

FERRIES OVER WINSLOW

FERRYTEMPO is the 'tugboat' – serving to develop/market/fundraise – for **Ferries Over Winslow**, a proposed public service/kinetic functional-art installation for downtown Bainbridge Island, Washington. It will fill a yet-realized role as an at-a-glance ferry reference, tracking progress of the actual boats in real-time, outdoors in all-weather. The project will prove informative + fun for locals and visitors alike.

In brief, electromechanical 'FerryBots' voyage between two masts capped with iconic figureheads representative of each port; a whimsical yet practical way to display the tireless boats relied upon in our day-to-day.

The installation aims to be clock-like + precise, and will utilize bespoke hardware solutions paired with FERRYTEMPO software technology.

So much is digital and screen-based: Here we might revive some awesome, animated analog!

And so much is heavy in the world, sad and serious: Here we might offer up a bit of levity.

Learn more at: www.ferries-over-winslow.org



CONTRIBUTE TO THE CAUSE

Our dream is a big one: essentially an outdoor, jumbo-scale, real-time ferry-tracking installation. Design + engineering is well underway via the help of a small, salty crew of volunteers. Fundraising is our next phase.

We are a non-profit corporation in Washington State. All profit from sale of this kit directly supports the endeavor. We are hoping to raise \$47K.

If you'd care to make a tax-deductible donation to support the project, please email: info@ferries-over-winslow.org

MANUAL

FerryClock
Real-Time Ferry-Tracking Clock
'MainSail'



AHOY!

Congratulations on your acquisition of FerryClock *LoveBoats* by FERRYTEMPO; an analog wall clock with additional mechanical dials + lights to indicate the real-time position, heading, and docking status of the two Bainbridge-Seattle ferryboats (additional routes coming soon). We hope it will prove *ferry* useful in your own home/office/ship. Also, we love you :-)

HOW IT WORKS

A proprietary algorithm (created by the programming Captain of the BIHS robotics team, 'Spartronics') running in the 'cloud' (on our server) continually compares the up-to-the-minute (every 5s) latitude/longitude (GPS) location of a real ferryboat (via the WSF 'VesselWatch' API) against a reference path to generate a precise sailing progress value. A small, Arduino-compatible microcontroller (WeMos D1 Mini ESP8266) within FerryClock connects to the FERRYTEMPO server over Wi-Fi to receive fresh data, controlling the lights and motors accordingly.

Test the functionality yourself here:

<http://bridge.ferries-over-winslow.org/debug>

CONTRIBUTE TO THE CODE

Our code is open-source, available free for anyone to use, reference, and expand upon. Actually, it is our hope that others will find it useful as a building block for their own public transit visualization concepts.

If you are of a programming mentality + ability, and would like to facilitate the evolution of our technology, please kindly consider contributing via our Git here:

<https://github.com/pietroglyph/fow>

DESIGNED ON BAINBRIDGE ISLAND

POWER-UP!

CLOCK MECHANISM

- Install AA battery in appropriate orientation.
- Set the time using the rear thumbwheel.

FERRY-TRACKING MECHANISM

- Connect the cable to a USB power source (computer/wall adapter).

TIP: That old phone/tablet/e-reader charger 'block' you have lying around makes an ideal dedicated power supply for your FerryClock. Ideally, it should provide 1A (1000mA) or more, indicated somewhere on the block in (usually) tiny print.

NOTE: A 'factory' state FerryClock (with no saved credentials) will run a brief test sequence immediately following connection to power. After this sequence completes, the motors will 'park' themselves at their motion midpoints. However, the needles may not be pointing properly to their middle positions (vertical), because of jostling during shipping. This is totally normal, as the needles are self-calibrating via magnetic slip-clutches. They will set themselves after a couple crossings, but you can manually calibrate them now:

- Set both FerryHands (needles) to their middle positions ('12' and '6').

CONFIGURE + CONNECT

The MicroController within FerryClock temporarily (when in 'factory' state) broadcasts its own wireless network, allowing user connection for entering configuration information.

- JOIN the wireless network named 'FERRYTEMPO
- After connection, the configuration page should automatically open.
- If page does not open after 10-15s, ENTER setup.ferrytempo.com into your web browser. (If that doesn't work, try entering 192.168.4.1)
- Follow the onscreen dialogue to set up your FerryClock.

The status box will show your connection status.

- WAIT up to 30 seconds for your FerryClock to connect to the FERRYTEMPO server (read more about it in the next section).
- If curious, CONFIRM relative vessel positions via comparison with <http://www.wsdot.com/Ferries/VesselWatch/>.

Once configured, FerryClock will retain your local wireless network login credentials in its flash memory. To reconfigure for a new wireless network, 'Deep-Reset' the microcontroller by pressing the 'RESET' button 3 times in even succession, spaced to a count of 'Wenatchee'. If reset was successful, it will run the startup 'test sequence'.

TROUBLESHOOT

- If you can't connect, check the network name and password, and try positioning your FerryClock closer to your wireless router.
- Read the more thorough guide online at: <https://github.com/pietroglyph/fow/tree/master/ferry-tempo>
- If you're still unable to connect, feel free to contact us at: info@ferrytempo.com

LAUNCH YOUR FERRYCLOCK

- HANG on a wall via an appropriate means (nail, screw, hook). Or:
- PLACE FerryClock in a stand or plate-holder for display on a surface.

Godspeed Sailor!

FREQUENTLY ASKED QUERIES

F.A.Q.

WHY ARE THE NAVIGATION LIGHTS GREEN AND RED?

Boats (and airplanes, too) use these colors to help others identify their sides (and thus heading) from a distance. For example, if a green light is visible, you are seeing the vessel's starboard side, and it therefore is moving to the right. A good rule of thumb to remember: Think Shorter/Longer Words. So:

Red|Left|Port versus **Green|Right|Starboard**

WHY DOES MY FERRYCLOCK MAKE SOUNDS?

FerryClock uses economical 'hobby' servo-motors to mechanically indicate ferry crossing progress. They are remarkable little electronic components, having integrated within a tiny motor, gearbox, position sensor, and controller chip. Mechanical 'ticks' are normal. Sometimes 'buzzing' sounds may be heard. If they are persistent, it is possible the USB power supply you've chosen does not supply adequate amperage. 1A (1000mA) or greater is recommended.

WHY IS MY INDICATOR HAND NOT ACCURATE?

If FerryClock was disconnected from power, movements during its network connection startup sequence can cause the indicator hand to read inaccurately, at least immediately following a reboot. Allow one full back-forth crossing cycle to transpire for hands to read properly.

WHY ARE A USB POWER SUPPLY AND BATTERY NOT INCLUDED?

In short, because there are enough in the world already. We believe the chances are very high that you have an old USB power supply laying around from a defunct electronics device. Reuse it. Similarly, you probably have a drawer full of batteries that want to be used.

MY USB CABLE IS TOO SHORT/LONG; CAN I SWAP IT OUT FOR ANOTHER?

Surely. Nearly any 'Micro-USB' cable should work. You'll need to remove the cover of the rear WireBox to access the end connected to the MicroController. Delicately swap the cables out and in, being mindful of the wires within.

HOW DO I KEEP MY FERRYCLOCK UP-TO-DATE WITH THE LATEST FEATURES?

FerryClock routinely looks for available software updates from our server, and will automatically download and install them. We will email you with feature additions.

BY WHICH METHOD DO THE HANDS MOVE?

OK, this is not a frequently asked question, but it is included here for explanation and those curious. A FerryHand moves in direct correlation with the velocity of the actual Ferry, accelerating + decelerating. Hence, FERRYTEMPO is functionally a dynamic vessel 'progress-tracker' rather than linear ETA 'timer hourglass'.

I HAVE SOME IDEAS/QUESTIONS; HOW DO I CONTACT YOU?

Email us at info@ferrytempo.com.

