Foilborne: a guide for testers

Thank you for testing Foilborne. It records your foil sessions on your Apple Watch, or on the iPhone alone, and shows them on your iPhone: where you went, how fast, when you were flying, and what carried the board. This guide is for test build 145, version 1.0.3; what is new in it is the section *Pump and dock start*. Some of it is right, some of it is not yet, and your sessions are how it gets right. The **quick start** on this page is all you need to ride with it; the rest of the guide is the detail, for when you want to know why or something does not go as expected. Every screen it mentions is pictured in the appendix at the end, *The screens*.

Quick start

1. **Install:** open the TestFlight link on the iPhone; the watch app comes with it (if not: Apple's Watch app › Available Apps › Install). **Open Foilborne on the iPhone once**, now and after every update, or the watch has nowhere to send a session.
2. **On the watch**, open Foilborne once and allow **Location** (While Using), **Health** (everything) and **Motion & Fitness**. Wait for *Waiting for the iPhone's settings* on its start screen to go (open Foilborne on the iPhone with the watch nearby).
3. **On the iPhone › Settings** (the gear at the top of the list): **Help improve Foilborne** on, your **free discipline** in Disciplines › Modules (all modules are free in TestFlight), **Units**, and **My gear** if you like.
4. **Ultra:** the watch's own Settings app › **Action Button** › Action: Workout › App: Foilborne › First Press: your discipline. One press then starts a session with wet hands.
5. **Ride:** on the watch, pick the discipline, Where and Gear, tap **Start** (or press the Action button). Turn the crown for the pages. **Mark** anything you want to tell me about: one press, or the flag on the Speed page. **End:** double press then one more press, or hold **End** on the Controls page.
6. **No watch?** Tap **Record** at the top of the iPhone's list, Start, lock the phone. Mark and End are on the Lock Screen; End takes two taps.
7. **Afterwards**, the session comes to the iPhone by itself (keep it nearby; if not within a few minutes, open Foilborne and pull the list down). Give it a title, then compare the timeline and the map with what you remember.
8. **Tell me what happened:** a line in the WhatsApp group or to foilborne.app@gmail.com, naming the session. Something read wrong: the session's share button › **Share files**. The app itself misbehaving: Settings › Diagnostics › **Share diagnostics**. Both files are encrypted so only I can open them.
9. **Send sessions to the developer**, under Help improve Foilborne, now and again with a line on each: five sent earns a code for a module, twenty for all of them.

Don't install a new build while the watch is recording. That is the whole of it; the rest is detail.

What you need

- An **iPhone** on iOS 26.
- An **Apple Watch** on watchOS 26 records the most, but it is no longer needed: the iPhone can record on its own (see *Recording on the iPhone alone*). Apple rates only the **Ultra** for high-speed water

sports, and its Action button is the one control that works with wet hands. Other watches from the Series 6 on record all the same.
- The **TestFlight** app from the App Store, then the invitation link from the group.
- A board. Any discipline: prone, SUP, wing, kite, parawing, pump and dock start, tow and wake, surf, and eFoil or foil assist. For the motor's data an eFoil needs a VESC with a Bluetooth module (see below); without one, everything else still records.

Install

1. Open the link on the iPhone. TestFlight installs the iPhone app; the watch app installs with it. If it does not appear on the watch, open the **Watch app on the iPhone** (Apple's), scroll to **Available Apps** and tap Install beside Foilborne.
2. Open Foilborne on the watch once and allow **Location** (While Using the App, not Allow Once), **Health** (turn on everything listed) and **Motion & Fitness**. On a board with a motor it will also ask for **Bluetooth** the first time a session starts.
3. On the iPhone, **open Foilborne once before your first session**, and again after each update: until the iPhone app has been opened, the watch has nowhere to send a session. Then **Foilborne on the iPhone › Settings › Using the watch** has the same steps as this guide, always with you.
4. A freshly installed watch app shows *Waiting for the iPhone's settings* on its start screen until it has them (Help improve Foilborne and your free discipline among them). Open Foilborne on the iPhone with the watch nearby and the line goes. Start your first session after it has gone: a session started before records without them.

Without a watch, only step 1 and opening Foilborne on the iPhone apply; the iPhone asks for Location the first time you record.

Four places are called Settings. This guide always says which one:

- **Foilborne on the iPhone › Settings**: the gear button at the top of Foilborne's session list. Using the watch, Help improve Foilborne, My gear, Units (the speed in km/h, knots or mph, shared with the watch; distances follow), Your sessions, Session on the Lock Screen without opening the app, Wind and weather, Fetch the board's log by itself, Disciplines, Apple Watch, Notify when a session arrives, Diagnostics.
- **Foilborne on the watch › Settings**: the last row of Foilborne's start screen on the watch. Units (the same choice as the iPhone's), Motion, Health, Water sensor, ESC over Bluetooth, Forget ESC, Foil Drive link, Low battery alert.
- **The watch's Settings app**: Apple's, the grey gear on the watch's home screen. Action Button, and Privacy & Security › Location Services.
- **The iPhone's Settings app**: Apple's. Notifications › Foilborne, among others.

The iPhone shows one sample session, a made-up wing session in San Francisco Bay, so you can see what the analysis looks like before your first ride. Delete it whenever you like.

Set up once

All on the iPhone, in **Foilborne on the iPhone › Settings**:

- **Disciplines › Modules › Free discipline:** choose your **free discipline**. It is chosen once and cannot be changed; the others can be added. In TestFlight the other modules are free too: nothing is

charged, and they do not carry over to the App Store version. If a module's button says Buy and will not tap, try again later.

- **My gear:** describe your setup, with a name, your all-up weight, whether it has a motor, and your take-off speed if you know it. The analysis uses it. "Standard" is fine to begin with.
- **Units:** the speed in km/h, knots or mph. Set on the iPhone or the watch, it changes on both, and distances go with it (kilometres, miles or nautical miles). Tide heights follow it too, on both devices: feet when speeds are in mph, metres otherwise, on the tide page and on a session's tide line. **Temperature** (build 117): Automatic, °C or °F. Automatic follows the device's own unit, °F in the US and °C elsewhere; the watch's ESC temperature then reads, for example, FET 113°F. **Power**: the watch's Power page in kW or in watts.
- **Help improve Foilborne:** please turn this on, **before your first session**: only sessions started while it is on can be sent. See *What to share with me* below.
- **Apple Watch Ultra:** put Foilborne on the Action button; the steps are in the next section.

The Action button (Apple Watch Ultra)

The Action button is the one control that works with wet hands and gloves, so on an Ultra it is worth the two minutes to set up. The same steps are in **Foilborne on the iPhone › Settings › Using the watch › The Action button (Ultra)**, to have on the phone's screen while you do it on the watch.

Set it up, once

1. On the watch, open **the watch's Settings app** (the grey gear on the home screen, not Foilborne's), scroll to **Action Button** and open it.
2. **Action:** choose **Workout**.
3. **App:** choose **Foilborne**. It is listed with the other workout apps.
4. **First Press:** choose the **discipline** the button should start: Wing foil, eFoil, Prone foil and so on, one line for each of the nine. Pick the one you ride most.
5. Press the crown to leave the Settings app. Nothing to set in Foilborne itself: its own start screen does not change what the button starts.

To ride another discipline with the button, change **First Press** in the same place. The place (Where) and the gear are the ones Foilborne's start screen last showed, so set those there before the first press.

If the First Press list shows the same name several times, a discipline missing, or an old name after an update: **restart the watch**. It keeps its own copy of the list and only a restart refreshes it.

Using it

- **No session running: one press** starts the First Press discipline. The watch buzzes and the Glance page comes up. For the first 10 seconds after a session has ended a press does nothing, so the summary cannot be dismissed by mistake.
- **During a session: one press** makes a **mark**. The buzz comes up to 2 seconds later, because the watch waits to see whether a second press follows. To mark twice, leave more than 2 seconds between them.
- **Two presses within 2 seconds** show **End?** on the screen and mark nothing (appendix, watch: *End?*). They need not be quick; a normal double press is fine.

- **One more press ends the session**, at least 1.6 seconds after the double press (a press sooner is ignored; wait for the buzz and the End? screen). With no press within 8 seconds the watch carries on recording; Cancel on the screen does the same.
- All of this works with Water Lock on. **Holding** the button is the watch's own: its menu, then the siren. A hold never reaches Foilborne.

The banner the watch shows as a session starts can name another discipline on watchOS 26; the session records the one you set.

eFoil and foil assist: the motor's data needs a VESC

The eFoil discipline, and the motor analysis on any board with a foil assist, read the speed controller (ESC) over Bluetooth. That takes hardware in the board:

- a **VESC** speed controller (a VESC 6, a Flipsky 75200 or 75100, a Trampa, a Makerbase and the like, running VESC firmware), and
- a **Bluetooth module on its UART port**, the kind VESC Tool on a phone uses (Flipsky's and the VESC Express among them).

Production boards from Lift, Fliteboard, Waydoo and others have their own controllers and do not expose VESC over Bluetooth, so the watch cannot read them. A board built or converted on a VESC (as my Takuma is) can.

Without the hardware, everything else still records: the track, speed, flights, heart rate, energy and motion are all from the watch, and the session is analysed like any other. Only the power side is missing: the Power and Battery pages on the watch stay at *Searching for ESC*, and the phone's power analysis is empty. Pick the eFoil discipline all the same, so the ride is read as a motor ride.

With the hardware:

1. In **Foilborne on the iPhone › Settings › My gear**, give the board a motor (Foil assist, eFoil direct drive or eFoil geared 4:1), and start the session on that gear, or on the eFoil discipline.
2. Keep **ESC over Bluetooth** on in **Foilborne on the watch › Settings** (it is on unless you turned it off).
3. Switch the board on, and **close VESC Tool** on your phone or disconnect it: the module takes one connection at a time.
4. Start the session. The Power page shows *Searching for ESC*, then *Connecting to…*, then the values. The ESC takes a few seconds to answer after power-on.

Once an ESC has answered, the watch remembers it and goes back to it in every session, and reconnects by itself after a fall (Bluetooth does not pass through water, so the values stop while the watch is under; the GPS log carries on). **Forget ESC**, in **Foilborne on the watch › Settings** under ESC over Bluetooth once an ESC is remembered, is for a new board or module. The battery's charge needs the battery set up in the ESC with VESC Tool (cells in series and capacity); without it the Speed page says *Charge unknown* and there is no low battery alert. The alert's first level (50, 40, 30 or 20 %; 30 unless you change it) is in **Foilborne on the watch › Settings › Low battery alert**, shown once you ride with a motor.

With a WaveHat node on the board's controller, the whole ride's motor log is fetched over the board's own Wi-Fi after the session and fills the Bluetooth gaps (the session's **Board log** section; **Fetch the board's log by itself** in **Foilborne on the iPhone › Settings** does it without asking). No tester has one yet.

The Foil Drive link

A Foil Drive assist module is not a VESC, and the watch leaves it alone unless you ask. **Foil Drive link**, in **Foilborne on the watch › Settings** in its own section just after ESC over Bluetooth, is off until you turn it on, and then stays on like every other setting. With it on, the watch connects to the module during the session and reads the battery, the motor's current and the temperatures, so the watch's Power and Battery pages and the phone's power analysis fill in. The cost: while the watch is connected, the Foil Drive remote's own screen loses its readout. The throttle keeps working (confirmed on a Gen 2 MAX on 2026-11-06). **Drop Foil Drive**, on the watch's Power page, lets the module go for the rest of the session, and the remote gets its numbers back. For a session recorded on the iPhone alone the same switch is in **Foilborne on the iPhone › Settings**. The first real unit it runs on is a Max+ (a Gen 2.5). If you try it, say what the remote's screen showed while the watch was connected and whether it came back when the watch disconnected. Since build 117, if the module drops, the watch connects to it again by itself, as to any VESC; the switch stays yours.

Recording a session

1. On the watch, open Foilborne, choose the **discipline**, **Where** (flat water, waves or downwind) and **Gear**, and tap **Start**. On an Ultra, one press of the Action button starts the discipline you set for it (above).
2. Ride. Turn the crown or swipe between the pages: **Glance** (your speed as large as the screen allows; with a motor, the pack's charge under it), **Battery** and **Power** with a motor, **Speed**, **Session** and **Controls**. The appendix shows each page and what it is for.
3. **Mark** moments you remember, a good wave, a fall, a jibe that worked: one press of the Action button, the flag on the Speed page, or Mark on the Controls page. The marks show on the map and the timeline afterwards, so you can tell me what happened at each.
4. **End:** on the Controls page hold **End** for a second (with Water Lock on, hold the crown first), or with the Action button as above. The summary comes up; Done goes back to the start screen.
5. The session comes to the iPhone by itself. Keep the phone nearby; a notification says when it has arrived, and tapping it opens the session. If it has not come within a few minutes, see *If a session does not reach the iPhone* below.
6. **Name it.** On the iPhone, the sliders button at the top of the session opens its settings: give it a **title** ("Main Beach, first wing session"), and correct the discipline, where you rode, the gear or the wind direction if the watch had them wrong (appendix, iPhone: *A session's settings*). A title makes a session easy to point at when you report something.
7. **Read its description.** Under the session's header are a few sentences written from its analysis (by Apple Intelligence where the iPhone has it on, plain sentences otherwise): the discipline, the place, the flights, the falls. Change them in the session's settings under **Description**; **Write it for me** writes them again.

Please do not install a new build while the watch is recording: it stops the session.

If the watch app closes in the middle of a ride (new in build 145): open Foilborne on the watch again within ten minutes and it takes the same session up again, with its time, distance and runs, and taps your wrist. What happened while it was closed is not recorded. This is new and has had little use on the water, so if a session came back in two parts, or marked *(interrupted)*, tell me.

Forgot to end it? Once you have flown, or ten minutes in, the watch keeps an eye out for a session left running: ten minutes dry and still, ten minutes without GPS, or two minutes at road speed. Then it

buzzes and asks *Still riding?*, with **End** and **Keep**. Keep holds it off for a quarter of an hour. It asks only with Water Lock off; under Water Lock it waits until you turn it off.

A session that ran into the drive home is trimmed on the iPhone to a minute after the last time on the water, so the car is not your distance, top speed or flights. The session's page says so (*Trimmed 57 minutes after the last time on the water.*) with **Keep it all**, which puts the rest back; **Trim** cuts it again. It goes by the watch's water sensor, so a session recorded on the iPhone alone, or on a watch whose sensor never reported the water, is not trimmed yet: end those before you drive.

If a session does not reach the iPhone

1. **Check it has ended.** The summary comes up after End; until then the session is still recording. On the watch, Foilborne's start screen › **On the watch** says *recording* beside it.
2. **Open Foilborne on the iPhone**, with the watch nearby and Bluetooth on, and **pull the session list down**: that asks the watch for the sessions it holds. If the iPhone app has not been opened since it was installed or updated, this is usually all it needed.
3. **Look at On the watch** (Foilborne's start screen on the watch, under Start). Each session shows *waiting for the iPhone*, *sending to the iPhone* or *on the iPhone*. If it stays on *waiting for the iPhone*, tap **Send again**. *Large files wait for the iPhone app or its charger* is normal: the session is already on the phone, and its large motion files follow while the iPhone app is open or the phone is charging.
4. **Still not there:** send me the diagnostics (*A problem with the app itself*, below). They show what the watch and the phone did with the session.

Pump and dock start

New in build 145. In **Pump / dock start** the watch and the iPhone have screens of their own (appendix: *Pump and dock start*). They come with the Pump and dock start module, which is free in TestFlight. Most of this has been built on made-up sessions and a few short real ones, so your sessions are its first real test, and in the other languages some of its new words are still in English for now.

On the watch

- **The pump page** is the one a pump session opens on: your time on the foil in large figures, the distance, your heart rate, your cadence while you pump, and your average speed on the foil. The cadence is in strokes a minute or in Hz: **Units › Cadence** in Settings, on the watch or the iPhone.
- **A tap at each kilometre** (mile or nautical mile, by your speed unit), with the split on the screen for a moment: its number, its time, your heart rate and your cadence over it.
- **Cadence test and glide test.** One press of the Action button on the foil is still a mark, and here it also starts a test. Pressed while you pump, the watch shows *cadence test*: change your cadence from there, and the iPhone sets the two parts of the run side by side. Pressed once you have stopped pumping, it shows *glide test*, and the glide is measured from there.
- **In the water.** Once you have been in the water a minute the page changes to *In the water*: how long you have been in, the water's temperature, and how far it is in a straight line back to where the session began and to where you last started, with a rough time to get there. It gives the page back when you fly again. **In the water alert**, in Foilborne on the watch › Settings, taps your wrist every 5 to 30 minutes in the water; it is off until you set it.
- The watch now opens each discipline on the page you last used in it.

On the iPhone

A pump session's page leads with its **runs**; a run is this discipline's word for a flight.

- **Runs.** A line on the longest run, then every run in a table: its time, distance, speed, cadence, metres a stroke and heart rate, and **how it ended**: *out of speed*, *back at the start*, *weed* (a sudden stop at a steady speed, whatever was hit), *breach*, or *touch or fall*. The app reads that from the run's last seconds and will sometimes be wrong: tap a run's **Ended** to put it right. Your choice is kept, with a pencil beside it.
- **Heart rate.** For each run of two minutes or more, your heart rate over your speed; your cruise speed and the heart rate you held there; and how fast the heart rate climbed at a held speed. Under them, your time on the foil in the five heart-rate zones. The zones use your maximum heart rate: set your own with **Set my maximum heart rate** in Foilborne on the iPhone › Settings, or the app uses the highest it has seen in your sessions, and says which.
- **Your earlier sessions.** With gear of your own chosen for the session (My gear), a second line sets today's heart rate at cruise beside your last sessions on the same gear at the same speed: the plainest sign of getting fitter, or of a wing that costs less.
- **Cadence tests and glides.** Each part of a run either side of a cadence test, with its cadence, speed, metres a stroke and heart rate; and each glide, with the speed it began and ended at, its distance and its time.
- **Splits**: each kilometre (or mile) on the foil, as on the watch.
- **Starts.** How many of your starts you made, a small map with a pin for each place you started from, and for each place the starts made of those tried, your speed a second after the jump, and your strokes and touches in the first ten seconds. Tap a place to name it (*Dock*, *The boat*); the name is kept for every session there. **Paddle back** is the time and distance between a run's end and your next start.
- **After the water.** For each run, how long you were off the foil before it, and its first two minutes beside the rest of it: touches and how steady your cadence was.
- **The share picture** has a story of its own, *Runs*: a bar for each run by its distance, the longest run, the distance and time on the foil, the average speed and your pump strokes, with your heart rate unless you switch it off.

Recording on the iPhone alone

No watch, or the watch left at home: the iPhone records by itself (appendix, iPhone: *Record*).

1. Tap **Record** at the top of the session list. Choose the **Discipline**, **Where** and **Gear**, and tap **Start**.
2. *Lock the phone and put it away: the session stays on the Lock Screen.* Leave Foilborne running; do not swipe it away.
3. **Mark** and **End** are on the Record screen and on the Lock Screen. End takes two taps: the first turns it to *Tap again to end*, and a second within 8 seconds ends the session. It is filed in the list at once.

The iPhone records the GPS track and speed, and on gear with a motor the ESC over Bluetooth (VESC Tool closed, as for the watch). There is no heart rate, no motion and no water sensor, so the session has the track, speed, flights, turns and carves and the motor's analysis, but no pumping, falls or Apple Health workout. Taking a phone on the water is your own call.

The session on the Lock Screen

While a session records, the iPhone's Lock Screen and Dynamic Island show it (appendix, iPhone: *The Lock Screen*): the discipline and the clock, your speed with the top so far and whether you are flying or on the hull, the distance, flights and time on the foil, and with a motor the pack's charge, power, amps and volts. It comes from the watch while the phone is nearby, or from the iPhone when it records.

Mark and **End** there act on whichever is recording, the watch or the iPhone. End takes two taps, as on the watch. After the end it shows the session's summary for ten minutes.

If it does not appear for a watch session, **open Foilborne on the phone once**: iOS lets an app start it only while the app is on screen. **Session on the Lock Screen without opening the app**, in **Foilborne on the iPhone › Settings**, starts it on a locked phone instead; the line under the switch says what that sends.

Every ride goes into Apple Health

A session is saved as a **workout in Apple Health**, so it counts in your rings and shows in the Fitness app like any other workout: the route, your heart rate through the ride, active and resting energy, the water temperature, and each flight as a segment. eFoil sessions go in as water sports, SUP foil as paddle sports, and every other discipline as surfing sports. That is why the watch asks for Health when you first open it; say yes to everything listed, or the workout cannot be saved.

Two things to know:

- A session in a discipline you do not have the module for, and have not chosen as your free one, is **not** added to Health, even if you buy the module later. In TestFlight the modules are free, so take them, and it does not arise. A session recorded on the iPhone alone is not added either: the workout is the watch's.
- The line under a session's tiles on the iPhone says what happened: *Saved to Apple Health as a workout*, or why not (appendix, iPhone: *The tiles and the Apple Health line*). If a session is missing from Fitness, that line is the first thing to check, and worth reporting.

To keep heart rate or energy out of Health and the log, turn them off in **Foilborne on the watch › Settings › Health**.

Keeping your sessions

Your sessions live on your iPhone, so a lost or broken phone must not take them with it. Two ways keep them:

- **The iPhone's iCloud Backup.** When it is on (*the iPhone's Settings app › your name › iCloud › iCloud Backup*, with Foilborne on in its list of apps), your sessions, their titles and your gear are in it, and come back when a new iPhone is set up from that backup. Purchases come back with Restore Purchases, and the workouts through Apple Health.
- **Export all sessions**, in **Foilborne on the iPhone › Settings › Your sessions**: one *Foilborne backup* file of every session, to keep wherever you like: iCloud Drive, a computer, another phone. **Import a backup**, in the same place (or the file opened from Files, Mail or AirDrop), brings them back. Sessions already on the phone are left as they are, so importing twice adds nothing.

Foilborne itself never puts your sessions in iCloud or anywhere else: the backup file goes only where you send it.

What to test

Everything, but these most of all:

1. **Does the watch keep recording for a whole session?** Note the time if it stops, loses GPS (the speed turns yellow with WEAK GPS) or says LOCATION OFF (appendix, watch).
2. **Is the ride read right?** Open the session on the iPhone: the timeline shows when you were flying, gliding, pumping or down. Compare it with what you remember, your marks help here. Flights, waves, tacks and jibes: are they where they happened, on the timeline and the map, and are any missing or invented?
3. **Falls, both kinds.** A fall from flight is now caught when you go in sideways too, by the hit at the wrist in every direction. A fall from the hull, a sudden stop from riding speed with a hit at the wrist (a take-off attempt that ends in the water), is caught without the water sensor. The session's description counts both: does its count match yours? A mark after each fall helps.
4. **Speed and distance** against anything else you track with, in the units you chose.
5. **Weather and tide:** the wind and the tide at the top of a session, and the tide page (the waves button at the top of the session list) against what you saw. Since build 116 a session's tide comes from the nearest tide station when one is within 50 km, the same as the tide page, with the station named under its chart; before it was an ocean model's and read high in some places.
6. **With an eFoil or a foil assist on a VESC:** the ESC's values on the watch's Battery and Power pages, the low battery alert, and the power analysis on the phone. Without a VESC, that the ride is still read right from the watch alone.
7. **The Action button:** did a double press ever end a session by mistake, or a mark get missed?
8. **Battery:** how much watch battery a session took.
9. **Apple Health:** does every session appear in Fitness as a workout, with its route, heart rate and energy?
10. **Recording on the iPhone alone:** Record, Start, lock the phone, ride. Afterwards, are the track, speed and flights right, and on an eFoil the ESC's values?
11. **The Lock Screen:** with the watch recording and the phone nearby, or the iPhone recording, does the session show on the Lock Screen and in the Dynamic Island, and do Mark and End there reach the device that records? If it did not appear until you opened Foilborne, say so.
12. **Still riding? and the trim:** if a session is left running off the water, does the watch ask, and only then? If one runs into the drive home, is it trimmed to the last time on the water?
13. **The water sensor on a newer Ultra or watchOS 27:** does the watch's Session page show the water's temperature? If it does not, tell me which watch and which watchOS. On one Ultra 4 on watchOS 27 the sensor has reported nothing so far, and why is not known yet. Falls from the hull do not need it; falls from flight read best with it.
14. **The folded tables (build 116):** on a session's page every table (flights, turns, carves, waves, paddle-ups and the rest) is closed under its title and count until you tap it; the summary lines stay. Each table remembers whether you left it open or closed. Is the page easier to read, and is anything you want gone from view?
15. **Temperature, power and the Foil Drive (build 117):** under Units, set Temperature (Automatic, °C or °F) and Power (kW or W). Do the ESC's temperature on the watch and the air temperature on a session show in the unit you expect, and does a choice made on the iPhone reach the watch? With a Foil Drive: if the watch loses the module, does it come back by itself?
16. **Pump and dock start: the runs (build 145).** Are the runs the ones you made, with the right distance and time? Is **how each ended** right? Put right any that are wrong and tell me what really

happened: what the app called *weed* or *breach* most of all.

17. **Pump: heart rate and cadence.** Do the heart rate over speed, the cruise speed and the zones look like your session? Try one **cadence test**: press the Action button mid-run, change your cadence, and see whether the iPhone shows the two parts. On a long run, does the watch tap at each kilometre?
18. **Pump: starts and the water.** Is *n of m starts made* your count, and are the places where you started? After a fall, does the watch turn to *In the water*, and is the distance back believable? Does it give the page back when you fly?
19. **A session in one piece (build 145).** Once, on purpose, close Foilborne on the watch mid-session (the side button, then swipe the app away) and open it again within ten minutes. Does the same session go on, and does it reach the iPhone as one session?
20. **ESC settings: experimental (build 145).** In Foilborne on the iPhone › Settings, for a board with a VESC. It can install a script on the speed controller that adds a limp-home run from the watch and a boost. It has been tried on the bench only and it changes what your speed controller does: leave it alone unless you are happy to experiment, and stay close to shore if you try it.
21. **Anything that is confusing or wrong** in the words, the pages or the guide.

How to give feedback

Say which session, by its title or its date and time in the list, and when in the session, by the clock on the timeline or by a mark. Then:

- **A quick note or a question:** the WhatsApp group, or email foilborne.app@gmail.com.
- **A screenshot:** take one on the iPhone; TestFlight offers to send it with a note, straight to me.

Something happened during a ride

A fall the app missed, a flight it invented, a wave read as a tack, the speed stuck: the files of that session show me what the app saw.

1. **On the water, make a mark** when it happens: one press of the Action button, or Mark on the Controls page. The mark shows on the map and the timeline afterwards, so neither of us has to guess the time.
2. On the iPhone, open the session and tap the **share button** (the square with the arrow, top right).
3. Choose **Share files** (appendix, iPhone: *The share menu*). It makes one Foilborne file of the session's files (what is in it is listed below), encrypted on your iPhone so that only I can open it: your rides stay private on the way.
4. Send it by **Mail** to foilborne.app@gmail.com, or by AirDrop or WhatsApp, with a line on what happened and at which mark.

A problem with the app itself

The watch stopped recording, a session never reached the phone, a crash, a page that would not open, a permission that kept asking: the diagnostics log says what both devices were doing.

1. On the iPhone, **Foilborne on the iPhone › Settings › Diagnostics** (appendix, iPhone: *Diagnostics*).
2. Tap **Ask the watch for its log** and give it a moment; the watch's log comes over to the phone. The watch must be on and nearby, with Foilborne open on it: the button shows only while the

watch is in reach.
3. Tap **Share diagnostics**. It makes one Foilborne file of both devices' logs and the phone's crash reports (listed below), encrypted the same way.
4. Send it to foilborne.app@gmail.com with what happened, when, and what you expected. If a session is involved, send its files as well (above).

What is in the two Foilborne files

So you know what you are sending. Your iPhone encrypts each Foilborne file to my key before it leaves the phone, so only I can open it, whether it goes by Mail, AirDrop or WhatsApp; there is no password to remember. Inside are:

A session's files (Share files) are the ride itself. From build 145 the file also carries the diagnostics listed further down, as does *Send sessions to the developer*, so one file is usually all I need:

- `log.csv`: a row a second or faster with the time, your **GPS position**, speed, course, height, heart rate and energy, and on a board with a motor the ESC's readings (volts, amps, rpm, duty, temperatures, faults).
- `motion.ftmo`: the watch's motion sensors through the session (acceleration, rotation, the compass, air pressure), at a higher rate with Help improve Foilborne on, which also adds `raw-000.ftra` and on: the raw accelerometer.
- `events.jsonl`: what happened during the session: the discipline, place and gear you chose, the workout's states, the ESC link's connections and drops, water in and out, your **marks**, the watch's battery and temperature each minute, GPS quality, errors.
- `manifest.json`: the session's date, duration, the watch model and app build, and the headline numbers.
- `health.json`: whether the workout was saved to Apple Health.

The diagnostics (Share diagnostics) are the app's own notes, not the ride:

- `diagnostics.jsonl` (the iPhone) and `watch-diagnostics.jsonl` (the watch, after *Ask the watch for its log*): one line per event, newest few days. At each launch, the app build, the system version, the device model, free storage and low-power mode. Then: sessions starting and ending, the ESC link's states and the Bluetooth devices it skipped, every file's transfer and arrival, notifications posted, purchases and restores (which modules, never payment details), each analysis and how long it took, the weather and tide lookups with their results (the wind figures, the tide station's name), and every error with its reason.
- `metrickit/`: Apple's reports on crashes, hangs and heavy processor or disk use, as JSON.

The diagnostics name your sessions by their file names (dates and times), and a tide station you chose or the wind at a session say roughly where you ride. They hold no GPS track, no heart rate and nothing from Apple Health, no names and no payment details. Both files come to me only, and only I can open them; I keep them under your contributor ID, use them to fix what you reported, and delete them when you ask.

What to share with me

Turn on **Foilborne on the iPhone › Settings › Help improve Foilborne**; it asks you to agree first (appendix, iPhone). **Turn it on before the session, with the watch nearby:** the watch decides what to record when a session starts, so a session started before it was on has none of the extra detail and cannot be sent. With it on, the watch records more detail on every session: faster motion sensing, the

compass, air pressure, every GPS fix. It costs about a fifth more battery during the session, which in practice means little: a 2-hour session on a first-generation Ultra with it on still leaves the watch running the rest of the day and into the next. It also uses about 100 MB an hour on the watch, freed as soon as the session has moved to the phone. **Nothing is shared unless you send it yourself.** Turning this on sends nothing: your sessions stay on your watch and iPhone until you tap **Send sessions to the developer** (or a share button) and choose where the file goes. Then, now and again:

- **Send sessions to the developer**, which appears under Help improve Foilborne once it is on. It puts every session not yet sent in one Foilborne file for the share sheet, encrypted on your iPhone so that only I can open it; Mail to foilborne.app@gmail.com, AirDrop or WhatsApp all work. **Send the last sessions again** repeats the last one if it did not go through.
- With each batch, a few words per session help more than anything the sensors record: what the conditions were, what you were riding, what went well and what did not, and what the app got wrong.

What you send carries where you rode, the app's diagnostics (listed above, from build 145) and an anonymous contributor ID, not your name, and travels encrypted, so only I can read it. It is used only to make the analysis right for every rider, is kept by that ID, is never passed on, and is deleted if you ask. You can turn it off at any time.

The voucher

Sharing takes your time, in the minutes to send and the lines to write, so it is paid for:

- **Five sessions** sent with Help improve Foilborne on, each with a line on what happened, and I send you a code for **any one module** of your choice.
- **Twenty sessions**, and a code for **all the modules**.

The codes are App Store offer codes, redeemed in **Foilborne on the iPhone › Settings › Disciplines › Modules › Redeem a code**, and they carry over to the App Store version, so what you earn in the test stays yours. Sessions from any discipline count, and ones where the app got it wrong count most. I will let you know in the group when you cross each line; if I lose count, remind me with your contributor ID, shown under Help improve Foilborne in Foilborne on the iPhone › Settings.

Thank you

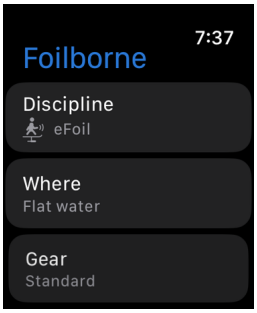
Every session you send teaches the app something no sensor can learn alone: what a real wave, a real tack or a real dock start looks like from the wrist. The voucher above is the least of it: thank you for riding with it on and telling me what happened.

Jason
foilborne.app@gmail.com

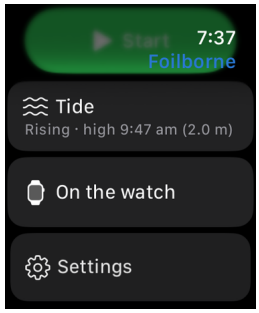
Appendix: the screens

The pictures come from the simulator, on made-up sessions; yours show your own rides.

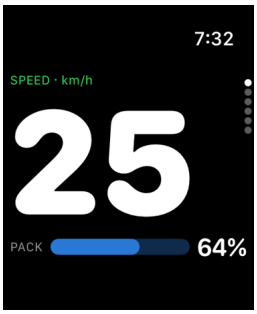
On the watch



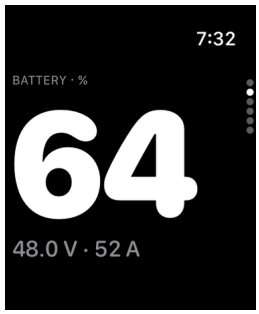
The start screen. Foilborne as it opens: the discipline, Where (flat water, waves or downwind) and the gear, then Start. Set these before you go in; the Action button starts with the Where and gear shown here.



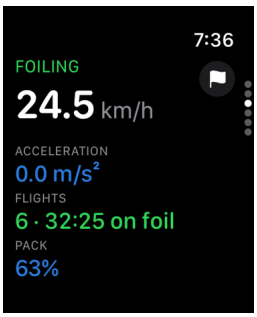
Under Start. Tide, with its gist on the row; **On the watch**, the sessions the watch holds; and **Settings**, which is *Foilborne on the watch › Settings*.



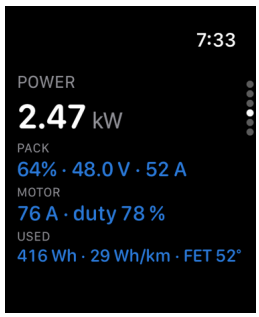
Glance. Every session opens here: your speed, as large as the screen allows. With a motor and the ESC, the pack's charge as a bar under it. The caption turns green while the board flies. The page to look at on the water.



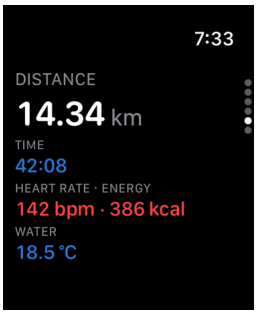
Battery (with a motor). The pack's charge in large figures, the volts and amps under it. Before the charge is known, the volts take the large figure. Look here when deciding to turn back.



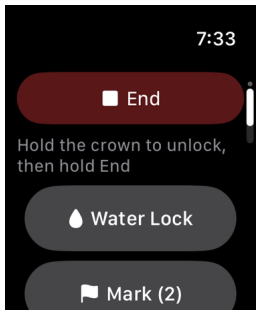
Speed. FOILING in green while the board flies (IN THE WATER when the watch is under, the pumping rate while you pump), the speed, the acceleration and load in g, your flights and time on the foil, and with a motor the pack. The flag at the top marks the moment.



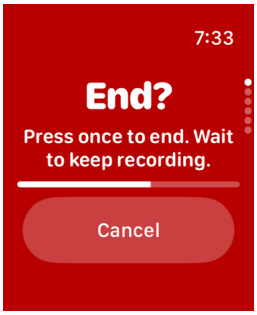
Power (with a motor). The battery's power in kW; the pack's charge, volts and amps; the motor's amps and the ESC's duty; the Wh used, Wh per km and the ESC's temperature; a fault in red if the ESC reports one. Until the ESC answers: *Searching for ESC*.



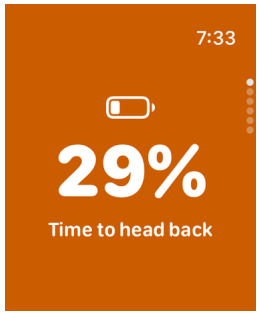
Session. The distance, the time, your heart rate and energy, and the water's temperature (Ultra and Series 10). For a look between runs.



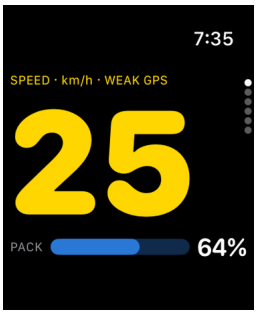
Controls. End (hold it for a second), how to end on this watch, **Water Lock**, **Mark** with the count so far, and what is being recorded. Turning Water Lock off (hold the crown) brings you here.



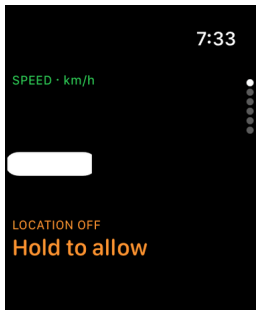
End? After a double press of the Action button. One more press ends the session; with no press, the bar runs out in 8 seconds and recording carries on. Cancel takes it back when the screen is unlocked.



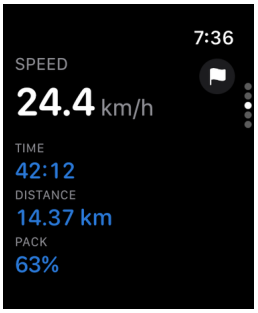
The low battery alert (with a motor). Three buzzes and the charge left on amber, at your first level (30 % unless you change it), then 20 % and 10 %, each once a session. A tap takes it away; it also goes by itself.



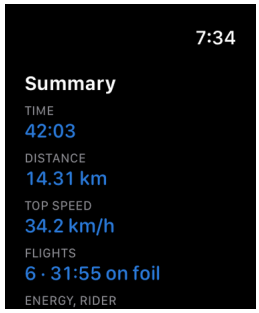
WEAK GPS. The speed in yellow: the watch is less sure of its place than usual. The speed is still good; the position may be a few metres out. A dash means no fix for 2.5 seconds, usually the watch under water.



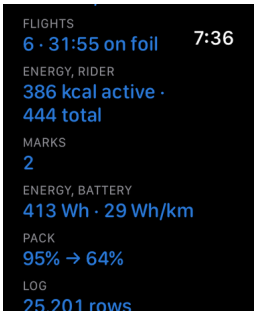
LOCATION OFF. The watch took the location away mid-session: no track or speed until it is back. Hold *Hold to allow* for a second. If it says *Allow in Settings*, fix it in *the watch's Settings app › Privacy & Security › Location Services › Foilborne*: While Using the App, Precise on.



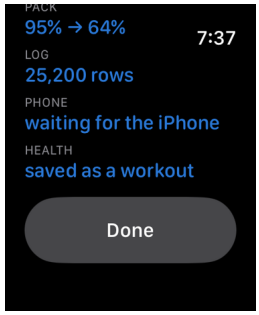
Without the module. A discipline whose module you do not have: the Speed page shows the time and distance, and there is no Session page. Everything is still recorded.



The summary, after the end: the time, distance, top speed, flights and time on the foil. Scroll for the rest (next two).



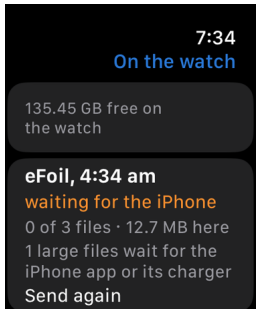
The summary, further down: your energy, the marks, and with a motor the battery's Wh and Wh/km and the pack's charge from start to end.



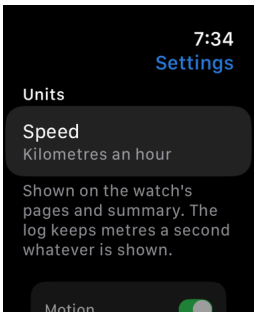
The summary's end: the log's rows, whether the session has reached the iPhone, and Health: *saved as a workout*. Done goes back to the start screen.



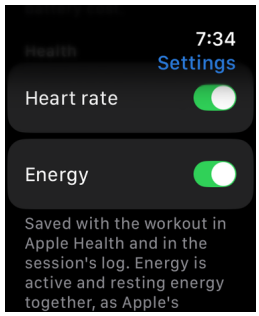
Tide (under Start). The nearest tide gauge, the height now and the next high or low, the curve from six hours ago to eighteen ahead, and the current where a gauge is near. Worked out on the watch. Not for navigation.



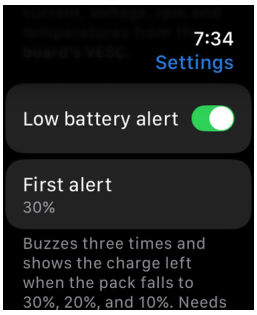
On the watch. The space free and every session the watch holds, with its state (*waiting for the iPhone*, *sending*, *on the iPhone*) and its files. **Send again** resends one. Look here when a session has not reached the phone.



Foilborne on the watch › Settings. At the top, **Units**: the speed in km/h, knots or mph, the same choice as the iPhone's. Then **Motion** and its rate. A change counts from the next session.

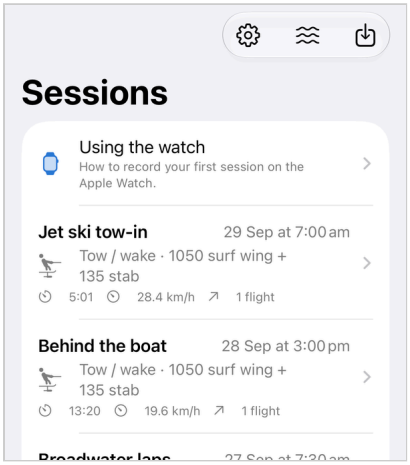


Settings, Health: Heart rate and **Energy**, saved with the workout and in the log. Further down: **Water sensor**, **ESC over Bluetooth** and, once an ESC is remembered, **Forget ESC**.

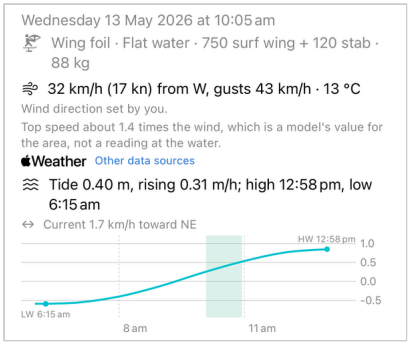


Settings, at the end: the **Low battery alert** and its **First alert** level, shown once you ride with a motor and the ESC on.

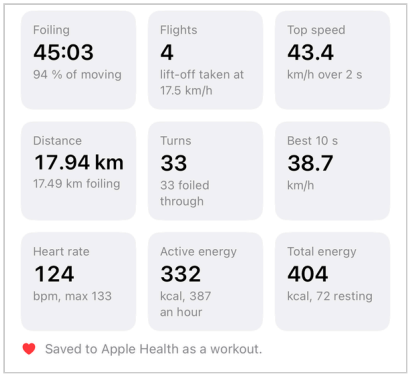
On the iPhone



The session list. At the top, the gear opens *Foilborne on the iPhone › Settings*, the waves the tide page, the arrow imports a log, and **Record** records on the iPhone alone (newer than this picture). **Using the watch** heads the list until your first session from the watch is in. Each row: title, date, discipline and gear, time, top speed, flights.



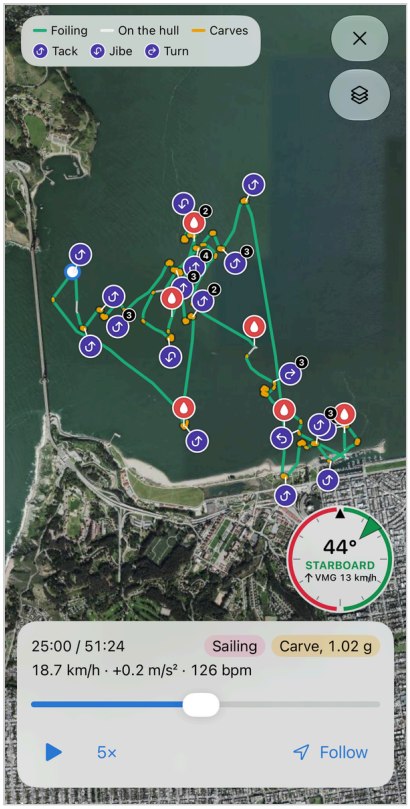
The top of a session. The date, discipline, where and gear; the wind from Apple Weather (a model's value for the area, the direction more trustworthy than the speed); and the session's tide. At the very top, the sliders button opens *A session's settings* and the square with the arrow the *share menu*.



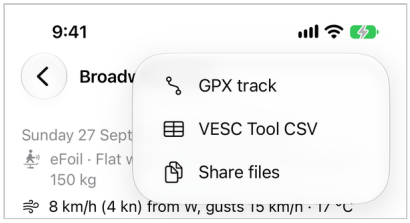
The tiles and the Apple Health line. Time foiling, flights and the take-off speed used, top speed, distance, turns, best 10 seconds, heart rate and energy. Under them, the Apple Health line: *Saved to Apple Health as a workout*, or why not. If a session is missing from Fitness, check this line first.



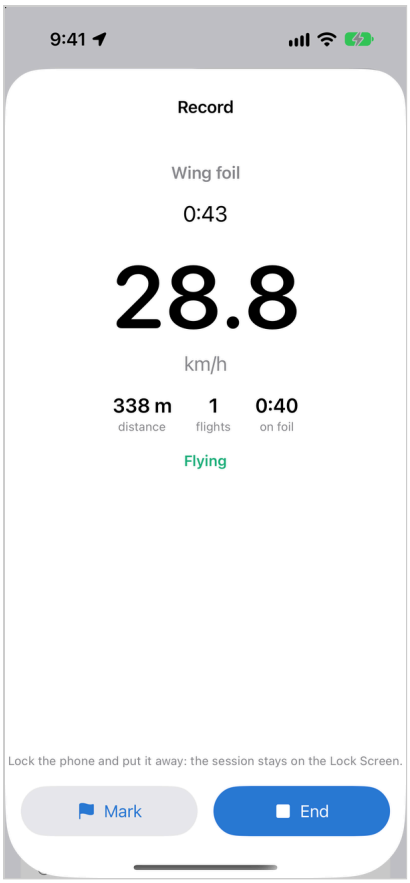
The ride: the timeline. A strip with a lane for each thing that carried the board (pumping, sailing, surfing, the motor), carves, your marks and weak GPS; then the speed, the heart rate and the acceleration with touches marked. The green bands are flights. Drag across a chart to read a moment. Compare it with what you remember.



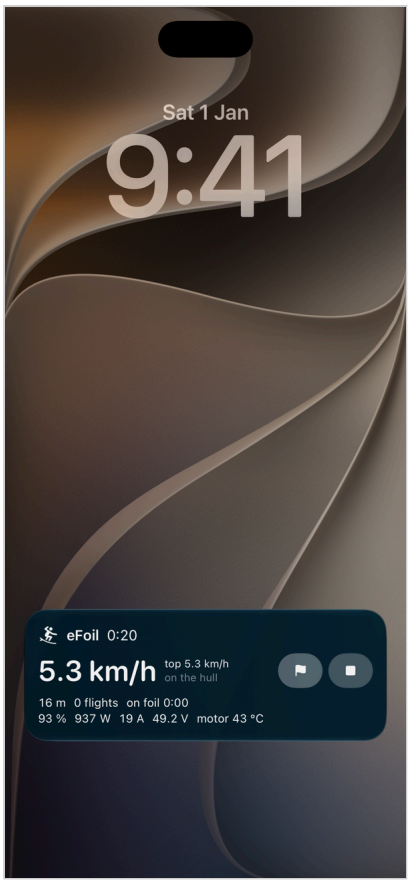
The map and its marks. Tap the session's map for this. The track green where the board flew; tacks, jibes and turns as purple badges, touches as red drops, carves in yellow, and your marks as black flags (a number where several join). The wind dial shows the wind's angle off the bow; the panel below replays the session. Tap a mark to move the replay there. The map's menu (the layers button) has a switch for each kind of mark, **On the hull**, which hides the track off the foil, and **Trail**.



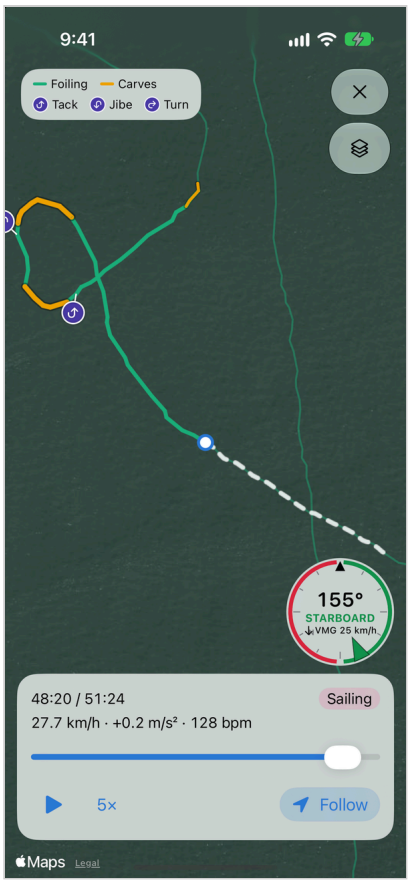
The share menu (the square with the arrow, top right of a session). **GPX track**, for Strava, Garmin Connect or a map app; **VESC Tool CSV**, only on a session with the ESC's log; **Share files**, the session's own files as one Foilborne file that only I can open (encrypted on the iPhone): the one to send me when something went wrong.



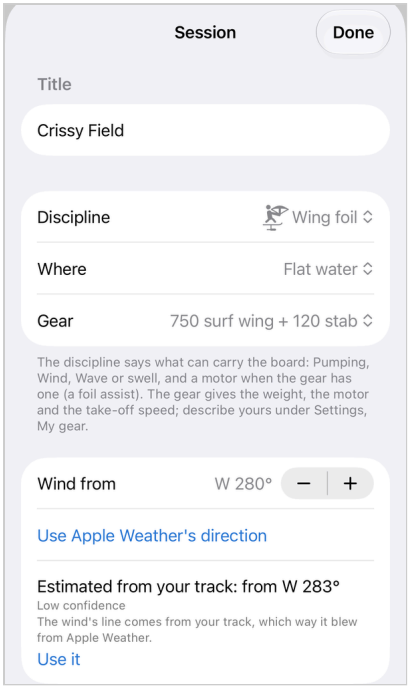
Record (at the top of the session list), recording on the iPhone alone: the discipline, the clock, your speed large, the distance, flights and time on the foil, *Flying* while the board flies. **Mark** and **End** at the foot; End asks *Tap again to end*.



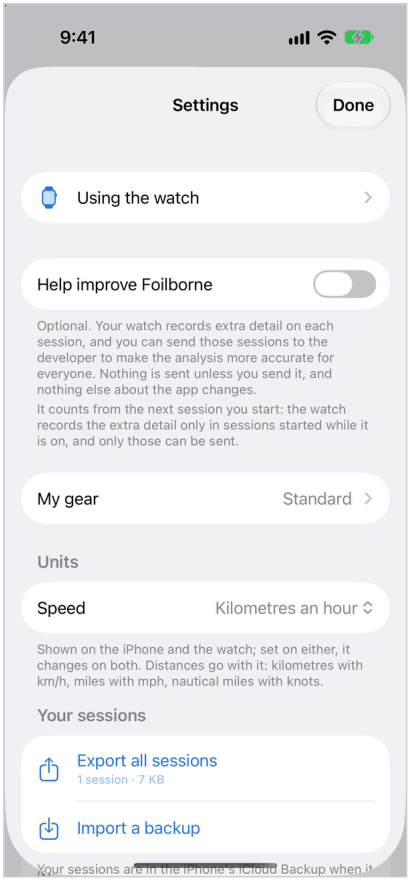
The Lock Screen while a session records, here an eFoil 20 seconds in: the discipline and the clock, the speed, the top speed and *on the hull*, the distance, flights and time on the foil, then the pack, power, amps, volts and the motor's temperature. The flag is Mark, the square End.



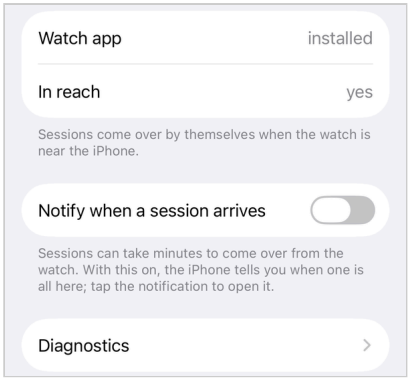
The replay's trail. During the replay the last minute of the track is bright behind the board, a dashed line runs ahead, and the rest is faint. **Follow** keeps the board in view. **Trail** in the map's menu turns it off.



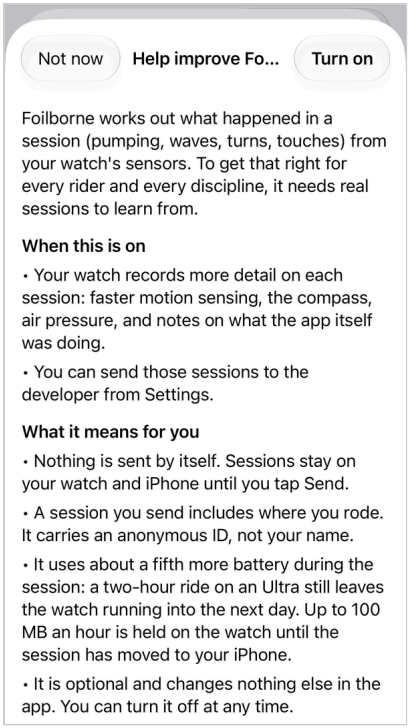
A session's settings (the sliders button at the top of a session). The **title** and the **Description** (**Write it for me** writes it again); the **discipline**, **where** it was ridden and the **gear**, to correct what the watch had; and **Wind from**, your own wind direction if Apple Weather's was wrong on the water, with the direction worked out from your track and **Use it**. Done saves; the session is worked out again.



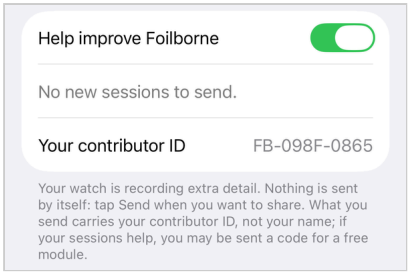
Foilborne on the iPhone › Settings. Using the watch; **Help improve Foilborne** (with it on, **Send sessions to the developer** and your contributor ID appear under it); **My gear**; **Units**, the speed shared with the watch; **Your sessions**. Further down: **Session on the Lock Screen without opening the app**, **Wind and weather**, **Fetch the board's log by itself**, **Disciplines › Modules**, **Apple Watch**, **Notify when a session arrives**, **Diagnostics**, and the version.



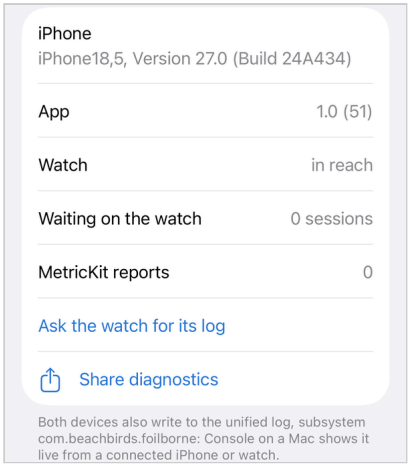
Settings, further down. Apple Watch: whether the watch app is installed and in reach. **Notify when a session arrives**: on by default (off here, in a simulator that has not allowed notifications); if the iPhone has refused them, turning it on takes you to *the iPhone's Settings app › Notifications › Foilborne*. **Diagnostics**, for reporting a problem.



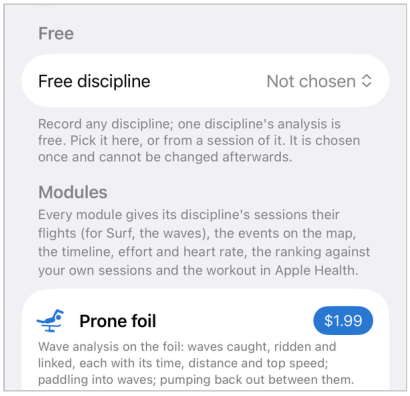
Help improve Foilborne asks you to agree first: what the watch records with it on, and what it means for you. **Turn on** at the top right.



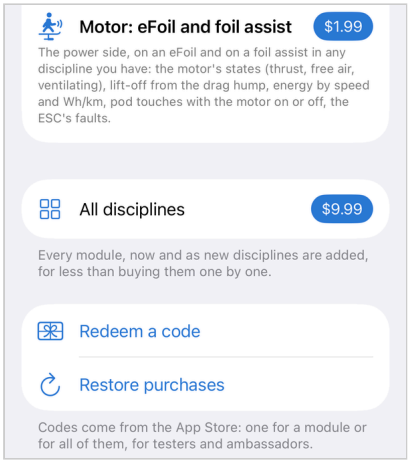
With it on: **Send sessions to the developer** under the switch once there are sessions recorded with it on (*No new sessions to send* until then), and **Your contributor ID**, the one to quote for the voucher.



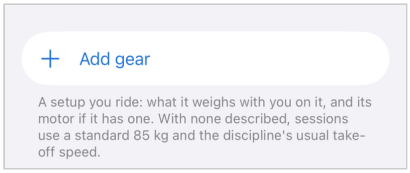
Diagnostics (Settings › Diagnostics). The devices and the build, whether the watch is in reach, what is still waiting on it. **Ask the watch for its log** shows while the watch is in reach; **Share diagnostics** makes the Foilborne file, encrypted so that only I can open it. Under them, both devices' recent events.



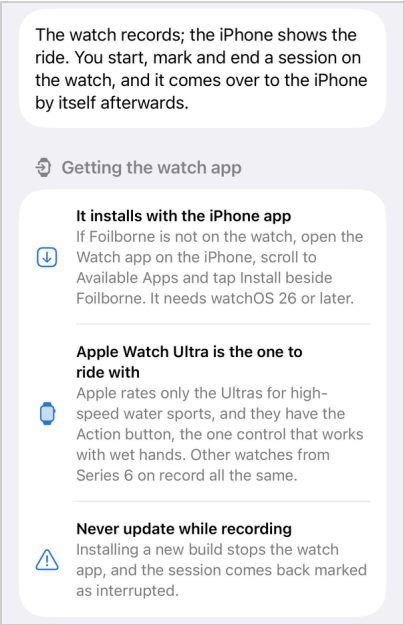
Disciplines (Settings › Disciplines › Modules). **Free discipline** at the top, chosen once; then each module with what it adds. In TestFlight nothing is charged.



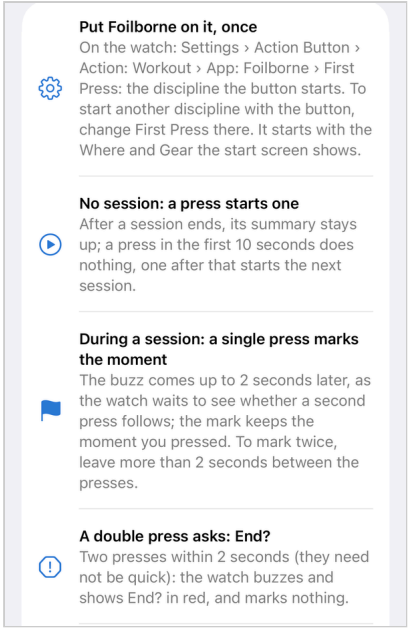
The foot of Disciplines: **All disciplines**, then **Redeem a code**, where the voucher's code goes, and **Restore purchases**.



My gear. Add gear for each setup: a name, the all-up weight (you, the board, the foil and what you carry), the motor (none, foil assist, eFoil direct or geared 4:1) and, if you know it, your own take-off speed. The list goes to the watch's start screen.



Using the watch. This guide's watch part, in the app: getting the watch app, what it asks for, starting, the Action button, ending, the pages, the ESC. At the top of Settings, and at the top of the list until your first session is in.

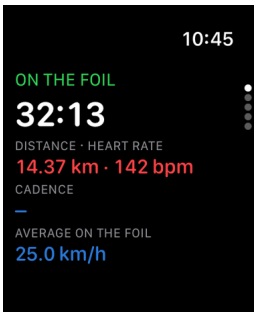


Using the watch, the Action button. The setup in *the watch's Settings app* (Action Button › Workout › Foilborne › First Press), then what a press, a double press and the confirming press do. Keep it open beside the watch while you set the button up.

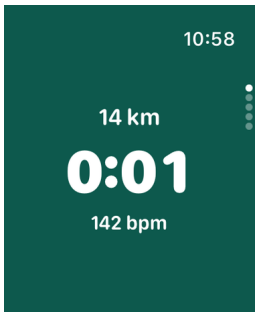


The tide page (the waves at the top of the list). The nearest gauge, now and next, the curve, the current where a gauge is near, then three days of tide and the highs and lows as a table. **Current location** over the title picks another place. Not for navigation.

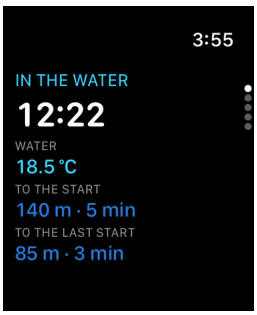
Pump and dock start



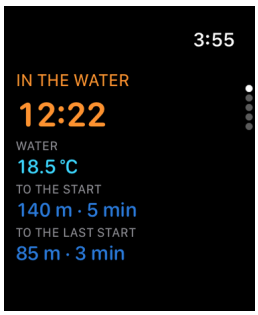
The pump page (watch). The time on the foil large, the distance and your heart rate, the cadence while you pump (a dash here: the demo has no motion), and the average speed on the foil.



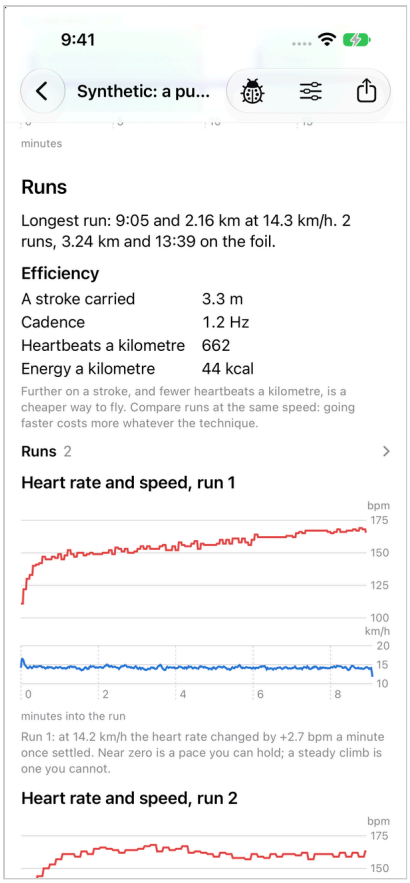
A split (watch). With the tap at each kilometre, mile or nautical mile: its number, its time and your heart rate over it. It goes after a moment.



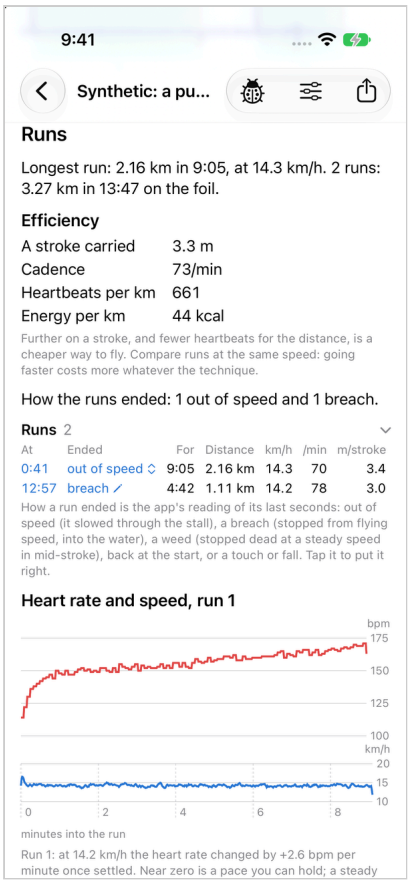
In the water (watch), after a minute in: the time in the water, the water's temperature, and the distance and rough time back to the start and to your last start.



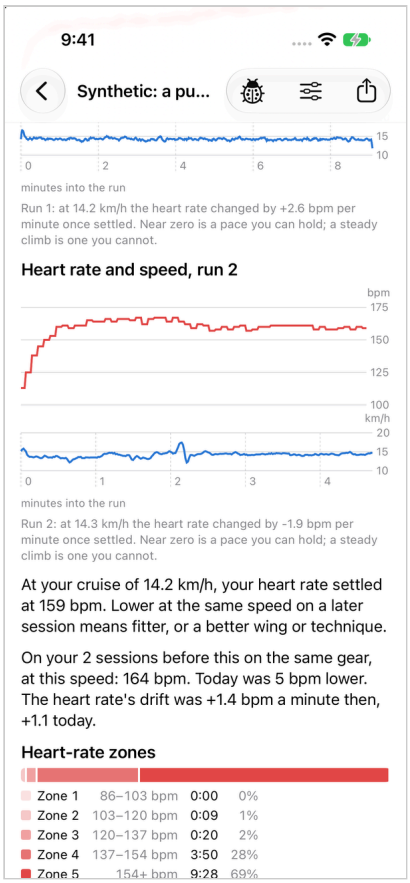
After the alert (watch): the same page turns amber once the **In the water alert** you set has tapped your wrist.



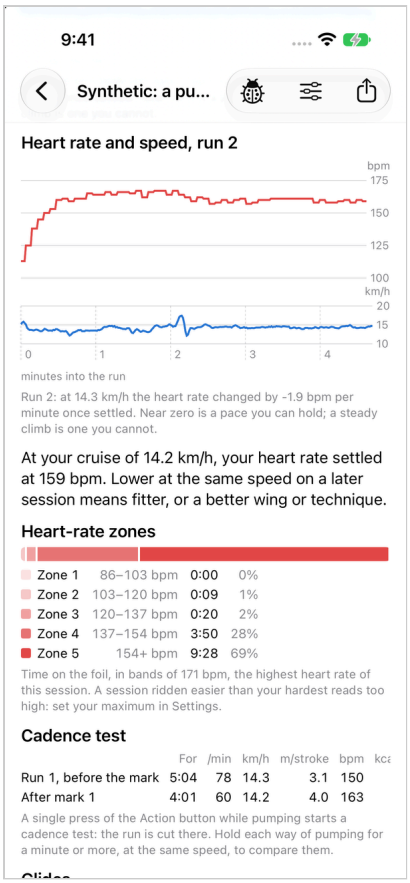
Runs. The top of a pump session: the longest run, the efficiency figures, and a long run's heart rate over its speed.



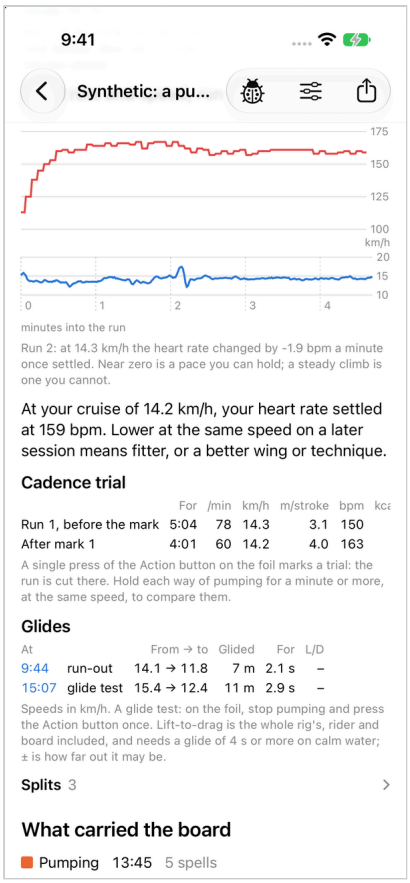
How the runs ended. The Runs table opened: a line counting the endings, and **Ended** beside each run's time. Tap it to put it right; the pencil marks one you changed.



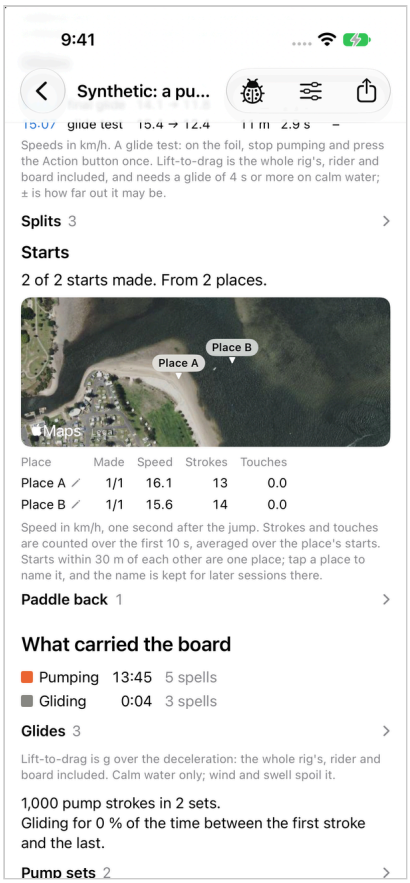
Your earlier sessions. Under the cruise speed, the second line: your earlier sessions on the same gear at this speed, today's heart rate beside theirs.



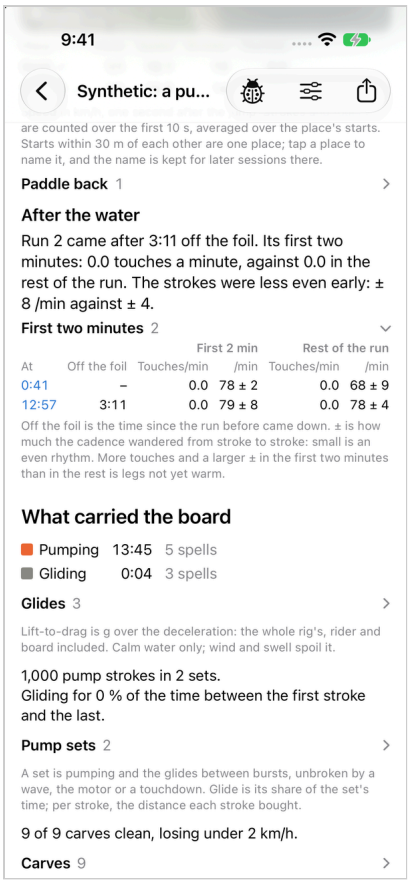
Heart-rate zones. The time on the foil cut by zone, each zone's band, time and share, and the line saying which maximum it used.



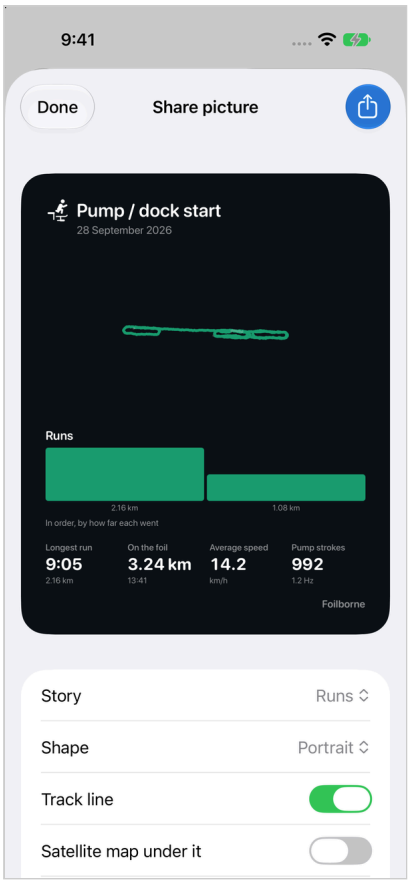
Cadence test and glides. The two parts of a run either side of a cadence test, then the glides.



Starts. The starts made, the map with a pin for each place, and a row for each place. Tap a place to name it.



After the water. The run after the longest time off the foil, and each run's first two minutes beside the rest of it.



The share picture of a pump session, *Runs*: a bar for each run, the longest run, the flying, the average speed and the strokes.