Brandy Batch Assistant

User Manual

Version 2.1 — April 2026

Sunset Vista Enterprises	Internal Use Only	PHP 8.3+ | Mobile-First

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1. Introduction

The **Brandy Batch Assistant (BBA)** is a mobile-first web application designed to help distillery operators log, monitor, and review brandy distillation runs in real time. It runs entirely in a web browser and requires no desktop software installation. All data is stored securely on the server in structured JSON and XLSX files.

Key Features

- Multi-user login with first-login password setup and password visibility toggle
- Guided batch creation with still and thumper configuration, including no-thumper (NA) mode
- Real-time run timer with Start / Stop controls — Stop Run returns directly to New Batch Setup
- Activity logging with workflow-driven next-activity prefill and inline activity notes
- Activity workflow configurable via **activities.json** — no code changes needed
- Jar Inventory section with per-jar cut assignment and volume entry in ounces
- Log Review with collapsible entries, inline editing, and delete capability
- Live temperature chart with still temp (red) and optional thumper temp (blue dashed) lines
- Jar markers (green), cut-point markers (orange) on temperature chart
- Batch Summary showing volumes by cut with distillation temperature guidance
- PDF and XLSX export of the full batch log from the Review Previous Batch section
- Review mode for loading, inspecting, and exporting any previous batch

> **Application URL**
> Access the application at: https://sunsetvistaenterprises.com/bba/batchassistant.php
> The application is optimised for mobile phones but also works on laptop browsers.

2. Getting Started — Login

Navigate to the application URL in any modern web browser. You will see the login screen with fields for your username and password.

First Login

The application supports three users: **Michael**, **Scott**, and **John**. On your very first login, your password is not yet set. Enter your username, choose any password you wish, and click **Login**. The system will permanently save that password for your account. All subsequent logins require the same password.

Returning Logins

Enter your username and the password you set on first login, then tap **Login**.

Password Visibility

Tap the eye icon (■) to the right of the password field to reveal the characters you are typing. Tap again to hide them.

> *Note: Passwords are stored as secure hashes — they cannot be recovered. Ask an administrator to reset your entry in user.json if you forget your password.*

3. New Batch Setup

After logging in, if no active batch exists you will see the **New Batch Setup** section. This section also reappears automatically after a run is stopped. Fill in all fields before creating the batch.

Field	Description	Units / Options
Still Charge Type	Grape variety or blend used in the still.	MQ, PP, LC, PS, FB, MX
Still Charge Volume	Total volume of wine loaded into the still.	Gallons (e.g. 12)
Still Charge ABV	Alcohol by volume percentage of the wine.	Percent (e.g. 12.5)
Thumper Charge Type	Liquid type placed in the thumper pot. Select NA (Not Applicable) if no thumper is used — this disables the volume field and sets it to 0.	NW = New Wine ST = Saved Tails NA = Not Applicable
Thumper Charge Volume	Volume loaded into the thumper. Disabled automatically when NA is selected.	Quarts, 0–5 in 0.1 steps (e.g. 2.0)
Allow thumper temp inputs	Checkbox (right-aligned below volume). When ticked, a separate Thumper Temp entry field appears in the Log Entry section after the batch is created.	Checkbox

Once all fields are complete, tap ■ **Create Batch**. The application assigns a batch ID in the format **BlackDuck-YYYY-MM-DD-Run_N**, where N is automatically determined by scanning existing batch files for today's date. A new batch data file is created in the *datafiles/* folder on the server.

Batch Numbering

If three batches were already run today, the next batch will automatically be Run_4.

Batch numbers are determined by scanning both datafiles/ and logfiles/ for matching dates.

No-Thumper Operation

Select NA (Not Applicable) as the Thumper Charge Type when running without a thumper.

This zeroes the volume field, disables it, and also disables the thumper temp checkbox.

The Batch Status panel will display 'Thumper: Not used' for the batch.

4. Review a Previous Batch

The **Review Previous Batch** section is always visible at the bottom of the page — below the active batch sections when a run is in progress, or below New Batch Setup when idle. This panel lets you load and inspect any batch that has been run without affecting the active batch.

How to Load a Previous Batch

- Open the **Batch** dropdown — it lists all batch JSON files found in the datafiles/ folder, sorted newest first. Finished batches show the completion date; in-progress batches are labelled.
- Select the batch you want to review.
- Tap ■ **Load Batch**. The review panel expands below the button.

What the Review Panel Shows

- **Batch info bar** — batch ID, still and thumper parameters, start time, finish time, and total duration.
- **Temperature chart** — reconstructed from stored measurement data, with still temp (red), optional thumper temp (blue dashed), green jar markers, and orange cut-point markers.
- **Volume table** — foreshots, heads, hearts, and tails volumes with temperature guidance, plus total collected.
- **Activity log** — collapsible list of every logged entry for the batch, including activities, jar starts, temperature readings, and volume updates.

Exporting from the Review Panel

- Tap ■ **Export as Excel** to download the activity log as a **YYYY-MM-DD_Batch_N.xlsx** file.
- Tap ■ **Export PDF** to download a formatted PDF report. The PDF includes the temperature chart (captured from the browser), Overview volume table, Jar Inventory, and full Activity Log across multiple pages.

Note: The review panel is read-only. No data can be modified from this view. Export buttons only appear after a batch has been loaded via the dropdown.

5. Batch Status Panel

After a batch is created, the **Batch Status** section appears at the top of the page. It shows the batch ID, still and thumper parameters, a colour-coded status banner, and the run control buttons.

Status Banner

Banner State	Meaning
Blue — Ready for Run	Batch created, run has not yet started.
Green — Run In Progress	The run is active. A live hh:mm:ss elapsed timer is shown on the right.
Grey — Run Finished	The run has been stopped. Data is preserved for review and export.

Run Control Buttons

The buttons shown depend on the current run state:

Button	Visible When	Action
Start Run (green)	Ready	Starts the run timer. Banner turns green. Button is replaced by Refresh and Stop Run.
Refresh (grey)	Running	Fetches the latest state from the server and redraws the temperature chart.
Stop Run (red)	Running	Ends the run, records finish time, and immediately reloads the page showing New Batch Setup. The batch data is preserved and accessible via Review Previous Batch.
Start New Run (amber)	Finished	Only shown if somehow returning to a finished batch. Clears the active batch and returns to New Batch Setup.

Note: A loading spinner is shown while any action is being sent to the server. Wait for the spinner to disappear before tapping another button.

6. Log Entry

The **Log Entry** section consolidates activity logging and temperature recording. Tap the section header to expand or collapse it. All timestamps are in **Eastern Time (ET)**.

Logging an Activity

- The **Activity** label and dropdown sit on one row. The dropdown is prefilled with the *next* activity in the workflow — guiding the operator through the standard run sequence.

- An activity note appears in italic below the dropdown, providing guidance notes and reference links for the selected activity. Updates live as you change the selection.
- Optionally type a comment, then tap ■ **Log Activity**. The dropdown advances to the next workflow activity automatically.

Current Activity	Next Prefilled
Start (Begin setup)	Heating (Start heating)
Heating (Start heating)	Collecting — foreshots
Collecting — foreshots	Collecting — heads
Collecting — heads	Collecting — hearts
Collecting — hearts	Collecting — tails
Collecting — tails	Shutdown
Shutdown	Finished
Finished	Log
Log	Log (stays on Log)

Note: Logging a 'Collecting —' activity adds an orange cut-point marker to the temperature chart at the current elapsed time, labelled Cf (foreshots), Ch (heads), CH (hearts), or Ct (tails).

Temperature Logging

- Enter the still temperature in the **Temp (°F)** field and tap ■ **Log Temp**. A red dot is added to the chart and a 'Temperature' row is written to the XLSX log.
- If thumper temp inputs were enabled at batch creation, a **Thumper Temp (°F)** field and dark-blue ■ **Thumper Temp** button appear on a second row. Thumper readings are plotted as a blue dashed line and logged as 'Thumper Temperature'.

Chart Legend

When thumper temp logging is active, a legend appears top-left of the chart:

Red solid line = Still temperature | Blue dashed line = Thumper temperature

7. Jar Inventory

The **Jar Inventory** section is a dedicated collapsible panel for managing collecting jars. It is separate from Log Entry, making it easy to work with jars independently.

Adding a New Jar

- Tap ■ **New Jar**. A jar is created with the current time and an auto-generated label.
- The section expands if collapsed, scrolls to the new jar, and highlights it with a green border.
- A green dashed line labelled J1, J2, etc. is added to the temperature chart at the current elapsed time.

Assigning a Cut and Recording Volume

Each jar row shows: jar number, start time, label, cut dropdown, oz input, and a checkmark button.

- Select the cut (Pending / foreshots / heads / hearts / tails). The Batch Summary cut bucket updates instantly.
- Enter the volume in whole ounces (0–32), tap the green ✔ button to save. The cut total and Total Collected update, and the green highlight is removed.

> **Volume Precision**
> Volumes are stored to 4 decimal places in quarts.
> 28 oz = 0.875 qt | 16 oz = 0.5 qt | 32 oz = 1.0 qt

8. Log Review

The **Log Review** section appears below the Jar Inventory and shows the activity log for the current batch. It supports inline editing and deletion of entries.

Viewing Entries

- The last 3 entries show by default. Tap **Show all N entries** to expand; tap **Show fewer** to collapse.
- Tap the **Recent Entries** header bar to collapse or expand the entire panel.

Editing an Entry

- Tap ✎ **Edit** on any entry. An inline form expands with the activity dropdown and comment field pre-filled.
- Tap ✔ **Save** to update the entry in the batch JSON and regenerate the XLSX. Tap **Cancel** to discard.

Deleting an Entry

- Tap ■ **Delete** on any entry and confirm. The entry is permanently removed from the batch JSON and XLSX log.

Note: Editing and deleting only affects the active batch. Completed batch entries can only be modified by editing the batch JSON file directly on the server.

9. Batch Summary (Temperature & Volumes)

The **Batch Summary** section combines a live temperature chart with a cut-volume table. Together they give a complete picture of the distillation run. Temperature is logged from the Log Entry section above.

Temperature Chart

The chart plots temperature (Y axis, °F) against elapsed run time (X axis). The X axis displays labels for every 30-minute increment (e.g. 30m, 1h, 1h30m). The Y axis auto-scales to the range of all recorded temperatures (still and thumper) with a 10° buffer above and below.

Chart Element	Description
Red solid line + dots	Still temperature readings, plotted in chronological order.
Blue dashed line + dots	Thumper temperature readings (only shown when thumper temp logging is enabled for the batch).
Green dashed lines (J1, J2…)	Jar start markers — added when New Jar is tapped, drawn at the elapsed run time.
Orange dashed lines (Cf, Ch, CH, Ct)	Cut-point markers — added when a Collecting activity is logged.
Legend (top-left)	Still / Thumper labels, shown when both lines are present.
X axis — time labels	30-minute grid lines from run start. Labels: 30m, 1h, 1h30m, 2h, etc.
Y axis — temperature	Auto-scaled to all recorded data. Label: Temp (°F).

The chart **auto-refreshes** every 5 minutes from the server and redraws every 60 seconds to advance the X axis. Tap ■ **Refresh** in the Batch Status panel for an immediate update.

Volume Table

Below the chart is a table showing the total collected volume for each cut, along with a temperature guidance column.

Cut	Temperature Guide	Notes
Foreshots	Start ~72°C (162°F)	Toxic first fraction. Discard. Typically a small volume (1–2 oz per gallon charged).
Heads	78–82°C (172–180°F)	Contains acetaldehyde and other unwanted congeners. Usually discarded or set aside.
Hearts	82–94°C (180–201°F)	The primary product — clean, smooth spirit. Collect carefully.
Tails	Start ~94–95°C (201–205°F)	Can be saved and re-distilled (Saved Tails / ST) or discarded.

The **Total Collected** row at the bottom sums all four cuts. Volumes update immediately each time a jar volume is saved or a cut assignment changes.

Note: Volumes are shown to 4 decimal place precision in quarts. For example, a jar with 28 oz recorded shows 0.875 qt.

10. Exporting the Log

Export buttons appear inside the **Review Previous Batch** section after a batch is loaded. Two formats are available side by side: **Export as Excel** and **Export PDF**.

Export as Excel (.xlsx)

- Tap ■ **Export as Excel**.
- Your browser downloads **YYYY-MM-DD_Batch_N.xlsx**.
- Open in Microsoft Excel, LibreOffice Calc, or any compatible application.

Export PDF

- Tap ■ **Export PDF**. The browser captures the temperature chart as an image before sending the request.
- Your browser downloads **YYYY-MM-DD_Batch_N.pdf**.
- Page 1 contains the batch header, full-width temperature chart, Overview volumes table, and Jar Inventory.
- Page 2+ contains the full Activity Log with Time, Activity, and Comment columns.
- Both export formats always reflect the complete current state of the selected batch.

XLSX File Format

The spreadsheet contains one sheet named *Log* with the following columns:

Column	Description
Date	Calendar date of the entry (YYYY-MM-DD).
Day of Week	Full day name, e.g. Saturday.
Activity	Activity label or 'Temperature' or 'Jar N started' etc.
Location	Always 'Distillery' — reserved for future use.
Tag(s)	Still charge type code — reserved for future use.
Comment	Optional comment text, or auto-generated description.
Start Time	Time the entry was created (Eastern Time, 12-hour format).
End Time	Same as Start Time for point-in-time events.
Duration (hrs)	Nominal duration in hours (0.01 for activities, 0 for measurements).
Name	Username of the operator who logged the entry.

The XLSX file is regenerated from all in-memory log entries on every export, so it always reflects the complete and current state of the batch.

11. Activity Configuration (activities.json)

The activity list and workflow sequence are driven by a JSON configuration file — **datafiles/activities.json**. This means activities, their order, and their guidance notes can be updated without any code changes.

File Location and Loading

- The file is located at **datafiles/activities.json** on the server.
- On first run, if the file does not exist, it is automatically copied from the bundled default **activities.json** in the application directory.
- To update activities, edit **datafiles/activities.json** directly and save. Changes take effect on the next page load — no server restart required.

File Format

The file is a JSON array. Each element has three fields:

Field	Description
activity	The display name shown in the dropdown and logged to the activity record.
nextActivity	The activity automatically selected after the current one is logged. Set to the same value as 'activity' to stay on that activity (e.g. Log → Log).
activityNote	Guidance text shown in italic below the dropdown when this activity is selected. May contain URLs — they render as clickable links. Maximum 512 characters.

Example entry:

```
[
  {
    "activity": "Heating (Start heating)",
    "nextActivity": "Collecting \u2013 foreshots",
    "activityNote": "Foreshots begin ~72\u00b0C (162\u00b0F). Ref: https://homedistiller.org/cut
s"
  }
]
```

Note: The 'activityNote' field is informational only — it is not written to the log or XLSX. Removing an activity from activities.json removes it from the dropdown for new batches, but existing log entries are not affected.

12. Data Files Reference

All application data is stored in plain JSON and XLSX files on the server. Access to these files is blocked by .htaccess rules — they are not publicly accessible.

File	Purpose
datafiles/user.json	Master credentials file. Contains hashed passwords for all users. Never delete this file.
datafiles/user_NAME.json	Per-user session record. Stores logon time, IP address, active batch ID, and logout time. One file per user (user_michael.json, user_scott.json, user_john.json). Contains only session information — no batch run data.
datafiles/BATCH_ID.json	Per-batch state file. Contains all batch configuration (still/thumper parameters, thumperEnabled, thumperTemp flag), run timers (globalStart, totalDuration), jar data, still and thumper temperature measurements, cut-points, and activity logs. Named after the batch ID (e.g. BlackDuck-2026-04-18-Run_1.json).
datafiles/activities.json	Activity workflow configuration. Defines activity names, next-activity sequence, and guidance notes. Edit this file to customise activities without code changes.
logfiles/YYYY-MM-DD_Batch_N.xlsx	Activity log spreadsheet for a completed or in-progress batch. Regenerated on every log entry and export. Safe to copy or back up at any time.

13. Temperature Guide — Cuts Reference

The following table is a quick reference for identifying distillation fractions by still-pot temperature. Temperatures will vary slightly depending on charge ABV, still design, and atmospheric pressure.

Cut	Temperature Range	Chart Label	Description
Foreshots	~72°C (162°F)	Cf	Methanol, acetone, and other low-boiling compounds. Always discard — never consume. Typically 50–150 mL per run.
Heads	78–82°C (172–180°F)	Ch	Acetaldehyde, ethyl acetate, and light esters. Harsh, solvent-like flavour. Discard or blend sparingly.
Hearts	82–94°C (180–201°F)	CH	Ethanol-rich, clean spirit with desired flavour compounds. Primary product — collect carefully for the best quality brandy.
Tails	94–95°C (201–205°F)	Ct	Fusel alcohols, water, and heavier congeners. Can be saved (Saved Tails) for re-distillation to recover residual spirit.

Cut-Point Chart Markers

When you log a Collecting activity, an orange vertical dashed line is drawn on the temperature chart.

Labels: Cf = foreshots start | Ch = heads start | CH = hearts start | Ct = tails start

These markers are stored in the batch data file and will appear in the Review panel for future reference.

14. Troubleshooting

Spinner does not disappear after tapping a button

A server error may have occurred. Refresh the browser page (the action may have still been saved). If the problem persists, check the PHP error log on the server.

Page shows HTTP ERROR 500

A PHP fatal error has occurred. Common causes: the datafiles/ or logfiles/ directories are not writable by the web server. Check folder permissions (should be 755 or 775). Also verify that the GD extension is enabled in PHP (required for PDF chart image rendering).

New Batch Setup page shown instead of active batch

Tapping Stop Run intentionally returns to New Batch Setup — this is expected behaviour. The completed batch remains accessible via the Review Previous Batch dropdown at the bottom.

Temperature chart appears empty

No temperature readings have been logged yet. Log at least one temperature entry using the Temp (°F) field and Log Temp button in the Log Entry section.

Thumper Temp button not visible

The Allow for thumper temp inputs checkbox must be ticked when creating the batch. This setting cannot be changed after the batch is created. If the checkbox is disabled, Thumper Charge Type is set to NA (Not Applicable).

Thumper temp checkbox is greyed out

NA (Not Applicable) is selected as the Thumper Charge Type. Select NW or ST to re-enable the checkbox.

PDF export shows a blank chart area

The temperature chart must be visible in the Review panel before tapping Export PDF — the browser captures the canvas at export time. Ensure the batch has been loaded and the chart has rendered. Also requires GD extension on the server for image processing.

Export buttons not visible

Export buttons only appear after a batch has been loaded via the Review Previous Batch dropdown. Select a batch and tap Load Batch first.

Cut-point markers (Cf, Ch, etc.) missing from chart

Cut-points are only recorded when a Collecting activity is logged via the Log Entry section. Simply assigning a cut in the Jar Inventory dropdown does not create a chart marker.

Jar volumes show 0 qt in the volume table

You must tap the green checkmark button next to the oz input to save each jar's volume. Entering a number without tapping the checkmark does not save it.

Activity dropdown not advancing to next activity

The activities.json file may be missing or malformed. Check that datafiles/activities.json exists and is valid JSON. The application falls back to no-advance behaviour if the file cannot be parsed.

Previous batch does not appear in the Review dropdown

Only batch files located in datafiles/ with a valid 'id' field are listed. Ensure the batch was created through the application and not manually added.

The application wraps or looks odd on desktop

The application is capped at 520px wide and centred — this mirrors the mobile layout intentionally. All functions work normally in a narrow desktop browser window.

Password forgotten

Passwords are stored as bcrypt hashes and cannot be recovered. An administrator must open datafiles/user.json, set the relevant user's 'password' value to null, and save. The user's next login will set a new password.