

Technician License Course

Chapter 8

Lesson Module 17 –
Interference, Remote & Automatic
Operation, Prohibited
Transmissions



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AMATEUR RADIO*

Interference

- QRN or “Static”
 - Natural interference (thunderstorms)
 - Man-made (appliances and power lines)
- QRM
 - Interference caused by other signals
 - Can be from transmitted signals
 - Can be created internally by a receiver

Interference

- Harmful
 - Interference that is disruptive, not necessarily willful.
 - Deal with it as best you can, try to avoid causing harmful interference.
- Willful
 - Intentionally causing interference.
 - This becomes a legal and law enforcement issue.
 - This is rare and there are procedures to deal with this (ARRL Official Observers can help).



Preventing Interference

- Use common sense and courtesy
- Know how to operate your equipment to reduce generated and received interference
- No one owns a frequency; be a good neighbor and share – have a “Plan B”
- Recognize special operations and special circumstances



Control Point

- Where the control operator function is performed – not necessarily at the physical transmitter
- *Local control*: operator is at the transmitter
- *Remote control*: control point is linked to the transmitter by a *control link* which could be telephone, radio, or Internet
- *Automatic control*: control functions are operated by circuitry that ensures proper operation



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Automatic Control

- Control operator is *always* required
 - Responsible for proper operation
- Repeaters, auxiliary stations, space stations, and beacons may operate under automatic control
- Repeater users are responsible for their transmissions through a repeater

Prohibited Transmissions

- Unidentified transmissions
 - Not giving your call sign
- False or deceptive signals
 - Using someone else's call sign
- False distress or emergency signals
 - Fake calls for help
- Obscene or indecent speech
 - Up to interpretation, avoid controversial subjects
- Music



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No Commercial Communications

- Advertising ham radio gear is okay as long as it's not your regular business. (Don't advertise non-ham gear.)
- You may not use ham radio on behalf of your employer.
- Exception: teachers may use ham radio in their classrooms, clubs may employ an operator but only with restrictions on hours.



No Encrypted Transmissions

- Encryption means deliberately encoding information for transmission in order to hide or obscure the message.
- Encryption is only allowed for:
 - Radio control
 - Space station control

No Broadcasting

- Broadcasting is sending one-way transmissions to the general public:
 - News
 - Music
- Exceptions:
 - Code practice
 - Ham radio-related bulletins
 - Retransmission of space station control communications

Special Circumstances

- Emergencies and critical situations create special circumstances.
- Special events may qualify as special circumstances.
- Normal rules return when the situation returns to normal.

Practice Questions



Which of the following meets the FCC definition of harmful interference?

- A. Radio transmissions that annoy users of a repeater
- B. Unwanted radio transmissions that cause costly harm to radio station apparatus
- C. That which seriously degrades, obstructs, or repeatedly interrupts a radio communication service operating in accordance with the Radio Regulations
- D. Static from lightning storms

FCC Rule: [97.3(a)(23)] T1A04 HRLM (8-7)



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FCC Rule: [97.3(a)(23)] T1A04 HRLM (8-7)



Which of the following services are protected from interference by amateur signals under all circumstances?

- A. Citizens Radio Service
- B. Broadcast Service
- C. Land Mobile Radio Service
- D. Radionavigation Service

FCC Rule: [97.101(d), 97.303(o)(2)] T1A06 HRLM (8-7)



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FCC Rule: [97.101(d), 97.303(o)(2)] T1A06 HRLM (8-7)



When is willful interference to other amateur radio stations permitted?

- A. Only if the station interfered is expressing extreme religious or political views
- B. At no time
- C. Only during a contest
- D. At any time, amateurs are not protected from willful interference

FCC Rule: [97.101(d)] T1A11 HRLM (8-8)



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FCC Rule: [97.101(d)] T1A11 HRLM (8-8)



On which of the following occasions may an FCC-licensed amateur station exchange messages with a U.S. military station?

- A. During an Armed Forces Day Communications Test
- B. During a Memorial Day Celebration
- C. During an Independence Day celebration
- D. During a propagation test

FCC Rule: [97.111(a)(5)] T1D02 HRLM (8-13)



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FCC Rule: [97.111(a)(5)] T1D02 HRLM (8-13)



When is the transmission of codes or ciphers that hide the meaning of a message allowed by an amateur station?

- A. Only during contests
- B. Only when operating mobile
- C. Only when transmitting control commands to space stations or radio control craft
- D. Only when frequencies above 1280 MHz are used

FCC Rule: [97.211(b), 97.215(b)] T1D03 HRLM (8-12)



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FCC Rule: [97.211(b), 97.215(b)] T1D03 HRLM (8-12)



What is the only time an amateur station is authorized to transmit music?

- A. When incidental to an authorized retransmission of manned spacecraft communications
- B. When the music produces no spurious emissions
- C. When the purpose is to interfere with an illegal transmission
- D. When the music is transmitted above 1280 MHz

FCC Rule: [97.113(a)(4), 97.11(a)3(ii)] T1D04 HRLM (8-13)



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FCC Rule: [97.113(a)(4), 97.11(a)3(ii)] T1D04 HRLM (8-13)



When may amateur radio operators use their stations to notify other amateurs of the availability of equipment for sale or trade?

- A. When the equipment is normally used in an amateur station and such activity is not conducted on a regular basis
- B. When the asking price is \$100.00 or less
- C. When the asking price is less than its appraised value
- D. When the equipment is not the personal property of either the station licensee or the control operator or their close relatives

FCC Rule: [97.113(a)(3)(ii)] T1D05 HRLM (8-12)



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FCC Rule: [97.113(a)(3)(ii)] T1D05 HRLM (8-12)



What, if any, are the restrictions concerning transmission of language that may be considered indecent or obscene?

- A. The FCC maintains a list of words that are not permitted to be used on amateur frequencies
- B. Any such language is prohibited
- C. The ITU maintains a list of words that are not permitted to be used on amateur frequencies
- D. There is no such prohibition

FCC Rule: [97.113(a)(4)] T1D06 HRLM (8-11)



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FCC Rule: [97.113(a)(4)] T1D06 HRLM (8-11)



What types of amateur stations can automatically retransmit the signals of other amateur stations?

- A. Auxiliary, beacon, or Earth stations
- B. Auxiliary, repeater, or space stations
- C. Beacon, repeater, or space stations
- D. Earth, repeater, or space stations

FCC Rule: [97.113(d)] T1D07 HRLM (8-13)



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FCC Rule: [97.113(d)] T1D07 HRLM (8-13)



In which of the following circumstances may the control operator of an amateur station receive compensation for operating the station?

- A. When engaging in communications on behalf of their employer
- B. When the communication is incidental to classroom instruction at an educational institution
- C. When re-broadcasting weather alerts during a RACES net
- D. When notifying other amateur operators of the availability for sale or trade of apparatus

FCC Rule: [97.113(a)(3)(iii)] T1D08 HRLM (8-12)



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FCC Rule: [97.113(a)(3)(iii)] T1D08 HRLM (8-12)



Under which of the following circumstances are amateur stations authorized to transmit signals related to broadcasting, program production, or news gathering, assuming no other means is available?

- A. Only where such communications directly relate to the immediate safety of human life or protection of property
- B. Only when broadcasting communications to or from the space shuttle
- C. Only where noncommercial programming is gathered and supplied exclusively to the National Public Radio network
- D. Only when using amateur repeaters linked to the Internet



FCC Rule: [97.113(5)(b)] T1D09 HRLM (8-13)

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FCC Rule: [97.113(5)(b)] T1D09 HRLM (8-13)



What is the meaning of the term "broadcasting" in the FCC rules for the amateur services?

- A. Two-way transmissions by amateur stations
- B. Transmission of music
- C. Transmission of messages directed only to amateur operators
- D. Transmissions intended for reception by the general public

FCC Rule: [97.3(a)(10)] T1D10 HRLM (8-13)



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FCC Rule: [97.3(a)(10)] T1D10 HRLM (8-13)



Under which of the following circumstances may an amateur radio operator broadcast?

- A. Under no circumstances
- B. When transmitting code practice, information bulletins, or transmissions necessary to provide emergency communications
- C. At any time as long as no music is broadcast
- D. At any time as long as the material being broadcast did not originate from a commercial broadcast station

FCC Rule: [97.111(b)(4,5,6)] T1D12 HRLM (8-13)



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FCC Rule: [97.111(b)(4,5,6)] T1D12 HRLM (8-13)



Under what type of control do APRS network digipeaters operate?

- A. Automatic
- B. Remote
- C. Local
- D. Manual

FCC Rule: [97.109(d)] T1E06 HRLM (8-11)



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- B. Remote
- C. Local
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FCC Rule: [97.109(d)] T1E06 HRLM (8-11)

Which of the following is an example of automatic control?

- A. Repeater operation
- B. Controlling the station over the Internet
- C. Using a computer or other device to automatically send CW
- D. Using a computer or other device to automatically identify

FCC Rule: [97.3(a)(6), 97.205(d)] T1E08 HRLM (8-11)



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FCC Rule: [97.3(a)(6), 97.205(d)] T1E08 HRLM (8-11)

What type of control is being used when the control operator is at the control point?

- A. Radio control
- B. Unattended control
- C. Automatic control
- D. Local control

FCC Rule: [97.109(b)] T1E09 HRLM (8-10)



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FCC Rule: [97.109(b)] T1E09 HRLM (8-10)



Which of the following is an example of remote control as defined in Part 97?

- A. Repeater operation
- B. Operating a station over the Internet
- C. Controlling a model aircraft, boat or car by amateur radio
- D. All of these choices are correct

FCC Rule: [97.3(a)(39)] T1E10 HRLM (8-10)



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FCC Rule: [97.3(a)(39)] T1E10 HRLM (8-10)



Who is accountable should a repeater inadvertently retransmit communications that violate the FCC rules?

- A. The control operator of the originating station
- B. The control operator of the repeater
- C. The owner of the repeater
- D. Both the originating station and the repeater owner

FCC Rule: [97.205(g)] T1F10 HRLM (8-11)



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FCC Rule: [97.205(g)] T1F10 HRLM (8-11)



What could cause your FM signal to interfere with stations on nearby frequencies?

- A. Microphone gain too high, causing over-deviation
- B. SWR too high
- C. Incorrect CTCSS Tone
- D. All of these choices are correct

T2B07 HRLM (2-9)

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T2B07 HRLM (2-9)



What action should station operators take if they discover that they are both using the same frequency, causing interference?

- A. Common courtesy should prevail, but no one has absolute right to an amateur frequency
- B. Whoever has the strongest signal has priority on the frequency
- C. Whoever has been on the frequency the longest has priority on the frequency
- D. The station which has the weakest signal has priority on the frequency

T2B08 HRLM (8-7)



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T2B08 HRLM (8-7)

