4.5 Logic and Accuracy Testing of System and Components

This test is to verify the readiness of the system for the specific election. It is not just an equipment test. At least two elections officials or poll workers should perform the logic and accuracy test, using the actual election definition and ballot formats.

Prepare the Test Deck

If ES&S is also doing the coding for the election, ES&S will provide a hand counted test deck for each election. A test deck is a stack of sample ballots that are marked and scanned at ES&S. The reports included with the test deck contain accurate results for the election definition sent to your jurisdiction.

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 to be included will be at least one completely blank ballot and an overvoted ballot (mark more candidates than the number specified). Complete this process of all ballot types in your election and maintain accurate records of your test ballot selections.

Model 100 Logic and Accuracy Testing

Test the election definition for each of your scanners before you deliver Model 100s to your polling places. To test a Model 100 election definition, scan the ballot test deck supplied by ES&S with your election definition PC Card and compare the results to the test reports supplied by ES&S or a deck generated by your county.

Test the scanner only after you install the election definition and configure the Model 100. After you scan the test ballots, generate a results report and compare the scanner report to your ballot records. If the results do not match, make sure that the marks on your test ballots are dark and clean and then scan the test ballots again.

Load the Election Definition

Model 100 precinct tabulators use election definitions programmed on PCMCIA Cards to recognize ballot marks and tabulate results. Take the following steps to load an election definition.

1. Make sure the scanner key is in the OFF position when you load an Election Definition.

2. Lift the access door on the front left of the scanner to access the Model 100 PC Card slots.

3. Insert the card programmed with your election definition into the top card slot.

4. Turn the key to the OPEN/CLOSE POLL position to start the scanner.

    The Model 100 automatically loads the election definition and prints an initial state report. The "S-MODE" prompt should appear in the upper left corner of the Model 100 display screen.

> **NOTE:** An arrow on the PC Card label shows which end of the card you should insert into the scanner. After the card is inserted, the eject button to the right of the card slot sticks out. Install the card in the top slot first. If the top slot does not accept the card, try the bottom. Do not force the card into a slot.

Check the Election Definition for Accuracy

The Model 100 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 DIAGNOSTIC-TEST menu.

> **NOTE:** Refer to the Date and Time Settings heading in the *Model 100 System Operations Procedures* for more information about changing the date and time settings for the scanner.

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

Open the Polls

1. When the message "ELECTION CARD INSERTED: OPEN POLLS NOW?" appears, select YES to open the polls.

2. Turn the key to the VOTE position. The Model 100 prints a Status Report, a Zero Totals Report and/or a Zero Certification Report on activation.

3. Verify that all results are zero.

⚠ **Warning:** Depending on the number of precincts programmed to that polling place, it may take several minutes to print All the Precincts report.

Scan Test Ballots

To test a Model 100 election definition, scan the ballot test deck you created.

The Model 100 can scan ballots inserted in any direction or orientation.

The Model 100 will return 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.

❖ Press RETURN to correct the ballot.

❖ Press ACCEPT to cast the ballot without editing selections.

  When you press ACCEPT, the message PROCESSING BALLOT -PLEASE WAIT… will appear. After the ballot is scanned, the message INSERT BALLOT -NUMBER OF VOTERS: appears.

Be sure to monitor the Model 100 for system messages while scanning ballots.

Refer to your *Model 100 System Operations Procedures* for descriptions of system messages and recommended actions.

Close the Polls

Take the following steps to complete your testing.

1. Open the Model 100 Key Access Panel, insert your control key and turn the key to the OPEN/CLOSE POLL position to access the CLOSE POLLS command.

2. Press CLOSE POLLS to officially close the polls. Reports will automatically begin printing.

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

Upload Test Results to ERM

If you use ERM, take the following steps to finish your testing.

1. Unlock the access door on the front of the ballot box.

2. Push the eject button and remove the PC card from the scanner.

3. Take the PC card to the computer testing ERM.

4. Print a Precinct Summary with Group Detail report. Use this report to verify your results match the expected test deck results and the Model 100 results tape.

Clear Test Results

After completing your logic and accuracy testing, you must clear the PC cards of the test votes before using them on Election Day.

1. Insert the PC card in the Model 100.

2. Turn the scanner control key to the OPEN/CLOSE POLL position to access the POLLS CLOSED menu.

3. Select MORE to open the MORE SELECTIONS menu.

4. From the MORE SELECTIONS menu, press RE-OPEN POLLS, to open a password selection screen.

> **NOTE:** If you did not program the election contact your election administrator or ES&S customer support for the scanner password.

5. Press the outside-left button on the control panel to cycle through the numeral positions. Use inside-left button to increase the selected number and inside-right button to decrease the number.

6. Press the button labeled ENTER after you enter the password. The message, "CLEAR ELECTION DAY TOTALS," appears if your password is correct.

7. Select YES to clear scanner totals.

8. Select PREVIOUS to return to the previous menus.

9. When the message "LOCKOUT SYSTEM SETTINGS?" appears, select NO.

Model 650 Logic and Accuracy Testing

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.

Load the Election Definition

A new zip disk containing the current election information is created for every new election.

1. Plug the scanner into the power strip/surge protector (with 6-foot cord) that ES&S sent with your scanner.

> ⚠ **Warning:** The power supply cord for this product should be routed or installed in such a manner to protect it from being walked on or pinched. Power the unit down completely before connecting or disconnecting the power cable. Remove the power cord before moving the unit. The power cord must be placed near an easily accessible unobstructed socket outlet.

2. Turn on both printers.

3. Verify that the printer paper is loaded properly, and that the print head is at the top of the page.

> Refer to your printer instructions for guidance. Keep the printer manufacturer's manual in the drawer of the scanner stand.

4. Insert the zip disk with your election definition into the zip drive on the scanner.

> ⚠ **Warning:** Insert the disk before you turn on the scanner, so that the scanner will recognize that you are loading a new election definition.

5. Turn on the scanner using the toggle switch on the electrical panel on the left side of the machine.

The message, "Press Stop to Keep (Election Name 1) Press Start to Initialize (Election Name 2)" appears after the machine boots.

6. Press START.

The message "Confirm: Initialize Election? Press Stop to Cancel, Start to Continue" appears.

7. Press START.

The message "Initializing Election Files" appears. The next message reads, "Printing System Ready Report," followed by a message which reads "Ready for Regular Counting."

After you load the election definition, the Ready light illuminates, and the scanner is in on-line mode. The report format is automatically set to short when the scanner starts.

8. Make sure the information on the Machine Readiness Report is correct.

⚠ **Warning:** Contact an ES&S support technician immediately if the printed information is not correct for the current election.

9. Remove the zip disk with the election definition and store it in a safe place.

⚠ **Caution:** Do not reuse the election definition disk to store election results. Use blank zip disks instead so that your election definition can be archived. The election definition will remain on the machine until a new election definition is loaded.

10. Hold down the ENABLE button and press ZERO TOTALS.

11. Press START then press STOP.

The message "Ready for regular counting" appears.

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.

1. Press the FORMAT button to switch from short format to long format.

2. Print the GRAND TOTALS report to verify that all counts are zero.

3. Push the input hopper tray down until it latches making sure to press down on the middle of the tray and not the edges.

4. Load the Precinct Header Card for the precinct to be tested.

5. Press START to scan the header card.

6. Verify that the information printed on the header card matched the line item printed on the audit log.

7. Push the input hopper tray down until it latches making sure to press down on the middle of the tray and not the edges.

8. "Jog" the ballots by gently shuffling them until the pages separate to reduce paper jams in the scanner. Load the ballots face-up into the input hopper tray with the cut corners placed directly under the pick belt. Only one corner of each ballot is cut. When facing the front of a ballot, the cut corner is the upper-right corner. Lightly tap the ballots so that they are flush against the two metal sides of the input hopper.

9. Push the input hopper tray down until the latch releases, and then let the hopper rise.

10. Press START to scan the test deck.

11. Press SAVE to save your test results to the internal drive. A confirmation message indicating the number of ballots saved appears.

12. Press the LAST PRECINCT button to print a Precinct Total Report for the tested precinct (long format will print over and under votes).

Refer to the *Model 650 System Operations Procedures* for instructions about printing reports from the scanner.

13. Compare the Precinct Total report with your pre-determined hand count.

14. If totals do not match, zero totals and scan the ballots again.

Contact ES&S immediately if totals still do not match.

15. Repeat steps 3-13 for each precinct to be tested on that scanner.

16. When complete with all precincts for that scanner, press SAVE to ensure all test data is saved to the internal memory.

17. Press GRAND TOTALS to generate an accumulated results report for that scanner.

18. When the report has completed printing, insert a *blank formatted* zip disk to back up your test results.

19. Press SAVE to save the results to the internal drive.

20. Hold down the ENABLE button, and press SAVE again to transfer results to the zip disk.

21. Press START to confirm that you want to save totals to the transfer disk.

> Refer to *Model 650 System Operations Procedures* for instructions about how to save results to the zip disk.

22. Remove the zip disk and transfer your test results to ERM.

> Refer to your *Election Reporting Manager System Operations Procedures* for instructions for transferring your zip disk data.

23. Print an Election Summary with Group Detail report. Use this report to verify your results match the expected test deck results and the Model 650 results report.

Set Up ERM for Test Results Accumulation

There are four main steps involved in setting up Election Reporting Manager (ERM) to accumulate election results.

1. Select Election
2. Create Results Database
3. Set Up Reports
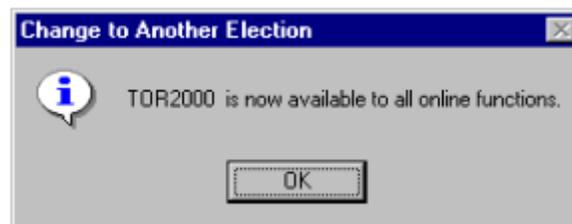4. Set Election Totals to Zero

Select Election

Take the following steps to select your election.

1. Start ERM.

2. Open ERM and select **Change** on the **Election** menu to open the Election File Directory window.
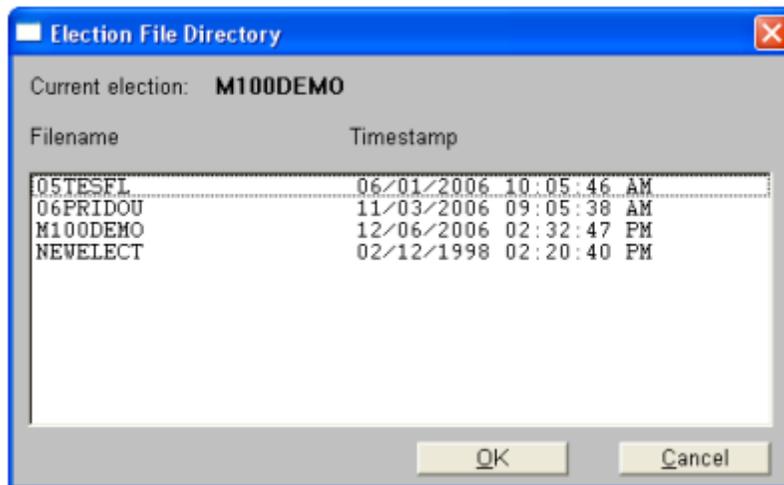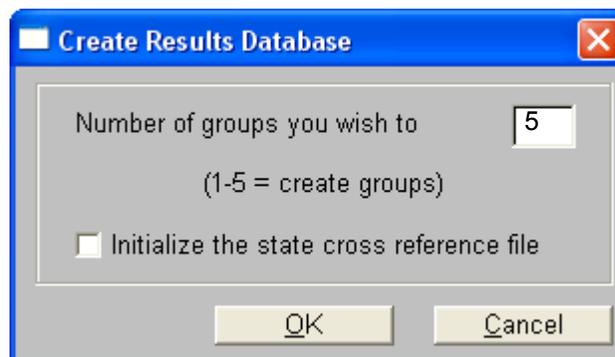
3. Scroll through the elections listed and select the one you want.

4. Click **OK**. A message box similar to the following will appear.

5. Click **OK**. That election will now be your current election.

Create Results Database

6. Select **Create Results Database** on the **Election** menu to open the Create Results Database window.


7. Enter the number of groups you want to create.

NOTE: If coding was provided to you by ES&S, check with the person who coded your election about whether they have already entered your Secretary of State template information.

The Election Day Totals group is automatically created and is updated with all of the election totals that are loaded into ERM.

**NOTE:** You must have at least one group for each type of tabulator that you use.

8. Check the **Initialize the state cross reference file** box.

9. Click **OK** to create your groups.
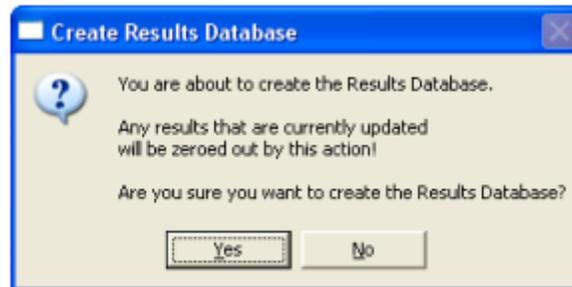
10. Click **Yes** to create a new results database. The Add /Change Groups window appears after you create your groups.
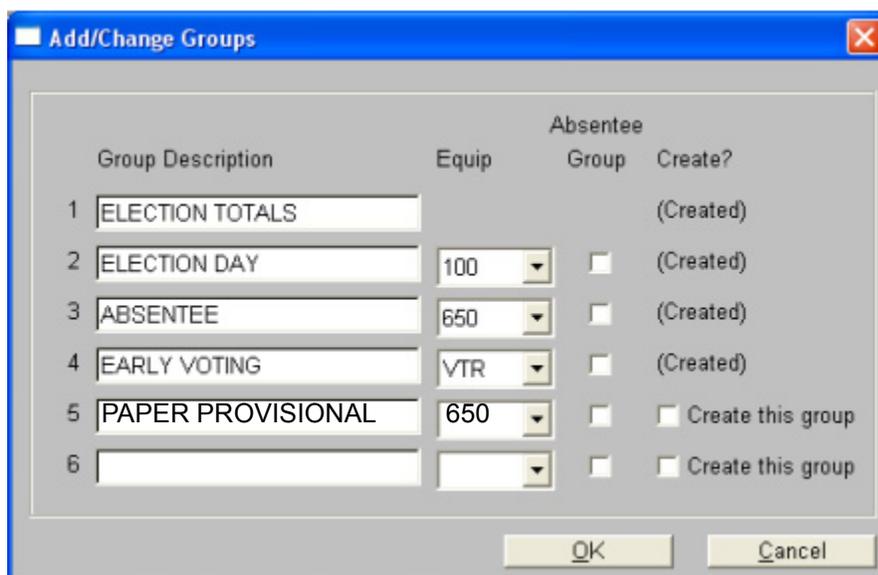
11. Type the name of the group as you want it to appear on your ERM reports in the **Group Description** box.

12. Select the type of equipment that will be used for the group from the list in the **Equip** box.

13. Click **OK** to create the groups. The following window appears when the new database has been created.
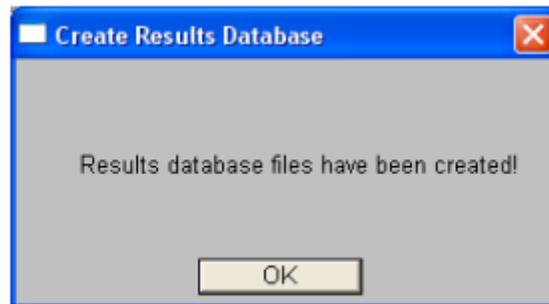
Set Up Reports

The process for generating reports in ERM is similar for all reports. The screens will have some variations, depending on the report. Following is a general process for creating and printing reports.

Create and print the following reports.

❖ **EL30, Precinct Report:** A Precinct Report is a list of individual precincts and contest results.

❖ **EL30A, Prec Report–Group Detail:** Generate a Precinct Report with Group Detail to print totals for up to five active reporting groups in addition to group 1.

> **NOTE:** If you have generated more than two (2) groups, you will need to need to adjust the groups for printing by going to the Options Tab and adding 4 to the listing (i.e. 2340) to trigger the other group created.

❖ **EL45, Election Summary Report:** An Election Summary Report lists the total number of votes received by each candidate/question and the percent of the total vote for each candidate/question in your election.

❖ **EL45A, Election Summary with Group Detail:** Generate an Election Summary with Group Detail to print totals for up to five active reporting groups in addition to group 1.

14. From the **Reports** menu, select the report you want to generate. The report window appears.
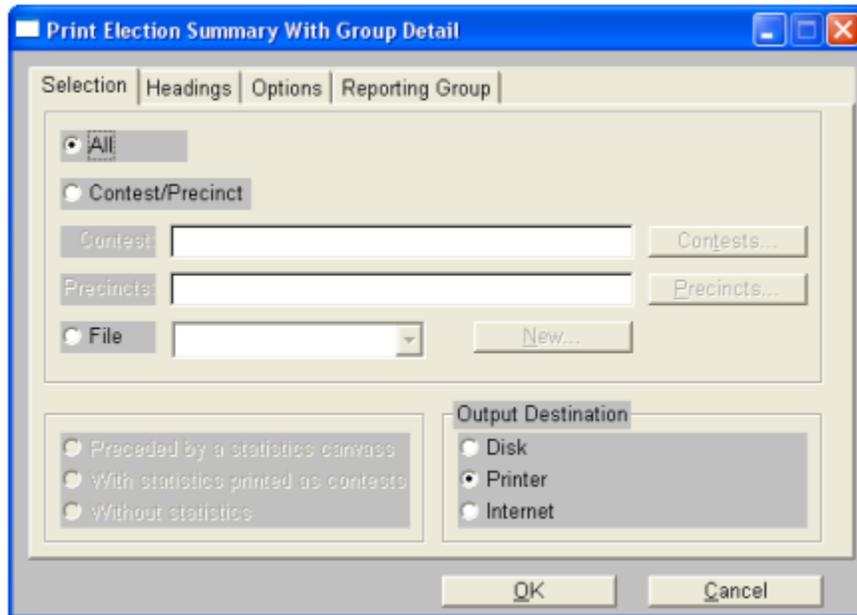
15. Click the **Headings** tab to enter the information that you want to appear on your report headings.
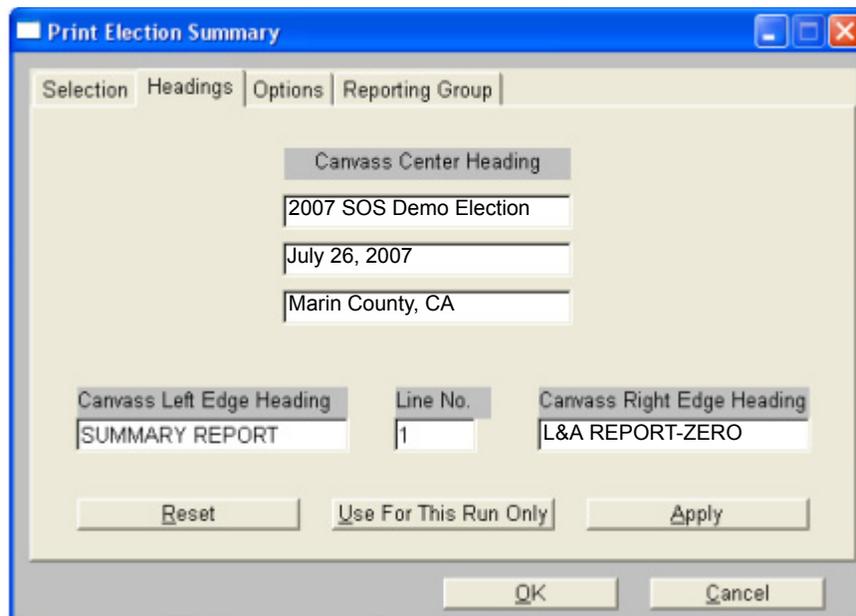
16. Enter up to three lines of identification text that you want to appear at the top center of your report in the **Canvass Center Heading** boxes.

If you entered text in HPM Headings and Certification, the **Canvass Center Heading** boxes will already be completed. You can make any necessary changes and click **Apply** to save these changes for each additional printing of this report. Any changes you make to the headings will not appear on other reports.

Refer to the Certification Message heading in 4.2 Section C: Define the Election for information about this text.

17. Enter the text that appears at the top left of your report in the **Canvass Left Edge Heading** box.

18. Enter the line number on which you want this heading to print (1, 2, or 3) in the **Line No.** box.

NOTE: This field will not appear for all reports.

NOTE: If you choose to print something on line 3, the time/date stamp and the report number and page will print on the fifth line, instead of the fourth.

19. Enter "L&A Report - Zero" in the Canvass Right Edge Heading.

NOTE: On election day "Unofficial Results" must appear on the top right heading of your reports until election results have been canvassed.

20. Click **Apply** to use your headings for all reports of the same type.

21. Click the **Options** tab, and select the options needed for reporting.

Refer to the *Election Reporting Manager System Operations Procedures* for a detailed information about the different options.

22. Click **Apply** to accept your choices.

23. Click **Cancel** to return to the ERM main screen.

Set Election Totals to Zero

24. Select **Reset Counted Precincts** on the **Update** menu to open the Reset Counted Precincts window.

25. Select **Zero all Precincts** to set all precincts to zero.

> **NOTE:** This option does not clear the log file.

26. Click **OK**.

Upload Model 100 Test Results to ERM

Take the following steps to process test results into ERM from Model 100 tabulators.

1. From the **Update** menu, click **Process 100 Cards**. A window similar to the following will appear.

2. Make sure the **Update precincts counted** box is checked.

> **NOTE:** If your county uses Model 100s for both vote by mail and Election Day processing, make sure the **Update precincts counted** box is NOT checked for vote by mail processing, but that it IS checked for processing Election Day Model 100 PC cards.

3. Double-click the reporting group using Model 100 equipment. Verify the correct group is selected in the **Change current group to** box.

4. Click **OK** to open the Process 100 Cards window.
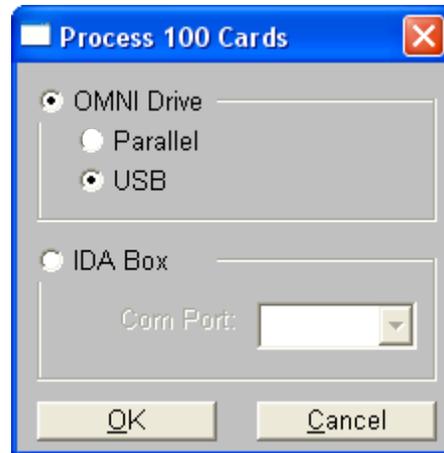
5. Select **OMNI Drive** and **USB**.

6. Click **OK** to open the following window.
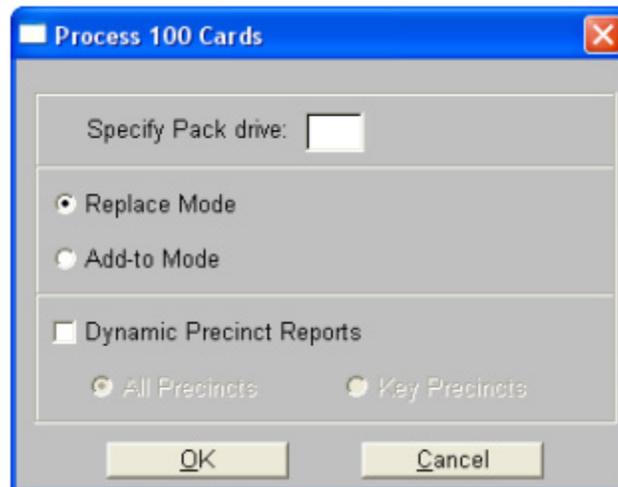
7. Leave the **Specify Pack drive** box blank.

8. Select **Replace Mode**.

Refer to *Election Reporting Manager System Operations Procedures* for more information about **Replace** Mode and **Add-to** Mode.

9. Click **OK**. The following window will appear.

10. Select **Create New File** to delete the existing .spp file and create a new file.

11. Click **OK** to open the following status window.
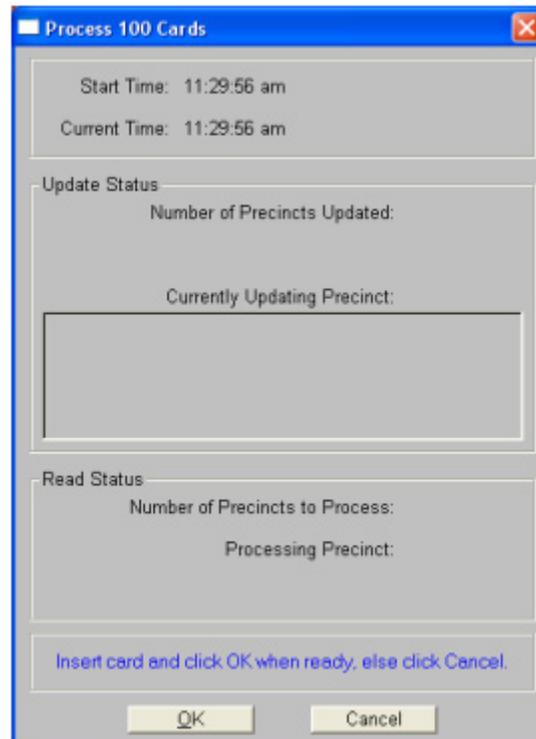
12. Insert the Model 100 card into the Omni drive and click **OK** to read the card, update the .spp record, and ERM results database. Precinct information will appear after the card is processed.
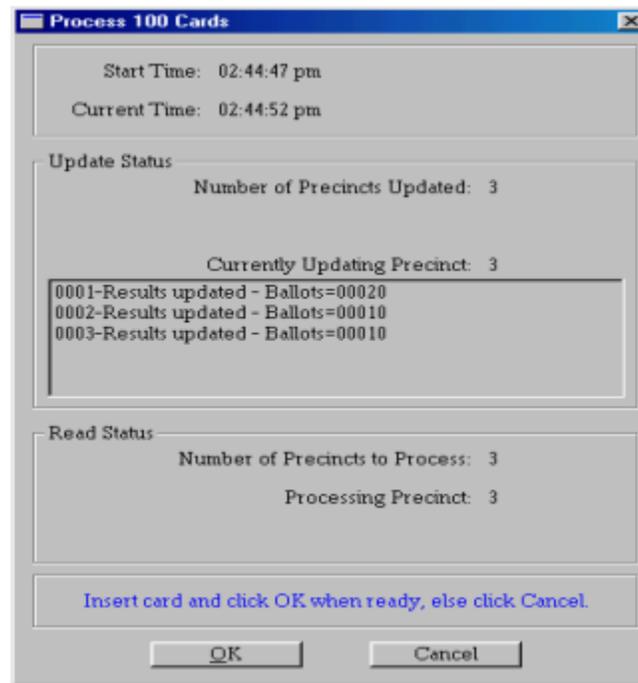
13. Eject the Model 100 card.

14. Process your other Model 100 cards by repeating steps **11** through **13**.

15. When all cards have been processed, click **Cancel**.

Upload Model 650 Test Results to ERM

Use this option to transfer test election results from Model 650 zip disks to ERM.

1. On the Update menu, point to **Run 650 Results Update Program**, and select **Update Group with 650 Results** to open the Select Current Group to be Updated window.

Select Current Group to be Updated

1 ELECTION TOTALS		
2 ABSENTEE	(650)	(Current)
3 ELECTION DAY	(100)	

☐ Update precincts counted   Change current group to: 2

[OK]   [Cancel]   [Description...]
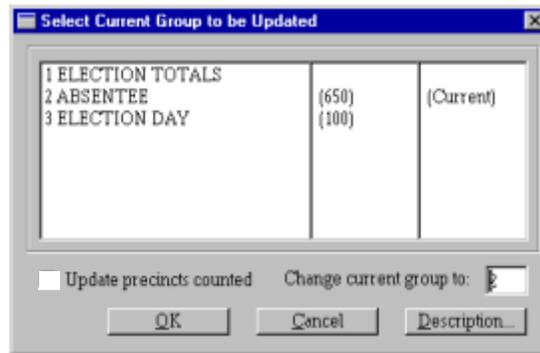
2. Double-click the group you want to update.

   Make sure the **Update Precinct Counted** check box is not selected.

3. Verify the correct group is selected in the **Change current group to** box.

4. Click **OK**. The following window will appear.

Update Group With 650 Results

Election Name: [HARRISON]

Change 650 Election Name if different than current Election Name.

[OK]   [Cancel]
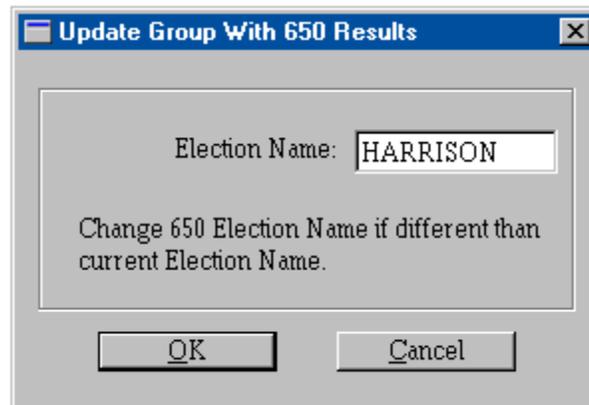
5. The current election name will be in the **Election Name** box. If necessary, change the name.

6. Insert your 650 disk into the zip drive.

7. Click **OK**.

8. The system will begin reading the results. Click **OK** when the system is finished reading the results.

```
Update Group With 650 Results                                    ×

    ┌─────────────────────────────────────────────────────┐
    │           Update Group With 650 Results             │
    └─────────────────────────────────────────────────────┘

    ┌──────────────┐   ┌──────────────────┐   ┌──────────┐
    │ Update 650 Group │   │ Advanced Options │   │  Cancel  │
    └──────────────┘   └──────────────────┘   └──────────┘
```
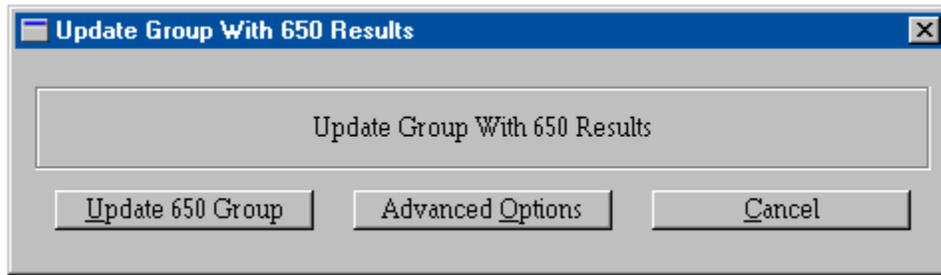
9. Click **Update 650 Group**. This will be a complete replacement of all prior results for the group selected.

10. The following window will appear, showing the precincts as they are being updated.

```
Update Group With 650 Results                                    ×

    ┌─────────────────────────────────────────────────────┐
    │                                                     │
    │          Update of results database in progress     │
    │                                                     │
    │             Currently updating precinct:            │
    │                                                     │
    │                        10                           │
    │                                                     │
    └─────────────────────────────────────────────────────┘
```
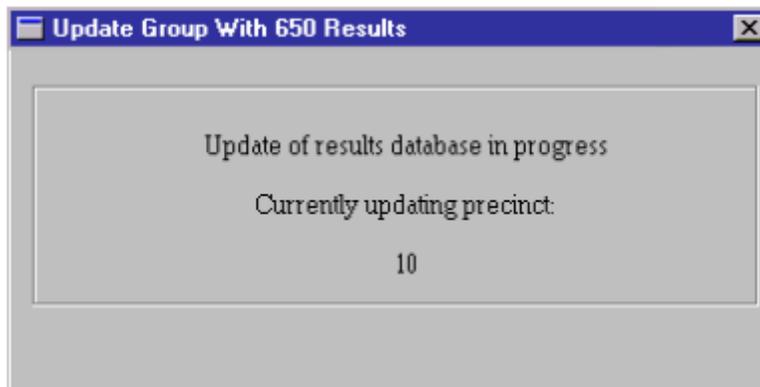
When the update is done, the following message appears.

```
Update Group With 650 Results                                    ×

    ┌─────────────────────────────────────────────────────┐
    │                                                     │
    │                                                     │
    │          Updating of results database is complete!  │
    │                                                     │
    │                                                     │
    └─────────────────────────────────────────────────────┘
```
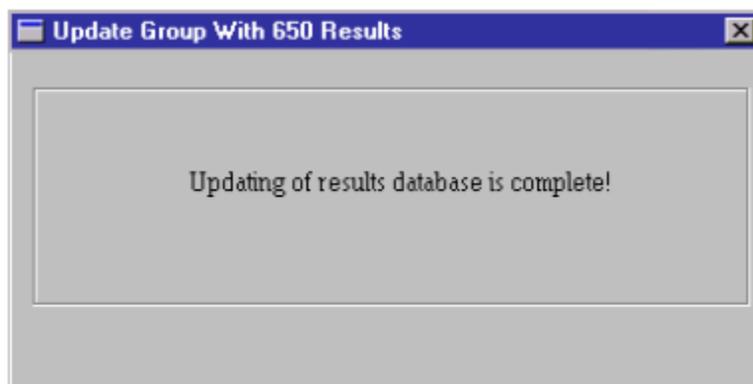
11. Print an Election Summary with Group Detail report. Use this report to verify your results are in the correct group and that the results match the pre-determined results.

NOTE: You can also print the Precinct report to view each individual precinct results.

12. From the Reports menu, point to **Canvass**, point to **Names and District Totals**, and click **Standard**. The Print Election Canvass - Name and District Totals window appears.

13. Click the **Headings** tab to enter the information that you want to appear on your report headings.

14. Click the **Options** tab, and select the options needed for reporting.

Refer to the *Election Reporting Manager System Operations Procedures* for a detailed information about the different options.

15. Click **Apply** to accept your choices.

Call your assigned ES&S coding representative for the information to enter in the **District control file name** if you did not create the file yourself.

16. Click **OK**.

17. Review the report for accuracy.

NOTE: If the district information is not transferred correctly please call your ES&S coding representative immediately to adjust your election files accordingly.

Clear L&A Totals

Clear election totals before and after running your test decks to make sure that your results are not corrupted on Election Day. In addition, you must clear your election totals before every election.

❖ Clear the scanners.

Refer to the instructions in your scanner's System Operations Procedures for instructions for clearing scanners.

❖ Clear ERM.

1. Select **Reset Counted Precincts** on the **Update** menu to open the Reset Counted Precincts window.
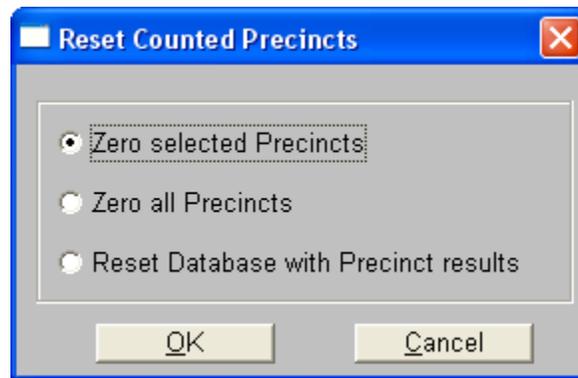
2. Select **Zero all Precincts** to set all precincts to zero.

> **NOTE:** This option does not clear the log file.

> **Warning:** Select **Reset Database with Precinct Results** only if you are instructed to do so by ES&S. The **Reset Database with Precinct Results** option will refresh the Election Totals group with all group totals.

> **NOTE:** The following instructions do not apply to the **Reset Database with Precinct Results** option.

3. Click **OK**, and the following window opens.
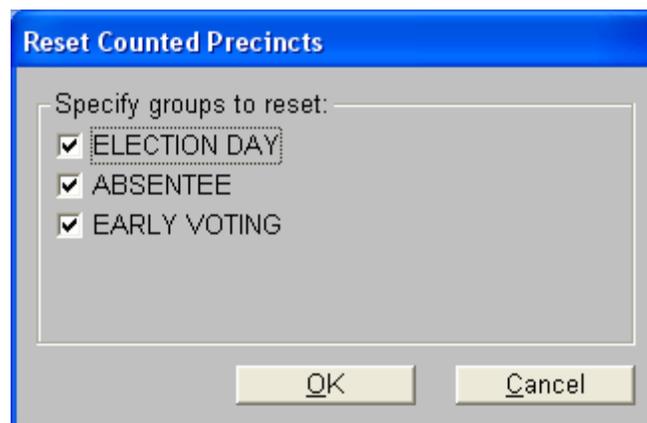
4. Select the group(s) that you want reset and click **OK**. Click **Cancel** to return to the main screen. If you click **OK**, the following window will appear.

Reset Counted Precincts ✕

⚠ Results files already reset
Click OK to reset anyway,
else click Cancel.

[OK]   [Cancel]

5. Click **OK**.

Reset Counted Precincts ✕

⚠ * Reset will affect entire results file *
Click OK to proceed with reset,
else click Cancel.

[OK]   [Cancel]

6. Click **OK**.

Reset Counted Precincts ✕

Reset of precincts is complete!
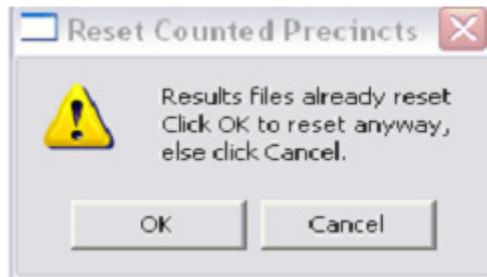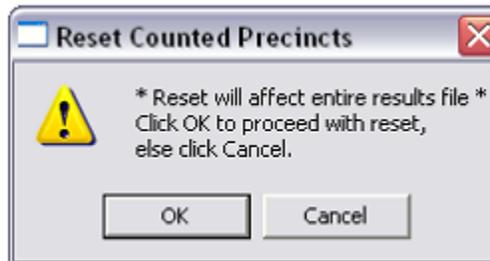
[OK]
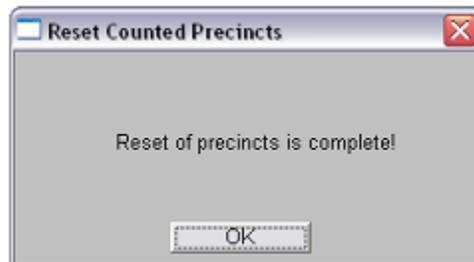
You have now cleared the results from all the precincts for the selected groups. Reload election data from your scanners if the results are not as expected.

7. Generate a Zero (Election Summary) report after your election totals are erased to make sure that the results database is clear.

Clear All Model 650 Results

This option will delete all existing results (*election name*.PR) files that exist in the file \ELECDATA\NODExxx folders.
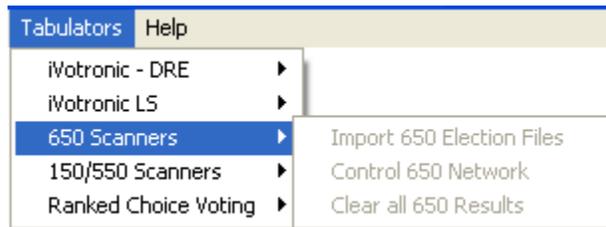
1. From the Tabulators menu, point to **650 Scanners**, and select **Clear All 650 Results** to open the following window.
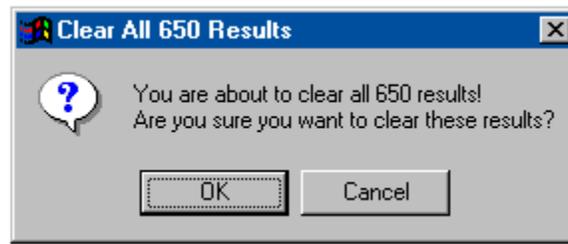
2. Click **OK** if you want to delete the files or **Cancel** if you do not want to delete the files.

Test AutoMARK VAT Operations

The AutoMARK VAT operations should be tested when the system is operating in the TEST mode.

Take the following steps to test The AutoMARK VAT operations.

1. First, lift the display screen to an upright position and turn the key switch to ON

2. In TEST mode, turn the key switch to the TEST mode position.

3. Select **Test Ballot Print** using the touch screen button.

4. Insert an unmarked ballot.

   The AutoMARK VAT will fill all ovals and print the name of each candidate next to the oval. Verify that each oval is filled and each candidate name is printed in the proper place on the ballot. If the marks appear off due to rotation, x, or y offset errors, then the printer may need to be re-calibrated

4.5.1 Pre-conditions for Performance of Tests, Including Test Decks (as appropriate)

Prior to Logic and Accuracy tests, the following must be assured: diagnostic tests on all equipment shall have been performed to include verification of firmware being used; ballot test decks shall have been prepared as specified herein; all memory cards to be used for Logic testing shall have been coded with the current election; all memory cards to be used for Accuracy testing shall have been coded with the "BMW" election, or with a similar fictitious election or actual election that will provide compliance with Section 2.6; all memory cards shall be initialized, and an "OK TO READ BALLOTS" message displayed on the LCD prior to processing test ballots. Documentation must be prepared to show the known and expected voting and statistical results, said documentation to be compared against that produced as a result of the tests.

Create a Test Deck of Paper Ballots

This section provides information about how to mark paper ballots to create a test deck that you can use for testing your AutoMARK, Model 100 and Model 650 scanners.

After you have scanned the test ballots bring the Model 100 and Model 650 (if applicable) test results into ERM to verify that results calculated correctly.

Mark each ballot with the card number in the top right corner of the ballot, then go back and mark the ovals for each one.

ES&S Image Manager can automatically create a pre-marked test deck that you can use instead of a hand-marked test deck.

Refer to the Generate a Test Deckheading of 4.1 Section Q: Automatic Test Decks for information generating an Automatic Test Deck.

Test Ballot Marking Instructions

The basic structure of the test deck is to create result pattern that follows the "one to the maximum" method. This begins with one vote going to the first person in that office on that ballot type. From there you continue with the voting sequence and mark the following 2 ballots in the second position, the third with 3 and continue so forth. At the end of the deck insert a completely blank ballot as well as an overvoted ballot. The overvoted ballot should have an overvote for ALL the offices on that ballot. Following is a sample matrix that describes the pattern.

Office 1 Vote for One (1)	An X indicates a vote for that candidate																
	Ballot Card Number																
Candidate Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Candidate 1	X															X	
Candidate 2		X	X													X	
Candidate 3				X	X	X										X	
Candidate 4							X	X	X	X						X	
Candidate 5											X	X	X	X	X	X	
Total Votes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	0x

The size of your deck will largely be dependent on the size of your largest office on that ballot type. Create a matrix or spreadsheet similar that above for each ballot type.

Test the Model 100

Perform the following checks on your Model 100 scanners to ensure they are ready for Election Day.

❖ Physical Check
❖ Machine Readiness

Physical Check

1. Ensure that the front PCMCIA access panel has a door knob for easy access

2. Open the key access panel to ensure access to key control and printer panel.

3. Check rails on bottom of machine

Machine Readiness

1. Plug in the power supply to the machine and insert a BMW Election or Sample Election PC Card into the top slot.

2. Turn the key to OPEN/CLOSE POLLS to power on the unit and wait for the Initial Status Report to print. As the report is printing check the LCD screen to ensure that the text is readable.

Verify date and time is accurate and check that firmware version is correct.

Initial State Report

10:57:25 06/19/2002
ELECTION DEFINITION LOADED UNIT: 3159

CPU 386   QNX_speed 361
CPU total memory 3712K
Application Memory 2496K
Communication utilities available

*** Initial State Report ***

Time and Date   10:57:25   07/15/2003

Firmware Version: 5.1.0.0**Firmware Version**
Machine ID: 3159
California Certification
California Open Primary 17/41
0001 POLLING PLACE 1 0001
Election Date: July 4, 2006
Maximum Number of Types: 6
Number of Precincts: 4
Number of Ballot Face Styles: 24
Audit Log Entries: 34/21043

System Configuration:
Election Results Printing: Enabled
Election Results Transferred: YES
Diverter Installed: YES
Unreadable Marks Setting: Accept
Report Type: SUMMARY
Ability to ReOpen Polls: YES
Report Format: Poll Report
Report By Rotation: NO

Election Configuration:
Ballots by Style: NO
Overvoted Ballots: Query
Blank Ballots: Query
Cross-over Ballots: Query

Single Over-Vote: NO
Divert Blanks to Writein Bin: NO
Response Type: OVAL
Use Separate Non Party Type: YES
Ballot Size: 14 Inches by 36 Rows
Ballot Sides Defined: 2

3. Press YES at the "Open Polls Now?" screen, turn the key to VOTE and wait for the report to print.

4. If using ballots with a removable stub, remove the stub before inserting the ballot.

5. Take two ballots and place one on-top of each other in the same orientation. Insert the ballots in all four (4) orientations to ensure that the machine rejects multiple ballots.

6. Insert four (4) single voted ballots in different orientations to check that the machine accepts the ballots.

7. Insert an overvoted or blank ballot and REJECT the ballot to ensure that machine returns your ballot.

8. Re-insert that same ballot and hit ACCEPT to ensure that the machine processes the ballot.

9. Turn the key to CLOSE POLLS and press CLOSE POLLS

10. If the machine fails at any of these points, note the machine serial number and the error and inform an ES&S representative to have the machine reviewed by a certified technician.

Test the Model 650

Perform a Machine Readiness Check on your Model 650 scanners to ensure they are ready for Election Day.

Machine Readiness Check

1. Clear out any paper dust on the read head and input hopper.

2. Check pick belt and replace if necessary.

3. Check and replace retard pad as necessary.

4. Check that both printers are connected to the Model 650 and align the papers accordingly.

5. Power on printers then power on Model 650.

6. Verify the version on the Status Report printed on the Audit Log printer.

7. If applicable, verify that the Node number listed at the top left corner of the report is different from the other machines you will be using.

Test the AutoMARK

Display Screen Test

1. In ON mode, turn the key switch to the ON mode position.
2. The **Insert Your Ballot** screen should appear. If not, check all power connections to ensure power is being supplied to the AutoMARK VAT.

Ballot Insert Test

1. If using a ballot with a removable stub, remove the stub before inserting the ballot.
2. Insert an <u>unmarked ballot</u> (corresponding to the FMC currently installed) into the AutoMARK VAT paper tray
3. The paper feed mechanism should feed your ballot into the AutoMARK VAT.

   If the test is successful, the AutoMARK VAT scans the ballot and displays a new screen. If the test is not successful, the AutoMARK VAT attempts to eject the ballot or displays an error message.

Audio Test

Plug in your headphones and use the audio keys on the keypad to test the audio operations as follows:

1. Press the round Audio **Repeat** key to repeat the presentation.
2. Press and hold the round Audio **Repeat** key to change the sex of the audio presenter.
3. Press the left side of the Audio **Tempo** key to decrease the audio speed.
4. Press the right side of the Audio **Tempo** key to increase the audio speed.
5. Press the left side of the Audio **Volume** key to decrease the audio volume.
6. Press the right side of the Audio **Volume** key to increase the audio volume.

Ballot Print Test

1. Turn the key switch to **Test Mode**.
2. Press the **Test Ballot Print** button on the touch screen.

3. If using a ballot with a removable stub, remove the stub before inserting the ballot

4. Insert a ballot that is recognized by the currently inserted compact flash card. Use a spare ballot that is not needed, because the AutoMARK VAT will print on this ballot.

5. If the ballot is not recognized, repeat a few times. If it still does not recognize the ballot, contact ES&S customer support.

6. Confirm that the ballot races on the currently inserted compact flash card are the ones that are shown on the screen and match the ballot that you were trying to insert. If they do not match then you need to replace your compact flash card or your ballot.

7. Scrutinize the placement of the marks in relation to the ovals/voting locations on the ballot. If there is any discernible rotation of the marks with respect to the voting locations, uniform across all marks, that is an error greater than 0.05 degrees, or a couple millimeters, Calibrate the printer.

8. Once the marks are printing correctly in all orientations (right-side up, upside down, inserted front-wards, inserted backwards), the printing is working properly.

9. As a final check, move the key switch into test mode and check the ink level. (On the bottom left portion of screen.) If it is lower than 10%, replace the ink cartridge. If you do, make sure to reset the ink level meter using the Replace Ink Cartridge button from the test mode menu.

Ballot Read Test

1. Insert a <u>marked ballot</u> into the AutoMARK VAT paper tray.

2. The paper feed mechanism should feed your ballot into the AutoMARK VAT. If the test is successful, The AutoMARK VAT scans the ballot and displays the **Language Selection** screen (if your jurisdiction is programmed for more than one language) followed by the Verification Summary Screen. If the test is not successful, The AutoMARK VAT attempts to eject the ballot or displays an error message.

4.5.2 Accuracy Test Procedures

Accuracy Test Procedures for the Model 100 Scanner

Accuracy testing consists of those processes and procedures necessary to ensure that the hardware to be used in the election is working properly, both as individual units and as a combined system. Emphasis is placed on verifying that Model 100's can read every permissible mark on the ballot, and that individual components as well as any interface between them function as required. These tests shall be run BEFORE Logic Testing in order to assist in isolating problems. Accuracy tests are an integral part of equipment maintenance, and may be run as often as necessary before each election to ensure proper functioning of the hardware to be used in the tallying process. Such testing reports shall be maintained in accordance with election retention period requirements.

Performance of Accuracy Tests

Accuracy tests shall be performed prior to Logic and Accuracy Certification (including amendments and re-certification, if necessary) to the Secretary of State prior to processing ballots on election day. The accuracy tests may be run more frequently and shall be run after equipment has had maintenance work. Any failure of the equipment to perform as expected shall be corrected before using that equipment for election processing, and any ballots tallied on equipment which failed shall be recounted. In the event a Model 100 fails after official ballot processing has begun, accuracy tests must be successfully run on the (failed) component after it has been repaired, replaced, or adjusted, provided the component is to be returned to service. Required accuracy retesting shall be conducted in a manner deemed sufficient by the responsible elections official. Diagnostic tests of hardware on election night are permitted. A loss of commercial power is not to be considered as a failure for purposes of this paragraph, since the Model 100's backup battery unit insures uninterrupted operation for eight hours.

Preparation of Accuracy Tests

The responsible elections official shall cause the accuracy ballot test deck to be prepared and tested. The county may choose to use the automated ballot test deck preparation feature provided within Unity but the county must ensure the ballot test deck used, fully tests the accuracy of the unit. Predetermined results of the accuracy test must be available for inspection and sign off by the Logic and Accuracy Board.

Reusable Accuracy Test Deck

A reusable test deck consisting of pre-printed ballots conforming to a "Famous Names" election is used to test the accuracy of each Model 100 device on an annual basis unless of course, the units are used more than once within a twelve month period. In that instance, a ballot test deck comprised of actual test ballots for that specific election may be used. An annual, reusable test deck consists of ballots of different colored paper stocks with pre-printed ballot information as well as pre-printed vote marks. The ballots are printed on both sides with a demonstration election. The pre-printed vote marks are intentionally printed thin to represent the minimum specified acceptable oval darkening. Reusable test deck predetermined vote totals are made available with the test deck. The ballot test decks described above for performance of the annual and pre-election Accuracy tests may be substituted with other test decks, provided that they meet the specifications for test decks set forth herein and provided that prior approval has been granted by the Secretary of State in compliance with California Election Code.

Logic and Accuracy Testing: Verifying the AutoMARK Correctly Records Votes and Prints Ballots

Option #1

For each ballot style programmed into an AutoMARK unit:

❖ Insert, vote and print sufficient ballots so that every valid voting position on the ballot, including write-ins, is voted at least once

❖ For each contest, attempt to overvote to verify overvoting is prohibited.

❖ Vote and print an entirely blank ballot to verify that the undervote warning is active for each contest and that no vote positions are marked on the ballot.

Each printed ballot must be visually inspected to verify all votes were accurately recorded and printed correctly.

This testing process must be repeated on each AutoMARK VAT used in an election.

Option #2 (For counties that deploy machines configured for multiple ballot styles, at their option.)

Group AutoMARKs by the combination of ballot styles that will be programmed into the units so that all AutoMARKS in the group will have the *identical* programming.   Designate one AutoMARK unit in each group as the "**Master**" unit. All others in the group are **"Clones"**.

For each **"Master"** unit, perform a complete test for each ballot style in accordance with the test described in "option 1" above.

Upon completion of the "Master" units testing, the remaining "Clone" AutoMARK units in the group that have identical programming as the "Master" shall be tested as follows:

❖ AutoMARK to be in "Test" mode

❖ Insert, print and visually inspect a "test mode" ballot style programmed into an AutoMARK unit.

❖ AutoMARK to be in "On" mode

❖ Insert, vote and print a randomly selected programmed ballot style so that every valid voting position on that ballot style, including write-ins, is voted a least once

❖ For each contest, attempt to overvote to verify overvoting is prohibited

❖ Select a contest, attempt to skip the contest to verify that the undervote warning is active and that no vote positions are marked on the ballot

Each printed ballot must be visually inspected to verify all votes were accurately recorded and printed correctly.

The "Clone" testing process must be repeated on each AutoMARK VAT designated as a "Clone" used in an election.

4.5.3 Logic Test Procedures

Logic Test Procedures for the Model 100 Scanner

Logic testing consists of those processes and procedures necessary to ensure that the vote tally programs and hardware correctly interpret, summarize and report voters' marks for a specific election. This is normally a series of tests utilizing test ballots which are made from actual printed ballots, and the accumulation of results from individual Model 100's by transferring results from the memory cards via a Model 100 functioning in memory card reader mode to the Summary System. Successful testing will demonstrate that each candidate and ballot measure receives the proper predetermined number of votes, and that the system reports the proper number of over and under votes. This testing will also confirm that the system accepts only the proper ballot styles and rejects improper ones, and that the system is capable of counting the maximum number of ballots possible for a precinct. Logic tests will be conducted using test materials prepared in such a manner as to meet these guidelines. All tests shall result in reporting that matches predetermined results. All reports and test materials must be retained as stipulated in Section 2.8 and in accordance with State and Federal Law.

Performance of Logic Test(s)

1. Pre-Election Tests: An election specific logic test shall be performed on 100% of the memory cards to be used. This logic test may begin within 30-50 days of the election and should be of sufficient duration to assure its adequacy. As each memory card is successfully tested it should be certified, identified and placed in security until needed.

2. The Summary System Logic and Accuracy Test shall employ one memory card of each ballot style.

3. Election Night Testing of upload and report production procedures shall be tested.

4. Summary System Logic Test shall be performed prior to and following election night tabulation, the latter test to occur after the Official Canvass period is concluded.

5. Post Election Testing: Following the Official Canvass, conduct a Logic and Accuracy Test for the Summary System. During the Canvass period all of the Model 100s' Precinct Results Tapes should be checked as outlined by the California Election Code. Discrepancies shall be resolved by referring to the actual ballots for that precinct.

6. The predetermined results for balancing of election processing must be available for inspection and sign off by the Logic and Accuracy Board described in Section 8.4. The official Logic test must be completed, certified, and received by the Secretary of State seven days before each statewide election. It must accompany official copies of the ballot tally programs and files.

7. All ballot tally program(s) and hardware must remain operative from the time of the pre-ballot processing logic test, through the processing of all voted ballots, and finally, the post-ballot processing logic test.

8. Verification of the Model 100 memory card totals is accomplished as part and portion of the 1% random manual recount of cast ballots for a specific election.

Preparation of Logic Test Materials

The responsible elections official shall cause the following logic test materials to be prepared and tested:

All Ballot Styles

A logic ballot test deck and memory cards will be prepared for all ballot styles to be used in the election. This logic test deck is composed of regular official ballots, and shall be marked "TEST" Within 30-50 days of the election, a 100% memory card logic test will occur. Logic Tests for the Summary System shall be for a minimum of one memory card per ballot style.

Logic Test Data

Two identical sets of test ballots shall be created for each ballot style used in the election. For purposes of testing, the elections official may use either the primary or back-up logic test deck, but the backup logic test deck must be subject to the same security provisions as is the primary logic test deck. The logic test ballots shall be distinctively marked "TEST", and shall include:

Voted Test Ballots

A group of test ballots shall be voted. Varying vote totals should be allocated to adjacent candidates, and the number of "yes" votes on any ballot measure shall be different from the number of "no" votes. In the case of offices for which the voter is allowed to vote for more than one candidate, at least one ballot of the group shall be voted with the maximum allowed number of choices. For purposes of this test, write-in positions shall be treated as declared candidates. No office or ballot measure shall be voted in more positions (overvoted) than are allowed for the office or measure.

As an option for the elections official, an individual ballot may be marked with a repetition count. This indicates the number of times that ballot is to be inserted and re-read in order that each candidate receives a predetermined number of votes. This vote total will be different from the vote total received by any other candidate for the same office. The ballots so prepared will be repetitively entered into the Model 100 the number of times required by the repetition count.

Overvoted Test Ballots

One test ballot shall be an overvoted test ballot, on which every contested office and ballot measure has received more votes than is allowed for that contest. Tests for overvoted test ballots will comply with the Ballot Box Diverter Options if adopted by the elections official.

Blank Test Ballots

One blank test ballot shall be created. It will not contain any marks other than those needed for precinct or ballot style identification. This test should result in undervotes being cast for each contest in every occurrence in the test. Tests for blank test ballots will comply with the Ballot Box Diverter Options adopted by the elections official.

Recall Measure and Candidates Contest Test Ballots

Recall elections, conducted in accordance with California state recall rules and laws and which include two official candidates, shall consist of a series of ballots that provides votes for each candidate listed on the ballot. When the recall election has more than two candidates, additional test ballots shall be marked for each additional candidate with a "Yes" vote and a "No" vote for the candidate, on each ballot. The third candidate should get 4 ballots; the fourth should get 5 ballots, etc. When there is a recall and only one official candidate, test ballot card sets, numbered 1, 2, 3, 4, 9, 12, and 14 only shall be prepared.

Certification of Logic Test

Logic test requirements apply to all elections; however, submission of the seven day certification of logic testing and copy of the vote tabulation software must be provided to the Secretary of State. This seven day certification is required only prior to statewide elections and elections to fill vacancies in the State Legislature or Congress.

4.5.4 Retention of Test Materials

The successful logic and accuracy tests, conducted at the time of certification (or re-certification, if necessary) shall be submitted to the Secretary of State. Storage logs or records, if any, and balancing reports, if any, shall be retained as long as the ballots are kept for the election. The official logic test ballot cards used for balancing prior to, and upon completion of, the processing of official ballots shall also be kept for as long as the ballots. Back-up decks and other test decks may be destroyed or used to train operators for other elections. Memory card totals may be zeroed.

4.5.5 Logic and Accuracy Board and Certification of Testing

The elections official shall establish a Logic and Accuracy Board pursuant to Section 8.4 to complete certification of testing. Not later than seven days before each statewide election, the Secretary of State must receive a copy of the Logic and Accuracy Board's certification. For local and district elections, the Logic and Accuracy Board members shall submit their copy of the Logic and Accuracy Board's certification to the local elections official conducting the election.

4.6 Ballot Tally Programs

The elections official shall send ballot tally programs to the Secretary of State pursuant to Section 8.5. The ballot tally program must be received by the Secretary of State no later than seven days before each statewide election. All software and hardware shall be certified by the SOS and no changes shall be made to any part of the system or operation without written approval from the Secretary of State prior to any such modification.