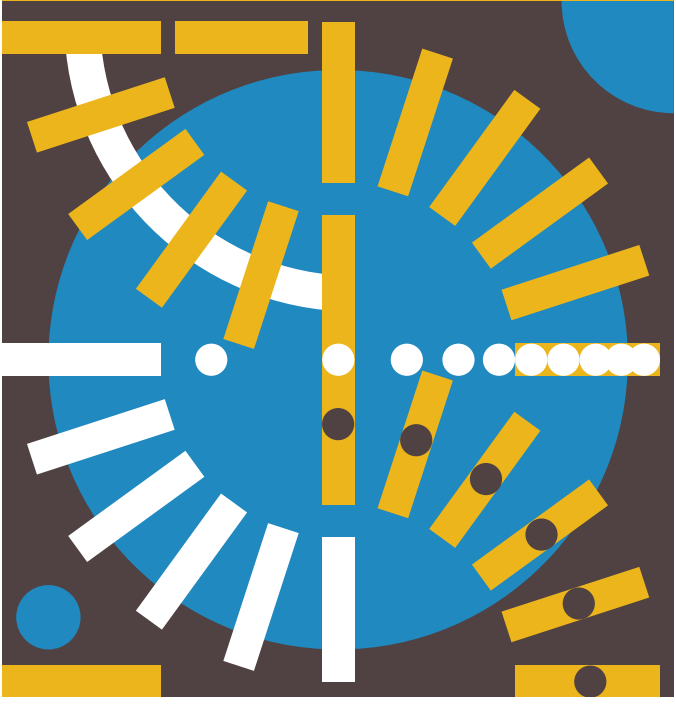
CBA ref 2022 – HAB1

chase bliss

A web guide to Habit



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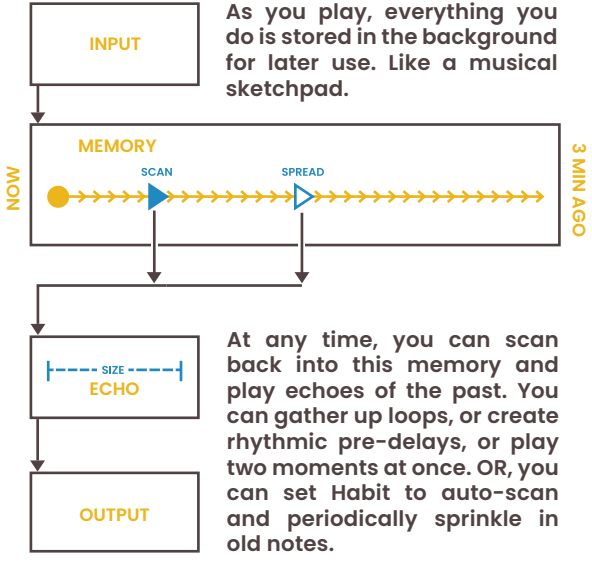
9V DC

Power req: 9VDC Center Negative ~150 mA

Overview

Habit is a delay with a memory.

Out of the box, it's good, quick fun and there isn't much you need to know. But it's designed to be a pedal you can grow with over time, loaded with surprises and hidden talents.



As you play, everything you do is stored in the background for later use. Like a musical sketchpad.

At any time, you can scan back into this memory and play echoes of the past. You can gather up loops, or create rhythmic pre-delays, or play two moments at once. OR, you can set Habit to auto-scan and periodically sprinkle in old notes.

In some ways, Habit will challenge you. It does all kinds of things that will be new and unexpected. But it's all made possible by this simple memory > echo system. So if you start to feel WTF, just return to this nice little illustration.

At its simplest, Habit is an experimental delay that can be up to a minute long.

At its extreme, it's a self-contained song made up of chance encounters.

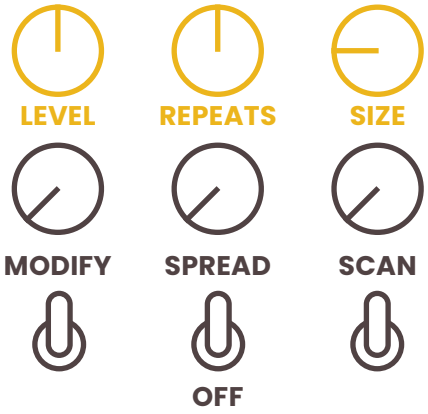
Here's how to do it.

Getting Started

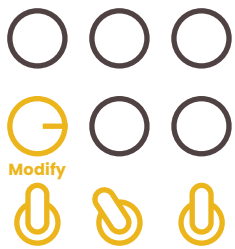
Let's start by making a simple delay.

The key to having a classic delay experience with Habit is leaving scan in the minimum position. If you're ever confused about what's going on, chances are bringing scan back to zero will settle things down.

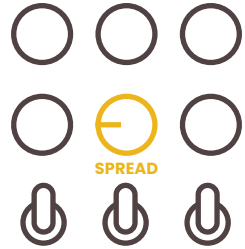
You should feel right at home here.



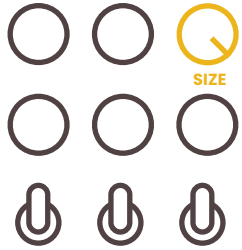
Once you have a handle on this, you can:



Experiment with the modify effects.



Add a secondary echo using spread.

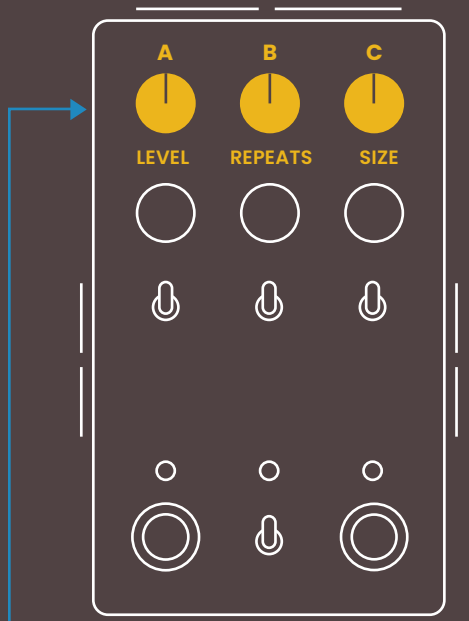


Explore really long delays.

Just fun delay stuff.

When you're ready for something new, it's time to start exploring Habit's memory and what scan can do (pg. 20).

Controls - Knobs



The top row of knobs are your classic delay controls. Turn everything else down and explore these for a familiar launching point.

A **LEVEL (RAMP)**

How loud would you like your echoes? (To mix fully wet, engage the DRY KILL dip switch). If ramping is engaged, the function of this knob will change. It now controls the speed of the movement (pg. 44).

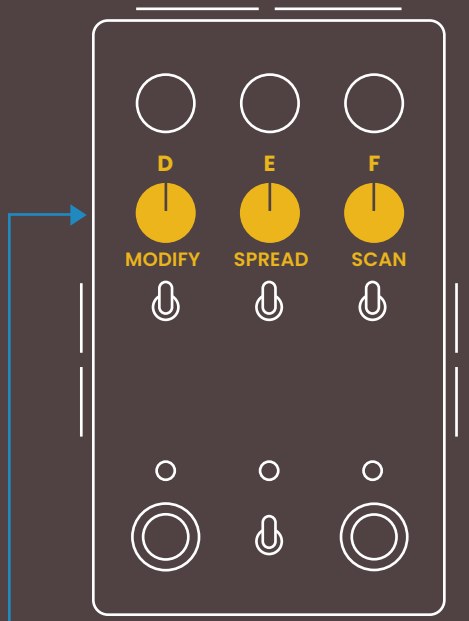
B **REPEATS**

Sets the number of echoes. At maximum you will get stable, infinite build-up, like looping.

C **SIZE**

You can think of SIZE like the *time* knob on a typical delay. It sets the space between echoes. SIZE offers clean adjustment, meaning there is no pitch warping as you move the knob–the echo simply gets shorter or longer. It ranges from 50ms, up to 60 seconds. SIZE can also be set by tapping the left footswitch.

Controls - Knobs



Both SPREAD and SCAN are linked to SIZE, so that things are always rhythmically related. You can think of it like SIZE setting the tempo and SCAN and SPREAD following, so that wherever they're placed is in sync.

D **MODIFY**

Introduces various effects for sculpting your echoes. The [1 2 3] and [A OFF B] toggles select which modifier is active or turns the modifiers off. See pg. 16 for an overview of each modifier.

E **SPREAD**

Introduces a secondary echo that plays part of Habit's memory. At shorter settings, this can be used to design unique multi-tap delays. At longer settings, it gives you the ability to be in two places at once. The position of the knob sets the distance between the primary and secondary echo. In the left-most position, SPREAD is off.

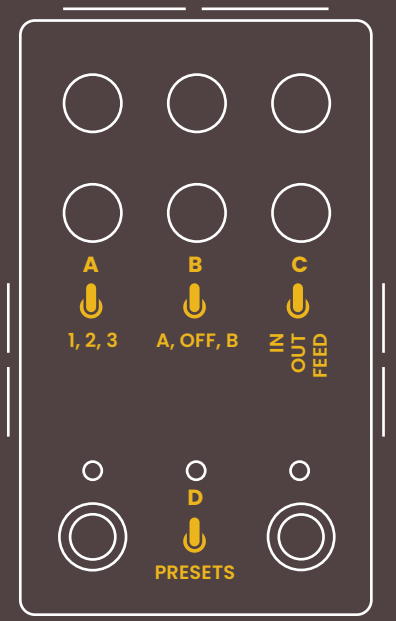
F **SCAN**

This is how you interact with Habit's memory. It has two possible functions, depending on the MANUAL dip switch.

AUTOMATIC (default): Introduces an auto-scanning effect, where Habit will automatically travel through the memory and play bits of old audio. The knob sets how frequently it will auto-scan (minimum = off), and how far into memory it will go.

MANUAL: You choose which part of the memory is played. The minimum position will play the present, while turning up the knob will go further and further back into the memory.

Controls - Toggles



Modify, save, route.

A **1, 2, 3**

Choose which modifier is on.

B **A, OFF, B**

Choose between two different banks of modifiers, or bypass them.

C **IN, OUT, FEED**

Changes the internal routing of Habit, which can have a dramatic effect. You can switch between these at any time.

IN Results in an accumulating effect from MODIFY. With each echo, the active modifier is applied again and again.

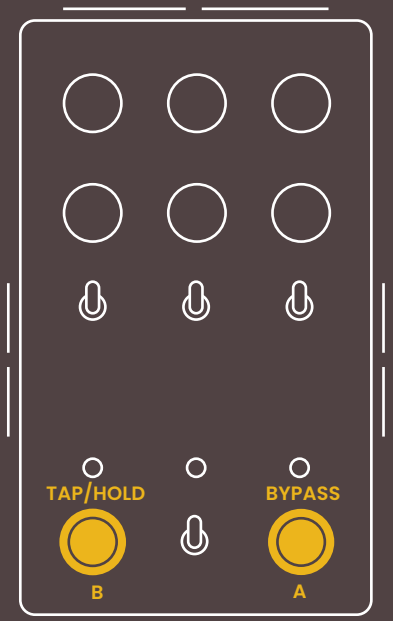
OUT Results in a consistent effect from MODIFY. Each echo will sound the same.

FEED Habit's output is routed back to the input, so everything you hear is recorded to the memory. You'll notice the REPEATS knob behaves differently when FEED is on. FEED gets pretty interesting (pg. 36).

D **PRESETS**

The left and right positions each store a preset, while the middle position is live (current settings). To save to the right slot, hold the right foot switch for 3 seconds, then add the left footswitch for another 3 seconds. Do the same for the left slot, but start by holding down the left footswitch. The middle LED will blink to indicate success.

Controls - Footswitches



Engage, loop, perform.

A **BYPASS**
Activates the pedal.

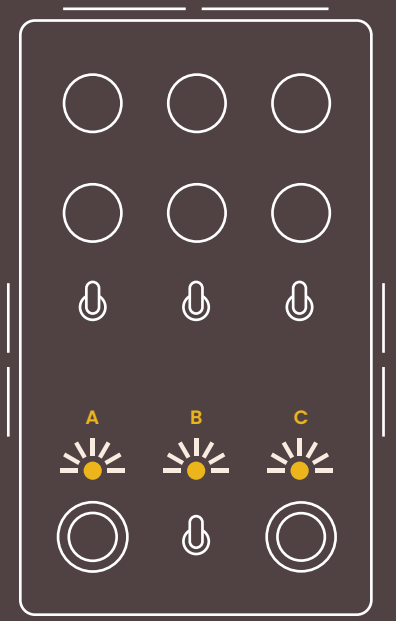
A (HOLD) **LOOP**
Holding the bypass footswitch causes the echo to loop. The loop is frozen, meaning you can play overtop without affecting it. You can also adjust SIZE without erasing any audio. The loop function can be momentary or latching, set by the LATCH dip switch. **NOTE:** The memory does continue to record when looping, which can be interesting (pg. 20).

B **TEMPO / SIZE**
Tapping this switch allows you to adjust SIZE. Two taps will do it.

B (HOLD) **MOMENTARY SCAN**
Holding the left footswitch engages a momentary auto-scanning effect, like turning the SCAN knob to max. When you release the footswitch, it snaps back to the setting on the SCAN knob.

B + **A** **CLEAR MEMORY**
Pressing both switches at once will clear the memory.

Controls - LEDs



Blink, blonk.

A quick-reference for Habit's LED states.

Blinking ● Solid

A LEFT

- SIZE setting
- Momentary scanning

B MIDDLE

- ● Right preset selected
- ● Left preset selected
- Memory cleared

C RIGHT

- ● Pedal engaged
- ● Looping engaged
- Pedal bypassed, but recording (ALWAYS mode, pg. 40)
- Pedal bypassed, but audio still in memory (COLLECT mode, pg. 32)

Modify

MODIFY gives you access to a library of echo-altering effects. Each modifier has a "neutral" position at noon, with different behaviors on the clockwise and counter-clockwise sides.

A1. STEPPED SPEED

Changes the speed and direction of your echoes in precise steps, tuned to stay in key (the equivalent of octaves and fifths), keeping everything harmonious.

A2. STABILITY

Introduces an analog feel that's reminiscent of tape delay: wow, flutter, and filtering. Clockwise also introduces noise, while counter-clockwise is noise-free.

A3. TRIMMER (STEPPED)

Cuts off a portion of your echoes, producing a repeating effect. Trimmer is rhythmically synced to SIZE, and can be used as a unique alternative to subdivisions.

B1. SMOOTH SPEED

Changes the speed and direction of your echoes in a smooth way. This is useful for detune or creating modulation effects like chorus.

B2. FILTER

Simple multi-mode filter; a High-pass filter for removing low frequencies, and a Low-pass filter for mellowing out the highs. Note that using the filter can cause oscillation in the IN and FEED settings as resonance piles up.

B3. DROPPER

Causes playback errors – brief moments of silence. These drops will sometimes be smooth and subtle, other times abrupt and deep. Going clockwise will produce a drop pattern: the position and feel of each drop will be the same for each echo. At maximum you get granular effects.

REAL TIME - By turning both SIZE and SCAN down, these modifiers can be used as real-time effects. Well, there's a slight delay. It's worth trying.

Modify - Ideas

Each modifier can be used as a building block to design custom effects and behaviors. Here are some to get you started.

FLOATING AWAY

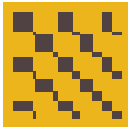
MOD B2 IN

Each repeat gets thinner and chimier, with the low frequencies melting away.

CRUMBLING ECHOES

MOD B3 IN

Echoes that dissolve a little more with each repeat. Can be used subtly or for evolving granular effects.



INTERRUPTION PATTERNS

MOD B3 OUT

Dropper introduces a secondary rhythmic element, like a delay being run through a strange tremolo.

WIZARD JAZZ

MOD B1 IN

Tumbling pitch echoes for odd, trailing counterpoint.

TAPE DELAY

MOD A2 IN

Old thing sounds.

SLICED SUBDIVISIONS

MOD A3 OUT

Something between auto-stutter and subdivisions–a chopping of your echoes into smaller, rhythmically-linked fragments.

REVERSE DELAY

MOD A1 OUT

.yllatoT

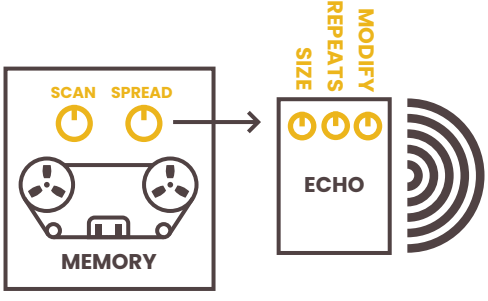
Memory

This is where things get interesting.

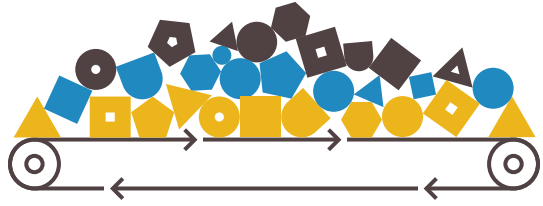
As you go about your business, Habit stores what you play. It's equipped with a 3 minute long piece of digital tape, and as long as the pedal is on it's continuously recording your input.

This is the memory.

You can think of the memory like an additional audio source, full of your old playing. It's always 3 minutes long, and it's always recording. The SCAN and SPREAD knobs choose if, and how, the memory is played. The other controls are for the echo that comes after it.



The memory gives you a pool of audio to reuse later, to explore, manipulate, and mix in alongside your performance.



When you bypass the pedal, it dumps the memory and starts fresh (unless the COLLECT or ALWAYS dips are engaged, pg. 40).

Why 3 minutes? Because that's a nice length for a piece of music, and this is one of Habit's deeper abilities – song generation. We'll get into that on pg. 34.

Okay, you have 3 minutes of audio.

This is where SCAN comes in.

Scan

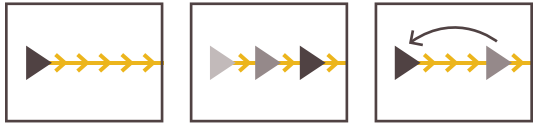
SCAN is how you access Habit's memory.

It controls whether the memory is being played and how.

There are two options, set by a dip switch:

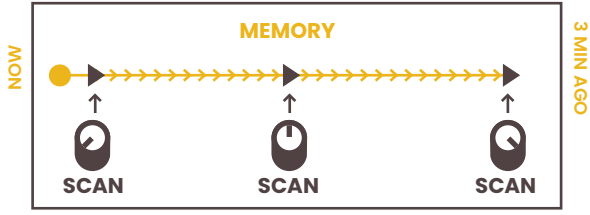
AUTO (default)
MANUAL

AUTO is a fast, intuitive option focused on real-time delay. It engages an auto-scan effect that causes Habit to wander off on its own and play bits of the memory, then snap back to real time. Mixing the past in with the present. The knob sets how frequently it will scan – lower settings will introduce the odd departure, while at maximum it will be auto-scanning at all times. The knob also sets how far into the memory Habit will wander, so lower settings tend to be more harmonious but higher settings may mix in a key change from two minutes ago.



AUTO-SCANNING

MANUAL lets you move around the memory on your own, choosing which specific part is being played. As an analogy, you can think of this like a pre-delay control – it sets how long you wait before what you just played reaches the echo.



MANUAL SCANNING

NOTHING IS HAPPENING!! When you first start up Habit, the memory will be empty. There's nothing to play, so you won't hear anything in MANUAL unless the knob is set quite low. And you might think your pedal is broken. If you're ever unsure, just move SCAN to minimum.

While SCAN is in motion, you'll hear it as a cloudy effect. This is because you're quickly scrubbing by all the sounds in the memory. When it's still, you'll hear things just as you played them.

So, what can you do with this?

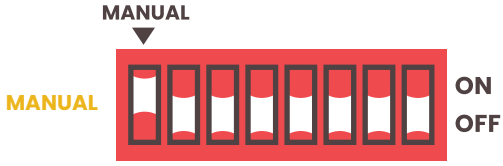
→

Scan - Ideas

The SCAN functions allow you to recycle and rediscover your own playing. To see old notes from a new perspective and use them as surprise accompaniment or raw materials.

AUTONOMOUS ECHO

This is the most straight-forward way to use SCAN. You can play Habit like a normal delay, but it will sometimes get a mind of its own and scan away into the past. The further clockwise the SCAN knob is set, the more likely it is to scan away, and the further into memory it will venture.

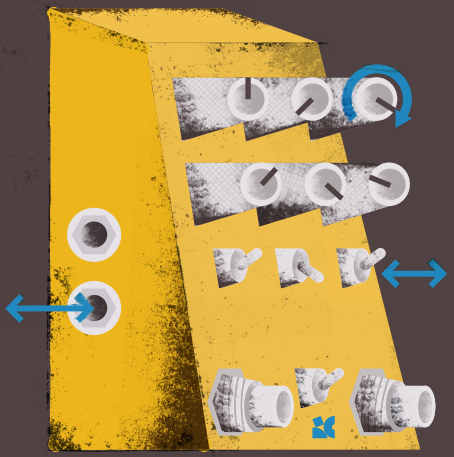


PRE-DELAYED DELAY

This is the simplest way to wrap your head around MANUAL. Just like pre-delay on a reverb, you will get a pause between your playing and the echoes that follow. The further clockwise SCAN is set, the longer the pre-delay will be.

LOOP COLLECTING

First, play a bit so there's audio in memory. Now turn REPEATS all the way up, which will cause anything that passes through the echo to repeat infinitely, like a loop. Start moving around the SCAN knob, and notice how sounds start piling up. You are essentially looking through the memory, gathering up audio. If you are constantly moving the knob, you will get a more blurry, abstract collection of sounds. If you move it to a region and stay there, you will get phrases. At any time, you can bring SCAN back to the minimum position and add real-time playing on top.

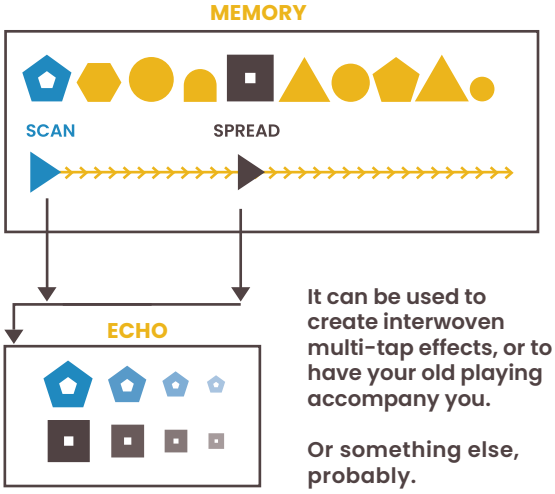


Intermission

Spread

SPREAD makes it possible to be in two places at once. It introduces a secondary echo. This echo shares the same SIZE and REPEATS settings as the primary echo, *but it plays a different part of Habit's memory.*

In other words, turning up SPREAD causes Habit to play two different moments simultaneously. It's a bit unique.



It can be used to create interwoven multi-tap effects, or to have your old playing accompany you.

Or something else, probably.

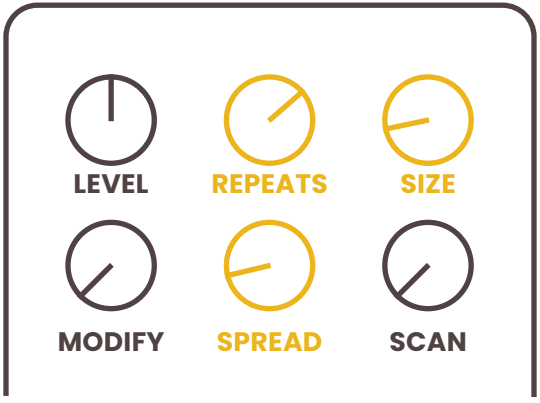
SPREAD

The SPREAD knob sets how far the secondary echo is behind the first – how much of a delay there is between the two (the primary echo is always first). It can go all the way back into Habit's memory, just like adjusting MANUAL SCAN. The two are linked, so whenever SCAN moves, SPREAD moves along with it. SPREAD is also synced to the SIZE setting, so the patterns you create are neat and rhythmic. This will be more obvious at lower settings.

CLASSIC MULTI-TAP
If you want a more familiar multi-tap sound, flick the right toggle into the FEED setting. We get into why this happens on pg. 36.

Let's use it.

Spread - Ideas



TIDY TAPS

This setting offers a different flavor of multi-tap, where one part of the pattern can be sprawling while the other stays tight. First, you get a coil of echoes controlled by the SIZE and REPEATS knobs. But thanks to SPREAD, it happens twice. Notice all the different patterns you can get by making subtle adjustments to the SPREAD setting.

HERE AND THERE

Turning SPREAD up introduces a more experimental approach. Here, you will get the experience of being in two places at once. The second echo is playing whatever you did about 1 minute ago. Because SIZE and SPREAD are rhythmically linked, as long as you haven't changed the SIZE setting within that minute your old playing will still be synced to the present. It's like two musicians playing at once, only it's you, from before.

EXPRESSIVE SPREAD

Placing SPREAD under expression or ramping control is a dynamic way to add some movement or accompaniment, while keeping the primary echo steady.

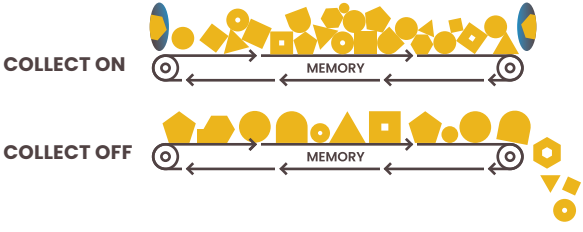
Collect

COLLECT is a simple change that opens up a very different side of Habit. It allows you to build free-form compositions.

It's engaged by flicking the COLLECT dip switch into the on position.

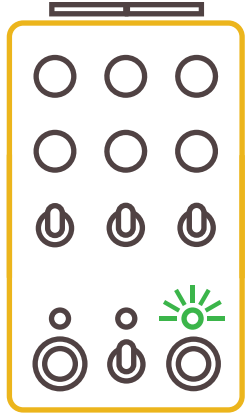
With COLLECT engaged, the memory will overdub. Because Habit is always recording, everything you play will gradually build up and layer. What you did 3 minutes ago will come back and combine with what you're doing now. Then layer again 3 minutes after that.

This is Habit's *song collector* function.



When Habit is bypassed with COLLECT engaged, the memory pauses and the audio in it is kept. This is reflected by a green, blinking LED above the bypass footswitch. To clear out the memory, press both foot switches at once.

Now let's look at how to collect a song.



WIPE

LISTENING BACK
The memory is always before the echo, meaning that it will be passed through the delay before you hear it. If you want to listen to the memory directly, turn on the WIPE dipswitch. This bypasses the echo.

Collecting a Song

There's no right way to do this, but this should get you started.

A strange song, in 12 minutes.

These settings are a reasonable starting point:

1 **FOUNDATION**
Just start playing, no need to overthink it. Stick to one key, and follow the rhythm of the echoes. Change riffs if you want, roam around, but try to stay in sync with the delay. After 3 minutes of this, the first note you played will come around again. It might sound a bit awkward or sudden, but that's just fine. We're ready for step 2.

2 **HARMONY**
Respond to what you played before, embellishing and supporting it. Add some chords, or more melodic elements. Fill out the space around that base layer. Continue for 3 minutes, until that first note comes around again.

3 **TWEAK**
You can put your instrument aside now. For this pass, explore what happens when you adjust the pedal's controls (but stay set to IN or OUT). Remember – these controls affect the echo, not the memory. You can warp, modify, and explore however you please, but the audio you recorded to the memory remains just as you played it.

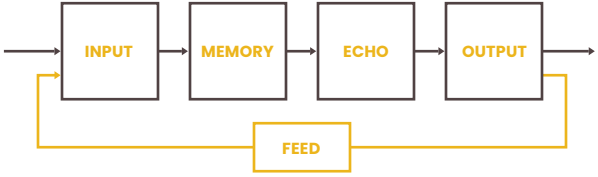
4 **FEED**
Okay, it's time. Set that right toggle to FEED. Now, any adjustments you make on the pedal *will* be recorded to the memory. It's a performance. Mess around with modifiers, SCAN, manipulate the echo. Manually create moments. All of it will be kept and become a part of the piece, like an overdub. After 3 minutes of this, rest.

5 **YOU DID IT!**
A strange song, in 12 minutes.
Let's talk about why FEED did that. ⟶

Feed

This is the deep end. Full Habit.

FEED turns Habit into a closed-loop. The output audio goes back into the input and gets re-recorded. This means that everything you do - all the echoes, knob turns, and other adjustments to the pedal - are captured in the memory.



It also means that Habit's echoes take on a metallic, blurry quality as they fade away, and become an evolving wash at higher settings. The REPEATS knob now controls the feedback for the whole system (instead of just the echo).

It also means you'll get a more traditional multi-tap effect when using SPREAD, as the delay between the primary and secondary echoes recirculates and repeats.

All of that.

It's like adding another dimension to your echoes.

FEED brings everything together – it's the most Habit. It's not always predictable, it almost doesn't make sense. But it works, somehow.

We'll leave it at that for FEED. It's your mystery to explore.

But also there are some starting points on the next page.

Feed - Ideas

SPACING OUT

REPEATS FEED

In FEED mode, each echo gets a bit more smudged and tinny than the last. At higher REPEATS settings, this can be used to produce something like a reverberated drone – not quite looping or oscillation, but instead your notes are gradually swallowed into a shifting pad.

MULTI-TAP MAKER

SPREAD FEED

Here, the delay between the primary and secondary echoes becomes a repeating element, like you would get from a traditional multi-tap delay. This makes for more sprawling, complex rhythms that play out over time. You can also use SCAN (in the MANUAL setting) for even more unique patterns.

CYCLING PERFORMANCE

BYPASS LED LATCH, MANUAL

This trick is a good window into some of the deeper interplay that's possible between Habit's different parts. The idea is to loop a phrase (by holding the bypass footswitch), then improvise overtop. What happens is the whole performance - the loop, as well as your improvisations - gets recorded to the memory because of FEED. When you're done, use the SCAN knob to navigate around and listen back to what you played. You can then re-loop that and play on top of it again, on and on until forever.

Customize

The blue-labeled dip switches on top of Habit allow you to access alternate behaviors and really get the most out of Habit's machinery.

The dip switch settings are saved with your presets.

MANUAL
Changes the function of the SCAN knob (pg. 22).

COLLECT
Engages overdubbing for the memory (pg. 20).

DRY KILL
Removes your clean signal from the output of the pedal. Habit has two types of DRY KILL, discussed on the following page (pg. 42).

ALWAYS
Instructs Habit's memory to record continuously, even when the pedal is off. This can be useful if you want to fill up the memory without hearing any effects. Turn on Habit when ready, and you'll have 3 minutes of audio all set to explore.

SAFETY FIRST – We've built in a safety mechanism so ALWAYS doesn't blow up your speakers or head. When the pedal is bypassed, ALWAYS turns off COLLECT and limits the REPEATS setting so it can't infinitely stack. In case you leave Habit off for a week but keep sending audio through it. All settings will be normal when the pedal is on. This is only to prevent accidental audio buildup in bypass.

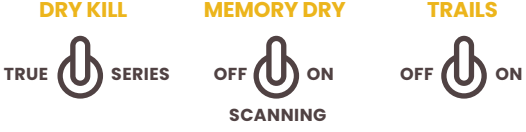
LATCH
Sets the behavior of the looping function (engaged by holding the right foot switch). By default it's momentary, but turning on LATCH allows you to step off the footswitch and continue looping.

WIPE
Mutes the echo, leaving only the memory active. This can be useful for a more minimal experience, or as a final stage when song collecting (pg. 34) – flip into WIPE when you're done and record your creation directly without it being passed through the echo. SIZE and MODIFY will have no effect in this setting, same goes for REPEATS unless you're in FEED mode.

Hidden Options

Habit also has a deeper level of customization that lets you fine tune its machinery. These options are accessed by holding both footswitches down and adjusting the middle row of toggles. To make a change, first move the toggle to the middle position to "wake it up," then make your selection. When you're done, release the footswitches and you're set.

These preferences are saved with your presets.



DRY KILL
Allows you to turn on an alternate form of DRY KILL that's useful for standard pedal chains. In the SERIES setting, your dry signal is muted while the pedal is on, but passes through when the pedal is off. This lets you use Habit full-wet without it becoming a dead end for your signal.

TRUE is the default setting.

MEMORY DRY
Sets whether you hear the audio from the memory directly, before it passes through the echo. Like another dry signal. This gives you more immediate feedback at higher SIZE values, or when you adjust MANUAL SCAN. A side-effect of MEMORY DRY being on is you'll hear this clean signal mixed in when you're using the modifiers.

SCANNING is the default setting, where MEMORY DRY is only heard when SCAN or SPREAD are being moved (including auto-scanning).

Note that turning on WIPE mode overrides this preference and sets MEMORY DRY to ON.

TRAILS
Allows you to activate TRAILS, so that echoes fade out when the pedal is bypassed.

TRAILS are OFF by default. You'll experience two unique behaviors when TRAILS are ON:

1. Trails will be interrupted and cleared if you turn Habit back on while they're still fading out (unless ALWAYS or COLLECT are engaged, pg.40)
2. The memory will not pause when Habit is bypassed in COLLECT mode. All audio will still be kept but the memory will continue to move forward.

Ramping

Ramping gives you the ability to automate Habit's knobs, either as a one-time movement (ramp) or continuous motion (bounce).

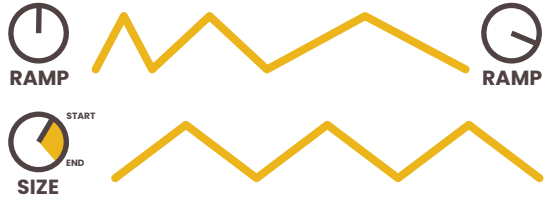
It's easier to get started with bounce, so let's do that. We're essentially going to modulate a knob.

1. Engage bounce.

2. Choose which knob(s) you wish to control.

3. Choose the sweep.

4. Set the speed.



Just like that. Now we have echoes that are steadily shrinking and expanding in SIZE, at a speed of your choosing. The position of the knob you're controlling is important, because it either sets the maximum or minimum point of the range (depending on the SWEEP setting).

By default, bounce uses a triangle wave. 
But it can also be a random wave. 
Or a square wave. 
Using the dip switches to choose.

Ramp is the same idea, but the movement only happens once when you turn the pedal on. Your chosen knob(s) rise or fall to your chosen position, then stay there. Useful for creating a wave of motion and activity when you first turn on Habit.

Check out our Dip Switches 101 resource for a step-by-step on ramping.

Ramping - Ideas

EXPAND/CONTRACT

SIZE

BOUNCE, SHAPE, SIZE

The square SHAPE setting is great for alternating between two different states. Like a 2-step pattern. In this case, you go back and forth between a delay time of your choosing and bathtub reverb. The transition is instant, almost like switching between two different pedals.

NOW AND THEN

MODIFY A2

BOUNCE, RANDOM, MODIFY

This setting creates the sensation of a tape machine that is constantly changing in age, ranging from brand new to falling apart. With RANDOM selected you will jump between different states, but you could also turn it off to smoothly flow back and forth between the extremes.

RANDOMIZED DELAY

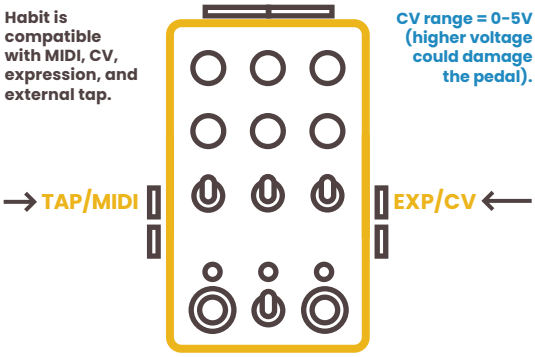
SIZE

BOUNCE, RANDOM, SIZE

Randomly bouncing the SIZE knob produces a delay that is constantly shifting in size. Not a lot more to say here. It's nice.

You can still adjust LEVEL while ramping, just hold down the right footswitch and make your adjustment.

External Control



CV and expression can be used to control Habit's knobs.

MIDI lets you go deeper and control everything, including tempo sync.

CV and expression are set up the same way as ramping, using the dip switches on the top of the pedal. The pedal will simply detect a CV or expression signal when you plug it in, and hand over control.

1. Choose which knob(s) you wish to control.

2. Choose the sweep.

3. Choose the polarity.

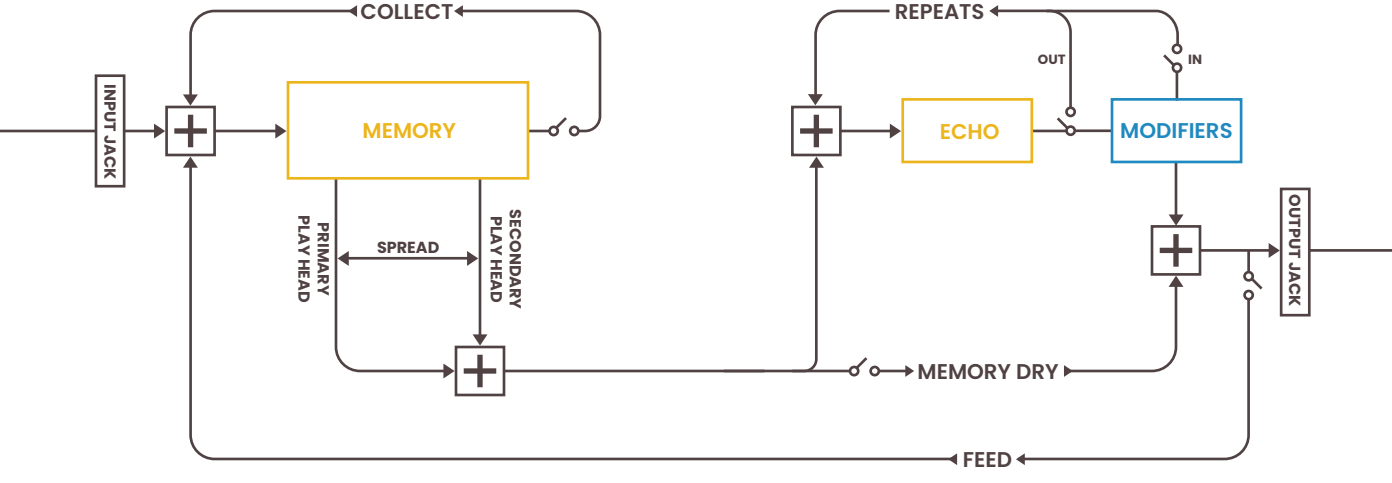
4. Set the range.

If you plug in a CV or Expression signal but engage none of the knobs, you will have control over LEVEL.

MIDI requires a Chase Bliss Midibox to convert the signal to a ¼" TRS jack. For details on getting MIDI going with Habit, check out the MIDI manual.

The MIDI jack can also be used to control Habit's SIZE using external tap-tempo.

Signal Flow


COLLECT
INPUT JACK
MEMORY
PRIMARY PLAY HEAD
SPREAD
SECONDARY PLAY HEAD
REPEATS
OUT
IN
ECHO
MODIFIERS
OUTPUT JACK
MEMORY DRY
FEED

This concludes
the Habit manual.
Hope you found it helpful.

If anything is confusing or
weird things are happening,
you can find us here:

help@chasebliss.com

We'll get to the bottom of it.

Good luck and have fun!