HOW IT WORKS

Voice notes and voice instructions

A plain guide to speaking your hive records instead of typing them: dictating a note, filling a whole form by voice, correcting a field, hearing the form read back, and saving without touching the screen.

The short version

Every voice feature starts with the microphone button in the hive log. You speak, the app turns your speech into text, and then does one of three things with it:

- Dictate under a notes box: the words are written into that note for you to edit.
- Speak an instruction in the Voice instruction card: the app works out what you want logged and fills the matching form.
- Follow-up commands in the same card: fix a field, hear the form read back, or save it.

A typical visit, hands free

“Log an inspection for Orchard row 2, calm, five brood frames, queen seen.”

The inspection form fills itself and the page scrolls to it.

“Change brood frames to six.”

Only the brood frame field changes. Everything else stays as it was.

“Read it back.”

The app speaks the form back: hive, date, temperament, brood pattern, frames, queen and notes.

“Save it.”

The form is saved exactly as if you had pressed the save button, and the usual saved message appears.

Nothing is ever saved without you asking. Filling a form by voice only puts values in the boxes; the entry is written when you press save or say “save it”.

FEATURE ONE

Dictating into a note

The Dictate button sits under the notes box on four parts of the hive log:

- Log an inspection, under Notes.
- Hive diary, under New note.
- Varroa treatment, under Notes (optional).
- Harvest, under Notes (optional).

What happens when you tap it

Step	What you see	What the app does
1. Tap Dictate	A red dot and a running timer	Asks the browser for the microphone, then starts recording
2. Speak	Timer counts up	Keeps the audio on your device until you stop
3. Tap Stop and add	Button reads Transcribing…	Uploads the clip, turns it into text, then deletes the audio
4. Text appears	Words appear in the notes box	Appends to anything already typed, separated by a space
5. Check and save	Normal save button	Saving works exactly as it does when you type

Good to know

- Recording stops by itself at three minutes, so a long story becomes several shorter notes.
- If you stop with nothing captured, the app says so and lets you try again.
- If the microphone is blocked, a message under the button tells you to allow it in your browser.
- Dictation is tuned for beekeeping words, so hive names, place names, mite counts and product names are kept as spoken rather than being “corrected” into something else.
- The text is ordinary editable text once it lands, so you can fix a word by hand.

Why 16px fields matter on a phone

The hive log uses 16 pixel text in every form field on small screens. That is not cosmetic: iOS zooms the whole page when a smaller field is focused, which is awkward with gloves on. It also keeps your dictated note easy to read at arm's length.

FEATURE TWO

Filling a form by voice instruction

The Voice instruction card at the top of the hive log turns a spoken sentence into form values. You do not need special wording, but naming the hive and the action helps.

How the app understands you

- Your speech becomes text first, exactly as it does for a dictated note.
- That text is then read by a language model together with today's date and your hive names.
- The model returns structured values, for example hive Orchard row 2, temperament Calm, brood frames 5, queen seen true.
- The app checks each value against the real dropdown choices and number fields before using it, so a strange answer cannot break the form.
- Hive names are matched loosely: “orchard two”, “row 2” and “Orchard row 2” all find Orchard row · 2.

What can be filled on each form

Form	Fields voice can fill
Inspection	Hive, date, temperament (Calm, Steady, Defensive), brood pattern (Solid, Good, Patchy, Scattered, Not checked), brood frames, queen seen, notes
Varroa treatment	Hive, date, treatment type, product, brood state (broodless or brood present), mite drop per day, mites before, mites after, notes
Harvest	Hive, date, weight in kilograms, supers taken, notes
Hive diary	A plain dated note or reminder, written straight into the diary box

Phrases that work

- “Log an inspection for Orchard row 2, calm, five brood frames, queen seen.”
- “Meadow stand three, nervous, patchy brood, three frames, queen not seen.”
- “Oxalic acid dribble on Orchard row one today, broodless, twenty eight mites before, three after.”
- “Harvest for Orchard row two, four and a half kilos, two supers.”
- “Diary note for Meadow stand three: hefted light, add fondant next visit.”

After the form is filled

The card shows a short confirmation of what it filled, plus the words it heard, so you can spot a misheard hive or number straight away. The page scrolls to the form it filled. Nothing is saved yet: you can adjust anything by hand, correct it by voice, hear it read back, or say save it.

FEATURE THREE

Correct, hear it back, save it

Correcting a field

Each instruction carries a snapshot of the form as it stands, so a follow-up is treated as a correction rather than a new form. Only the fields you mention change.

- “Change brood frames to six.”
- “Make the temperament defensive.”
- “Mites before were thirty.”
- “Set the weight to five kilos.”

The app remembers which form you last filled by voice, so a correction about mites lands on the varroa form and a correction about kilos lands on the harvest form.

Hearing the form read back

Say “read it back”, “what have you got”, “repeat that” or “check it back”. The app speaks a summary of the current form in a calm voice:

Form	What is read aloud
Inspection	Hive, date, temperament, brood pattern, brood frames, queen seen, notes
Varroa treatment	Hive, date, treatment type, product, brood state, mite drop, mites before and after, notes
Harvest	Hive, date, kilograms, supers, notes
Diary	Hive and the note text

A read-back never changes a field and never saves. It ends with the reminder to say save it, or correct anything first. Some browsers block sound that starts on its own; when that happens a small player appears in the card with a play button.

Saving by voice

Say “save it”, “log that”, “submit it” or “store it”. The app applies the instruction, then presses save for the form it filled. The normal saved message appears and the form clears, exactly as if you had tapped the button. If a required value is missing, the usual error message appears instead, and nothing is written.

TRUST AND LIMITS

Your recordings, your data

Voice clips are short lived. The browser records locally, the clip is uploaded to your own app backend, transcribed, and then deleted from storage immediately, whether the transcription succeeded or not. Only the resulting text is kept, and only when you save the form. Nothing is shared with other accounts, and each request is tied to your signed-in session.

Microphone permission

- The browser asks once per site. Allow the microphone for the published address.
- Microphones only work on secure addresses: the published https address is fine, local testing on http://localhost is fine, a plain http address is not.
- If you block it by accident, allow the microphone in the browser's site settings and tap again.

Limits worth knowing

Limit	Value	Why
Single dictation clip	3 minutes	Keeps uploads small and fast; start another note for more
Audio file size	About 24 MB	Backend guard against very long recordings
Speech per request	One instruction at a time	Corrections are quick follow-ups rather than one long sentence
Credit cost	Small per minute of audio	Charged by the speech service on audio duration
Read-back cost	One fixed charge per read-back	Charged by the speech synthesis service

Getting the best results

- Name the hive early, then the action, then the details.
- Numbers can be spoken as words: “five brood frames”, “twenty eight mites”.
- Say dates plainly: “today”, “yesterday”, “last Tuesday”, or “the fourteenth of November”.
- Wind and veil noise are the usual culprits: turn away from the wind and speak towards the phone.
- Check the confirmation line before saving, especially hive names that sound alike.

Troubleshooting

Symptom	What to do
Microphone access was blocked	Allow the microphone for this site in browser settings, then tap again
No speech was picked up	Move closer, speak after the timer starts, try a shorter sentence
Could not understand that instruction	Rephrase with the hive name and the action first
Wrong hive chosen	Say “change the hive to…” or pick the hive by hand
No sound on read-back	Tap play in the small player that appears in the card
Voice features unavailable	Typing still works; try again shortly or check the account credit

FOR THE CURIOUS

How it works under the bonnet

This page is for anyone who wants the mechanics. Nothing here is needed to use the app.

The pipeline

Stage	What happens	Where it runs
1. Record	Browser microphone, MediaRecorder, webm/opus or mp4 depending on the browser	Your device
2. Upload	Short-lived Convex upload URL, then the clip is posted to it	Your app backend
3. Transcribe	Speech model with a beekeeping prompt and English language hint	Convex action
4. Interpret	Language model returns strict JSON, checked against allowed values and hive list	Convex action
5. Apply	Form state updated, page scrolled, confirmation shown	Hive log page
6. Read back	Summary sentence sent to speech synthesis, audio URL played in the page	Convex action
7. Save	Existing save handler runs, so storage, reminders and analytics behave identically	Hive log page

Design choices

- Audio is never kept: the delete call sits in a finally block, so it runs even when transcription fails.
- The model is never trusted directly. Every returned value passes through an allow list, a number check or a date pattern before it reaches the form.
- Corrections send the current form as context, so “six” replaces the right number instead of starting again.
- The save path reuses the same handler as the button. Voice saving cannot bypass validation.
- Read-back and save are separate flags, so asking to hear the form can never write a record.
- The dictate and instruction features share one recording component, so microphone errors, timers and permission messages behave the same everywhere.

What is verified and what is not

The transcription service, the interpretation step, the read-back voice and the save logic have each been tested with real requests and type checked. The one thing that cannot be tested from a desk is your microphone: the first real spoken run happens on your own phone. If a phrase is consistently misheard, the prompt and the phrase examples are easy to tune.

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