

## Maintenance, Troubleshooting Tips, and Repairs

Mackie mixers are notoriously bulletproof and reliable, but, hey . . . stuff happens. Any electronic product with this many components can occasionally suffer a minor casualty.

Even if we could build a mixer that never fails, there are those acts of nature or Congress that tend to fall upon consoles occasionally – spilled coffee, a toppling monitor, a thoughtless visitor eating peanut butter crackers over the fader slots.

This section offers some suggestions on how to get your mixer healthy again, or determine for sure that it's time for it to visit the hospital.

### Troubleshooting

It'll be to your benefit to do a little basic troubleshooting first to determine whether your mixer is really malfunctioning or if there's pilot error or simply something unplugged. Searching for a loose power plug or signal connection before you dig into the mixer might save you some downtime. It'll also save you money because if you send your mixer off for repair and the problem can't be duplicated at the factory or repair shop, you're out of business for a while, and you may be hit with a service charge as well as shipping costs.

We could write a whole book on troubleshooting, but we won't. Here are some things to look for that might get you right back on the air.

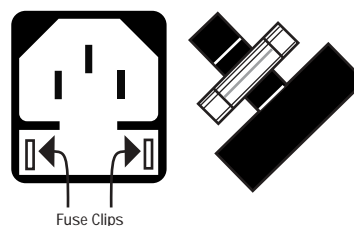
#### Power Considerations

This sounds insultingly simple, but if the whole console is dead, is it plugged in? Really? Is the Power switch on? That's not as silly a question as it seems. On many Mackie mixers, the main power and phantom power switches are adjacent. If you switched the console on by feel, no matter how many times you've done it before, you may have flipped the wrong switch.

Is the power cable securely seated in the socket at the back of the mixer or power supply? Did someone unplug it from the AC outlet so they could plug in their boom box to record the show? Did a fuse or circuit breaker in the building blow? Plug something else into the AC outlet to be sure there's juice coming out.

#### Check the Fuse

All Mackie mixers prior to the Onyx series use a standard, fused IEC power connector. There's a fuse located inside the chassis-mounted power connector. Remove the power cable and slide out the fuse holder compartment. It comes straight out, perpendicular to the panel. Gentle prying with a tiny screwdriver will release it.



Once you've separated the fuse holder from the power connector, you can remove the fuse from the holder easily. Try it now, before you have a problem, note the size and rating of the fuse, and get a spare. Radio Shack might not be open in the middle of a gig. Don't try it on an Onyx, though. Those mixers don't have a fuse that's accessible from the outside.



**A Closer Look** A note about fuses: The fuse is there to protect the wiring, not to prevent disasters. A fuse can open up from a hard physical knock, a voltage surge on the power line, and sometimes it can just die of natural causes. If the fuse has blown, however, chances are pretty good that there's an electrical reason and the replacement fuse will blow, too. If it does, this is a sign that your mixer is due for a trip to the hospital.

#### Intermittents

These are the most pesky problems. Sometimes it's there, sometimes it's not. Faulty cables, dirty plugs, or jacks are often the culprit. A plug can sit in a jack doing its job perfectly for months and then suddenly decide (based on temperature, humidity, or the phase of the moon) to short out, stop conducting, or partially conduct, causing crackling noises or distortion rather than simply interrupting the signal flow.

If you're having trouble with a single channel or a single signal path, for gosh sakes swap the cable with a known good one or plug the signal into another channel before calling the doctor. A quick shot of contact cleaner in a troublesome jack will often solve the problem. ProGold® from Caig Laboratories is

effective and harmless to the inner workings when used as directed. It's stocked at most pro audio dealers, music stores that sell sound equipment, and even some Radio Shack stores.

## Troubleshooting Checklist

Dumb as some of these suggestions may seem, troubleshooting is a systematic process. Some of the simplest problems are often overlooked in the heat of the moment. Keep cool and check everything.

### Bad Channel

- Is the channel assigned to someplace where you can hear it?
- Is the FADER or GAIN knob turned up?
- Is the problem with a mic channel? Is it a condenser mic that requires phantom power? Is the phantom power switch turned on?
- Try unplugging any INSERT devices to see if the channel path is restored. If it's OK, the problem is with the inserted device (it might be turned off) or the cable.
- Is the signal source working? If it's a tape deck or instrument, is its volume control turned up? If it has a headphone jack, listen with headphones to see if it's working. Solo the channel and see if the Level-Setting Procedure works. Try plugging the same source into another channel set up exactly like the problem channel. This will tell you if the trouble is with the channel or the source.
- Is the MUTE (ALT 3-4) switch pressed?
- On the 8-Bus, are the MIC/LINE and FLIP switches in the correct position?

### Bad Output

- Is the associated level knob (Main output, AUX master, etc.) turned up?
- If the problem is with one of the MAIN OUTS, try unplugging all the others. For example, if it's the 1/4" Left Main out that's dead, unplug the RCA and XLR Left outputs. If the problem goes away, it's not the mixer. It's most likely a short in one of those cables.
- If it's a stereo pair, try switching the channels. For example, if a left output appears to be dead, switch the left and right cables at the mixer end. If the problem switches sides, it's not the mixer.

## Noise

- Turn the channel GAIN and AUX RETURN knobs down, one by one. If the noise disappears, it's either that channel or whatever is plugged into it, so unplug whatever that is. If the noise disappears, it's from your whatever.

## Power Amplifier and Speaker Troubles

- The usual channel swapping techniques work for diagnosing problems beyond the mixer. If one side of the PA system is louder than the other, after checking to be sure you don't have a source panned off-center or have a submaster fader turned down, try swapping speaker cables at the amplifier end. If the problem moves to the other speaker, that indicates trouble with a speaker or speaker cable. If the problem remains on the same side, there's trouble with the amplifier output on that channel. Swapping input cables to the amplifier (if the amplifier is external) will tell you if you have a good input signal to the amplifier.
- On the PPM series mixers, plugging something into the POWER AMP IN jacks disconnects the mixer outputs from the built-in power amplifiers. If you're not using an outboard amplifier, those jacks should be empty.



On early PPM mixers, plugging into the POWER AMP IN jacks does not disconnect the power amplifier from the mixer output. The power amplifier gets the combined signal from the internal mixer and the external device plugged into this jack.

## Weak Bass

It's possible that the polarity of one of the speakers is reversed with respect to the other. This could be caused by a miswired cable or miswired speaker. Swap the two speaker leads at the power amplifier terminals on one channel only. If you have a powered mixer, try a different speaker cable.

## PPM Mixer Shuts Down When The Music Gets Loud

This usually indicates that the thermal shutdown has activated.

- Check to be sure inputs are not clipping. Clipped audio drains more power than clean audio.

- Check for adequate air flow behind the mixer in the area of the heat sink. Move it into the shade if you're working outdoors. A sunbonnet looks cute. (On the mixer, not on you!)
- Make sure the speaker impedance is 2 ohms or greater. An almost-shortened speaker cable (one with a single strand of wire shorting to the opposite conductor) may still deliver some sound to the speaker but will look to the amplifier like you've connected a few extra speakers.

## A Clean Fade(r)



Faders are not rocket science - they operate by dragging a metal contact (the wiper) across a carbon-based strip (the track). If you smoke or eat greasy hamburgers too near your mixer, it's possible for airborne crud to land on the fader track. Should that happen, you may hear scratchy noises or signal dropouts as the wiper stumbles over the greasy particles. If it's bad for your health, it's probably bad for your mixer's health, too.

Work in air conditioned rooms whenever possible, avoid smoking near the mixer, keep food and drink away from the mixer, and for pity's sake, never put the mixer in your kitchen!

We also recommend "exercising" the faders - give them a few full-travel swipes once a week or so. That will help scare the crud away. As a rule, we do not recommend the use of spray cleaners in pots and faders (though they're fine for jacks), but a blast of dry, purified air (computer and camera stores sell aerosol powered canned air in the "cleaning supplies" department) is good first aid.

## Need Help?

You can reach a Mackie technical support representative Monday through Friday from 7 AM to 5 PM Pacific time by calling 800-898-3211, or from outside the USA, 425-487-4333. You can also go to the web site <http://www.mackie.com> and click on Support, or e-mail us at [techmail@mackie.com](mailto:techmail@mackie.com) and we'll get back to you, almost always the same day or first thing next morning (here).

## Repairs

Service for Mackie products is available at a factory-authorized service center. Service for Mackie products living outside the United States can be obtained through local dealers or distributors.

If your unit needs service, follow these instructions:

1. Review the preceding troubleshooting suggestions. Please.
2. Call Tech Support at 1-800-898-3211, 7 am to 5 pm PST, to explain the problem and request a Service Request Number. Have your serial number ready. You must have an Service Request Number before you can obtain warranty service.
3. Keep the owner's manual and the detachable linecord. We don't need them to repair the mixer.
4. Pack the mixer in its original package, including endcaps and box. This is VERY IMPORTANT. Mackie is not responsible for any damage that occurs due to non-factory packaging.
5. Include a legible note stating your name, shipping address (no P.O. boxes), daytime phone number, Service Request Number, and a detailed description of the problem, including how we can duplicate it.
6. Write the Service Request Number in BIG PRINT on top of the box. Units sent without the SR number will be refused.
7. Tech Support will tell you where to ship the unit for repair. We suggest insurance for all forms of cartage.
8. You will need to contact the authorized service center for their latest turn-around times. The unit must be packaged in its original packing box, and must have the Service Request Number on the box. Once it's repaired, the authorized service center will ship it back by ground shipping, pre-paid (if it was a warranty repair).

**Note:** Under the terms of the warranty, you must ship or drop-off the unit to an authorized service center. The return ground shipment is covered for those units deemed by us to be under warranty.

**Note: You must have a sales receipt from an authorized Mackie dealer for your unit to be considered for warranty repair.**

## Notes

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