

BOARD OF ADMIRALTY

Programmable Sounds from Model Solutions of Canada

By Patrick Matthews, Contributing Editor



It's been some three years since I first heard rumors of a hobbyist/engineer in the far frozen north (well, ok, Ottawa) who was creating a sound unit especially for model boaters... a sound unit which wasn't restricted to a single prerecorded sound, or worse yet, a staticky synthesized approximation of a horn or engine sound. This unit

is the SFX5.3 – a unit which is somewhat simplified from previous offerings, thus allowing for an easier-to-use sound unit at an affordable price.

While I love the flexibility this unit offers, I'll offer this warning up front: If you're not comfortable hooking up your own R/C gear, or if you're shy about approaching a personal

functions.

Engine Sound

The SFX5.3 provides a speed-proportional engine sound in forward and reverse. Speed is read by tapping the receiver's signal to the electronic speed control (ESC). If one is using an old-style mechanical (resistive) speed control, the system should still work by tying into the servo which moves the "wiper".

You can order the unit with one of several engine sounds – some of which include a start-up sequence – or you can "build" your own. The SFX5.3 comes with interface software that can take a single engine sound clip and modulate its speed into 16 steps. As you adjust the motor speed, the sound unit switches between these clips to give the impression of a smoothly accelerating engine.

When operating, the engine can be "started" by a small movement of the throttle stick. When the stick is returned to its neutral position, the engine sound continues to idle. If you would like to silence it for a while, merely move the throttle to the first "click" of reverse, and the engine sound shuts off.

Additional Sounds

The SFX5.3 can be loaded with up to another six sounds for a total of about six minutes, although only four of the

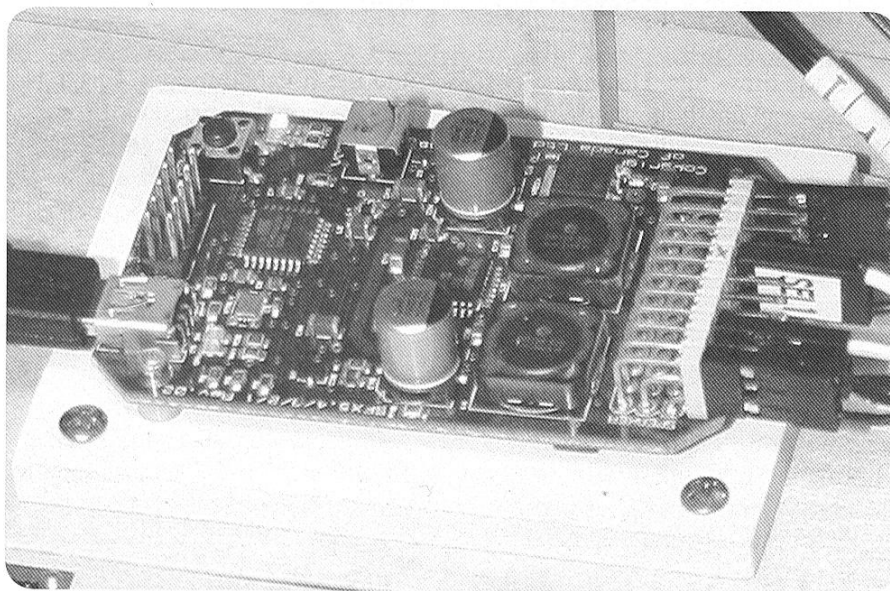


Photo 1. The SFX5.3 sound module installed. USB programming cable is on the left, and the installation leads are on the right.

would hold multiple digitally recorded sounds (including speed-proportional engine sounds), have a powerful high quality amplifier, and best of all, would allow the owner to reload the unit with sound clips of his own choice! That hobbyist's venture has blossomed into Model Solutions of Canada, Ltd. (MSoC), and the latest offering

computer, then it will be best to let a tech-savvy friend set this unit up for you. But anyone who has successfully set their VCR's clock, installed a software update on their computer, and run some wires in a model boat without making sparks will be able to master the SFX5.3.

So, what can we do with an SFX5.3? Let's look at the main

additional sounds may be selected for playback. Again, the customer may order their SFX5.3 with a selection of sounds from MSoC's collection, and can swap out clips at any time (there are many sources of interesting sound clips on the Internet). Sounds can include whistles or horns, "ambient" sounds, weapons, music, or whatever you like.

By use of the software interface and optional wiring setups, the user may select one of three operating modes:

Mode "1x4" allows four sound clips to be played by moving a proportional radio control to various positions. This works best with a spring-centered stick, but the proportional knob on some 6-channel radios will work too. In neutral, no sounds; move the control 50% one way for Sound 1, 100% for Sound 2, and likewise in the other direction for Sounds 3 and 4.

Mode "2x1" only allows selection of two sounds, but can be useful for 6-channel radios with two "on-off" type switches on channels 5 and 6, each of which is used to control a single sound.

Mode "2x Switch" allows you to control two sounds with external switches instead of the radio. This can be useful for static displays, or situations where you don't mind switching on the sounds before sending the boat out on the water – thus saving the radio controls for other functions.

Each of these sounds can have their "latched" and "play once" properties set through the software interface. "Latched" turns on a sound with a stab of the control lever, and then another stab is needed to turn it off. Otherwise, the action is "momentary", and the sound only plays while the control is held in

position. "Play once" means the sound clip ends after one play; otherwise, it loops continuously.

Note that the SFX5.3 will only play two sounds simultaneously, including the engine sound. MSoC says that future "slave units" will allow for additional simultaneous sounds

Flashers and Switches

The SFX5.3 can be ordered with two optional flashers or switched outputs. These features either flash a lamp in synch with an activated sound – machine gun fire or Morse flasher, for example – or turn on a latched output with the start of a sound. An example of this might be moving a turret when a turret-traverse sound is activated.

Volume Control

An on-board potentiometer sets the unit's volume level; no remote adjustment is possible.

Speakers

MSoC offers several speaker choices for your installation. If you use your own speakers, note the instructions regarding matching speaker impedance (4Ω vs. 8Ω) to avoid risk of damage to the unit.

Audio Editing Software

The SFX5.3 comes with several utilities which allow for editing

of sound clips and conversion to the required ".wav" file format. I found a sound clip on the Web that perfectly matched my idea of a tugboat whistle, but it was longer and had a few more "toots" than what I wanted to play. With one of the included utilities, it was easy to trim the sound file to the length I wanted.

I've only spent a short time experimenting with the SFX5.3's features, but have a few observations to share:

- As expected with digital recordings and a powerful amplifier, the sounds were wonderfully clear and loud, with no pops or hisses that have been observed in other devices. Do pay attention to speaker enclosures and sound path to ensure the best volume out on the pond.
- The engine sound worked as expected, but I couldn't set up the whistle exactly as desired. The best combination of settings was Latched and Play Once; this way, I could stab the control to activate the whistle, and the entire sound would play without holding

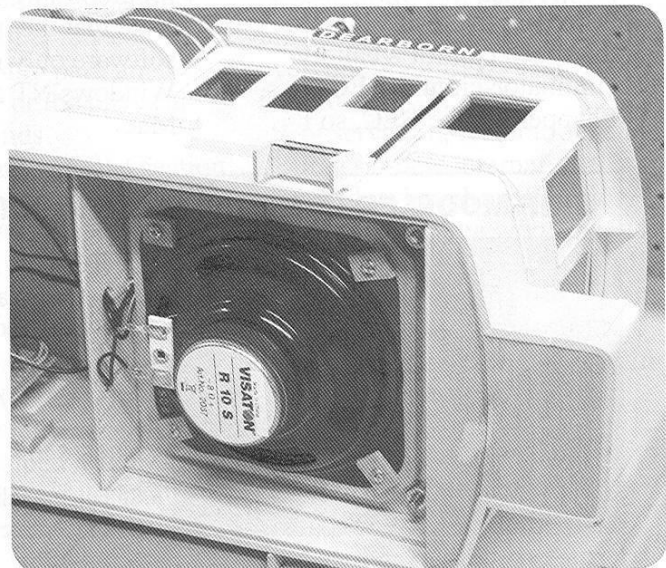


Photo 2. A 4-inch speaker installed under the pilothouse floor. Holes in the floor and open windows let the sound out, while the closed hull acts as a speaker enclosure.

the control in place. But the latched mode required another stab of the control to “unlatch” the sound, and a third stab to play it again. I let MSoC know about this, and a revision is being made for future releases.

- The USB programming cable is optional. If you have a few digital devices at home, you may already have a cable with the required USB “mini-B” end. If not, order one from MSoC, as they are expensive in the local electronics stores.
- MSoC’s wiring diagram assumes that you will use a separate battery pack to power the receiver, instead of powering the receiver from the speed control’s battery-eliminator-circuit (BEC). I happen to like BEC, so I

found that a “Y” servo lead connector between ESC, receiver, and sound unit would allow for BEC power and correct engine sound function.

- When installing the SFX5.3, make sure that you have access to the set-up button, and room for attaching the programming cable.
- Note that the interface software only runs on Windows NT and Vista, not Mac.

- The SFX5.3 will operate on 10 to 26 volts, and the higher voltage will allow for maximum volume. Six or 7.2 volt systems won’t do.

Summary

The SFX5.3 sound module from Model Solutions of Canada Ltd. offers great sound clarity and volume, and the computer interface allows you to customize sounds and functions in ways not possible with any previous offerings for model boaters.

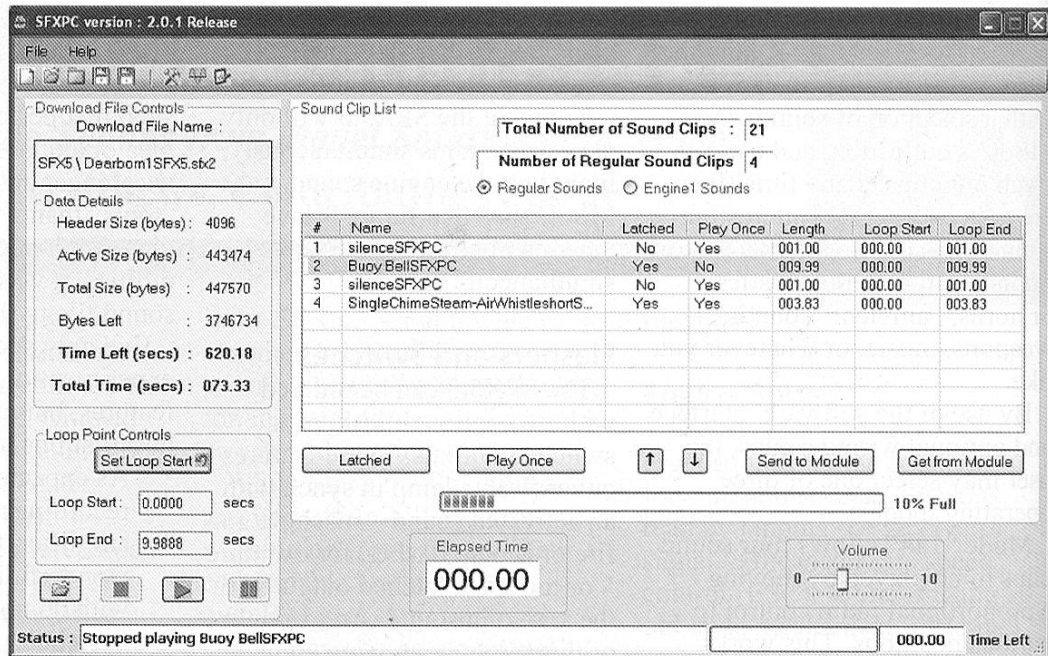
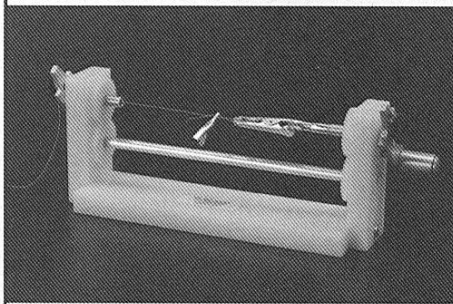


Photo 3. Screenshot of the SFX5.3 setup software.

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Where to find the SFX5.3? MSoC only sells the unit direct from their website, www.modelsolutions.ca (or call (613) 882-4649). Current price is CAD\$169.95 (about US\$165) plus shipping and any extras. You can also find manuals and full specifications at the website.