



## Operations Manual

You asked for it, and here it is. Over the years we at Catalinbread have listened to customer comments on our original Semaphore, and have combined everything into the ultimate tremolo pedal, the Semaphore Tap Tempo Tremolo. This pedal combines a fantastic audio path, with a diverse tremolo that has a bottomless feature set including 8 different waveforms, tap tempo and divide, and expression pedal capabilities. The Semaphore suits both foot tappers and knob twiddlers in its control, making it the last tremolo you'll ever need.

At the heart of the Semaphore is a lush audio path that incorporates optically controlled JFET gain stages to sculpt a gorgeous clean boost sound, that is present and alive without being peaky or harsh. We've quadrupled the number of waveforms, everything is in there from classic square, triangle, and sine waves to ramping sounds, and a mind-bending random shape. And in conjunction with the Shape contour, which morphs the waveshape, numerous waveforms are waiting to be unlocked. The Semaphore sounds fantastic, and the Tap Tempo section is engaging and easy to use. We've even included a control voltage input to slave the Semaphore to another tap tempo device.

With the original Semaphore we realized that features without benefits are irrelevant, and benefits without features lack credibility. The Semaphore Tap tremolo offers up everything you need in a tremolo, and nothing you don't.



# Layout Overview

Top Panel



## RATE

The rate control, controls the speed of the tremolo. On the Semaphore this knob's characteristics are affected by the position of the Tap Divide control. If the Tap divide is set at a higher rate, you will notice that the Rate knobs sweep will change as well. The expression pedal nullifies the rate control when plugged in.

## TAP DIVIDE

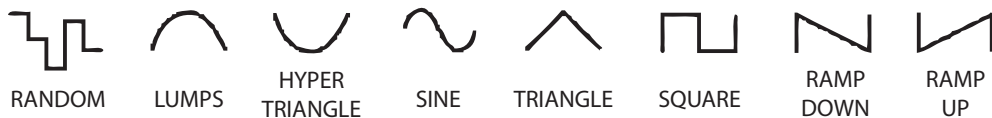
The Tap Divide works as the engine for the Tap function of the Semaphore. Since a tremolo can obviously operate at a much faster rate than one could tap out, this control takes your tap tempo and multiplies it by the corresponding note beats. The quarter note represents the same tempo that you tap out. Once a tempo has been tapped in, the Tap Divide can function as an in-time rate control.

## SHAPE

The Shape control is used to morph the selected waveshape. At noon your waveshape will represent the shape on the Waveshape control, but to either side this shape will slant providing numerous sounds and endless possibilities. The Shape, however, has no effect on the Random waveshape setting, because it is random.

## WAVESHAPE

The Waveshape control provides eight different waveshapes, which won't leave anybody wanting for more.



## DEPTH

The Depth control dials in how much tremolo is in your signal. Dialed all the way down, the Semaphore can be used as a boost, and you can bring up the depth enough for slight shimmers in your signal, or all out depth, for maximum effect.

## VOLUME

The Volume control, obviously, controls the volume of the pedal. Unity on the pedal is around 10 o'clock, depending on the voltage running, and provides plenty of boost or attenuation.



## IN

This is the input jack of the Semaphore.

## OUT

This is the output jack of the Semaphore.

## TAP IN

This jack is for control voltage to be fed into the Semaphore. This allows you to control the Tap Tempo of the Semaphore with another device.

## EXP.

This jack can be used with an expression pedal, to control a knob parameter with your foot. A small switch inside the Semaphore determines whether you control the depth or the rate with your expression pedal.

## 9V-18V DC

Like many of Catalinbread pedals, the Tap Semaphore can be run at either 9 or 18 volts, using a standard DC power supply with negative tip. Running the unit at 18 volts will increase the volume and headroom of the unit.

Foot switches.



## BYPASS FOOTSWITCH

This footswitch is on the lower right of the Semaphore, and controls whether or not the pedal is engaged. The LED light next to this footswitch, shows whether the Semaphore is engaged or not.

## TAP TEMPO FOOTSWITCH

This footswitch is on the lower left of the pedal, and is a momentary switch used to count out a tempo. The LED light next to this footswitch, shows the rate of the LFO in the Semaphore.

# The Rate/Tap Section

Rate/Tap

The Tap Semaphore offers 4 options for controlling the rate of tremolo, each offered to provide the best fit for the individual musicians' needs.

**The Rate control**, provides traditional control for the speed of the tremolo. On the Semaphore this knob's characteristics is affected by the position of the Tap Divide knob which behaves as a rate range control. Set the Tap Divide knob to a whole note then the Rate knob range goes from 0.05Hz to 13Hz, set the Tap Divide knob to 1/16 note the Rate knob range is now 0.11Hz to 50Hz.

**Tap Tempo** footswitch over-rides the Rate knob setting.

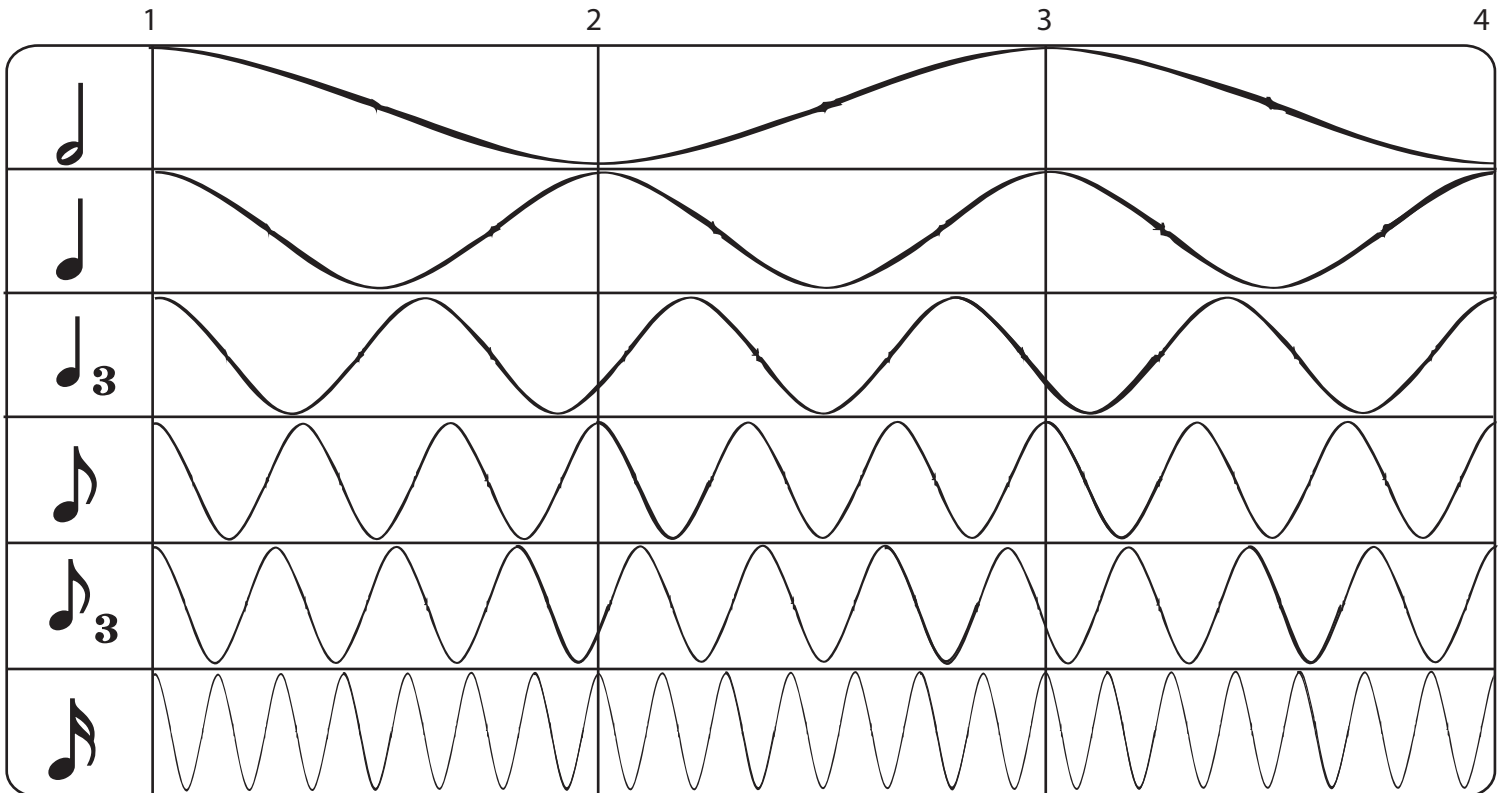
**The expression pedal** nullifies the rate knob when plugged in, providing a fluid sweep of rates. The Roland EV-5 is an example that works great for this purpose.

**The Tap In** input over-rides the Rate knob settings. This jack allows the Semaphore to be controlled via another Tap Tempo device .



## TAP TEMPO & TAP DIVIDE

As explained before, the Tap Divide works in conjunction with the Tap Tempo function of the Semaphore. Below is a graph showing how the various positions on the tap divide interact with a 4/4 timed tap. For example, 120 BPM in WHOLE note means your modulation is at 60BPM, in 1/8 note 240BPM.



As you can see, once a tap tempo has been tapped out, the tap divide can work as an in-time rate control, allowing the player to speed up or slow down the tremolo, while still staying in the original time signature. This function, along with the other three methods of controlling the rate, make the Semaphore an invaluable tool, no matter how you use it.

# The Shape/Waveshape Section



The Waveshape and Shape knobs are paired together to determine the form of the tremolo. While the last section explored the rate and tempo of the Semaphore, this section will illustrate the waveshapes that the tremolo is based on, and how you can skew these shapes to create interesting and original waveshapes.

The Semaphore comes equipped with the eight waveforms listed below, to experience these 8 shapes unaltered, the Shape knob should be at noon. With the exception of the random waveshape, all the others can be manipulated using the Shape knob.



## SHAPING THE WAVE

As stated before, the Shape knob is used to skew the waveform. This allows the user to make the tremolo more asymmetrical in its waveform. Below is a graph highlighting how the Shape knob does this morphing in various positions. The graph uses the sine, ramp down, and triangle waveforms as examples.

