Risk-Limiting Audits: Ballot-Polling Method

Lesson 1: Background on Risk Limiting Audits (RLAs) in Virginia

Introduction to RLAs

In 2024, every locality in Virginia will be participating in the Risk Limiting Audit (RLA) for the General Election in November. The RLA takes place after all election results have been received and following a State Board of Elections meeting.

This course will guide you through all aspects of the RLA process, from set-up to submitting results, in order to help you prepare for the upcoming RLA this November.

Definition of an RLA

A Risk Limiting Audit (RLA) is a type of post-election audit that utilizes statistical methods and a manual review of paper ballots to confirm that the electronic voting system accurately reported the correct outcome of an election. RLAs analyze a random sample of hand-counted ballots to confirm election results. If the margin of an election is wide, fewer votes are audited; if the margin is narrow, more votes are audited until enough evidence can confirm the results of the contest.

RLA Methods

There are two RLA methods used in the Commonwealth of Virginia: **ballot-polling** and **batch-comparison**.

- **Ballot-polling audits** manually review a randomly selected, sufficiently large sample of ballots to determine if the overall outcome of an election contest was correctly reported.

- **Batch-comparison audits** manually review randomly selected physical batches of ballots, such as those cast in one precinct, and compare those results with corresponding machine counts.

In Virginia, the Virginia Department of Elections (ELECT), in accordance with the procedures prescribed by the State Board of Elections (SBE), has traditionally utilized the **ballot-polling** method to conduct statutorily required RLAs.

Since 2022, local electoral boards (EB) have the option to apply for RLAs for contested races that are wholly contained within the jurisdiction of the EB. Local electoral boards may choose to utilize either the ballot-polling or batch-comparison method for conducting their RLA, subject to the approval of the SBE.

History of RLAs in Virginia

RLAs are one type of post-election audit used to verify the accuracy of voting systems (voting machines, counting machines, etc.). In addition to comprehensive Voting System Certification Standards and Logic and Accuracy Testing, RLAs can provide an additional check in ensuring the integrity of voting equipment. As a type of post-election audit, RLAs have been gaining in popularity with election administrators nationwide. California, Colorado, Georgia, Indiana, Kentucky, Maine, Michigan, Nevada, New Jersey, New Mexico, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, and Washington have all passed legislation requiring or allowing for RLAs following elections or have administration pilot programs in process (source: risklimitingaudits.org).

View more on the history of RLAs in Virginia below.

- **2017**- In 2017, the Virginia General Assembly passed legislation that amended the Code of Virginia to include RLAs of ballot scanner machines in use in the Commonwealth and the changes went into effect on July 1, 2018.
- **2018**- The City of Fairfax conducted Virginia's first pilot of RLAs in August 2018.
- **2019**- Eight localities in Virginia conducted RLAs: Lancaster County, Franklin City, Bristol City, Loudoun County, Manassas City, Louisa County, Stafford County, and Rockingham County.
- **2020**- The Department of Elections conducted a statewide risk-limiting audit of the November 2020 General Election.
- **2022**- During the 2022 General Assembly Session, §24.2- 671.1 was repealed and replaced with §24.2-671.2, which took effect on July 1, 2022. With these changes, the Code now requires that RLAs be performed by the EBs and general registrars (GR) under the supervision of ELECT and in accordance with the procedures prescribed by the SBE.

This course outlines the SBE procedures and includes guidance on the following:

- Randomly selecting contested races and determining the risk-limit

- Preparing for an RLA, including guidelines for organizing ballots, selecting venues, and securing appropriate materials by EBs and GRs
- Ballot custody, accounting, security, and written record retention procedures that ensure a complete and accurate collection of cast ballots from which samples are drawn
- Hand counting of the audited ballots
- Methods for conducting the RLA
- Ensuring transparency and understanding of the process by participants and the public

Lesson 2: RLA Basics

RLA Basics

Pursuant to § 24.2-671.2, RLAs must be conducted before a race has been certified. ELECT must ensure that an RLA is conducted for at least one randomly selected contest each year. The Code of Virginia provides the contests eligible for selection for an RLA depending on the election cycle, as outlined in §24.2-671.2(C) and illustrated in the graphic from 2024 below:
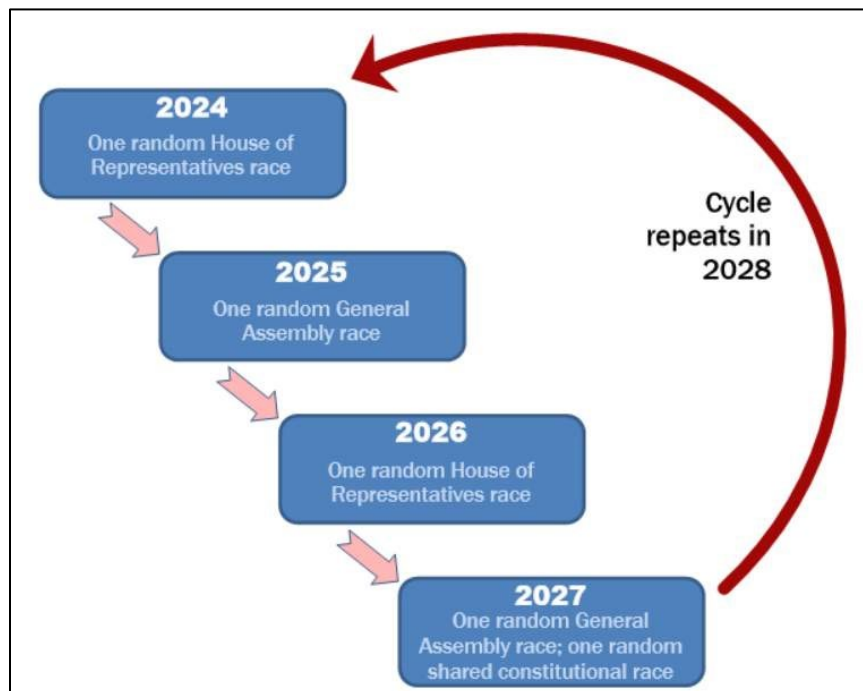
Additionally, §24.2-671.2(D) allows EBs to request a risk-limiting audit of a contested race within the EB's jurisdiction. Using an SBE-671.2(D) Form: Request for Risk Limiting Audit, a locality may submit their request to the SBE for approval.

Examples of races wholly contained within a locality's jurisdiction may include but are not limited to: mayoral, school board, clerk of court, treasurer, sheriff, or city council.

Localities that have portions of House of Delegate, State Senate, U.S. Senate, or U.S. House of Representative races located within their localities *are not* able to request to audit just their portions of those races.

At least once every five years, every jurisdiction must participate in at least one RLA of a contest in its jurisdiction, either by random selection by the SBE or by opting into their own contest. As of 2022, the SBE may, by two-thirds majority vote, direct that a locality conduct an RLA of a contest within its jurisdiction. The SBE defines participation in an RLA by the uploading of a ballot manifest.

Every locality in the Commonwealth participated in a ballot-polling RLA of the 2020 Presidential and 2021 U.S. Senate races, which is explained in greater detail in the March 31, 2021 Risk-Limiting Audit Report linked [here](). It can also be found on ELECT's website.

Applying for an RLA of a Local Contest

An EB may request SBE approval for an RLA of a contested local race wholly contained within the EB's jurisdiction. The SBE has promulgated both a regulation to guide EBs in selecting a race for an RLA, as well as the SBE-671.2(D) Form that localities must use to request a race for an RLA. **As of March 2022, EBs may choose between utilizing the ballot-polling or batch-comparison method of conducting an RLA.**

To request an RLA, board members must take the following steps:

1. The electoral board casts a majority vote at a public meeting to request an RLA for a particular contested local race, wholly contained within the jurisdiction of the electoral board.
2. The electoral board completes the current SBE-671.2(D) Form and identifies local race(s) subject to the requested RLA.
3. All board members sign and date the form.
4. The electoral board's secretary sends the form to ELECT via the locality's Elections and Registration Specialist no later than close of business the day prior to the publicly noticed RLA SBE meeting (the date will vary depending on the election cycle).

The SBE will grant an RLA request if the form (pictured below) is properly completed, all statutory requirements are met, and the request is submitted in time. The regulation specifies that, as needed, the SBE will grant a two-week extension to an electoral board's certification deadline under § 24.2-671 to accommodate the completion of the RLA.

★ VIRGINIA ★
DEPARTMENT *of* **ELECTIONS**

REQUEST FOR RISK-LIMITING AUDIT

PURPOSE OF THIS FORM

Under Code of Virginia § 24.2-671.2(D), "A local electoral board may request that the State Board approve the conduct of a risk-limiting audit [RLA] for a contested race within the local electoral board's jurisdiction." The local electoral board may request an audit of such a race wholly contained within the jurisdiction of the local electoral board by completing and submitting this form to their Election Services Registrar Liaison prior to the State Board of Elections (SBE) meeting to choose races to audit. *If a request is made of a race that is not wholly contained within a locality's jurisdiction, this request will be denied. Please review 1VAC20-60-80 for details on qualifying for a risk-limiting audit request.*

COMPLETE THE FOLLOWING:

Locality: _____

Date of Public Meeting: _____

Contested Race: _____

Town Name/District Number: _____

Date of RLA: _____

Location of RLA: _____

Was Ranked-Choice Voting Used? ☐ Yes ☐ No

RLA Method Requested: ☐ Ballot Polling ☐ Batch Comparison

Preliminary Vote Totals: _____

    Candidate A: _____

    Candidate B: _____

    Candidate C (if applicable): _____

    Candidate D (if applicable): _____

On the lines below, please include any other relevant information:

_____

_____

*ELECT reserves the right to ask additional questions on behalf of the SBE, if necessary.

**Please submit a form for each contested race your locality is requesting to have audited.

*** If multiple races are being submitted, the RLA method requested must be the same for all races requested.

We, the members of the electoral board, request an audit of the above contested race(s), being wholly contained within our jurisdiction:

Printed name of Chairperson	Signature	Date	Vote (Yay or Nay)
Printed name of Vice-Chairperson	Signature	Date	Vote (Yay or Nay)
Printed name of Secretary	Signature	Date	Vote (Yay or Nay)

If your audit request is approved by the State Board of Elections, then the Board may grant an extension of up-to two weeks to your certification deadline under §24.2-671.2 of the Code of Virginia for the audited race.

The second page of the SBE 671.2(D) form is pictured above. It requires the printed name, signature, date, and yay or nay vote of all three members of the electoral board.

Key Factors

When a locality considers applying for an RLA, ELECT recommends a review of the following aspects: method choice, time, staffing, cost, and stakeholders.

1. **Method Choice**

The SBE gives EBs the option to choose between the use of two RLA methods for applications submitted: ballot-polling or batch-comparison.

Ballot-polling typically requires the smallest number of ballots to produce strong evidence that a reported outcome was correct. This method has been used by the Commonwealth since RLAs were first required by statute. It is the easiest method for the public to observe the interpretation of ballots. In the case of ballot-polling RLAs, a statistically significant number of ballots are sampled to infer the accuracy of the machines used in the election.

Batch-comparison is an audit where batches (such as precincts) are randomly selected, counted, and compared to the voting system's count. This method tends to use the most ballots of either method, causing a greater workload and the need for more manpower and resources. Additionally, when the RLA software (Arlo) is set up for a batch comparison audit, it tends to randomly select the precincts with more ballots. Localities should expect to review over a thousand ballots.

Example of Sample Sizes:

ELECT estimated the number of ballots that may have needed to be sampled for the 2022 General Election RLA, U.S. Congressional District 9, using both the ballot-polling method and the batch-comparison method to provide a real-world example of the amount of work required for each method. This race had 248,792 ballots cast with a margin of 47% between the candidate with the most votes and the candidate with the second most votes.

Batch–Comparison Estimate for District 9	Ballot–Polling Estimate for District 9
7 batches or around 5,600 total ballots	60 ballots

2. **Time**

Pursuant to the Code of Virginia §24.2-671.2, ELECT is required to oversee that certain RLAs are done after the general election but before certification. The SBE announces those races, as well as approved applications requesting a local RLA, during an SBE meeting, typically held the second Wednesday following the November General Election. This creates a very tight timeline for the RLA, which must be completed before certification. This means localities will have 9.5 business days to complete the RLA process following a general election.

This timeline may be further compounded during a November general election if an EB chooses the batch-comparison method for a local race. Historically, the SBE has conducted RLAs

using the ballot-polling method, and utilizing the batch-comparison method locally would mean running both types of RLAs simultaneously. This will take additional time and staff to complete.

If an EB applies for an RLA of a primary, an electoral board will have 3 business days from the time of approval of the RLA to the date for the SBE to declare a nominee. Given these time constraints, an RLA of a primary, while not prohibited by statute, is not recommended.

3. Staffing

As part of the RLA, EBs must recruit audit review boards. An audit review board is a two-person team assigned to review ballots and record a hand tally of the results. The required number of audit review boards is based on the number of batches that are needed for an RLA. However, when a single batch contains a large number of ballots, additional audit review boards may be assigned to the batch to tally the ballots more effectively and efficiently.

Ballot-polling method: On average, an audit review board can pull 20-25 ballots per hour. If many ballot containers must be retrieved, this average decreases to about 15-20 ballots per hour. It may take longer to locate a specific ballot within a stack of ballots utilizing the ballot-polling method, which accounts for additional time.

Batch-comparison method: On average, an audit review board could audit about 510 ballots per hour. Auditing 100,000 ballots for one contest would take approximately 195 hours. Batch-comparison audit review boards can work more quickly because they are not searching for specific, random ballots but instead working through all ballots in a "batch." That being said, they have substantially more ballots to review.

4. Cost

As noted above, audit review boards will need to be recruited to process the ballots or batches that will be hand counted. Each audit review board consists of two individuals; if more ballots or batches are sampled, more people will need to be compensated to complete the RLA process on time.

5. Stakeholders

Administering and performing any RLA requires a great deal of coordination amongst both state and local stakeholders. Each group relies on the other to perform their duties to the best of their ability for the RLA process to be successful. The process includes:

- ELECT staff

- GRs and their staff

- Local EBs

- Officers of Election

- Clerks of Court and their staff

- Circuit Judges

- Authorized representatives

- The public

GRs need to be available to coordinate the EB members, audit board members, and their staff; typically, GRs also fill the role of local manager of the RLA, an important role in ensuring that data is properly uploaded into Arlo.

EB members from both major parties need to be available to observe the RLA as is required under §24.2-671.2(G).

Clerks of Court need to be available to help maintain the chain of custody of the ballots either by being present for the RLA or are available to transfer custody of the ballots to the GR or EB for the RLA.

If an EB member of a major party is unavailable for the RLA, Circuit Court Judges should be available to allow for the temporary appointment of an EB member for the purpose set out in §24.2-671.2(G).

RLAs are open to the public and other authorized representatives as they are conducted during public meetings of the local electoral board.

Arlo Planner

You can use the Arlo Planner Tool to create an estimate of the number of ballots or batches that may be required to conduct an RLA for your race. The Arlo Planner Tool can be found here:

https://arlo.voting.works/planner

This tool is available to the public and does not require a login to access.

REMINDER:

Should an EB choose to apply for an RLA, the batches or ballots used to perform the RLA will be randomly chosen by Arlo, no matter which RLA method is chosen, and will not be chosen by the applying EB.

RLA SBE Meeting

The SBE will meet the next business day following the end of a general election's canvass to select contests, set the "risk limit", and determine the random seed number for the RLA.

- **Selected Contests**

  Eligibility:

  For those contests eligible for an RLA as designated by the year in §24.2-671.2(C), the SBE will only consider races with margins greater than 1%. All races that meet that threshold will be placed in the selection pool.

  An EB may apply for an RLA pursuant to §24.2-671.2(D). The EB must fill out an SBE-671.2(D) Form, and the contested race must qualify pursuant to the criteria under 1VAC20-60-80.9. If the SBE-671.2(D) Form is properly filled out and the contested race qualifies under 1VAC20-60-80, then the SBE will approve the application. These contests will not be placed in a selection pool.

  Drawing:

  For those contests eligible for an RLA in a given year under 24.2-671.2(C), the SBE Chair or designated representative will randomly draw one race(s) to audit from this pool. Before the random selection takes place, a member of ELECT staff will explain the selection method. Examples of random selection methods may include drawing a contest from a bowl or rolling dice to determine the audited contest. The selection will be held and recorded during a public meeting to ensure that the chosen race is completely random.

- **Setting the Risk Limit**

  A risk limit is the maximum chance that the RLA will fail to correct an incorrectly reported outcome. For example, a 10% risk-limit means that there is a 90% chance that the RLA will correct an incorrect outcome.

  To date, every RLA in Virginia has used a 10% risk-limit. A 5% risk limit is also common in other jurisdictions, though it has yet to be tested in Virginia. The SBE will set the risk limit of the RLA following industry best practices and will announce the risk limit of each RLA at the SBE RLA meeting.

- **Generating the Random Seed Number**

  For each audited race, the RLA software uses a 20-digit random seed number to select ballots for retrieval. A random seed number specifies the starting point of a computer-generated random sequence of numbers.

  To create this random number, the designated representative(s) rolls twenty, ten-sided dice (numbered zero through nine), one time each. As each dice is rolled, the resulting number is recorded on a whiteboard. Any person may be designated to roll the dice; it may be done by one person or multiple people.

  If there are applications approved by the SBE from electoral boards pursuant to Title 24.2- 671.2(D), a new, additional 20-digit seed number will be generated via the process explained above.

The 20-digit number generated by this activity will be inputted into the RLA software by the RLA Administrator on ELECT's staff. Once this number is inputted, the auditing software will randomly select and generate a list of ballots to be retrieved based on the sample size.

Lesson 3: RLA Preparation

Due to the compressed timeline for RLAs, localities can take actions before Election Day to set themselves up for a successful RLA should they be chosen or approved by the SBE, including:

- Determining RLA location
- Scheduling the public meeting
- Recruiting Audit Review Boards
- Reviewing ballot accounting and storage practices

As a best practice, ELECT recommends coordinating with local partners (such as the Clerk of Court) throughout all steps of the preparation process.

Determining the Location of the RLA

A locality must consider a space for the RLA that can accommodate the public and that is ADA compliant. The facility where an RLA takes place must also have an internet connection to download and print retrieval lists, placeholder pages, RLA board credentials, and labels.

If only a few ballots are required for an RLA, it may be possible to conduct the RLA at the courthouse. If more space is needed, the RLA may take place in another suitable location, such as:

- The GR's office

- A library

- A firehouse

- A school

Localities should work with their Clerks of Court to consult on the physical space of the RLA.

Scheduling the Public Meeting

Pursuant to [§2.2-370712](#) and [§24.2-671.2(G)](#), an RLA must be conducted as a public meeting. An EB and the GR shall conduct an RLA within their jurisdiction. Once the electoral board has selected a location for the RLA, it must provide the location to ELECT; ELECT will select the date and time for the RLA to begin. ELECT will publish the list of contested races along with the date, time, and location of the RLA as soon as practical. Local party chairpersons must also be notified of the RLA public meeting.

Additionally, at least one member of the electoral board representing each party must participate in and be present for the duration of the RLA. In addition to electoral board members and the GR, meeting attendees may include:

- Clerk of Court

- Audit Board members

- General public

- Representatives from political parties

- Candidates

- Campaign staff

- Local party chairs

Note: While the RLA statute does not specifically address authorized representatives, the RLA is a public meeting of the electoral board. A best practice would be to apply the same rules of authorized representatives used during canvass to authorized representatives that attend an RLA. Meaning, authorized representatives would be allowed to observe the process but are not allowed to interfere with the process.

Localities should plan for at least one full day to conduct the RLA. It is recommended that the public meeting begins in the morning so the afternoon may be free if a second round of ballot retrieval is required. Since the sample is random, there is no way to predetermine the number of ballots a locality must retrieve.

Recruiting RLA Audit Review Boards

An Audit Review Board is a two-person team that retrieves specified ballots, records the results of the ballot, and inputs the results into the ballot software. GRs and/or the electoral board determine the audit board(s).

Audit board members can be:

- Staff

- Officers of Election

- Electoral Board members

- General Registrars

- Representatives from each party and/or candidates

Audit boards do not have to declare a party affiliation. As a best practice, it is recommended the audit board consist of one Democrat and one Republican to ensure balanced representation.

The number of Audit Review Boards is based on the number of ballot storage containers that must be opened and not on the number of ballots to be retrieved.

Reviewing Ballot Accounting and Storage Practices

When preparing for an RLA, it is a good time to review ballot accounting practices, which include ballot tracking, ballot reconciliation, and chain of custody forms and procedures. Ballot accounting forms the basis of a ballot manifest by providing the number of ballots in an envelope/box/container. It is imperative that the ballots remain organized and clearly marked within the contents of the box. Having a strategic plan for organizing ballots can save a lot of time when conducting an RLA.

ELECT has designed a sample chain of custody form to document the control, transfer, and disposition of ballots during an RLA. Localities may choose to utilize this form or design their own to suit their specific needs. A sample form can be found in FormsWarehouse under the RLA section.

Suggested Supplies

While not required, the following is a list of helpful supplies for a successful RLA:

- Table and chairs for each audit board
- Bright-colored paper
- Bright-colored removable labels
- Tally sheets
- Pens
- Rubber fingers
- Device to open containers

- Materials to reseal containers, if necessary
- Device with Wi-Fi/cellular to enter ballot tallies (laptop, smartphone, etc.)
- Printer

Lesson 4: Overview of the Ballot-Polling Method

Ballot-polling audits manually review a randomly selected, sufficiently large sample of ballots to determine if the overall outcome of an election contest was correctly reported. The Department of Elections in Virginia has traditionally used the ballot-polling method to conduct statutorily required RLAs. However, local boards have the option to utilize either the ballot-polling or batch-comparison method for conducting their RLA, with approval from the SBE.

Overview

When beginning an RLA, a locality must do the following:

- Notify the public and participants identified in the previous section (RLA Preparation)

- Submit an ELECT 659- Request to Inspect Sealed Election Material form

- Create and upload the ballot manifest

- Gather supplies

Click continue to learn more about these requirements.

Submit a "Request to Inspect Sealed Election Materials for a Post-Election Audit" Form

Pursuant to Va. Code §24.2-659, a locality must receive permission from ELECT to unseal ballots cast on Election Day for a post-election audit. Localities are required to submit an ELECT 659- Request to Inspect Sealed Election Material form to obtain permission.

The form is submitted to ELECT for signature authorization and then presented to the Clerk of the Circuit Court to access ballots from the election.

This form can be found in FormsWarehouse.

Lesson 5: Creating the Ballot Manifest

A ballot manifest is a two-column Excel spreadsheet created by localities that includes a list of the "Batch Name" (Column A) and the "Number of Ballots" (Column B). It creates an inventory of every ballot cast in a locality. An example of a ballot manifest is shown below.

	A	B
1	Batch Name	Number of Ballots
2	501 - Bayview	848
3	503 - East Ocean View	931
4	505 - Little Creek	600
5	509 - Tarrallton	847
6	510 - Third Presbyterian	930
7	CAP - EV	2786
8	CAP - VC1 - Pretlow (EV)	2291
9	CAP - VC2 - Jordan-Newby (EV)	400
10	CAP - VC3 - Berkley (EV)	113
11	CAP - VC 4 - Lambert's Point (EV)	613
12	CAP - AB	6070
13	CAP - PE	567
14	Provisional	463

Note: A ballot manifest should account for *all* ballots received: provisional, early voting, absentee, Election Day, and post-election.

Depending on the size of the locality, a ballot manifest should take one hour or less to complete. As a best practice, localities are encouraged to build their ballot manifest as they go. In order to select random ballots or batches, all participating localities must upload a ballot manifest before the audit can begin.

Note about Performing Both a Ballot-Polling RLA and a Batch-Comparison RLA: In the event that your locality has to perform both a ballot-polling RLA and a batch-comparison RLA, pay attention to the design of your ballot manifest for each method. While the ballot manifest for one may be used for the other, the batches listed in the ballot manifest <u>must</u> be the same as your precincts. For example, if 100 ballots were cast in Precinct 1, then Batch 1 would have 100 ballots. This is not only for consistency but also so that the "Candidate by Batch File" matches with the "Ballot Manifest" for a batch-comparison method RLA. You may also choose to create two separate ballot manifests for each separate method for greater ease in locating ballots.

Batch information can be found on Ballot Record Reports or on Label #3. ELECT encourages localities to have discussions with their Clerk of Court prior to the election. During these conversations, localities should work with their Clerk of Court to discuss storage limitations, the location of the RLA, and chain of custody concerns.

The number of ballots in each batch should be verified independent of the tabulator. The information to create a ballot manifest may be found in the following places:

- Ballot Record Reports from precincts

- Inventory the ballot boxes at the Clerk of Court. Label #3 should contain the information needed (pictured left)

- Electronic Pollbook Data

    o **Reminder**: *Check Incident Reports or Officer of Election notes for occurrences of failing to check in voters. This will allow the EPB number to be increased to the correct number.*

- VERIS data from the Final Absentee Report

Calculating the number of ballots in a container by weight

If the number of ballots in a specific container is unknown, a locality can perform a simple equation to approximate the number of ballots in each box. To do this, each container box must be weighed. The weight of each box is added together. The total of this sum is then divided by the total number of ballots cast. The result of this equation is then multiplied by the weight of the corresponding box to get the number of ballots (see graphic).
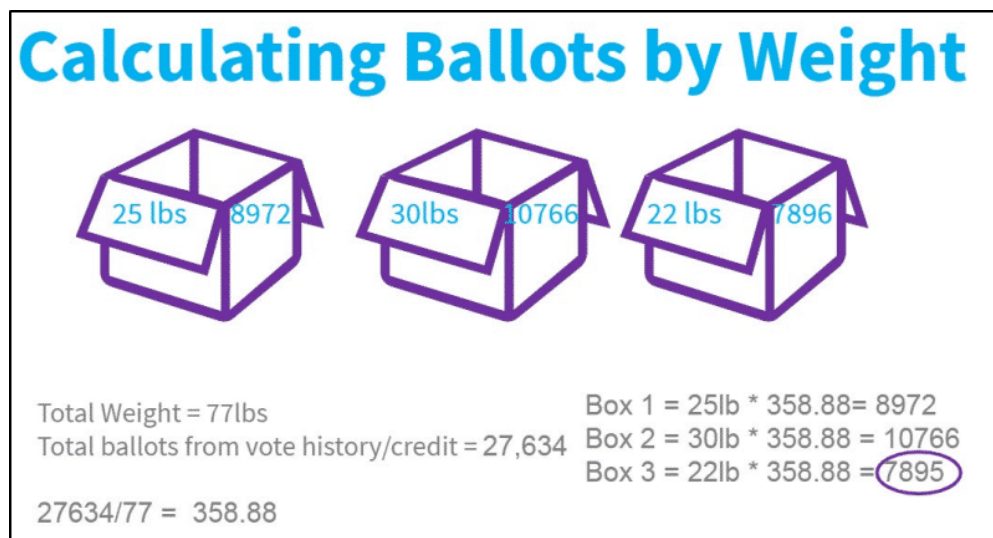
Helpful Tips and Reminders

- All types of ballots (in-person, mail-in, provisional, etc.) are included in the manifest.
- Localities may label the "Batch Name" in any way that helps keep them organized (i.e.: Precinct 101, Box 26, Container 8, etc.). Batch names are unique to each locality.
- Boxes/Containers/Envelopes that contain large amounts of ballots may be grouped into smaller units to ease the physical challenges of conducting the RLA, as long as it is reflected in the batch name (i.e.: Precinct 101 Unit 1; Box 26 Unit 2; Container 8 Unit 3; etc.).
- Keep the spreadsheet simple; avoid color coding and bold, so the ballot auditing software can read it.
- Run a quick equation in Excel to check that all ballots have been accounted for in a locality. After performing this check, make sure to delete this sum before uploading the manifest into the RLA software.
- Build a ballot manifest as the ballots are being stored after an election in preparation for future RLAs.

Lesson 6: Uploading the Ballot Manifest

Once the ballot manifest is created, it is saved as a .csv file and uploaded into the auditing software. The RLA software lets participants know if a mistake has been made when creating or uploading the manifest by generating an error message. Mistakes may include:

- Empty rows

- Incorrect file formats (the manifest must be saved as a .csv file)

- Ballot totals in any rows or columns

All ballot manifests must be submitted by all participating localities to start the RLA.

Once the software receives all the ballot manifests, it will compile them into one large ballot list. This master list will be used to select random ballots across participating localities. Ballot manifests must be uploaded no later than the Thursday after the SBE's random draw. Once all ballot manifests are uploaded the RLA can begin.

Detailed instructions on how to upload a ballot manifest into the current auditing software are listed below:

1. Using Google Chrome or Safari as your browser, go to this link: https://arlo.voting.works
2. Enter your email address.
3. Click Log in to your audit.

4. Check your email for a new email with the subject "Welcome to Arlo - Use the Code in this Email to Log In" - enter the verification code.
5. Click on the button with the locality name.
6. Click the Browse button and navigate to the ballot manifest .csv file that was created. Once selected, click Upload File.
7. When the upload is successful, a message will appear at the top of the screen that says "Ballot manifest uploaded." If a mistake is found after a ballot manifest has been uploaded, participants have the option to log back in and use the Replace File button to update the file.
8. Once the steps for uploading your ballot manifest have been completed, log out before exiting the screen.

Lesson 7: Retrieving and Tallying Ballots

In preparation for ballot retrieval, Arlo identifies which ballots need to be audited.

- **Log in to the RLA Software:**
  Once the list of ballots to be audited has been generated by the RLA software, participants will log into the RLA software to review the list of ballots they must retrieve to complete the RLA.
  1. Using Google Chrome or Safari as your browser, go to this link: https://arlo.voting.works
  2. Click Log in to your RLA.
  3. Enter your email address.
  4. Check your email for a new email with the subject "Welcome to Arlo - Use the Code in this Email to Log In" - enter the verification code.
  5. Click on the button with the locality name.
- **Audit Boards:**

  The RLA software will ask how many audit boards will be participating in the RLA.

- **Download and Print:**
  The RLA software will sort ballot retrieval lists, placeholder sheets, ballot labels, and audit board credentials for every audit board. Print each item for each audit board.
  - Ballot Retrieval List: A ballot retrieval list is a list of ballots to be retrieved by a locality. The "Batch Name" will be the naming convention used in the ballot manifest. Since the selection is random, precincts may have multiple ballots to be retrieved and some precincts may have none.

- The ballot number reflects the numerical order of a specific ballot. To audit ballot number 90 in Precinct 1, for example, a member of the audit board must count from the top, each stored ballot until they reach the 90th ballot in the batch.
- <u>Placeholder Sheets:</u> Placeholder sheets are individual sheets that contain each batch name and number (ex. Precinct 1, Ballot Number 90). They come in the form of a pdf and are printed on brightly colored paper. These sheets will be used to mark the place of the ballot that is being retrieved in the stack of ballots.
- <u>Ballot Labels:</u> Ballot Labels should be placed on ballots when retrieved. A bright-colored removable label is recommended but not required.
- <u>Audit Board Credentials for Data:</u> The RLA software will create a username and password for the audit board members. The link at the bottom of the audit board credentials or QR code will direct audit board members to the site to enter in the ballot totals.

Retrieving and Tallying Ballots

Once the ballot retrieval lists have been downloaded from Arlo, the process of retrieving and tallying ballots may begin. This process is detailed below.

1. Review the list of ballots and retrieve the necessary containers.
2. Perform any chain of custody that may be required by the Clerk of Court. The chain of custody needs to be documented. ELECT has a sample form that may be used to document the chain of custody, or a locality may design their own form.
3. Remove ballots from the box and place them in a neat stack.
4. Review the *Ballot Retrieval List* to determine what ballot to select.
5. Starting at the top of the stack, count ballots until the desired ballot is reached.
6. Once the ballot needed to be retrieved is reached, pull it out of the stack and insert the placeholder sheet in the stack to mark its position. Place the removable label on the ballot. The placeholder sheets and ballot labels are generated by the RLA software.
7. Once all ballots have been pulled from the containers, the audit board will use the procedures established by ELECT for conducting hand counts of ballots. These procedures are outlined in FormsWarehouse under Election Management, Election Day Instruction and Forms, Hand Counting-Ballots-Examples. Include the batch name, ballot number, and the vote on the tally sheet. ELECT has sample tally sheets available for use during an RLA, but a locality may choose to create their own.
8. Localities may return ballot(s) to the appropriate container(s) or keep all the ballots from the RLA in a designated envelope/container.
9. The containers should be resealed and returned to the Clerk of the Circuit Courts following the Chain of Custody procedures.

Lesson 8: Alternative Methods to Counting Down the Stack

If a locality has a batch that is too large to locate a single ballot efficiently by counting down the stack of ballots, the locality may perform the **K-Cut Method** to locate the ballot or utilize a **Commercial Scale**. The methods are explained in more detail below:

Commercial Scale

Localities may utilize a commercial scale to locate a ballot. Using a ballot scale is highly accurate, saves time, and places less stress on a locality's audit board. By calculating the average weight of the ballots, a scale can easily identify the corresponding ballot in a ballot retrieval list.

K-Cut Method

To make a k-cut of a given stack of ballots:

- Cut the stack into two parts at random, designated a "top" part and a "bottom" part.

- Switch the order of the parts by moving the "bottom" part to the top and the "top" part to the bottom.

- The two parts are placed together.

- Cut the stack at least five times.

- The ballot at the top of the new stack is selected.

A locality must perform a k-cut five times before selecting the top ballot. A random number must be used to dictate the percentage of the cut. One way to randomize the percentage of the cut is to utilize a random number generator set to 1-100. The number generated then becomes the percentage of the cut (example 23=23% of the stack is moved to the bottom.) After performing the cut five times the top ballot becomes the retrieved ballot.

Helpful Tips and Reminders:

- ELECT has a limited number of counting scales to loan. Localities may send an email to their Elections and Registration Specialist to request the use of a scale.

- ELECT has sample Chain of Custody forms and Tally Sheets available for use in FormsWarehouse. These are also available in the Toolbox at the end of this course.

Lesson 9: Ballot Entry Into Arlo

Once the proper ballots have been located, the ballots need to be entered into the RLA software. This process is explained below.

1. A link and/or QR code is needed to begin ballot entry into the RLA software. This link and/or code found at the bottom of the audit board credentials will take audit board members to the data entry portal to input the results of the RLA. **Note:** *A device with a Wi-Fi connection is needed to record the paper tally sheet.*
2. The audit board members will be prompted to sign in.
3. Click the Start Auditing button to begin.
4. Go through the ballots in order.
5. Select the candidate marked on the ballot. Note: Both audit board members need to agree with the results. Click Review. Verify accuracy before clicking Submit & Next Ballot button.
6. When all ballots have been inputted, audit boards should return to the audit overview screen to verify every ballot has been entered into the audit software. Once everything has been verified, click the "Submit Results" button.
7. Audit board members will sign off. Names must be keyed in exactly how the audit board member signed in. For example, if the caps lock was on when the audit board member signed in, then the caps lock must be on when the audit board member signs out.

Lesson 9: Completion of the RLA and Results

When all audit boards have completed their tally entry and the risk limit has been met, the Audit Progress screen will display the message, "Congratulations - the audit is complete!" If the risk limit was not met after all the batches have been audited for the contest, the audit software will initiate another round of sampling. A new batch retrieval list, placeholders, labels, and audit board credentials will be generated for an additional round of ballot retrieval.

If more than one locality is auditing for the same office, both localities must complete before the software will determine the need for the second round and subsequently generate the new retrieval list(s).

After a certain number of rounds of RLA and the risk limit has yet to be met, Arlo will indicate that a full hand count is required if it finds the sample size needed is the same as the actual amount of ballots.

Pursuant to § 24.2-671.2 (I), if an RLA of a contested race escalates to a full hand count, the results of the hand count shall be used to certify the election in lieu of the tabulation of the unofficial results obtained prior to the conduct of the RLA.

Results

At the conclusion of the RLA, ELECT will submit a report to the SBE on the findings of the RLA. If your locality is participating in an RLA and would like to provide feedback to be included in the report, contact your RLA Administrator from ELECT with your findings. The report will include the results of the RLA as well as an analysis of any detected discrepancies.

ELECT has also created a sample press release template that localities may utilize. This press release template (pictured right) is found in the RLA section in Forms Warehouse.

Lesson 10: Toolbox

Form Request for Risk-Limiting Audit Link:

https://www.elections.virginia.gov/media/formswarehouse/risk-limiting-audit/SBE-671.2(D)-Form-Request-for-Risk-Limiting-Audit_March-2023_FINAL.pdf

Request to Inspect Sealed Election Materials for a Post-Election Aduit Form Link:

https://fs28.formsite.com/vaelect/6adxuvmm6n/index.html