Review of the MRC 1025 Synchro Sound Box for Steam or Deisel
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This is the only review on the WWW, though you can read some people's experiences with the box on forums. The accompanying instruction sheet is also the only source on the WWW. MRC has chosen not to include it on their website, so I guess it's my job.

Several phrases have come to mind while trying this device out:
"What were they thinking?"
"Microscopic wires"
"Flakey"
"Low bidder"
"Beat into submission"
"What about documentation and beta testing?"

Despite all these negative first impressions I am happy to report that the device is worth the money and can be made to work ("beaten into submission"), at least in DC mode. I have not tested its DCC capabilities.

I purchased my example in February 2011 for $58 from ebay seller Hobby-USA (MD), plus $7 shipping. Service and packing was good and the merchandise was fresh. It may be possible to purchase the unit for less.

I model in G scale. I have no interest in adding sound to my many locomotives which do not have built-in sound, so I thought this device would be a good way to enliven my indoor layout.

The first thing I noticed was that the 6 wires on the short, flexible cable are microscopic, perhaps 30 gauge, stranded. This is where the disparaging remarks "what were they thinking?", "low bidder" and "beta testing" come in. It took me several hours to correct this design error. I found some more substantial 6-conductor cable, stripped some insulation from the microscopic leads by heating them with a soldering iron (it is not possible to mechanically strip such small wire), soldering and heat-shrinking and finally encasing the whole mess in a large chunk of heat shrink. At the other end of my new control cable I connected the two speaker wires to a male, and the remaining 4 wires to a female, full-sized computer disk drive power cable. These make a cheap, sturdy, friendly quick-disconnect. The 4 wires going to the female connector consist of a pair for power (AC/DC up to 18V, no minimum voltage documented), and a pair going to the track. The track pair are not polarized and they also can be AC/DC up to 18V. Remember that I am reviewing this device as wired for DC use. Wiring for DCC is different.

I made up a mating connector attached to a 4" speaker instead of the smaller, included speaker, as the specs say the 1025 has a 3W amp. I made up a mating connector for the power/track wires and attached them to my LGB throttle, piggybacking them onto the "transformer" and "track" wires.

Imagine my disappointment when many of the functions of the 1025 did not work as advertized. Chief among these failures was the units inability to recognize when zero volts was applied to the track. It was not possible for the diesel motor to idle or for the steam engine to stop chuffing. After much consideration I decided that perhaps the unit required a separate power supply, so I attached it to an old transformer with 12VDC accessory terminals. This was the answer. Without this discovery the unit would be more trouble that it was worth, but with this undocumented revelation I like the unit. This is

just the first of many things left out of the documentation. In the text that follows I will tell you everything you need to know about using the unit in analog mode, saving you hours of experimentation. If you are able to make the non-working functions work, I'd like to hear about it.

The unit has a volume control, ten function buttons arranged somewhat logically, a MODE key and a SHIFT button. The next thing that is not documented is how to use the SHIFT button. Is it a toggle? Can you hold it down while repeatedly pushing function keys? Must you press it once before each push of a function key? Read on, as there is no single answer.

The MODE key is straightforward. Each time you press it you switch from DIESEL to STEAM mode and back. Because the processor in the unit is not too powerful, it may miss your button push while it is 'polling' all the buttons. This is true of all buttons, though, and is just the nature of a slow processor.

In neither of these modes is it possible to turn off the motor sound. You might have hoped to do that if your locomotive had built-in motor sounds but you wished to use only the miscellaneous sounds, like rail clacking or couplers. You might also be running an electric locomotive. This omission would have been caught in beta testing. The best you can do is adjust the volume of the motor sound to its lowest position.

DIESEL MODE

I will describe all the functions in Diesel mode, followed by the Steam functions.

There is no function to adjust the voltage when the motor goes off idle or reaches its maximum rpm. My example idles until .25V and reaches full rpm at 3.5V.

BELL: (Referred to in MRC instructions as 'F1', though this does not appear on unit).
Press button to toggle on bell sound every .7 seconds. Press again to toggle off.

F18 CHANGE BELL TYPE: Press and release SHIFT button, then press F18 to change to next bell type. The SHIFT button is not a toggle. Press it then press F18 each time you want to advance to the next bell sound. There are 8 bell choices. Press BELL when you have made your selection, to silence the bell.

F20 BELL VOLUME: This is supposed to somehow be used to change the bell volume. It is the only function, in analog diesel mode, that does not work.

H/W "HORN/WHISTLE": (Referred to in MRC instructions as 'F2', though this does not appear on unit). Press to sound horn. Release button to stop.

F19 CHANGE HORN TYPE: Exactly like F18 above, use SHIFT and F19 to cycle through a whopping 16 horn sounds. Since the HORN function is not a toggle like BELL, it is not necessary to do anything after you have made your selection.

F12 HORN VOLUME: 4 levels. Cycle through these levels using SHIFT and F12, just as you did with F18 and F19. It is not necessary to do anything after your have made your selection.

F3 AIR RELEASE: Press, release when done. Don't hold it down.

F4 COUPLING 1: Press for one clunk. Don't hold it down.

F5 BRAKE RELEASE (IDLE) (press momentarily) / **BRAKE SQUEAL (MOVING),** as long as button is depressed.

F6 DYNAMIC BRAKE: Press to toggle on or off. (This is the principle that makers of hybrid cars discovered only 50 years after train manufacturers, where the motor becomes a generator during braking).

F7 UNCOUPLING LEVER: Press momentarily. Don't hold it down.

F8 AIR HOSE FIRING: Press momentarily. Don't hold it down.

F9 ENGINE COOLING FAN: Press momentarily for a 2 second fan sound. For some reason IRC did not make this a toggle and holding the button down does not result in a usable sound.

F10 RAIL WHEEL CLACK when moving / **"ALL ABOARD"** when idle: The clack can be toggled off at any time, moving or idle. It doesn't cancel automatically. Unfortunately, the rail clack doesn't track the speed of the train.

F11 CROSSING BELL: SHIFT plus BELL starts and stops the crossing bell. In this instance it does not matter whether you press and release, or hold, the SHIFT button. At this point it would be natural for you to ask whether it is possible to sound the crossing bell, the horn, the rail clacking and the diesel rumble all at the same time, right? No, the crossing bell function cancels the rail clack. But you can still make a lot noise at one time with the diesel rumble, rail clacking and horn. Thus, this instrument has 3 "voices" ("sound on sound capability"). Since you would expect such a unit to have either 2 or 4 voices, perhaps there is a way to coax a 4th sound out of it, if not in DC, maybe in DCC.

F12 CHANGE HORN VOLUME: (covered above).

F13 TRACTION AIR COMPRESSOR ON/OFF: (Sounds like a Teletype to me). Press SHIFT, release, press F13 to toggle on or off.

F14 COUPLING CRASH: Press SHIFT then F14 momentarily to make sound. Makes no difference whether you release SHIFT.

F15 AIR PUMP: Press SHIFT then F15 momentarily to hear 24 revolutions of pump sound (about 3 seconds), followed by air release sound. Makes no difference whether you release SHIFT.

F16 EXHAUST: Press SHIFT then F16 to hear 1 second of this sound, whatever it is. I don't know why the duration is 1 second and no, you can't hold it down for a longer sound.

F17 CHANGE DIESEL RUMBLE VOLUME: Press SHIFT, release, press F17 to cycle through 4 levels of volume.

F18 CHANGE BELL TYPE: (Covered above).

F19 HORN TYPE SELECT: (Covered above).

F20 BELL VOLUME: (Covered above, doesn't work).

Thus, all diesel sounds in DC mode work and only F20 does not function correctly.

STEAM MODE

In this mode, operation is not as satisfactory as in diesel mode.

When you power up the unit, or switch from Diesel Mode, or at other random times, the unit may forget to chuff. You may be able to jolt it into working by pressing a function key such as Bell. But you may have to reenter the "START CHUFF POINT" by using F20 as explained below.

Even so, you will see that some functions simply do not work.

I also noted that the unit will misbehave if there is no load across the tracks. It puts 5V across the tracks when no locomotive is present, and this seems to confuse the circuit.

BELL BUTTON "STEAM BELL ON/OFF": Also known as F1 in the documentation, though this does not appear on the unit. This is a simple toggle and there is only 1 bell type.

H/W HORN/WHISTLE BUTTON: Whistle has terrible sound quality. Hold for the duration of the sound, as in Diesel Mode.

F12 CHANGE WHISTLE VOLUME: Use SHIFT with F12 to cycle through 4 volume levels. You must release the SHIFT key between steps.

F19 WHISTLE TYPE SELECT: Use SHIFT with F19 to cycle through 4 poor-quality whistle sounds.

F3 AIR RELEASE: Similar to Diesel Mode.

F4 COUPLING 1: Similar to Diesel Mode. Are you wondering why this is called "Coupling 1" when there is no "Coupling 2"? Me, too.

F5 BRAKE RELEASE (IDLE) / BRAKE SQUEAL (MOVING): Programming error: For some reason Brake Squeal is a fixed 1 second sound in Steam Mode, unlike the continuous sound in Diesel Mode. So in Steam Mode, this is a momentary switch.

F17 CHUFF RATE SLOW DOWN:
F18 CHUFF RATE SPEED UP:

Here is how these functions are supposed to work: Press SHIFT while pressing either of these keys. An audio signal will tell you when you have reached the minimum or maximum Chuff Rate. The audio signals do work, but the Chuff Rate is unchanged no matter how you use these buttons.

F20 CHANGE START CHUFF POINT: While this function also does not work, pressing SHIFT and then F20 can serve to reset the Start Chuff Point when track power is at zero volts.

Fortunately, although the Chuff settings are a failure, the default settings are pretty good. Your problem will be getting the Chuff to sound consistently, as mentioned above.

F9 SET CHUFF TYPE: Use this button to cycle through 4 different pitches of Chuff sound. This works!

F13 LONG (one second) AIR RELEASE: By now you can see that Functions 11-20 require you to do

something with the SHIFT key. . . Momentary. Don't hold it down.

F14 WATER INJECTOR: Momentary. Produces sound about 6 seconds long. Don't hold it down.

F15 HISS BLOW OFF: Momentary. Produces sound about 3 seconds long. Don't hold it down.

F16 COAL: Momentary. Produces sound of coal falling on metal for about 3 seconds. Don't hold it down.

F17 - F20: (Covered above).

CONCLUSION: This is not the only similar product available from MRC. It does seem to offer the most bang for the buck, since it includes Steam and Diesel sounds. I plan to simply install a speaker near the center of my layout.

But I have three ideas to enhance its utility. First, the output could be directed to a proper amplifier for improved sound quality. Second, the sound could be transmitted via a wireless speaker system ($10 and up) inside a piece of rolling stock (I model in G gauge, so space is not a problem). Finally, a set of, say, 4 speakers spaced around a layout could be wired to reproduce the sound individually, based on the position of the train. Train detection techniques could be used to switch the sound, and a very clever person could even cause the sound to fade as it moved from one speaker to the next. If I succeed in either getting the sound from this unit to follow a train, or to be reproduced inside a train, that will be worth writing another article.

Accompanying this document you will find a PDF file of the instructions and an audio file.

On the next page I have reproduced all the graphics from the box.

SYNCHRO SOUND BOX

FOR DIESEL AND STEAM

High Quality Realistic Digital Sounds

- For DC or DCC systems
- Synchronize sound with throttle
- Sound on sound capability
- Simple wire hook up

Speaker included

SYNCHRONIZED SOUND FOR DC OR DCC LAYOUTS

This stationary sound system features synchronized steam chuff or diesel rumble with many additional authentic locomotive sounds. The steam chuff and diesel rumble rate can be adjusted to match the locomotive's starting rate.

Installation is very simple. For DCC simply connect 2 wires to the track. For DC connect 2 wires to the track and 2 wires to the accessory terminals on your power pack. The speaker can be hidden anywhere on layout. System includes push button control, speaker and amplifier.

SYNCHRO SOUNDS FOR "DIESEL LOCOS"

High Quality Realistic Digital Sounds

Sounds include: Synchronized Diesel Rumble &:

Air Pump		Horn	Gear
Dynamic Brake		Brake	Flange
Brake Release		Bell	Couple
Coupler Lift Bar		Air	Sand

Speaker included

SYNCHRO SOUNDS FOR "STEAM LOCOS"

High Quality Realistic Digital Sounds

Sounds include: Synchronized Steam Chuff &:

Whistle		Coal	Fire Box
Shovel		Hiss	Flange
Water		Bell	Couple
Brake		Air	Sand

0001025 Diesel And Steam Sound Box

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