



What Is Typhoon 2000?

Typhoon 2000 is the first official release of Typhoon since version 1.0. It will also be the **last and final version** to be released. As further development on this product has ceased, **Typhoon 2000 is released as freeware**. Typhoon is still copyrighted by NuEdge Development but from now on you are free to copy and distribute **Typhoon 2000** provided you follow these simple rules:

- You are distributing **Typhoon 2000** in its complete form, including all documentation.
- You are not charging money for copying or distributing **Typhoon 2000**.
- You are not distributing modified versions of **Typhoon 2000**.
- You are not making false claims on the origin of **Typhoon 2000**.

The official home page of Typhoon is <http://www.nuedge-development.com/typhoon2000>. On this page you can find distribution packages for Windows and Mac OS. If you have any further questions please contact the Typhoon development team at typhoon@nuedge-development.com.

What Is New In Typhoon 2000?

The most prominent new features in **Typhoon 2000** are:

Import routine. The import routine will load and translate Yamaha setups into Typhoon. Typhoon will do its best at translating the old parameters to the new format, but **sometimes you may find it necessary to do a few adjustments manually**. See further down for information on what the import does and does not.

New low-pass filter. This filter table was designed from scratch by NuEdge Development to utilize the maximum capacity of the TX16W filter. Don't expect a revolution though. The TX16W filter circuits are still pretty lame, but this is as good as it gets. **The filter is number 17, it is called LOWPASS and its two axis are frequency and resonance.**

New wave edit functions. This is where you find the biggest innovations for **Typhoon 2000**. The new wave edit functions are *emphasize*, *fade*, *mix*, *reverse* and *time stretch*. Each function is described separately further down.

Utility for adding waves to a voice. This utility makes it remarkably easy to **construct a new voice from a set of waves**. The utility is located under *Voice Edit Utilities* as the last utility. Simply select a wave for adding as a group or split and it will be placed appropriately in the voice. More information can be found further down.

Utility for loading everything on a floppy. By using this utility you can **load an entire floppy into memory**, including AIFF files, Yamaha waves, Typhoon voices, performances etc. The function is located under the *System Setup Utilities* and is called *Load **.

What Is Improved In Typhoon 2000?

There are a lot of improvements in **Typhoon 2000**, both feature-wise and quality-wise. These are some of the most notable improvements:

Erase all/unused utility. This utility now allows you to keep modified and unsaved items, so that you won't lose anything you have worked on. **It may be a good praxis to use this feature before you shut off the unit**, just to make sure that you have saved everything.

Erasing performances and voices. When you erase a voice **you are given the choice to erase the waves it is using**. Waves that are used by other voices are of course not deleted. The same applies to voices and waves when you are erasing a performance. Just as with the *erase all/unused* utility, you can choose to keep items that you have not saved.

Floppies containing long file names. When using floppies containing files with long file names Typhoon version 1.0 would get confused and display incorrect floppy labels etc. Even though **Typhoon 2000** still doesn't support file names longer than eight characters it should no longer be a problem to use floppies containing such files.

Loading setups. When you are loading a setup **you may now choose whether you want to clear the memory** first or not. Furthermore, if you choose to clear the memory you are asked whether you want to keep modified and unsaved items or not.

Loop crossfade. The *crossfade* utility has been blessed with another parameter that sets the amount of overlapping. **A high amount of overlapping increases the gain of the crossfade**. The default value of 41% usually gives a smooth-sounding loop. Typhoon version 1.0 did not overlap the crossfade at all.

Resampling of waves. The fidelity of the *resample* utility has been improved. You are also allowed to resample to a higher sample rate than the original.

The "alpha keys". Typing characters with a MIDI keyboard has been made easier as the alpha keys now behaves more like a traditional computer keyboard. E.g. characters are always inserted instead of overwritten, and a backspace key is available.

Support for up to 20 filter tables. The limit has been raised from 16 to 20. Number 17 is used for the new low-pass filter (see above).

Support for larger keyboards. The highest note Typhoon accepts is now C8 instead of C7.

User interface. The panels now scroll "smoothly" instead of the rather clumsy "jumping scroll" in version 1.0. Equal signs ('=') are used throughout the system in place of the period ('.') as separator for parameters. (Menus still use the period.) Furthermore, **spaces in names are substituted by underscore ('_')** to give a more structured look. The cursor is also larger and easier to see.

The Import Routine

The import function can be found as the last utility under *System Setup Utilities*. Simply insert a floppy containing Yamaha setup files and the possible selections will automatically pop up. When importing, Typhoon will first load all the required waves for the setup. After the waves have been imported, Typhoon may ask you for specific files (such as the filter file). **If you are not sure of where they are stored, just try the different floppies.**

The items from the Yamaha setup will be converted to their respective items in Typhoon. Performances become performances, voices become voices, waves become waves and **timbres are converted to groups** (split-points are not created). The names are shortened to eight characters and often you will find some "slack" items, such as "INIT PERF". (Remember that the Yamaha system stores unused performances and voices as well as used ones.)

The import routine will do its best at translating all the parameters from the Yamaha format, but **some things are difficult or simply impossible to convert**. Pay special attention to the following cases:

Alternating voices. Alternating voices cannot be supported because there is no easy way to recreate this effect in Typhoon.

Pitch and filter envelopes, LFOs and other modulations. These modulations could be emulated by defining entries in the modulation table. However, since at most eight of them can be defined this way we would run into trouble deciding which modulations to include and which to ignore. End of story: **the only modulation currently converted by the import routine is the pitch bender.**

Pitches of waves. Typhoon will try to figure out proper pitch settings for the waves by looking at how they are used in the Yamaha timbres. If a timbre places a wave at a single key, the wave is considered to be un pitched. Otherwise the pitch is found using a combination of the different pitch and tune parameters for the voice and timbre. Most often this is correct but sometimes it can be way out of line.

Stereo performances. Performances constructed for stereo playback are not treated differently from other performances. The voices and waves of these performances will not be converted to true stereo voices and waves (i.e. some voices play the left channel and others the right channel). Thus, **perfect stereo phase-synchronization is not achieved unless you reconstruct these performances from scratch.** (Hint: use the wave edit function *join* to create a stereo wave from two mono waves.)

Velocity response curves. The response curve parameters in Typhoon are totally unlike the ones in the Yamaha OS. Some curves, albeit really weird ones, cannot be recreated in Typhoon at all. **Typhoon will try to convert the velocity curves that can be recreated in Typhoon.** If a curve cannot be translated, a default velocity setting will be used.

Add Wave Utility

The *Add Wave* utility gives a helping hand to some of the tedious work when constructing voices. This function lets you quickly add waves to voices, into either groups or splits by your choice. When adding a wave as a group, the last group of the voice will be used as a template. Default parameter settings will be used if no groups exist. **If you choose to add the wave as a split, the wave will be inserted into the last group in the voice,** or in case no group exists a new default group will be created.

Unpitched waves are placed at the next available key starting at C1, making it a breeze to build drum and effect set-ups where each key plays its own sound. The placement of pitched waves is a bit more intricate. If you add them as groups they will simply play the entire keyboard, but if you add them as splits **Typhoon will rearrange the split points in order to center the wave in between its surrounding waves.**

The utility is found as the last choice under *Voice Edit Utilities*. Combined with the *load all* utility (described above) you will find that building voices from any raw material will go almost by itself, whether you are constructing chopped up drum-loops or multi-sampled pianos. For your convenience the utility even increments the chosen wave number afterwards, so **you will only have to keep on clicking until your voices are ready to go.**

New Wave Edit Functions

Typhoon 2000 includes the following new wave edit functions:

Emphasize. With this function you emphasize (*Emph+*) or de-emphasize waves (*Emph-*). Emphasizing a wave increases its brightness. De-emphasizing decreases the brightness by the exact same amount. Run the function several times to achieve a more dramatic effect.

A good use of the *emphasize* function is to **compensate the somewhat damp output filter of the TX16W.** The compensation will be perfect if the wave is sampled at 50kHz and played in its original pitch. Just remember to de-emphasize the wave if you wish to export it to another sampler.

Fade. This is a simple fade in and out utility. Use it to **fade out nasty clicks and pops at the beginning or the end of a wave,** or use it together with the *mix* function to create smooth fades between different waves. You specify the number of samples to fade in and fade out.

Mix. With this function you can digitally mix one wave into another at a specified offset (in samples). No sample rate conversion is made. If the waves you are mixing have different sample rates, the rate of the destination wave will be used. As an example, **if you mix a 25kHz wave into a 50kHz wave, the 25kHz wave will sound one octave higher than it is supposed to** (it is being played back at double the speed). With a little math and the *resample* utility, you can use this “shortcoming” to create chorus effects.

Reverse. This function simply reverses the wave in the time domain. There is no choice to undo this operation as you simply need to run it again to get back to the original.

Time Stretch. This is an extremely simple and fast time stretch algorithm. **You use this function to change the length of a wave without changing its pitch.** The three parameters you specify are ratio, granularity (called *Grain*) and crossfade amount (called *XFad*).

The ratio is the desired length of the processed wave compared to the original. You can shorten a wave all the way down to 25% of its original length and you can extend it to as much as 400%, as long as you do not exceed the maximum wave length limit of the TX16W (262016 samples). Sometimes, you may even need to cut down the source wave by a couple of thousand samples in order to process it at all. (This is due to some internal limitations in the algorithm.)

The granularity is the number of samples to process in each chunk (or “grain of sound”). **A too small *Grain* setting may produce a metallic sound and a too large setting may add echoes or create rhythmic artifacts,** which can be pretty cool but maybe not what you desire. Generally, settings between 2000 and 8000 are most useful (depending on the sample rate in use). Finally, the *XFad* parameter defines the amount of crossfade overlapping between each “grain”. **A high crossfade percentage will generate a smooth sound,** and is usually good for harmonic or “airy” sounds (such as strings, choirs and voices). **A low crossfade percentage will generate a choppy sound** and is best suited for drum-loops with a lot of sharp sounds and transients.

A final word on the time stretch function: You will probably notice that the quality of the algorithm is rudimentary to say the least. **The key to success is to experiment.** Start with finding a good granularity by working your way down until the modulation becomes obvious. Next, try varying the crossfade amount until you find a good balance. At the end of the day, the best use for this function is perhaps special effects. Go crazy. Don’t blame us. We warned you.

Demonstration Files (from Typhoon version 1.0)

Included on the system floppy are a couple of experimental demonstration sounds. Many of them are built upon very simple waves. For instance, the drum-kit is built upon waves such as sine and noise. Because the sounds use layering intensively they eat audio channels, so they may not be ideal in a multi-timbral performance. **The main intention is to demonstrate the capabilities of Typhoon rather than to provide a broad selection of useful sounds.**

To load the demonstration setup, enter *System Setup Utilities* (by pressing *System Setup* and then *Utilities*), go to the field named *Go* and press *ENTER*. (If the *load utility* is not selected, select it first by pressing *1* in the field named *Util.*) Now press *Performance Select, Voice Edit or Wave Edit*, select the different sounds by pressing *+1* and *-1* and try them out.

(If the LED’s are flashing constantly you have pressed a menu button twice and managed to enter monitor mode. Press any menu button twice again to return to normal mode. See chapter 3 in the *user’s manual* for further information.)

Demonstration Performances

DRUMKIT. The Typhoon Drum-kit. A set of drums similar to the Roland vintage drum-machines. Created using only the waves *SINE, NOISE* and *SAW*. Filters, layers and modulations are used extensively. Modulations: pitch bender & wheel (for various effects). Drum sounds: 808-kick, 808-snare, clap, snare #2, toms, hi-hat set #1 (closed, pedal and open), 808-cowbell, shaker, maracas, claves, 909-kick, 909-snare and hi-hat set #2 (closed, pedal and open).

NEW_AGE. A performance consisting of the voices *FAIRLITE, ANA_STRS, ICE_RAIN* and *NOISEWAV*. The upper part of the keyboard plays the *ANA_STRS* voice and the lower part plays a layer of *FAIRLITE, ICE_RAIN* and *NOISEWAV*. *NOISEWAV* only plays at higher key velocities. Modulations: wheel controls noise LFO rate.

WAVEBELL. A performance consisting of the voice *ESQIBELL* - an emulated Ensoniq ESQ-1 sound. Built upon a multi-sampled single cycle bell wave (*BELL-C2, BELL-C3, BELL-C4, BELL-C5* and *BELL-C6*). Requires three audio channels per note.

MULTI. A multi-channel performance consisting of the voices *ANA_STRS* (MIDI channel #1), *UNISON* (MIDI channel #2) and *DRUMKIT* (MIDI channel #10). Program changes are supported for the voices *FAIRLITE* (PCH 000), *ANA_STRS* (PCH 001), *ESQIBELL* (PCH 002) and *UNISON* (PCH 003).

16 CHAN. Contains 16 empty entries, one for each MIDI channel. A good starting-point for creating multi-channel performances.

Demonstration Voices

ANA_STRS. A string sound built upon the wave with the same name. A stereo chorus effect has been achieved by layering two groups (for the left and right outputs respectively) with a slight vibrato. **Try assigning the new filter table 17.LOWPASS for a softer sound.**

DRUMKIT. See the performance.

ESQIBELL. See the *WAVEBELL* performance.

FAIRLITE. Contains a single powerful stereophonic wave.

ICE_RAIN. A small loop, heavily modulated by a random pitch and pan.

INVADERS. Who needs video games? Uses only the *SOFT_SQR* wave.

NOISEWAV. Part of the *NEW_AGE* performance.

UNISON. A monophonic analog type of lead sound. Uses four layered groups with a single one-cycle wave (*TEKNO*). The fat sound is achieved by detuning (the amount is controlled by ENV2). Modulations: XCTL2 (the foot pedal by default) controls portamento time.