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Subject: Leslie Retrofit

Posted by [debuys](#) on Wed, 19 May 2004 04:27:09 GMT

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I was thinking of building a Leslie style rotator to place in front of a speaker. In other words something that I can use with a variety of cabinets, adjustable, but still standing on the floor in front of the cabinet. My amp tech suggested actually building a rotator with "brush" connections to rotate the mics themselves. Anyone seen or tried any of these ideas?

Thanks,

Robert

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Subject: Re: Leslie Retrofit

Posted by [ted nightshade](#) on Wed, 19 May 2004 05:42:24 GMT

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I LOVE it! This from a guy with 7 leslies. I used to wonder, how do they get the speakers to spin? What happens to the wires? I had great plans to build leslies, now I own 7 vintage ones.

I had a friend who built a line of DC motor leslies you could spin at variable speeds- couldn't find a quiet enough DC motor though. For that matter, the new Suzuki/Hammond Leslies are not as quiet motorwise as the old ones.

Finally found a fantastic, near silent DC motor with variable speed control! On a Musser vibraphone- the motor assembly alone costs \$800... still, it's just the ticket...

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Subject: Re: Leslie Retrofit

Posted by [Bill Park](#) on Wed, 19 May 2004 11:19:22 GMT

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Or you could do as one of the local showcase clubs did here, and hang large industrial ceiling fans in front of your speakers. Now EVERY song is "Crimson and Clover".

Bill

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Subject: Re: Leslie Retrofit

Posted by [Padboy](#) on Fri, 21 May 2004 01:24:37 GMT

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ted nightshade wrote on Wed, 19 May 2004 01:42I LOVE it! This from a guy with 7 leslies. I used to wonder, how do they get the speakers to spin? What happens to the wires? I had great plans to build leslies, now I own 7 vintage ones.

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Finally found a fantastic, near silent DC motor with variable speed control! On a Musser vibraphone- the motor assembly alone costs \$800... still, it's just the ticket...

Yup, the old/still made Ham-Suz servo pulsed 2 pole AC motors used in the 122A/XB and 147/A/XB series are an electronic bandage to a mechanical problem. The newer 21 series (designed in Japan) are a great remedy that does it right, but it's just as costly as your solution.

For people with 2 digit leslies with AC 4-pole motors only, there are several options. None of them perfect, but some of them are more perfect than others.

best,

pad

(11 leslies, 3 consoles, 1 spinet)

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Subject: Re: Leslie Retrofit

Posted by [Erik](#) on Fri, 21 May 2004 03:42:49 GMT

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debuys wrote on Wed, 19 May 2004 00:27My amp tech suggested actually building a rotator with

"brush" connections to rotate the mics themselves. Anyone seen or tried any of these ideas?

The Beatles experimented with this in the "Tomorrow Never Knows" timeframe.

Here's a nice site devoted to some of this stuff:

<http://mywebpages.comcast.net/vrbass/vibratone/>

Note that the speaker drivers in leslie speakers are not part of the rotating assembly.

--Erik

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Subject: Re: Leslie Retrofit

Posted by [debuys](#) on Sat, 22 May 2004 06:55:48 GMT

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Let me explain a bit further. I am thinking of building a rotateing baffle to place in front of a speaker cabinet. I dont need a large bulky leslie cabinet. That takes too much space for my taste. I am thinking of literally building a rotator that I can face against the speaker itself. I need some "why that wont work advice" so I can modify or abandon plans. I am hoping to spend around \$300 in parts. However, I'd hate to build an ugly, useless wind free pinwheel.

Most gigs I do these days involve small amps (local) or roadies and backline. I have no interest in anything heavy for live gigs.

Robert

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Subject: Re: Leslie Retrofit

Posted by [Scott Helmke \(Scodiddly\)](#) on Sat, 22 May 2004 16:12:31 GMT

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I've been playing with this idea a little, after I inherited a couple old tube-based turntable/amp things. Sound pretty good with a guitar plugged into the mic input, and then there's that spinning thing...

I haven't tried it yet, but I was thinking in terms of having a stationary board with some pie sections cut out and then a similar rotating board just in front of that. As it rotated the cutouts would line up and "open" to sound. Just having a single rotating board didn't do much. I also tried to build something like the bottom drum on a Leslie, but it would have needed too much work sealing edges and such. Plus a turntable spins too slow, even at 78.

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Subject: Re: Leslie Retrofit

Posted by [Padboy](#) on Sat, 22 May 2004 21:59:18 GMT

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If you just set up 2 boards in front of each other, (like a camera shutter) you're only going to get a tremolo/volume effect. The major part of the leslie sound (especially in the higher frequencies) is from doppler because of the rotating horn 'throwing' the sound in a circle.

Anyway - why don't you try ebay for pre existing units pulled out of spinets?

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=64430&item=3724811896&rd=1>

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=23794&item=3725869985&rd=1>

Those are essentially the 'guts' that exist in the vibratones that Erik mentioned.

Or... a drum unit ripped out of a standard leslie? (bigger than the ones above for 15" speaks but would need more work -and a motor assembly- to work)

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=64430&item=3725123098&rd=1>

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=64430&item=3725063786&rd=1>

I'm just trying to save you the trouble of reinventing the wheel.

Pun intended sort of.

later

pad

doppler enabled

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Subject: Re: Leslie Retrofit  
Posted by [debuys](#) on Sun, 23 May 2004 06:21:44 GMT  
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Thanks Padboy!

That's exactly what I needed. Although I did pass piano proficiency, I still lack basic search skills on Ebay and "Leslie" turned up an uninturpretable mish mash for me....  
I thought I was going to have to build a baffle and rotator from scratch. Um, reinvent the wheel as you said.

I bid on

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=64430&item=3724811896&rd=1>

If it's not right I believe at the least I can use the parts. If I loose the auction I know where to look for parts at least. Thanks for saveing me alot of time padboy. I am in your debt.

That was so easy that now I'm unprepared for the next step; implementation. Do you know any good links for Leslie style rotator maintenance, use and schematics? The above Item is different then what I had in mind but seems like the right place to start so now I'm in need of more info.

Thanks again,

Robert

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Subject: Re: Leslie Retrofit  
Posted by [Stephen Fortner](#) on Sun, 23 May 2004 06:30:31 GMT  
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Don Leslie actually tried a bunch of different configurations, and settled on the rotating drum and

horn assembly that's become a part of history. A lot of manufacturers have tried alternative takes on damping a speaker with some kind of rotating baffle, including Yamaha and Roland, and none of them sound anything like a Leslie.

In short, what you're proposing may well sound interesting and cool on guitar or keyboards as a special effect. If your goal, though, is to simulate the lush, throaty sound of a Hammond through a Leslie, don't try to simulate. Go for the real thing, or something from Motion Sound, or even the electronic simulation onboard a Nord Electro 2, Hammond XK3, or Roland VK series organ.

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Subject: Re: Leslie Retrofit

Posted by [John Klett](#) on Tue, 25 May 2004 18:24:32 GMT

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I am not sure what to suggest - the rotating drum would be different than a spinning board or a pair of shutters that open and close. Since you want to kick this in as an effect you have to deal with getting it out of the way when you turn it off. A drum thing would be as big as a small Leslie type thing anyway. We have a couple items in the shop that belong to one or another of the gang here. One does have an actual speaker and counterweight on an arm that spins like some sort of carnival ride. The arm thing is belt driven and there is a button on the end of the axle that is isolated from the rest of the contraption that has a spring bearing down on it to act as a commutator to get the speaker hot to the rotating speaker.

The original motor was shot so we took a reel motor from an MCI JH-110 and a variable DC supply to make it work - it perfectly quiet and ranged from a slow creep to dangerously fast... so now there is a foot pedal - like a volume pedal - to make that work.

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Subject: Re: Leslie Retrofit

Posted by [Padboy](#) on Wed, 26 May 2004 00:00:42 GMT

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debuys wrote on Sun, 23 May 2004 02:21

That was so easy that now I'm unprepared for the next step; implementation. Do you know any good links for Leslie style rotator maintenance, use and schematics? The above item is different than what I had in mind but seems like the right place to start so now I'm in need of more info.

Thanks again,

Robert

Most anything leslie and/or hammond can be found here. Links are at the bottom of the page:  
<http://www.captain-foldback.com/>

For an esoteric description of how it all works, try here:

<http://www.theatreorgans.com/hammond/faq/mystery/mystery.htm> |

John Klett wrote:

I am not sure what to suggest - the rotating drum would be different than a spinning board or a pair of shutters that open and close. Since you want to kick this in as an effect you have to deal with getting it out of the way when you turn it off. A drum thing would be as big as a small Leslie type thing anyway. We have a couple items in the shop that belong to one or another of the gang here. One does have an actual speaker and counterweight on an arm that spins like some sort of carnival ride. The arm thing is belt driven and there is a button on the end of the axle that is isolated from the rest of the contraption that has a spring bearing down on it to act as a commutator to get the speaker hot to the rotating speaker.

Sounds like an Allen Gyrophonic or something similar. A friend of mine in Canuckia has one. The organ companies that didn't talk to Don about customizing his speakers for their specific organs and went their own way did some pretty outrageous things to get away from patent infringement. Most of them sounded like hammered shit. I'm being polite.

Anyway, read and Ahn-Choy

later,

pb

Subject: Re: Leslie Retrofit

Posted by [ted nightshade](#) on Thu, 27 May 2004 20:54:16 GMT

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The other day I saw a thing labeled Leslie 102- looked like a 122 with two bottom rotors, complete with two sets of vents, one above the other, and the rotors had speakers built in- the speakers actually spun! Damnedest thing... didn't get to see it in action.

That's fascinating about the spinning speaker gizmo you describe, John- and a great source for a quiet variable speed motor!

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Subject: Re: Leslie Retrofit

Posted by [ssltech](#) on Fri, 28 May 2004 17:59:13 GMT

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...I had one o'dem! -the midrange speaker is fed through a 'Mercotac' ( [www.mercotac.com](http://www.mercotac.com) )to avoid the 'noisy/worn-out brushes' problem.

The 102 is a very different sounding beast to the 122. Very worth hearing! -i think that the classic 122 arrangement is the best leslie combo though. The ramp-up/ramp-down is wierd on the 102, since the different mass of the rotating assembly in the middle tends to not sound as glorious as the high-inertia-low-end/low-inertia-high-end of the traditional 122-style arrangement to me.

Keith

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Subject: Re: Leslie Retrofit

Posted by [ted nightshade](#) on Mon, 31 May 2004 23:49:41 GMT

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So it really was a 102- I saw it in an old hack shop junk shop so I didn't know if it was stock, totally mislabeled, or what...

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Subject: Re: Leslie Retrofit

Posted by [Padboy](#) on Sat, 05 Jun 2004 21:54:09 GMT

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The 102 was usually paired up with a 103, they were made for a Gulbransen Rialto K (organ) or similar. I actually ended up with the first set of them made a few years back. Serial #001 and 002. They don't sound at all like a 122/147, but some of the guts are great for a parts whore like me.

later,

pb

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Subject: Re: Leslie Retrofit

Posted by [debuys](#) on Wed, 09 Jun 2004 08:42:13 GMT

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I recieved the leslie assembly today and have been testing it. Its a Colls rotator salvaged from an old organ. It has two motors (fast and slow) a rotateing baffle and pully and an 8" Jenson speaker housed in a plywood box facing the baffle.

I want to modify it a bit. It will be used in a studio primarilly from guitars. All the parts are working fine with the exception of the speaker (holes in the surround) and no switch or power is wired.

I tried a three speed cieling fan switch on the fast motor and got just one speed. The switch also included an on/off switch for a light wich I wired to the slow motor. The end result was I burned up the switch and was left with fast or off.

The unit must stay vertical for the two motors to work together. I need to construct a base, butress, or cabinet to keep it this way.

I want a rotating speaker that can be used for recording. Gigging with it would be nice, but I have an aversion to toteing too much gear. I've got myself to the point where I can carry all my gear in one trip on most gigs.

I would love it if I could get a quality 12" speaker in it, switch between fast and slow AND have

continuous controll.

The fast is too fast and the slow is too slow on this thing and the speaker is beat up and can handle only 35 watts.

Suggestions?

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### File Attachments

1) [4c\\_1\\_sb.jpeg](#), downloaded 106 times

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Subject: Re: Leslie Retrofit

Posted by [Scott Helmke \(Scodiddly\)](#) on Thu, 10 Jun 2004 01:37:37 GMT

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You want to switch on either the fast or the slow motor - not both at once! You could use solid state relays to do the switching silently.

The slow motor, incidentally, should sort of pull itself into the coil and there get its shaft rubbing on the fast motor wheel - sort of a cheap gear thing. The slow motors are what go bad, the bearings wear out. You could get it rebuilt, or you could check Goff Professional for a modern controller which can do fast and slow off the fast motor.

<http://www.goffprof.com/shopping.jsp?p=140>

(you could also buy a replacement slow motor...)

Or you could try running the fast motor off a variac.

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Subject: Re: Leslie Retrofit

Posted by [ted nightshade](#) on Fri, 11 Jun 2004 13:29:41 GMT

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That's how these organ leslies are on guitar- the fast is too fast, the slow is too slow. I have a Leslie 16, virtually identical to a Fender Vibrolux (did I get that name right?), which actually can get the speeds right in there where they ought to be for guitar. It's a lot smaller than a 122 or 147.

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