

Technician Licensing Class

Run Some Interference Protection

Presented by

The image shows the cover of a book titled 'TECHNICIAN CLASS' in large yellow letters. Below the title, it says 'FCC Element 2 Amateur Radio License Preparation'. At the top, there are three tabs: 'TECHNICIAN CLASS' (selected), 'GENERAL CLASS', and 'EXTRA CLASS'. The cover features three small photos of people in radio-related settings. A circular badge on the left says 'NEW! A BIG RED!'. The author's name 'by GORDON WEST, WB6NQA' is at the bottom. A list of features is provided in a red-bordered box:

- Fully Illustrated Text: Aids Learning
- Questions Reorganized for Logical Easy Learning
- Highlighted Key Words in Answer Explanations
- Fun & Quizzical Explanations: Teach You Ham Radio
- Over 125 Addresses of Helpful Educational Websites
- Frequency Chart Showing Privileges
- Chapter on Learning Morse Code
- List of VEC Examiners

At the bottom, it says 'Includes BONUS COUPONS!' and 'FREE Q MAGAZINE TRIAL SUBSCRIPTION FREE BOOK WITH ANNUAL MEMBERSHIP DISCOUNT ON YOUR FIRST RADIO!'. An image of a radio is shown in the bottom right corner.

Amateur Radio Technician Class Element 2 Course Presentation

➤ **ELEMENT 2 SUB-ELEMENTS** (Groupings)

- **About Ham Radio**
- **Call Signs**
- **Control**
- **Mind the Rules**
- **Tech Frequencies**
- **Your First Radio**
- **Going On The Air!**
- **Repeaters**
- **Emergency!**
- **Weak Signal Propagation**

Amateur Radio Technician Class Element 2 Course Presentation

➤ **ELEMENT 2 SUB-ELEMENTS** (Groupings)

- **Talk to Outer Space!**
- **Your Computer Goes Ham Digital!**
- **Multi-Mode Radio Excitement**
- **Run Some Interference Protection**
- **Electrons - Go With the Flow!**
- **It's the Law, per Mr. Ohm!**
- **Go Picture These!**
- **Antennas**
- **Feed Me with Some Good Coax!**
- **Safety First!**

Run Some Interference Protection

- T7B10 If you receive a report that your audio signal through the repeater is distorted or unintelligible:
 - Your transmitter may be slightly off frequency,
 - Your batteries may be running low,
 - You could be in a bad location. **All of these choices are correct.**
- T4B1 If a transmitter is operated with the microphone gain set too high the output signal might become distorted.
- T7B1 If you are told your FM handheld or mobile transceiver is over deviating, talk farther away from the microphone.
- T2B7 If you receive a report that your station's transmissions are causing splatter or interference on nearby frequencies check your transmitter for off-frequency operation or spurious emissions.

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- T4B5 Turning on the noise blanker would reduce ignition interference to a receiver.
 - Not on common FM handheld or mobile FM radios
 - On bigger high-frequency, multi-mode transceiver



Even this older Icom 730 has the NB function

PreAmp built in

NB - Noise Blanker

Run Some Interference Protection

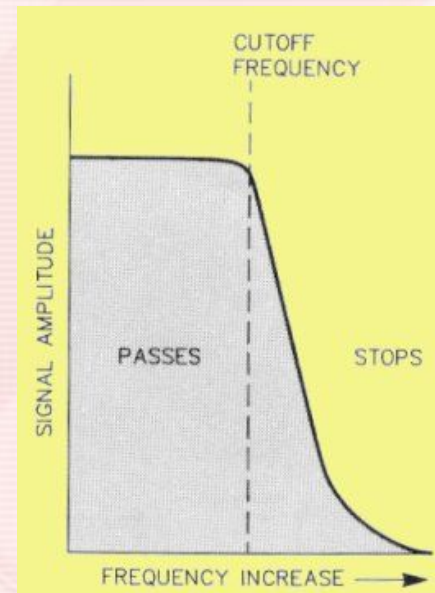
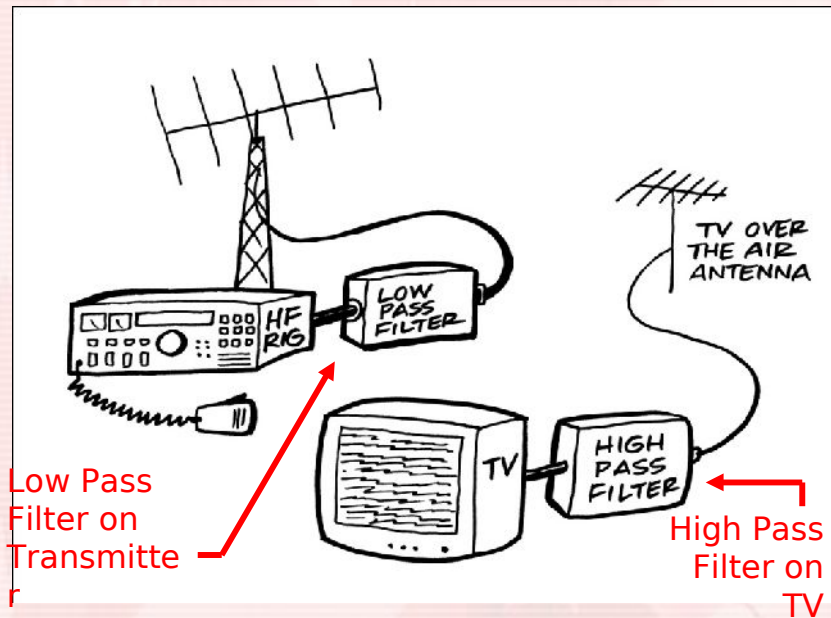
- T7B9 If another operator reports a variable high-pitched whine on the audio from your mobile transmitter, noise on the vehicle's electrical system is being transmitted along with your speech audio.
 - Automobile alternator without filters on leads
- T4A10 The alternator is the source of a high-pitched whine that varies with engine speed in a mobile transceiver's receive audio.
- T4A9 You would use a ferrite choke on the shield of an audio cable.

Clam shell iron devices just snap on over wiring



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- T4A5 A band-reject filter should be connected to a TV receiver as the first step in trying to prevent RF overload from a nearby 2 meter transmitter.



Passes low frequencies and cuts high frequencies

Low Pass Filter

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- T4A4 Install a filter between the transmitter and antenna to reduce harmonic emissions.



Drake TV-3300-LP Low Pass Filter. 80 db attenuation above 41 MHz. 1000 Watts below 30 MHz.

There are low-pass filters like this one, band-pass filters, and high-pass filters that can be used to solve interference problems.

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- T7B3 Causes of radio frequency interference:
 - Fundamental overload;
 - Harmonics;
 - Spurious emissions.

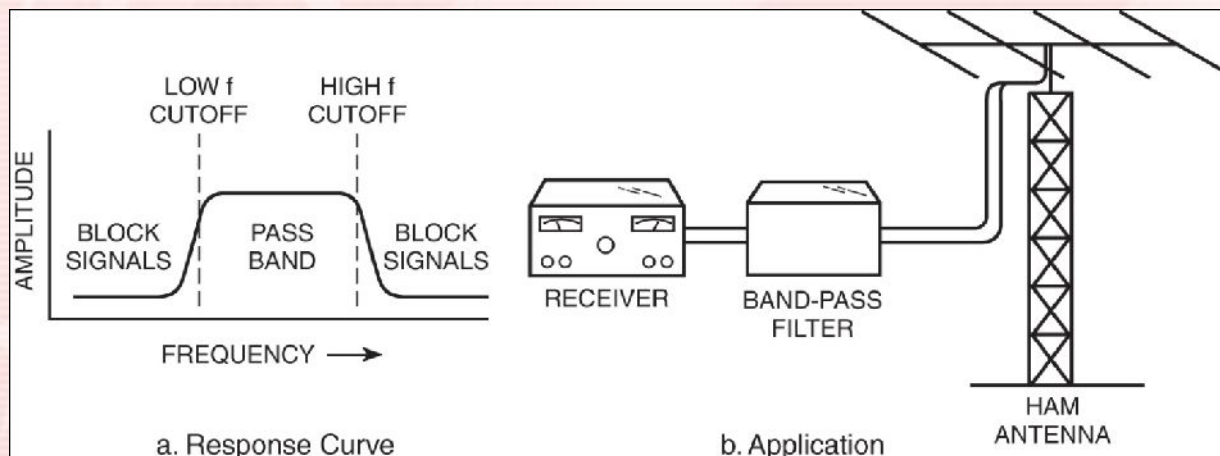
All of these choices are correct.
- T7B11 Reports of garbled, distorted, or unintelligible transmissions can be caused by RF feedback in a transmitter or transceiver.
 - Most likely cause is RF feedback between your antenna and mic
- T7B6 If someone tells you that your station's transmissions are interfering with their radio or TV reception make sure that your station is operating properly and that it does not cause interference to your own television.
 - Double check that your TV is working okay when transmitting

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- T7B4 The most likely cause of interference to a non-cordless telephone from a nearby transmitter is that the telephone inadvertently acts as a radio receiver.
 - Be aware of inexpensive corded telephones
- T7B5 Install an RF filter at the telephone as a logical first step when attempting to cure a radio frequency interference problem in a nearby telephone.
 - Snap filters over telephone power cord
 - Snap filters over curly cord
 - Snap filters on the actual incoming telephone line cord
 - The more you add, the less likely you'll have interference

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- T7B7 The following may be useful in correcting a radio frequency interference problem:
 - Snap-on ferrite chokes;
 - Low-pass and high-pass filters;
 - Band-reject and band-pass filters. All of these choices are correct.

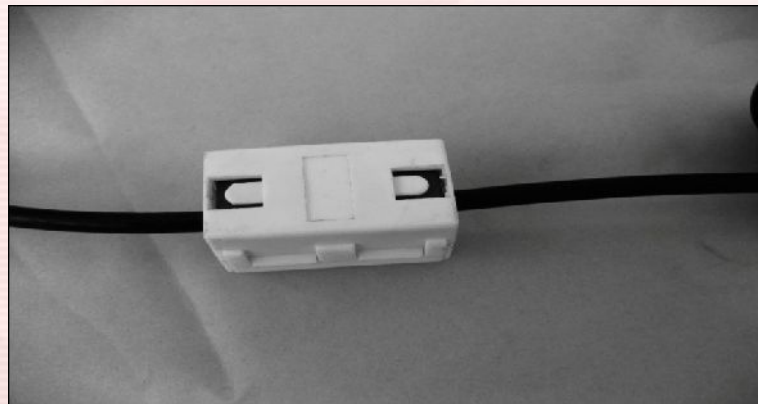


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- T7B8 If a "Part 15" device in your neighbor's home is causing harmful interference to your amateur station:
 - Work with your neighbor to identify the offending device;
 - Politely inform your neighbor about the rules that require him to stop using the device if it causes interference;
 - Check your station and make sure it meets the standards of good amateur practice.

All of these choices are correct.

A simple snap-on choke filter like this one can help resolve harmful interference problems on Part 15 devices.



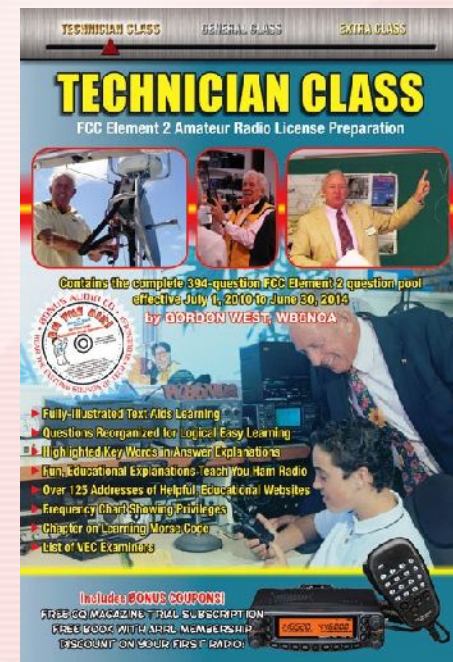
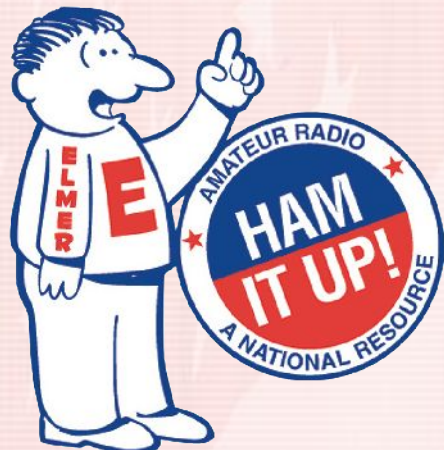
Element 2 Technician Class Question Pool

Run Some Interference Protection

Valid July 1, 2010

Through

June 30, 2014



receive a report that your audio signal through the repeater is distorted or unintelligible?

- A. Your transmitter may be slightly off frequency
- B. Your batteries may be running low
- C. You could be in a bad location
- D. All of these choices are correct

T4B01
with

What may happen if a transmitter is operated with the microphone gain set too high?

- A.** The output power might be too high
- B.** The output signal might become distorted
- C.** The frequency might vary
- D.** The SWR might increase

T7B01

your
is

What can you do if you are told
FM handheld or mobile transceiver
over deviating?

- A. Talk louder into the microphone
- B. Let the transceiver cool off
- C. Change to a higher power level
- D. Talk farther away from the microphone

T2D07 What should you do if you receive a report that your station's transmissions are causing splatter or interference on nearby frequencies?

- A.** Increase transmit power
- B.** Change mode of transmission
- C.** Report the interference to the equipment manufacturer
- D.** Check your transmitter for off-frequency operation or spurious emissions

T4B05 Which of the following would reduce ignition interference to a receiver?

- A.** Change frequency slightly
- B.** Decrease the squelch setting
- C.** Turn on the noise blanker
- D.** Use the RIT control

T7B09 What could be happening if another operator reports a variable high-pitched whine on the audio from your mobile transmitter?

- A.** Your microphone is picking up noise from an open window
- B.** You have the volume on your receiver set too high
- C.** You need to adjust your squelch control
- D.** Noise on the vehicle's electrical system is being transmitted along with your speech audio

T4A10
whine
mobile

What is the source of a high-pitched
that varies with engine speed in a
transceiver's receive audio?

- A. The ignition system
- B. The alternator
- C. The electric fuel pump
- D. Anti-lock braking system controllers

T4A09
current
cable?

Which would you use to reduce RF
flowing on the shield of an audio

- A. Band-pass filter
- B. Low-pass filter
- C. Preamplifier
- D. Ferrite choke

T4A05

TV

RF

What type of filter should be connected to a receiver as the first step in trying to prevent overload from a nearby 2 meter transmitter?

- A. Low-pass filter
- B. High-pass filter
- C. Band-pass filter
- D. Band-reject filter

T4A04 Where must a filter be installed to
reduce harmonic emissions?

- A.** Between the transmitter and the antenna
- B.** Between the receiver and the transmitter
- C.** At the station power supply
- D.** At the microphone

T7B03 Which of the following may be a cause of radio frequency interference?

- A.** Fundamental overload
- B.** Harmonics
- C.** Spurious emissions
- D.** All of these choices are correct

T7B11 What is a symptom of RF feedback in a transmitter or transceiver?

- A. Excessive SWR at the antenna connection
- B. The transmitter will not stay on the desired frequency
- C. Reports of garbled, distorted, or unintelligible transmissions
- D. Frequent blowing of power supply fuses

you that your station's
transmissions are interfering with their
radio or TV reception?

- A. Make sure that your station is functioning properly and that it does not cause interference to your own television
- B. Immediately turn off your transmitter and contact the nearest FCC office for assistance
- C. Tell them that your license gives you the right to transmit and nothing can be done to reduce the interference
- D. Continue operating normally because your equipment cannot possibly cause any interference

T7B04 What is the most likely cause of interference to a non-cordless telephone from a nearby transmitter?

- A.** Harmonics from the transmitter
- B.** The telephone is inadvertently acting as a radio receiver
- C.** Poor station grounding
- D.** Improper transmitter adjustment

attempting
interference
telephone?

to cure a radio frequency
problem in a nearby

- A. Install a low-pass filter at the transmitter
- B. Install a high-pass filter at the transmitter
- C. Install an RF filter at the telephone
- D. Improve station grounding

T7B07
useful

Which of the following may be
in correcting a radio frequency
interference problem?

- A.** Snap-on ferrite chokes
- B.** Low-pass and high-pass filters
- C.** band-reject and band-pass filters
- D.** All of these choices are correct

device in
harmful
station?

your neighbor's home is causing
interference to your amateur

- A. Work with your neighbor to identify the offending device
- B. Politely inform your neighbor about the rules that require him to stop using the device if it causes interference
- C. Check your station and make sure it meets the standards of good amateur practice
- D. All of these choices are correct