Newcomers and Elmers Net: Fixing Common Problems
09.04.16 Robert AK3Q

Experienced operators make mistakes just like newcomers. Along the way we have learned from experience, and our hope is that our experiences can save you some time and effort!
A good rule of thumb is to start with the simplest explanations first
-- think through what you are trying to do
-- how should the radio be set? What are the steps involved, like a checklist
-- in fact, a checklist can be a really useful thing, and not just for newbies!
-- if radio fails to power on, check power connector; check power supply; check circuit breakers and wall switches
-- always check the fuses in the power cables, not just for being blown, but also for weak contact points; they usually have springs in them…are they still putting enough pressure on the fuse, etc.
-- make sure the power is off and that you have waited a bit for any residual power to drain off
-- also, make sure the radio really isn't on but not audible—sometimes settings may make the radio look like its not working when it really is
-- if the squelch is turned off, the audio is turned down, or the RF gain gets nudged, you are likely to think things are not working
-- I have had that happen to me more than once!

-- it is very easy to get careless with equipment we think we know like the back of our hand
-- for example, a quick check of a fuse may indicate it is okay—but is it? Check it with a meter; sometimes a blown fuse is hard to see
-- oxidation on power connectors can keep a radio from transmitting or from transmitting with full strength
-- I recommend something like DeOxit or a Marine strength cleaner for electronics such as CRC's QD Electronic Cleaner – it is a bit more expensive, but it dries fast and does not leave any residue
-- I have had to use this many times, in fact just today, I had a battery pack that would not power on the radio. Finally, I sprayed the contacts and voila! It powered on.

Transmitting
-- if you are trying to transmit and nothing is happening, there are a number of things which can go wrong without being a real problem
-- I cannot stress enough how often a problem is really just a simple setting issue—there are so many variables you that have to follow a logical approach to checking things out

-- check connectors (microphone, antenna, power supply); check for a solid connection (many radios will power on and seem fine when receiving, but transmitting draws significantly more power);

-- make sure any antenna/coax switches are set properly -- check for mode – make sure the radio is in the proper mode (for example, many radios will not transmit anything if the mode is set for CW and you press the microphone button)
-- check your microphone gain, vox settings, and anything else which can affect transmit such as RF gain or the lock button
-- don't forget to check your frequency most radios will not transmit out of band!
-- if using anything dependent on sound make sure volume is up or mute is not turned on; if using digital modes make sure the computer's sound card is adjusted properly, and so on
-- and don't assume no one has touched your radio! And don't assume you left everything set right the last time you used it!
-- more than once I have had a coax switch in the wrong position and wondered why my antenna suddenly didn't work! It happens!
-- if the bands all sound quiet, check the attenuate filter or mode settings, and again check the antenna connections/switches/routing

Getting in a hurry is often our worst enemy, right up there with familiarity breeding contempt
-- in some ways it would be better for us if we treated each radio session like we were setting up new equipment
-- if you use a tuner are the settings correct? How about the mode? If the radio or an amplifier can be put in standby, has this happened?
-- when operating VHF/UHF there are even more things which can go wrong, such as input/transmit frequencies; PL/CTCSS codes, low power, antenna connectors coming loose on an HT, etc.; as well as out-of-band issues
-- and of course, if using a repeater, check multiple repeaters – the one you are trying to use might be down

Also keep in mind newer radios are very sensitive to SWR overload and will cut back power to protect themselves—this can happen for a number of reasons, so don't be surprised when something like this happens; start checking the basics first

Always check and recheck cables and connectors—especially when they are ones which are connected and disconnected regularly
-- sometimes just reseating a connector can fix a problem; get in the habit of disconnecting and reconnecting cables "just in case"

-- even cables which have not been touched can develop problems with oxidation or vibration or become loose in obvious and no-so-obvious ways
-- most of us have had the experience of “fixing” something by turning it off and back on, unplugging a cord, or something similar

Connectors can become loose easily without ever being touched
-- natural vibrations, heating and cooling contractions, etc, can all cause a cable to work loose, especially ones which provide a ground such as coax or a microphone cable
-- similarly small cables with 1/8” connectors can easily become dislodged, as can USB cables or serial cables
-- when you add computer connections to things you add a lot of complexity, especially when running digital modes or controlling your radio through software
-- drivers can be corrupted, ports can be shared or ignored, and settings for one piece of software can conflict with settings for other software

If you can’t figure out what’s wrong take a break and come back fresh in an hour or two, or the next day
-- I have learned the hard way to back off sometimes and let your subconscious chew on something while you sleep
-– it is amazing how many times the answer comes to me the next day

Antenna Issues
Aside from damage from rain or wind, the usually culprit with antenna problems is bad coax
-- water seeping into a coax can cause shorts or corrosion, and damaged coax can lead to shorts along the line
-- a simple test for a coax short is to take an Ohm meter and test the inner connector and shield—disconnect the coax from the radio and the antenna and touch the positive and negative probes to the inner conductor and shield respectively and read the meter; it should show infinite resistance (open); if it shows 0 resistance you have a short
-- if that is fine, test for an open line—put the positive on one end of the center conductor and the negative on the other end of the center conductor and check your reading; then do the same with the shield on both ends; the reading should be zero in both cases, else you have an open wire (break)

Other problems can be with the antenna itself
-- look for changes in the antenna—has it come in contact with other antennas or with metal objects? Has a wire broken, a connector broken, or has an element moved?

-- if your antenna has a ground is it still connected? Are tree limbs getting in the way (they can cause shorts); is there snow or ice or rain on the antenna? These could all cause issues under the right conditions
-- check ropes a guy wires for slack which could change you antenna's position

Ask For Help!
Before sending in your radio or other equipment for costly repairs, try to get an outside opinion or two
-- sometimes other hams are good resources, as well as checking out symptoms through the internet or the manufacturer's website
-- sometimes a call to the tech department of the manufacturer can give you a clue as to what is wrong, and they might be able to talk you through the issue over the phone
-- many problems can be solved just by looking at them from the right perspective, so don't be afraid to ask for help
-- also, sometimes borrowing someone else's equipment can help you figure out where a problem is, such as if the transmitter is the problem or if the antenna is the issue

Expect to make mistakes, to over look the obvious, and most importantly to learn from these experiences – we all do!!