

The Nano writes your finished flight log to its USB drive once it detects landing. But what if it loses power or crashes unexpectedly before then? The flight log recovery feature is the safety net for exactly those situations, and it works on its own without you having to do anything.

How it works

While it is recording, the Nano keeps two copies of your flight. The full-resolution log builds up in memory, and that is the one normally written to the drive when the flight ends. At the same time, the Nano continuously streams a slimmed-down backup into a separate area of its internal flash, together with all the key flight details: the launch time, the ground-level pressure, the temperatures, and on Rev4 and later boards the launch angles and the burnout and ejection times.

That backup area is not part of the USB file system, so it survives a power cut, a reset, or even a file-system problem. To save space the backup is recorded at a fifth of the live rate, so a 100Hz flight is backed up at 20Hz and a 50Hz flight at 10Hz.

When it kicks in

The backup starts the moment the Nano detects a launch and begins recording. If the flight ends normally and the log is saved to the drive, the backup is wiped straight away and there is nothing to recover. The backup only comes into play if that normal save never happens, for example if the Nano loses power or resets somewhere between launch and the log being written.

Recovering a lost flight

There is nothing special for you to do. The next time you power the Nano on, it checks the backup area during start-up. If it finds an unsaved flight there, it rebuilds it automatically: it reloads the data, runs it through the same True Path cleaning and apogee detection used for a normal save, and writes out a proper flight log and its matching flight info page, given the next flight number, exactly like any other flight. The backup is then wiped and the Nano restarts itself. You may see the LED flicker while this happens. When it comes back up, the recovered flight is sitting on the drive ready to view or upload.

What a recovered log looks like

A recovered log is a normal, fully valid flight log. It carries the same secure hash as any other, so it still verifies as genuine on the Altimeter Cloud. There are a couple of differences worth knowing:

- It is recorded at the lower backup rate, a fifth of the live rate, so the trace is a little coarser in time. The apogee and the overall flight profile are preserved.
- It covers the flight up to the moment power was lost. If that was at apogee, you will have the climb and the peak but not the descent. If the Nano made it all the way to landing, you would have had a normal log anyway.

You can always tell a recovered flight apart. Its flight info page lists **Saved from** as "Recovered from flash buffer" rather than "Flight memory", and `device_information.html` shows **Recovery from flash** as Yes after it has run.

REVISIONS

On Rev4 and later the backup includes the full motion data (acceleration, gyro and orientation), so a recovered flight keeps its IMU traces. On Rev3 and earlier the backup holds altitude and timing, which is everything those boards record anyway.

GOOD TO KNOW

Recovery only applies to a flight that actually launched. If the Nano was reset before it detected a launch, there is no flight

to rebuild. And once a flight is safely on the drive its backup is wiped, so this is a one-time safety net for the most recent unsaved flight, not a second copy of everything you have ever flown.