Mono-A-Mono
Last Updated: March 2008 (NOTE new lower price!)

Mono-A-Mono ("The Wonder Audio-Scrubber"), version 2.8, $ 20.72 as a download from the author's website using *Share-It!* The program file size is about 837 kB.
http://mono-a-mono.netfirms.com

Version 1.7 had a very simple user interface: just three sliders. **Click Detection, Noise Removal** and **Output Level**. All three have a 0 to 10 scale with a default setting in the middle at "5". In version 2.2 a fourth slider is labeled **Low-pass Filter (kHz)**. This is the filter cutoff frequency. It has 4 at the left end, 16 in the middle and 24 at the right end. The default setting is about 17 kHz. This is the third version I have evaluated so I was expecting "good results."

I've been working on cleaning up a bunch of Duke Ellington 78s from the 1920s and '30s using *DC6*, *Sound Forge* and *Wavelab* as needed. I selected two tracks that had proven somewhat difficult and I listened to the original raw digital version and then to my cleaned version. Then I tried *Mono-A-Mono* and I was very impressed with the results using just the four default settings. (Note: *Mono-A-Mono* is not also a sound editor so you have to open the cleaned file in an editor to listen.) The *Mono-A-Mono* file sounded as good as what I had achieved with *DC6* in perhaps an hour of work. The noise was virtually gone and I couldn't detect any added distortion (artifacts) from the cleaning. And cleaning **sdemo1.wav** was very satisfactory too.

I did experiment some with the **Output Level** control on one of the Duke Ellington tracks. The default "5" setting produces an output file about 3 dB lower (peak-to-peak) than version 1.5 which didn't have this control. A setting of "10" is about 6 dB higher than "5" while a setting of "3" is about 6 dB lower than "5". In general, it's best to set the **Output Level** as high as possible (without clipping, of course) as this gives you the best signal-to-noise ratio in the output file.

It's easy to scan a "raw" music file with a spectrum analysis program to see where the energy is. Many 78s have little energy above about 8 kHz so a variable frequency low-pass filter lets you minimize the high frequency noise. But the low-pass filter cutoff frequency has a non-linear scale so it takes some practice to figure out how to set it. To get some practice, try this procedure: Scan the "raw" file (assume the energy is mostly below 8 kHz), set the cutoff frequency to about 12 kHz and run *Mono-A-Mono*. Then listen to and scan the cleaned file (most programs let you do both at the same time.) Then set the cutoff frequency to, say, 15 kHz and try it again. Does the cleaned file sound bettor or worse than before?

Mono-A-Mono expects a stereo input file (AIFF or WAV) and produces a cleaned mono file. But the mono file is easy to convert back to stereo with a sound editor such as *Cool Edit* or *Adobe Audition*. Also, you can safely work in just one directory as *Mono-A-Mono* renames the output file so your original file is not over written. For example, an input file named track1.wav is cleaned and saved as track1-1.wav.

This is a view of the version 2.8 screen.
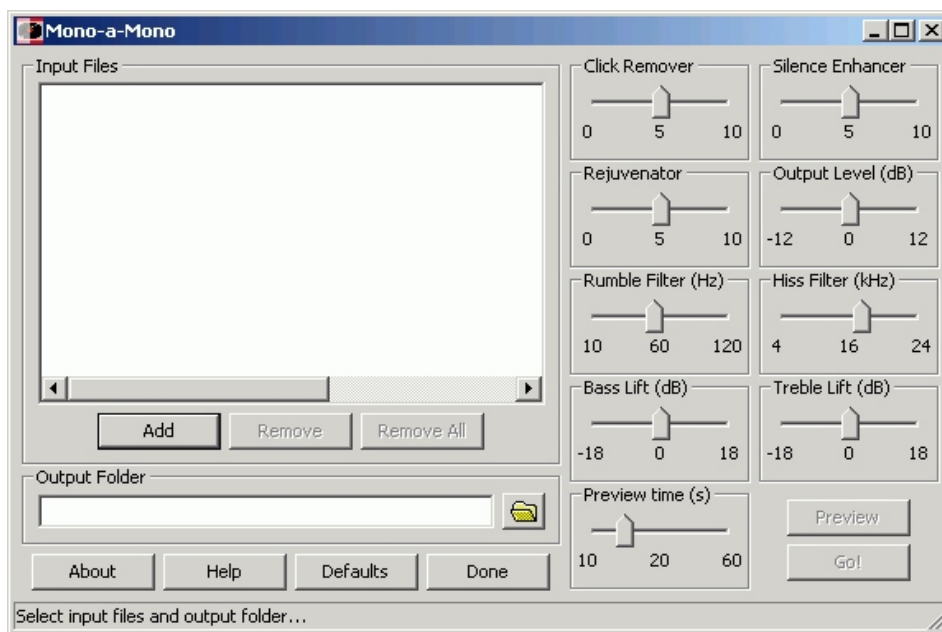
Click Detection in version 2.2 has been renamed **Click Remover** and the new **Silence Enhancer** seems to work much the same as the did the former **Noise Removal.** The **Low-pass Filter** has been renamed **Hiss Filter** and three new sliders have been added: **Rumble Filter**, **Bass Lift** and **Treble Lift**. The range minimum and maximum is shown for each slider and the screen is initially displayed with the default value in the center. This number changes as the slider is moved. (The default values can be restored by simply pressing the **Defaults** button.) Version 2.8 contains a new slider: **Rejuvenator.** It is intended to remove distortion such as you might find on a "well-worn" 78 or a 78 played with a microgroove stylus. If your record isn't distorted, set this control low (1 or 2). Since the operation of *Mono-A-Mono* is the same as version 2.2, I won't cover it again. But I've been asked how I go about working on a restoration, so here's my approach -- which you can use or not.

I make a first pass through the music track with the default values and then I listen to and watch the frequency spectrum with an editor such as *Cool Edit.* (*Adobe Audition* works fine too.) Depending upon what I hear and see, I adjust the appropriate sliders and make another pass. I repeat this process of listening and watching until I am satisfied with the results. As an example, I recently worked on a 78 RPM recording of the *Erroll Garner Trio* on the "Black & White" label recorded in January 1945.

The first pass did almost fine (more on this later) on click and pop removal so I left the top two sliders alone. There was no audible rumble so I left the **Rumble Filter** at its default setting. I could see from the spectral display that there was little energy above about 12 kHz so I set the **Hiss Filter** to 12 kHz. The bass and treble seemed rather out of balance so I set the **Treble Lift** to +6 dB. A pass using these setting gave excellent results on one side and very good on the reverse. There were two major clicks near the start of the reverse side which *Mono-A-Mono* didn't remove. I manually removed them with *Cool Edit* and this brought the track up to "excellent".

I couldn't find any information on the "Black & White" record label so I had no idea what equalization values to set into my preamp – so I guessed. The bass to treble imbalance was probably due to my guess not being close enough, but there's no way to really know.

Starting with version 2.5, the **Help** function has been expanded which lets you print a rather brief but still useful User Guide. Steve released version 2.6 during December 2007 with the **Preview** function now settable from 10 to 60 seconds. As the slider is moved, the center number shows the selected time.

Steve has a companion website: http://mono-a-mono.co.uk that hosts a large number (dozens) of music files that he has cleaned with *Mono-A-Mono*. The ones I have downloaded are all mono mp3 files which does decrease the download time – they all sound very good.

Highly recommended!

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