

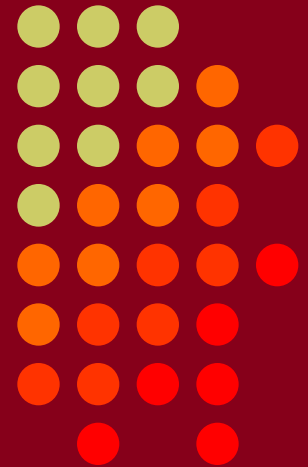
How to Maintain and Take Care of Your Contest Station

Contest success often depends on how well you prepared your station for competition

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• CTU •
CONTEST
UNIVERSITY

ICOM®



Tower Inspections and Maintenance Help You Avoid Mid-Winter Failures and Reliability Problems During Your Next Contest



- Measure all guy wire tensions (7 to 15% of breaking strength)
- Inspect guy wires, guy hardware and guy anchors for damage
- Inspect tower plumb and twist
- Inspect the tower base for standing water and
 - corrosion, settling and cracks at the tower-to-concrete interface
 - regularly remove all debris from tower bases to avoid corrosion
- Inspect rotator performance and play
- Inspect tower and guys for damage after major wind storms
- Pay special attention to damaged, loose, missing or corroded:
 - diagonal and horizontal trusses, welds and hardware
 - especially those adjacent to guy attachments

Antenna Inspections and Maintenance Help You Avoid Mid-Winter Failures and Reliability Problems During Your Next Contest



- Inspect coax cable for cuts, cracks, damage and moisture intrusion
 - cuts, chaffing and wear rotator loops
 - Water intrusion at electrical and physical attachments to antennas
- Compare coaxial cable losses to prior measurements
- Compare antenna VSWRs to prior measurements
- Inspect connector water proofing and verify PL-259 tightness
- Inspect for rope wear - replace rope before it fails
- Inspect antenna wire for wear and connections to feed lines
- Repair or replace unreliable, failing or overloaded rotators
- Inspect antennas and coaxial cables for lightning damage
- Inspect antennas, feed lines and rotators for wind damage

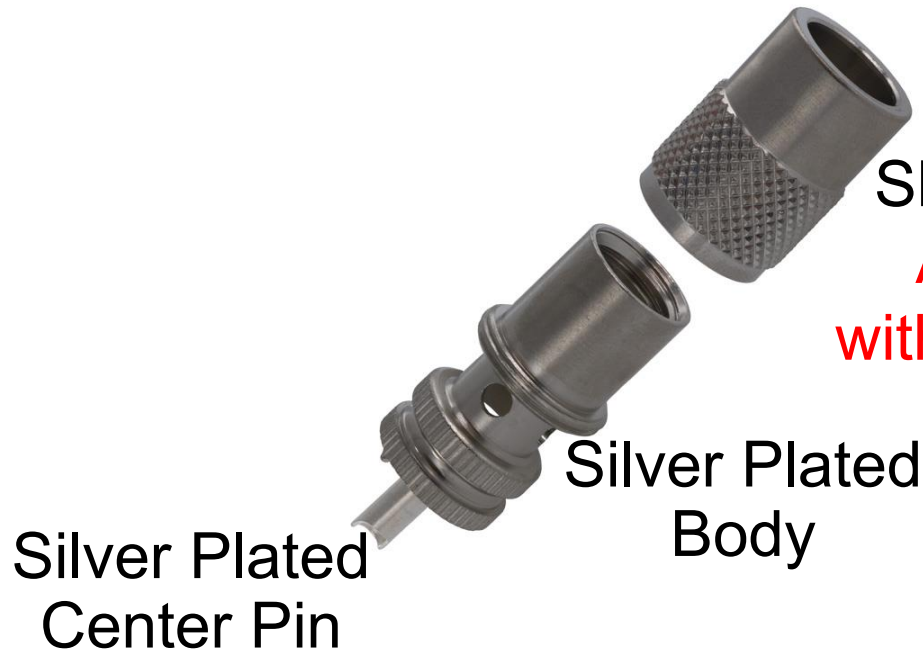
Improving the Reliability of Coaxial Cable Connectors



- N and UHF connectors are the most common choices
 - neither have significant loss at HF
 - neither have significant VSWR at HF
- High quality silver plated UHF connectors provide much more center pin mating pressure than N connectors
 - eliminates connector failures and cross-station interference from potentially unreliable N connector center pin mating pressure
 - **avoid saving a few dollars on cheap unbranded hamfest connectors**
- Avoid use of adapters -- but if necessary -- use only name-brand silver plated adapters, not nickel plated
- Wrench-tighten UHF connectors
 - just enough so they cannot be loosened by hand
- Inspect SO-239 connector center pin mating pressure

Coaxial Cable

Amphenol 83-1SP PL-259 Connector



Shell labeled exactly:
Amphenol 83-1SP
with no additional digits!

DX Engineering, Mouser Electronics and RF Connection

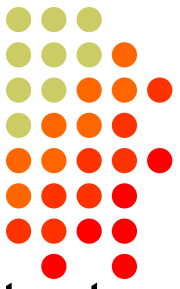
Coaxial Cable Connector Waterproofing



Cover the connectors with two 50% overlapped layers of Scotch 130C stretched to 50% of its original width, sticky side facing out

Cover the Scotch 130C with two 50% overlapped layers of Scotch 33+ or Scotch 88

Execute Your Proof of Performance Checklist Before Every Major Contest



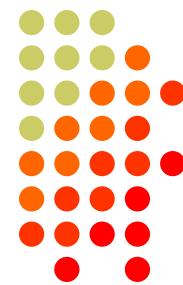
- Identifies problems that might be unnoticed until the contest
 - improve and update your checklist regularly
 - record all performance measurements
- Never enter a competition with unproven equipment/software
- Prove proper operation of all antennas, rotators and outdoor equipment far enough in advance so you can make necessary repairs
- Prove proper operation of all indoor equipment far enough in advance so you can make necessary corrections
- Prove proper operation of all software far enough in advance so you can make necessary corrections
- Your checklist may have well over 100 items to be checked
 - most checks take just a few seconds

Transceiver Checklist



- Receiver sensitivity, preamp and attenuator settings
 - external noise about one S-unit above internal receiver noise
- Transceiver frequency control from the logging program
- CW keying quality
 - from logging program and from external keyer
 - verify proper paddle and external keyer operation
- Transmitter audio equalization settings
- Receiver audio equalization settings
- Transmitted audio quality, background noise and RF power
 - from microphone and from logging program
- Receiver audio quality in your headset
- Reliable footswitch operation
- DC voltage at the transceiver at the desired RF output power

Computer Checklist



- Verify BIOS settings
- Replace CMOS battery when needed (typically five years)
- Reliable interface cables to transceiver
- Reliable LPT or serial port keying cable for CW keying and PTT
- Reliable audio cables to the transceiver
- Reliable keyboard and mouse
- Reliable, effective and enabled computer security for internet connected computers

Windows Operating System Checklist

this will be a lengthy checklist



- Verify that the date and time are correct
- Automatically hide the Windows taskbar
- Turn off all notifications, tips, etc
- All unnecessary Windows settings should be unchecked
- Set the sleep function to never
- Set password on wakeup to never
- Put computer to sleep: never
- USB selected suspend: never
- PCI-Express link state power management: off
- Display: turn off display after 180 minutes
- Remove all unnecessary desktop icons

Computer Network Checklist



- Verify network settings and connectivity
- Reliable internet connectivity
- Secure internet connectivity
- Enable the Ethernet network

Logging Program Checklist

this will be a lengthy checklist



- Configure all computer interfaces
- Select the parameters of every logging program window
- Check external DX spotting network connectivity
- Check external Contest Scoreboard connectivity
- Install latest country files
- CW keyer settings and keying quality
- Voice recorder settings, audio quality and background noise
- Setup logging program parameters for the selected contest
- Select the correct band plan for the selected contest
- If networking multiple computers, select the station names
- If networking multiple computers, configure time distribution across the network from only one selected computer

DX Spotting Network and Contest Scoreboard Checklist



- DX spotting networks
 - Verify reliable internet connectivity
 - Verify desired spotting network settings
- Contest scoreboard
 - Verify reliable internet connectivity
 - Verify your callsign and score uploads to the scoreboard