Philco Model 46-1209 with D10-A Changer Thanks to customer Dom

OK. Problem solved. I have a .5 volt mono cartridge installed on the original D10A phonograph tone arm. It is a Ceramic with a 3 mil sapphire needle for 78 records. VOM Part number P51-3 (info from VOM is -- Part Number-P51-3; Description-Ceramic mono cartridge with 3 mil sapphire needle for 78 rpm records; Replacement Comment-Astatic 51-3J, 51-3M, AC-C78, GC-78; Replacement Needles(s)-700S3).

I used the suggestion provided by dberman51 and connected one lead of the cartridge output to the phono/radio switch contact from the 7AF7 plate (phono pre-amp) which directs it to the high end of the volume control, the other lead is grounded to the chassis. The volume control is now effective from just shy of half way to all the way to max volume, and max volume is loud. This is fairly comparable to the volume response when listening to the radio. The phono/switch will isolate the cartridge when it is the radio position. This effectively just bypassed the phono pre-amp circuitry. Simple and elegant solution. I am learning a LOT about this stuff talking to you guys and I appreciate it VERY much.

A few more items to consider:

Cartridge mounting - The VOM cartridge has the standard 1/2" mounting screw arrangement. I removed the entire original cartridge and fabricated a sheet metal adapter to hold the cartridge using the original mounting hardware holes. The adapter is made from .040" thick steel replacement door skin from a 1970 Chevy pick up. It's what I had laying around. The extra connections on the cartridge lead were from when I tried a stereo cartridge. I will get rid of them. Cartridge and adapter weigh about 12.5g. The adapter can't allow the cartridge to hang too low below the tone arm or it will hit the tone arm rest when it rejects.

Tone arm balance - The tone arm on the D10A is a heavy beast at 109g. It has about a 200g counter weight in the rear end. The original cartridge weighed about 43g. This originally set up worked fine. I don't know the original tracking force. Since the pivot point is offset (lower) from a direct line between the two arm weights, the center of gravity actually shifts rearward when the arm is raised by the mechanism and it just stands up and will not come back down onto the records without sufficient weight on the cartridge end, and just adding weight to the cartridge end doesn't solve this. The rear weight must be reduced to avoid this. I cut the large weight into four slices to experiment. I ended up with about 100g on the rear end and installed the ceramic cartridge and adapter with no additional weight on the cartridge end. The arm behaved correctly through the reject cycle. Tracking force is about 14g. Plays well, no skips. I'll balance this better as needed to get the 8g tracking force recommended for the cartridge. I think washers can be added to the rear counterweight mounting screw for fine balance adjustment.

Hopefully this write up will help others get around the issues with getting this old beauty to play well.

Thanks to all.

Just a few last items to add. I needed to put some weight back into the rear of the tone arm to get an 8 gram tracking force. I used two of the remaining three segments that I made from the original rear weight. I also took the cartridge cable male connection off of the top of the transformer that was used for phonograph input to the pre-amp, and pop riveted into the rear of the chassis. I wired one input pin directly to the high side of the volume control, and the second input pin to a chassis ground. The third pin is for the cartridge cable shield and is connected directly to a chassis ground. Now I can connect the original cartridge cable to the back of the

chassis for phono input. I left the other cable which used to run from the transformer to the pre-amp in place and just coiled it up in the cabinet. It is still wired in place but is not connected to anything on the plug end. All other original wiring is still in place but not in use.

Everything is now back in the cabinet and seems to work well. Thanks again for everyone's help getting this resolved.