Technician License Course

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Chapter 8 Part 1

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Control Operator

- Control operator – the amateur licensee responsible for making sure transmissions comply with FCC rules.
- The FCC requires that transmissions are made only under the control of a licensed operator.

Control Operator

- Designated by the station licensee.
  - Assumed to be the station licensee unless otherwise documented.

Control Operator

- Designated by the station licensee.
  - Must have a valid FCC-issued Amateur Radio license or have reciprocal operating permission.
  - Station must operate within the authorization of the control operator’s license.
  - Control operator must be present at the control point of the station

Control Operator

- Wherever the station controls are operated – not necessarily the physical transmitter
- The control operator must be able to assert control of the transmitter
- Control point can be at the transmitter, or linked to the transmitter
- Control by a circuit or computer is also allowed

Guest Operations

- Non-licensed people can make transmissions but only when a control operator is present.
  - The control operator is solely responsible for station operation.
- For licensed guest operators, both the control operator and the guest ham are responsible for station operation.

Station Identification (ID)

- All transmissions *must* be identified
  - State the call sign every 10 minutes during and at the end of the communication
  - Use phonetics on voice modes
- Use of “Tactical Calls”
- Licensed Guests

Miscellaneous ID Rules

- Repeaters must also ID using the same 10 minute rule.
  - Can be voice or CW (at 20 WPM or less).
- Satellites and ISS have special rules.
- Special event calls.
  - Club call or control operator call given once per hour.

Third-Party Communications

- *Third-party communication* – transmissions on behalf of an unlicensed entity
  - Could mean actually speaking on the air
  - Could mean passing a message on behalf of third party
- Two situations – different rules
  - Within the US
  - Communication that crosses international borders

Third-Party within US

- No special rules.
- Just make sure the message is non-commercial in nature.

Third-Party Across Borders

- Third-party agreement with US must exist
  - Check for current third-party agreements from ARRL website or FCC sources if in doubt
  - Most agreements are within ITU Region II
  - This includes contest operation
- Identify with both stations' call signs

Practice Questions

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When is an amateur station permitted to transmit without a control operator?

When is an amateur station permitted to transmit without a control operator?

Never

Who is eligible to be the control operator of an amateur station?

Who is eligible to be the control operator of an amateur station?

Only a person for whom an amateur operator/primary station license grant appears in the FCC database or who is authorized for alien reciprocal operation

Who must designate the station control operator?

Who must designate the station control operator?

The station licensee

What determines the transmitting privileges of an amateur station?

What determines the transmitting privileges of an amateur station?

The class of operator license held by the control operator

What is an amateur station control point?

What is an amateur station control point?

The location at which the control operator function is performed

When the control operator is not the station licensee, who is responsible for the proper operation of the station?

When the control operator is not the station licensee, who is responsible for the proper operation of the station?

The control operator and the station licensee are equally responsible

Who does the FCC presume to be the control operator of an amateur station, unless documentation to the contrary is in the station records?

Who does the FCC presume to be the control operator of an amateur station, unless documentation to the contrary is in the station records?

The station licensee

When, under normal circumstances, may a Technician Class licensee be the control operator of a station operating in an exclusive Extra Class operator segment of the amateur bands?

When, under normal circumstances, may a Technician Class licensee be the control operator of a station operating in an exclusive Extra Class operator segment of the amateur bands?

At no time

What type of identification is being used when identifying a station on the air as Race Headquarters?

What type of identification is being used when identifying a station on the air as Race Headquarters?

Tactical call

When using tactical identifiers such as “Race Headquarters” during a community service net operation, how often must your station transmit the station’s FCC-assigned call sign?

When using tactical identifiers such as “Race Headquarters” during a community service net operation, how often must your station transmit the station’s FCC-assigned call sign?

At the end of each communication and every ten minutes during a communication

When is an amateur station required to transmit its assigned call sign?

When is an amateur station required to transmit its assigned call sign?

At least every 10 minutes during and at the end of a communication

What is an acceptable language to use for station identification when operating in a phone sub-band?

What is an acceptable language to use for station identification when operating in a phone sub-band?

The English language

What method of call sign identification is required for a station transmitting phone signals?

What method of call sign identification is required for a station transmitting phone signals?

Send the call sign using CW or phone emission

What formats of a self-assigned indicators is acceptable when identifying using a phone transmission?

What formats of a self-assigned indicators is acceptable when identifying using a phone transmission?

XX7XX stroke W3
XX7XX slant W3
XX7XX slash W3

What restrictions apply when a non-licensed person is allowed to use a station under the control of a Technician Class control operator to speak to a foreign station?

What restrictions apply when a non-licensed person is allowed to use a station under the control of a Technician Class control operator to speak to a foreign station?

The foreign station must be one with whom the U.S. has a “third party agreement”

What indicator is required by the FCC to be transmitted after a station call sign?

What indicator is required by the FCC to be transmitted after a station call sign?

/KT, /AE or /AG when using new license privileges earned by CSCE while waiting for an upgrade to a previously issued license to appear in the ULS database

To which foreign stations do the FCC rules authorize the transmission of non-emergency third party communications?

To which foreign stations do the FCC rules authorize the transmission of non-emergency third party communications?

Any station whose government permits such communications

How many persons are required to be members of a club for a club station license to be issued by the FCC?

How many persons are required to be members of a club for a club station license to be issued by the FCC?

At least 4

What must an amateur operator do when making on-air transmissions to test equipment or antennas?

What must an amateur operator do when making on-air transmissions to test equipment or antennas?

Properly identify the transmitting station

What is true when making a test transmission into an antenna?

What is true when making a test transmission into an antenna?

Station identification is required at least every ten minutes during the test and at the end of the test

What method is encouraged by the FCC when identifying your station when using phone?

What method is encouraged by the FCC when identifying your station when using phone?

Use of a phonetic alphabet

End of Chapter 8 Part 1

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Chapter 8 Part 2

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Chapter 8

Lesson Plan Module – 17

Interference, Remote & Automatic Operation, Prohibited Transmissions

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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

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Interference

- Harmful
  - Interference that is disruptive, not necessarily willful.
  - Deal with it as best you can, try to avoid causing harmful interference.

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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).

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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

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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

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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

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Prohibited Transmissions

- 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.

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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

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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

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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.

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Practice Questions

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What is the FCC definition of harmful interference?

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What is the FCC definition of harmful interference?

That which seriously degrades, obstructs, or repeatedly interrupts a radio communication service operating in accordance with the Radio Regulations

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What services are protected from interference by amateur signals under all circumstances?

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What services are protected from interference by amateur signals under all circumstances?

Radionavigation Service

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When is willful interference to other amateur radio stations permitted?

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When is willful interference to other amateur radio stations permitted?

At no time

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On what occasion may an FCC-licensed amateur station exchange messages with a U.S. military station?

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On what occasion may an FCC-licensed amateur station exchange messages with a U.S. military station?

During an Armed Forces Day Communications Test

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

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

Only when transmitting control commands to space stations or radio control craft

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

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

When incidental to an authorized retransmission of manned spacecraft communications

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

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

When the equipment is normally used in an amateur station and such activity is not conducted on a regular basis

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

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

Any such language is prohibited

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

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

Auxiliary, repeater, or space stations

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

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

When the communication is incidental to classroom instruction at an educational institution

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When are amateur stations authorized to transmit signals related to broadcasting, program production, or news gathering, assuming no other means is available?

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When are amateur stations authorized to transmit signals related to broadcasting, program production, or news gathering, assuming no other means is available?

Only where such communications directly relate to the immediate safety of human life or protection of property

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

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

Transmissions intended for reception by the general public

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Under what circumstances may an amateur radio operator broadcast?

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Under what circumstances may an amateur radio operator broadcast?

When transmitting code practice, information bulletins, or transmissions necessary to provide emergency communications

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Under what type of control do APRS network digipeaters operate?

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Under what type of control do APRS network digipeaters operate?

Automatic

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What is an example of automatic control?

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What is an example of automatic control?

Repeater operation

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

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

Local control

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What is an example of remote control as defined in Part 97?

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What is an example of remote control as defined in Part 97?

Operating a station over the Internet

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

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

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

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

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

Microphone gain too high, causing over-deviation

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

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

Common courtesy should prevail, but no one has absolute right to an amateur frequency

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End of Module 17

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