each party in primary elections must be maintained.

- The total number of ballots processed must be maintained.

- Separate accumulations and reporting of the quantity of overvotes, undervotes, and write-ins within each precinct for each race or issue must be maintained. This is generally done on reports other than the report distributed Election Night.

- Availability of the above information in summary and by precinct.

13.9 Audit Logs

This section provides a description of all audit log files, the file location within the voting system, and procedures to retrieve, export, and archive audit logs from the voting system.

The close of polls will automatically generate two (2) copies of the results report. One copy shall remain with the machine and the other shall be posted in an open public area. At the discretion of the County Election Administrator, the audit log report for that particular scanner can be printed at the close of polls after the results have completed printing. If the audit log is printed, keep the log, along with all related election materials, together with the results tape for processing at the County office. Each jurisdiction shall, before taking any action that could delete or overwrite any audit log, create an electronic copy, when possible, or a clean paper copy, of all audit logs, to be maintained for 22 months.

13.9.1 Audit Log: ExpressVote

The ExpressVote's Operations Log and System Log reports comprise a system-generated audit trail you can use to verify that elections are administered fairly, accurately, transparently, and efficiently.

System-generated audit records reduce the possibility of errors and omissions associated with manually-generated audit logs. The following sections summarize how the ExpressVote generates audit record data.

Record Timing and Sequence of Audit Record Entries

The ExpressVote stores continuously updated audit logs on a removable USB flash drive. The ExpressVote's real-time clock applies a time-and-date stamp to each event recorded in the Operations Log and System Log reports.

Preserve Timing and Sequence of Audit Record Entries

Stored audit records are not affected by system power interruptions. The ExpressVote audit record is stored on the removable USB flash drive.

View and Print Audit Logs

You can view audit logs on the ExpressVote's touch screen by displaying the Operations Log and System Log reports. You also can print both logs using the unit's internal card printer.

Operations Log and System Log report information enables you to immediately identify and resolve error conditions. Each log entry is numbered and includes event details to facilitate recognition, segregation, and retention. You can use each of the ExpressVote's administrative menus to generate machine-level audit reports at any time.

Display Error Messages and Remedial Actions

The ExpressVote displays and stores all error messages to the user as they occur. Error messages are either displayed in the voter's selected language or include the international warning symbol if intended for the poll worker or if a general system error is generated. The error message details state the recommended action to restore the system to the state existing before the first error occurred and with no irreversible errors.

Display and Report Critical and Non-Critical Status Messages

The ExpressVote displays and reports critical and non-critical status message in real time and in the voter's selected language or in English, along with the international warning symbol depending on the nature of the error at the time of occurrence.

13.9.2 Audit Log: ExpressVote XL

The ExpressVote XL maintains a system-generated audit trail you can use to verify that elections are administered accurately and accountably. The system meets the following audit criteria.

Records the Timing and Sequence of Audit Record Entries

The ExpressVote XL generates and stores a running audit log containing all user- or system-initiated events that occur on the ExpressVote XL terminal. Recorded system events are sequentially numbered. The system applies a time-and-date stamp in ISO 8601 format to each event as it occurs according to the terminal clock.

Preserves the Timing and Sequence of Audit Record Entries

Stored audit records are not affected by system power interruptions.

Displays Error Messages and Remedial Actions

The ExpressVote XL displays and records all error messages as they occur. Error messages are displayed and stored in English or in the voter's selected language. When an error message is intended for the poll worker, or if a general system error occurs, the system displays the international warning symbol. Error messages include information about restoring the system to its previous state with no irreversible errors.

Displays and Reports Critical and Non-Critical Status Messages

The ExpressVote XL displays and records critical and non-critical status messages in real time, in English or the voter's selected language. If applicable, warnings are displayed along with the international warning symbol.

This following sections in this chapter summarize how the system generates and stores audit record data. This chapter also provides instructions for viewing, printing, or exporting a copy of the Audit Log via the Supervisor Menu of the ExpressVote XL terminal.

The Audit Log records the date, time, and description of every user- or system-initiated event that occurs on the ExpressVote XL terminal, including the following event types.

- Any change to the device or configuration, such as a date or time change

- All poll worker or technician interactions with the terminal, including menu and screen navigation

- All actions taken by a voter, including the time the voting session started and ended for each voter, excluding contest selection/deselection, ballot navigation, and write-in entries

- All errors and warnings

- All internal read/write operations, such as data written to a specific location or peripherals queried for status

- All battery/power notifications

- Hardware configuration and status

- Software/firmware versions

The Audit Log is always available whether or not an election is loaded on the terminal. This log is not cleared by the EQC process and therefore contains a record of terminal activity across elections.The ExpressVote XL stores the Audit Log on the terminal's internal flash memory card.

13.9.2.1 ExpressVote XL Log Retention and Rotation

The ExpressVote XL maintains the Audit Log in both a current and an archived log file on the terminal's internal flash memory card. This method is designed to alleviate storage space limitations related to log retention.

When the current Audit Log reaches 80% of its storage capacity, the system displays a warning window. To acknowledge the warning and return to normal operation, touch **Continue**.

After the operator acknowledges the displayed warning message, the system automatically rotates the current log into an archived state and continues recording system events in a new log file. The new log file is now the current log file. The record of all system activity that occurred prior to the capacity warning is preserved in the archived file.

If the system has already rotated log files and the current log file reaches 80% of capacity, the system rotates the current file into archive status and rotates the previous archive file back to current status, overwriting all previous data. ES&S expects each ExpressVote XL terminal to log multiple elections before encountering this level of log rotation.

13.9.2.2 Viewing, Printing, and Exporting the Audit Log

The Audit Log is available via the Logs option of the Supervisor Menu.

On the Supervisor Menu, touch **Audit Log**. The system displays the Logs function.
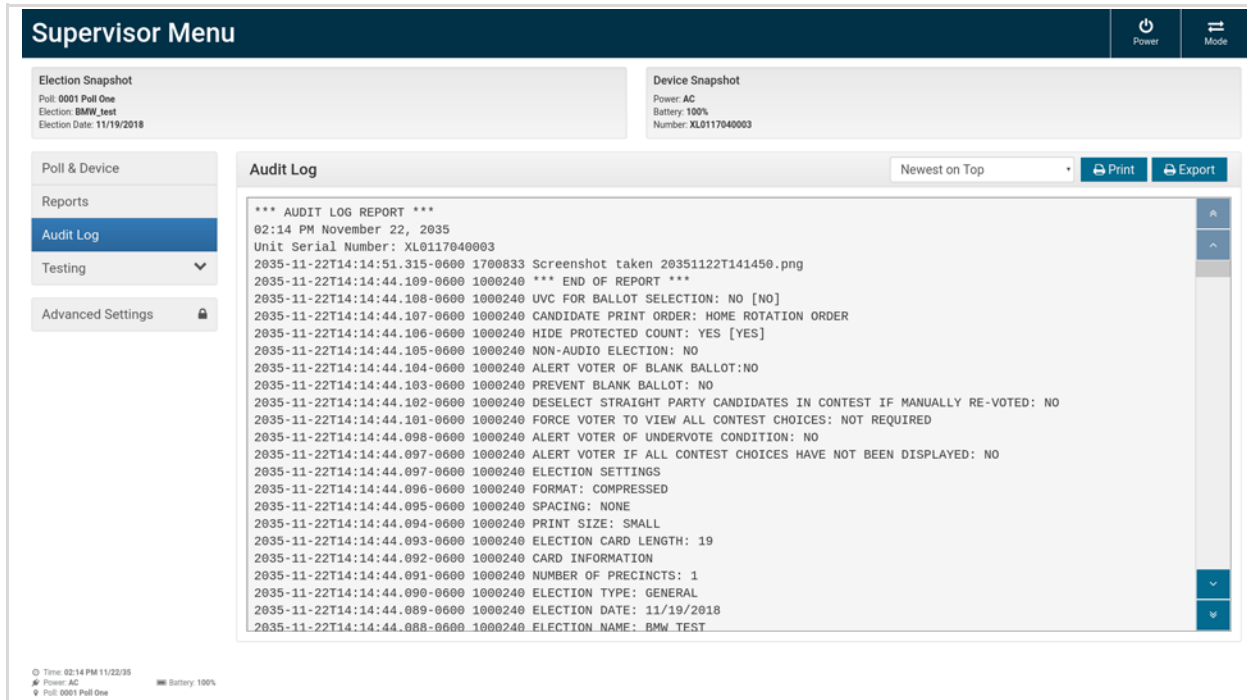
When on operator accesses the Logs function, if an election is loaded on the terminal, the system automatically displays a preview of the Audit Log by default.

The preview pane provides a drop-down menu that enables you to sort the displayed log from newest event to oldest, or from oldest event to newest. To sort the displayed log, in the drop-down menu, touch the desired display order.

Valid options:

- Newest On Top

- Oldest On Top

To view the entirety of a log that exceeds the space provided in the preview pane, touch the up or down scroll buttons on the right edge of the pane.

To skip to the end or skip to the beginning of the displayed log, touch the up or down skip buttons on the right edge of the pane.

13.9.2.3 Printing the Audit Log

To print the log displayed in the preview pane, complete the following steps.

1. In the preview pane, touch **Print**.

   The system sends the log to the ExpressVote XL report printer and displays a window indicating that printing is in progress.

2. To pause the printing process, touch **Pause**.

   The system displays a window indicating that printing has been paused.

3. To resume printing from a paused state, touch **Resume**.

4. To cancel printing at any time, touch **Cancel**.

13.9.2.4 Exporting the Audit Log

You can manually export copies the Audit Log to an inserted export flash drive. When you export the Audit Log, the system exports the entirety of the stored log, including both the current and the archived log files, in JSON format.

Important

The export flash drive must be a blank ES&S USB flash drive formatted for the FAT32 file system with the volume label renamed EXPORT. If you insert any other type of USB flash drive during this procedure, the system displays an error message indicating that the inserted media is invalid.

To manually export the Audit Log, complete the following steps.

1. In the Logs pane, touch **Export**.

   The system prompts you to insert a blank USB flash drive.

Note

To cancel the export process without inserting a flash drive, touch **Cancel**.

2. Insert a prepared blank backup flash drive.

   The system copies the selected log to the inserted flash drive.

13.9.3 Audit Log: DS200

The Event Log Report is an audit log of all activity that has occurred on the DS200 and contains information including the date and times when the unit was initialized and when it generated reports. It includes a record of all actions taken by election workers and/or voters on the DS200. The Event Log Report also includes information about internal or system events that are not included on the Event Log Summary Report, such as when Intelligent Mark Recognition (IMR) is activated and when ballot images are stored. For each ballot scanned, the Event Log Report lists the time the voting session started and the time the session was completed.

The Event Log Summary Report is a condensed version of the Event Log Report. It omits information about IMR and ballot image storage. In addition, the Event Log Summary Report lists the voting session start time for only the first ballot scanned, and the voting session complete time for every ballot scanned.

The Event Log Report lists all of the DS200 events that occur from the time you load your election definition USB flash drive into the DS200 until you remove the flash drive after the election is complete.

Sample of the Event Log report

```
*** EVENT LOG REPORT ***
 1:08 PM April 22, 2014
Unit Serial Number: 02095350655

 TIME DATE MSG ID
MESSAGE TEXT
16:58:33 04/22/2014 1114111
Election media created
17:01:39 04/22/2014 1004002
Election loaded
17:01:44 04/22/2014 1004326
All data paths and memory locations OK
17:01:44 04/22/2014 1004143
Printing 1 copy of Configuration Report
17:02:08 04/22/2014 1004128
Completed printing Configuration Report
17:02:13 04/22/2014 1004193
Backup Media Detected
17:02:14 04/22/2014 1004302
DS200/UVC not plugged in
~~~~ sample continues in next column ~~~~
```

```
17:02:32 04/22/2014 1004149
Attempting to open poll
17:02:38 04/22/2014 1004193
Backup Media Detected
17:02:40 04/22/2014 6004022
Open process complete
17:02:41 04/22/2014 6004121
Keys detected on poll media 0108340394
17:02:41 04/22/2014 1004003
Poll opened
17:02:44 04/22/2014 1004143
Printing 1 copy of Ballot Status
Accounting Report
17:02:55 04/22/2014 1004128
Printing 1 copy of Zero Totals Report
17:14:01 04/22/2014 1004152
Attempting to enter Voting Mode
17:14:02 04/22/2014 1004056
Entering voting mode
17:14:18 04/22/2014 1004115
Vote Session Started
17:14:21 04/22/2014 3004101
IMR Log Characteristic Point Status
Init
24 New 24
17:14:22 04/22/2014 1004107
Ballot images stored
17:14:22 04/22/2014 1004002
Ballot data stored
17:14:22 04/22/2014 1004022
Voting session complete
17:14:28 04/22/2014 1004115
Attempting to Close {Poll
17:14:29 04/22/2014 1004193
Backup Media Detected
17:14:30 04/22/2014 6004041
Close process complete.
17:14:32 04/22/2014 6004072
Collection process complete.
17:14:41 04/22/2014 1004013
Poll closed
17:14:43 04/22/2014 1004143
Printing 1 Copy of Ballot Status
Accounting Report
17:15:02 04/22/2014 1004128
Completed printing Ballot Status
Accounting Report
17:14:32 04/22/2014 6004072

Unit Serial Number: 02095350655

*** END OF REPORT ***
```

13.9.4 Audit Log: Central Count Tabulators

The audit log is generated in real time on the dot-matrix printer and provides a time and date stamped record of all actions taken on or by the Central Count. The audit log can also be exported separately and viewed with regular text viewer and or is also included in a files export from the Central Count which can be loaded into Electionware.

Electionware provides the settings for the audit log printing function in the election definition.

The audit log can also be enabled or disabled on the Central Count.

Partial sample of the Audit Log report

```
14:41:31 Tue Jun 02 2015 Public Count: 0
14:41:31 Tue Jun 02 2015 Ballot Spec ID: DSIM_279.400_215.900_50_24_PP
14:41:31 Tue Jun 02 2015 Load election definition OK
14:41:40 Tue Jun 02 2015 Audit log printer is ready
14:41:45 Tue Jun 02 2015 Selected: Load Election done
14:41:56 Tue Jun 02 2015 Navigated to: Setup Menu
14:42:00 Tue Jun 02 2015 Navigated to: Election Menu
14:42:01 Tue Jun 02 2015 Navigated to: Scanning Menu
14:42:03 Tue Jun 02 2015 Selected: Scan Ballots
14:42:06 Tue Jun 02 2015 Navigated to: Scanning Menu
14:42:07 Tue Jun 02 2015 Selected: Scan Ballots
14:42:09 Tue Jun 02 2015 Navigated to: Scanning Menu
14:42:09 Tue Jun 02 2015 Navigated to: Election Menu
14:42:10 Tue Jun 02 2015 Navigated to: Configuration Menu
14:42:11 Tue Jun 02 2015 Navigated to: Processing Mode Settings
14:42:15 Tue Jun 02 2015 Selected: Edit Processing Mode
14:42:25 Tue Jun 02 2015 Selected: Election code entry canceled
14:42:26 Tue Jun 02 2015 Navigated to: Processing Mode Settings
14:42:26 Tue Jun 02 2015 Selected: Edit Processing Mode
14:42:28 Tue Jun 02 2015 Selected: Election code entry canceled
14:42:28 Tue Jun 02 2015 Navigated to: Processing Mode Settings
14:42:29 Tue Jun 02 2015 Navigated to: Configuration Menu
14:42:30 Tue Jun 02 2015 Navigated to: Election Menu
14:42:31 Tue Jun 02 2015 Selected: Exit
14:42:32 Tue Jun 02 2015 Navigated to: Shutdown Scanner
14:42:32 Tue Jun 02 2015 Selected: Shutdown
14:42:32 Tue Jun 02 2015 Shutdown initiated

15:03:22 Tue Jun 02 2015 Election Id: 9PNYROCK
15:03:22 Tue Jun 02 2015 Election Date: 2015-05-29
15:03:22 Tue Jun 02 2015 Election EQC: 9fa48bd5
```

13.9.4.1 Exporting Central Count Audit Logs

The audit log can also be exported separately and viewed with regular text viewer or can be included in a files export from the Central Count, which can be loaded into Electionware and viewed via the Reporting module.

1. From the Results menu, touch **Export Audit Log**.

2. Insert the Election Definition flash drive or a blank ES&S flash drive into one of the USB ports.

3. When prompted to do so, enter the Election Code, then touch **Accept**.

    The Export Audit Log screen appears.

4. Touch **Confirm** to export the audit log.

5. When the Export Audit Log screen indicates the audit log has been successfully exported, remove the flash drive. Press **Done** to return to the Results screen.

13.9.5 Audit Logs: Electionware

In Electionware's Setup module, use the **Reports** menu to access administrative report options. Use the Report Screen Toolbar to print, save, change the current page, or change the view of the displayed report.

13.9.5.1 Admin Audit Events Report

Use the Admin Audit Events Report option to access detailed audit information displayed to the administrator within the specified date range.

This report includes information regarding all administrator events in Electionware, including the type of Event, an event Description, the event's Timestamp, the User ID, and the module in which the event occurred.

1. To run this report, from the **Reports** menu click **Admin Audit Events Report**.

2. In the Admin Audit Events Report Criteria window, define the criteria for the report:

    a. Specify the date range with the From Date and To Date selectors. Only the data from this range will be included in the report.

    b. From the **Event Type** drop-down menu, choose the event types to include in the report:

- Fatal

- Debug

- Verbose

- Info

- Warning

- Error

- All

3. Use the **Date-Ascending** or **Date-Descending** option button to sort the events by ascending date or descending date order.

4. Click **Run Report**.

Admin Audit Events Report		03/01/2012 10:02AM	ElectionWare County AnyCounty Primary January 24, 2012	
Event	Description	Timestamp	User Id	Module
Verbose	Generating Report...	03/01/2012 10:02:52AM	admin	Setup
Info	Running report: Admin Audit Events Report	03/01/2012 10:02:52AM	admin	Setup
Verbose	Connecting...	03/01/2012 10:02:52AM	admin	Setup
Verbose	Done.	03/01/2012 10:00:29AM	admin	Setup
Verbose	Generating Report...	03/01/2012 10:00:28AM	admin	Setup
Info	Running report: User Report	03/01/2012 10:00:28AM	admin	Setup
Verbose	Connecting...	03/01/2012 10:00:28AM	admin	Setup
Info	Setup module activated.	03/01/2012 10:00:24AM	admin	Setup
Info	Election Opened: AnyCounty Primary	03/01/2012 09:21:22AM	admin	Home
Info	Home module activated.	03/01/2012 09:05:24AM	admin	Home

13.9.5.2 Election Audit Events Report

Use the Election Audit Events Report option to access detailed audit information displayed to the user within the specified date range.

This report includes information about events in Electionware for the open election, including the type of Event, an event Description, the event's time stamp, the User ID, and the module in which the event occurred.

Note

An election must be open in order to run the Election Audit Events Report.

1. To run this report, from the **Reports** menu, click **Election Audit Events Report**.

2. In the Election Audit Events Report Criteria window, define the criteria for the report:

a. Specify the date range with the From Date and To Date selectors. Only the data from this range will be included in the report.

b. From the **Event Type** drop-down menu, choose the event types to include in the report:

- Fatal

- Debug

- Verbose

- Info

- Warning

- Error

- All

3. Use the **Date-Ascending** or **Date-Descending** option button to sort the events by ascending date or descending date order.

4. Click **Run Report**.

Election Audit Events Report | *06/30/2016 10:54AM* | Electionware Electio April

Event	Description	Timestamp	User Id	Module
Info	Running report: Election Audit Events Report	06/30/2016 10:54:00AM	admin	Setup
Verbose	Open Election: Finding Election...	06/30/2016 10:53:42AM	admin	Home
Verbose	Open Election: Finding Jurisdiction...	06/30/2016 10:53:42AM	admin	Home
Verbose	Open Election: Finding Customer...	06/30/2016 10:53:41AM	admin	Home
Info	Election Opened: Election 5220	06/30/2016 10:53:41AM	admin	Home
Info	Election Closed: Election 5220	06/29/2016 02:54:23PM	admin	Capture
Info	Capture module activated.	06/29/2016 02:19:47PM	admin	Capture
Verbose	Open Election: Finding Election...	06/29/2016 02:19:44PM	admin	Home
Verbose	Open Election: Finding Jurisdiction...	06/29/2016 02:19:44PM	admin	Home
Verbose	Open Election: Finding Customer...	06/29/2016 02:19:44PM	admin	Home
Info	Election Opened: Election 5220	06/29/2016 02:19:44PM	admin	Home
Info	Election Closed: Election 5220	06/28/2016 04:12:55PM	admin	Configure
Info	Configure Equipment module activated.	06/28/2016 03:34:00PM	admin	Configure
Info	Home module activated.	06/28/2016 03:27:53PM	admin	Home
Info	Configure Equipment module activated.	06/28/2016 03:25:49PM	admin	Configure
Info	Accessible Ballot module activated.	06/28/2016 03:25:28PM	admin	Accessible Bal
Info	Element Library module activated.	06/28/2016 03:25:22PM	admin	Element Librar
Info	Capture module activated.	06/28/2016 03:25:17PM	admin	Capture
Verbose	Open Election: Finding Election...	06/28/2016 03:24:03PM	admin	Home
Verbose	Open Election: Finding Jurisdiction...	06/28/2016 03:24:03PM	admin	Home
Verbose	Open Election: Finding Customer...	06/28/2016 03:24:03PM	admin	Home

Chapter 14: Biennial Hardware Certification and Notification

EC 19220 requires jurisdictions to examine voting systems every two years and certify the results to the Secretary of State. Requirements for examination and testing are further detailed in Article 15 of the Secretary of State Procedures for Approving, Certifying, Reviewing, Modifying, and Decertifying Voting Systems, Vote Tabulating Systems, Election Observer Panel Plans, and Auxiliary Equipment, Materials, and Procedures.

14.1 Certification and Notification for Precinct Tabulation Hardware

Elections Code section 19220 requires each elections official to inspect and certify the accuracy of their voting or vote tabulating equipment at least once every two years. The elections official shall certify the results of their inspection to the Secretary of State.

14.1.1 Hardware Certification and Notification for the Precinct Tabulator

14.1.1.1 Certification

All ballot readers and specialized vote tabulating equipment must be certified prior to use in any election by the Secretary of State. Certification procedures are available upon request from the Secretary of State's Elections Division. All firmware and software used as part of the system is subject to the notification of change requirement.

14.1.1.2 Notification

For each statewide election, the responsible county elections official shall cause to be prepared a list, including quantities, of all equipment to be used to tabulate votes during the semiofficial and official canvass.

Seven days before each statewide election, the elections official shall certify to the Secretary of State the results of the logic and accurate tests as well as the functionality of all ballot counting equipment. This certification shall also affirm the use of the same equipment for pre-election testing and for semiofficial and official vote canvasses. In the event of a change to the ballot tally program occurring after this certification, an amended certificate shall be submitted no later than the day before the election.

In the event any equipment is repaired, altered or replaced following the certification, and prior to completion of the official canvass of the vote, an amended certification of logic and accuracy testing and a revised list of equipment used must be submitted to the Secretary of State. This submission shall occur not later than submission of official canvass results. The jurisdiction will have an inventory of all voting equipment available for review by the Secretary of State at all times.

14.1.2 Election Observer Panel

All procedures prescribed herein shall be carried out in full view of the public insofar as feasible. In addition, the responsible elections official shall devise a plan whereby all critical procedures of the vote tallying process are open to observation by an Election Observer Panel. Representatives of the qualified political parties and representatives of the news media may be among those invited to serve on this panel and shall be given the opportunity to observe that the correct procedures are followed in the receiving, processing, and tallying of all voted ballots.

14.1.3 Logic and Accuracy Certification

A Logic and Accuracy Board shall be appointed by the responsible elections official and insofar as is practicable, shall be comprised of the same persons prior to, during, and after the election. The Board shall have the following duties:

- Receive from the elections official all required test materials and take steps to ensure the security of said materials prior to, during, and after the election, except when the materials are properly in the possession of one of the other boards or elections officials as required by these procedures.

- Verify the correctness of the logic and accuracy of test memory cards and the logic and accuracy of test ballots. This verification shall also be required for any material which must be replaced.

- Observe the performance and verify results of all required tests.

- Note any discrepancies and problems and affirm their resolution or correction.

- Deliver into the custody of the elections official all required test materials and printed output.

- Certify to the performance of each of the above-prescribed duties as well as those otherwise established by the procedures; provided that all

members of the Board shall sign the appropriate certificate or certificates. Final pre-election certification shall be made to the Secretary of State no less than seven days before each statewide election. This certification shall be made by the responsible elections official based on the Logic and Accuracy Board's certification of successful testing. In the event an amendment to the ballot counting program is required following this certification, the elections official must immediately recertify to the Secretary of State.

14.1.4 Submit Ballot Tally Programs to the Secretary of State

Ballot tabulation programs for statewide elections are to be delivered to the Secretary of State no later than seven days prior to each statewide election. Ballot tally programs must be accompanied by the elections official's certification of testing, the list of vote counting equipment used and a notification that he has caused memory cards to be programmed in conformity with the ballot diverter options as set forth in Table 2 herein. Refer to Elections Code section 17500. Should changes be required following certification and submission to the Secretary of State, resubmission and re-certification is required.

14.1.5 Election Night and Post Election Reporting

Any delays in election night's semiofficial canvass reporting due to hardware, software, environmental, or human causes which result in failure to report results to the Secretary of State at least every two hours shall be reported to the Secretary of State by the 28th day following the election. The responsible elections official may also report other delays in the processing of ballots as he or she deems appropriate.

14.1.6 Preparation of Specific Written Procedures

Each elections official shall prepare specific written procedures for each phase, step and procedure in the preparation, operation of polling places, vote counting and official canvasses of elections. Written procedures must also include instructions to precinct officials regarding proper handling of Vote-By-Mail voter and provisional voter ballots as well as a description of procedures used to manually recount ballots pursuant to Elections Code section 15645. These procedures must be prepared and submitted to the Elections Division of the Secretary of State's Office within two years following the adoption of these procedures by the Secretary of State. Upon submission, the elections jurisdiction's procedures shall be reviewed for compliance with state procedures, and the elections official shall be advised of any necessary revisions.

14.2 Biennial Certification for Central Tabulation Hardware

Elections Code section 19220 requires each elections official to inspect and certify the accuracy of their voting or vote tabulating equipment at least once every two years. The elections official shall certify the results of their inspection to the Secretary of State.

14.2.1 Tabulation Hardware Certification and Notification

All ES&S election equipment must be certified for use in elections by the Secretary of State prior to use in any election. Certification procedures are available upon request from the Secretary of State's Elections Division.

For each statewide election, the responsible county elections official shall cause to be prepared a list, including quantities, of all equipment to be used to tabulate votes during the semiofficial and official canvass.

14.2.1.1 Logic and Accuracy Tests

Seven days before each statewide election, the elections official shall certify to the Secretary of State the results of the logic tests as well as the accurate functioning of all ballot counting equipment. This certification shall also affirm the use of the same equipment for preelection testing and for semiofficial and official vote canvasses. In the event of a change to the ballot tally program occurring after this certification, an amended certificate shall be submitted no later than the day before the election.

In the event any equipment is repaired, altered or replaced following the certification and prior to completion of the official canvass of the vote, an amended certification of logic and accuracy testing and a revised list of equipment used must be submitted to the Secretary of State not later than submission of official canvass results.

14.2.1.2 Certifying Logic and Accuracy

Appoint a logic and accuracy board to perform the following tasks:

- Receive all required test materials from the elections official.

- Verify the correctness of the election definition and test deck.

- Observe scanner performance and verify results.

- Note any discrepancies between test results and the results from ES&S.

- Deliver all the required test material to the elections official.

- Certify the performance of the scanner.

14.2.2 Escrow of Ballot Tally Source Code

Prior to its use in any election, an exact copy of the source code for all ballot tally software programs shall be placed in an approved escrow facility, pursuant to the procedures and requirements of Elections Code section 19103 and Title 2, Division 7, of the California Code of Regulations, beginning with section 20610.

Appendix A: Revision History

EVS 6042 CA Election Management System Document Version: 1.1 July 2019	
Chapter(s)	**Description**
All	• Implemented revisions/additions requested by the state of California • Replaced duplicated clear/initialize/load sections throughout document w/ cross-references to centralized information (see next row)
3	• Expanded DS200 update procedure • Clear/Initialize Election Equipment: New section moving all clear/initialize processes into central location • Touch Screen Calibration: New section moving all screen calibration processes into central location • Load Election on Equipment: New section moving all election loading processes into central location
6	• Changed chapter name from "Election Preparation" to "Equipment Preparation"
9	• Revised entire section "ExpressVote XL Voting" for clarity
13	• Updated equipment recommended security locks and seals

EVS 6042 CA Election Management System Document Version: 1.0 March 2019	
Chapter(s)	**Description**
All	• Initial document