Technician License Course

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Chapter 8

Lesson Plan Module – 17

Interference, Remote & Automatic Operation, Prohibited Transmissions

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.

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 Volunteer Monitor 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

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

Prohibited Transmissions

- Obscene or indecent speech
  - Up to interpretation, avoid controversial subjects
- Music

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

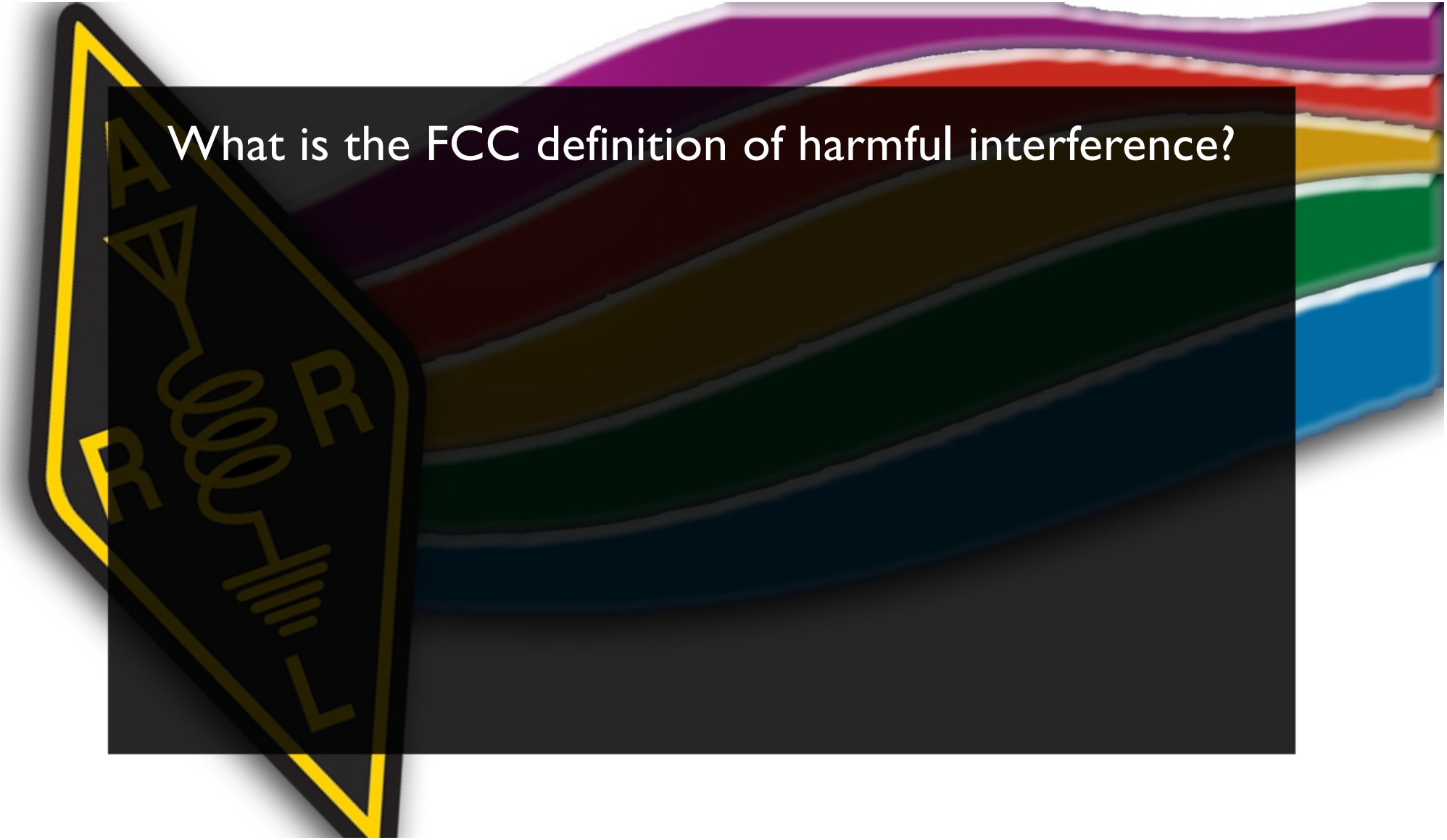
No Broadcasting

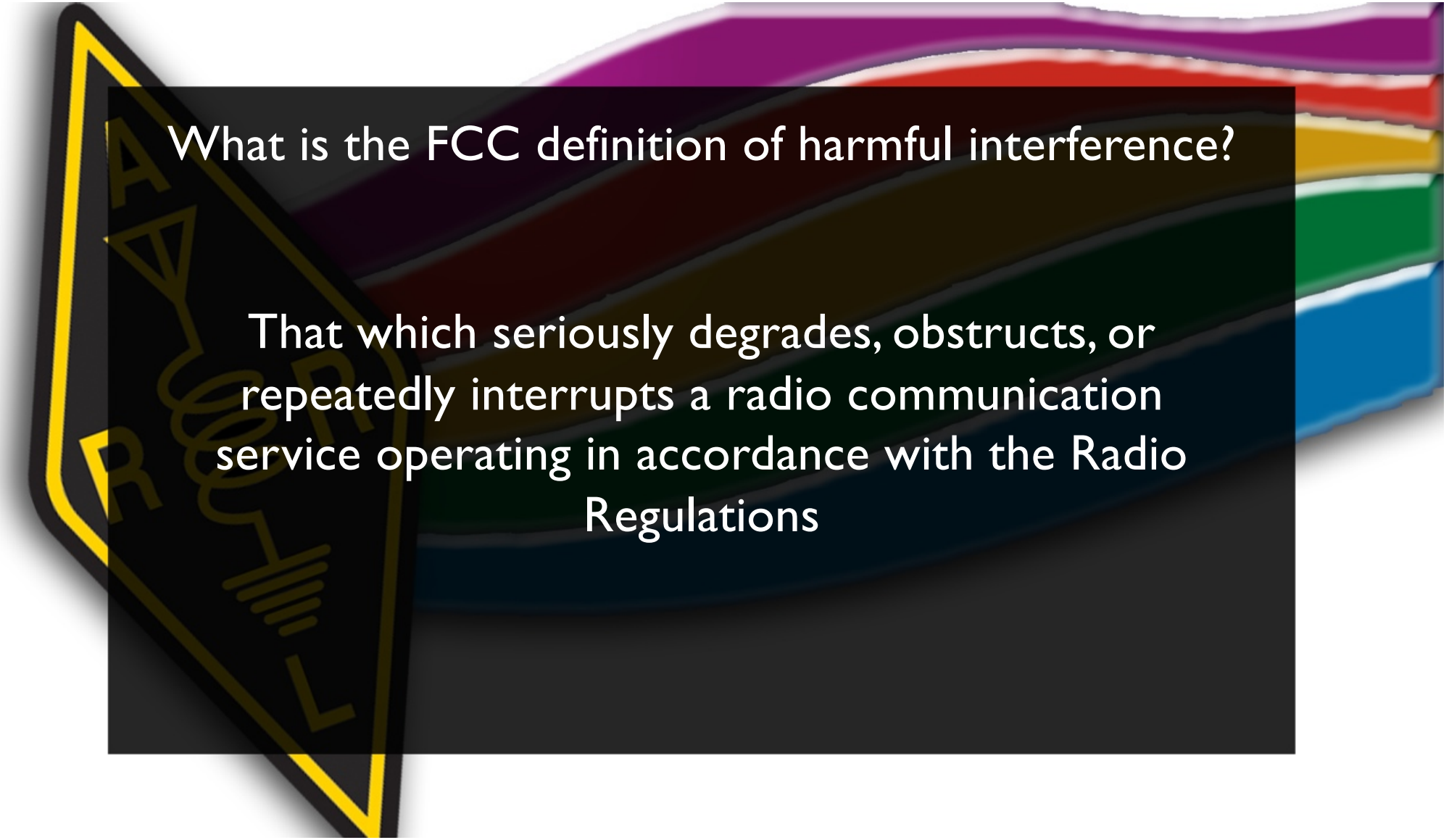
- Broadcasting is sending one-way transmissions to the general public:
  - –News
  - –Music
- Exceptions:
  - –Code practice
  - –Ham radio-related bulletins
  - –Retransmission of space station control communications

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


What is the FCC definition of harmful interference?



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

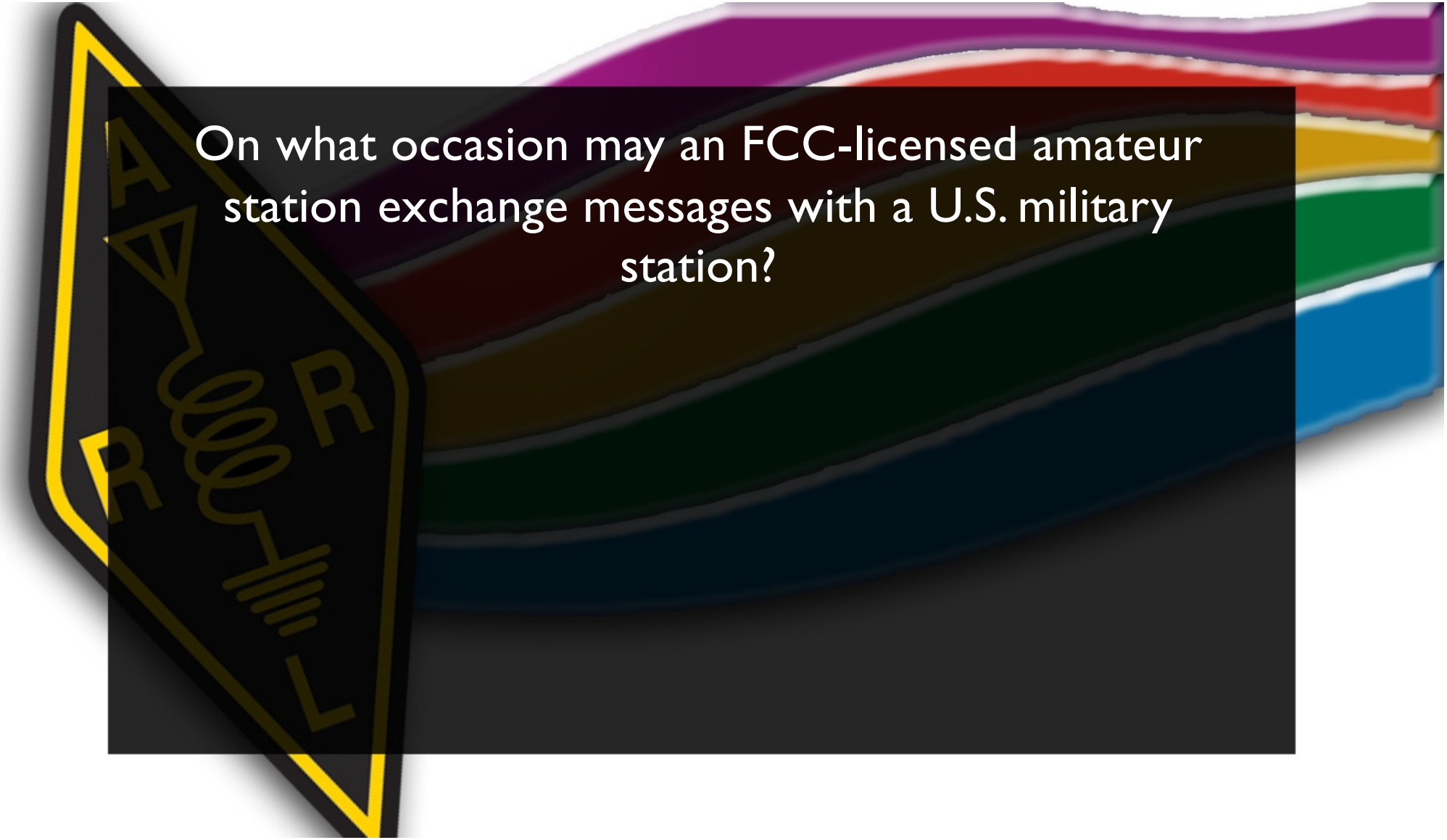

What services are protected from interference
by amateur signals under all circumstances?


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


When is willful interference to other amateur radio stations permitted?

When is willful interference to other amateur radio stations permitted?

At no time


On what occasion may an FCC-licensed amateur station exchange messages with a U.S. military station?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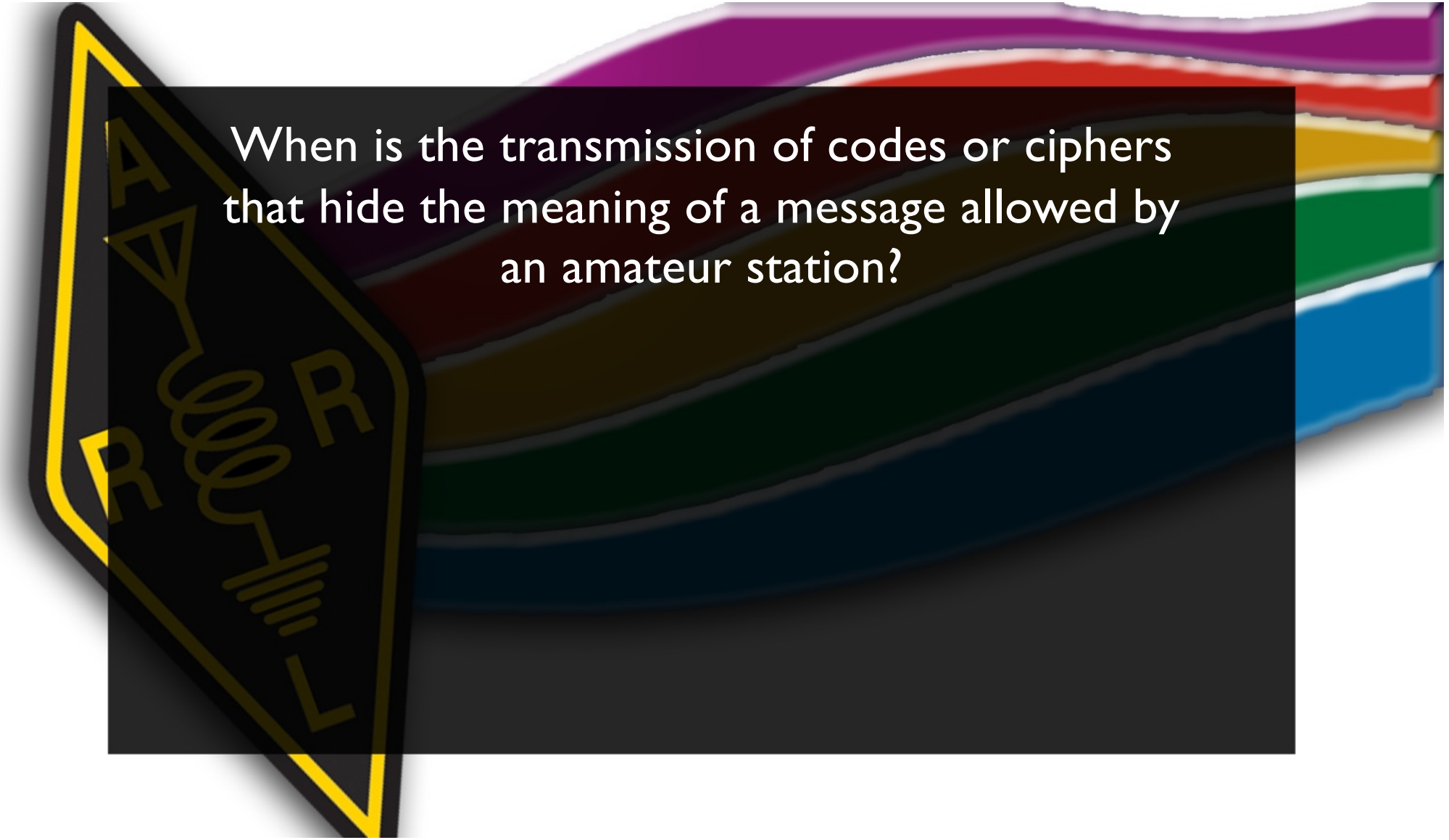
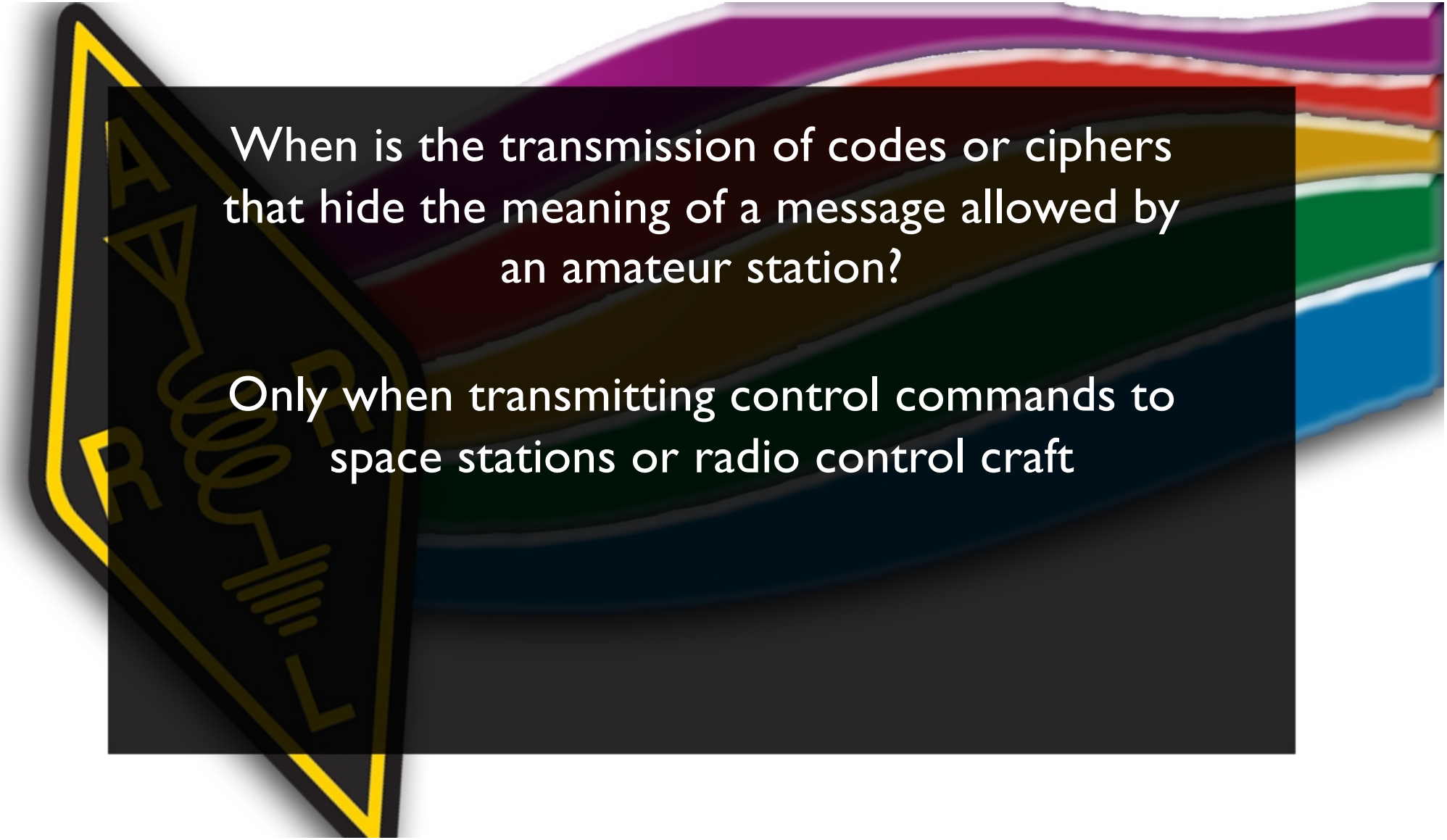
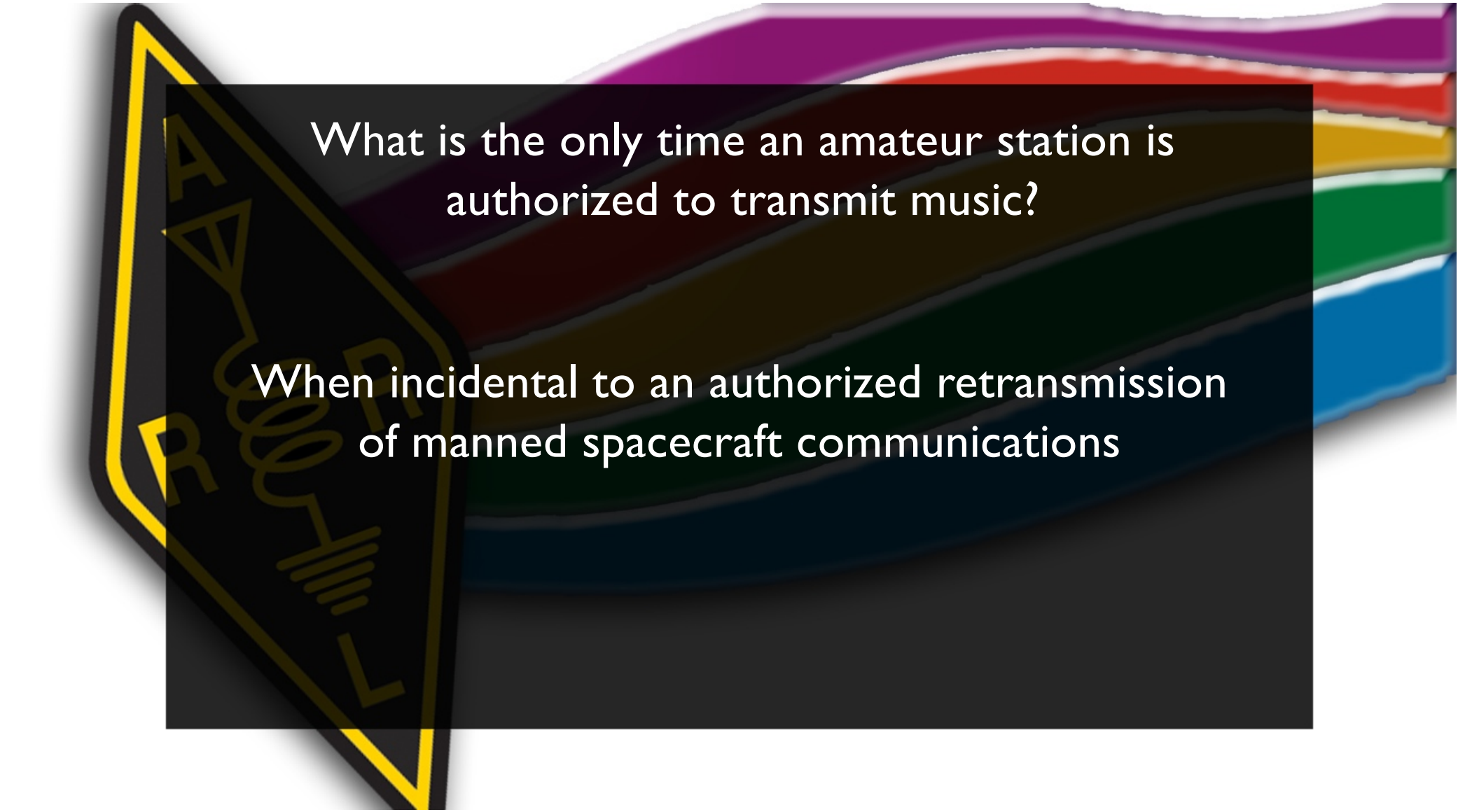
During an Armed Forces Day Communications Test

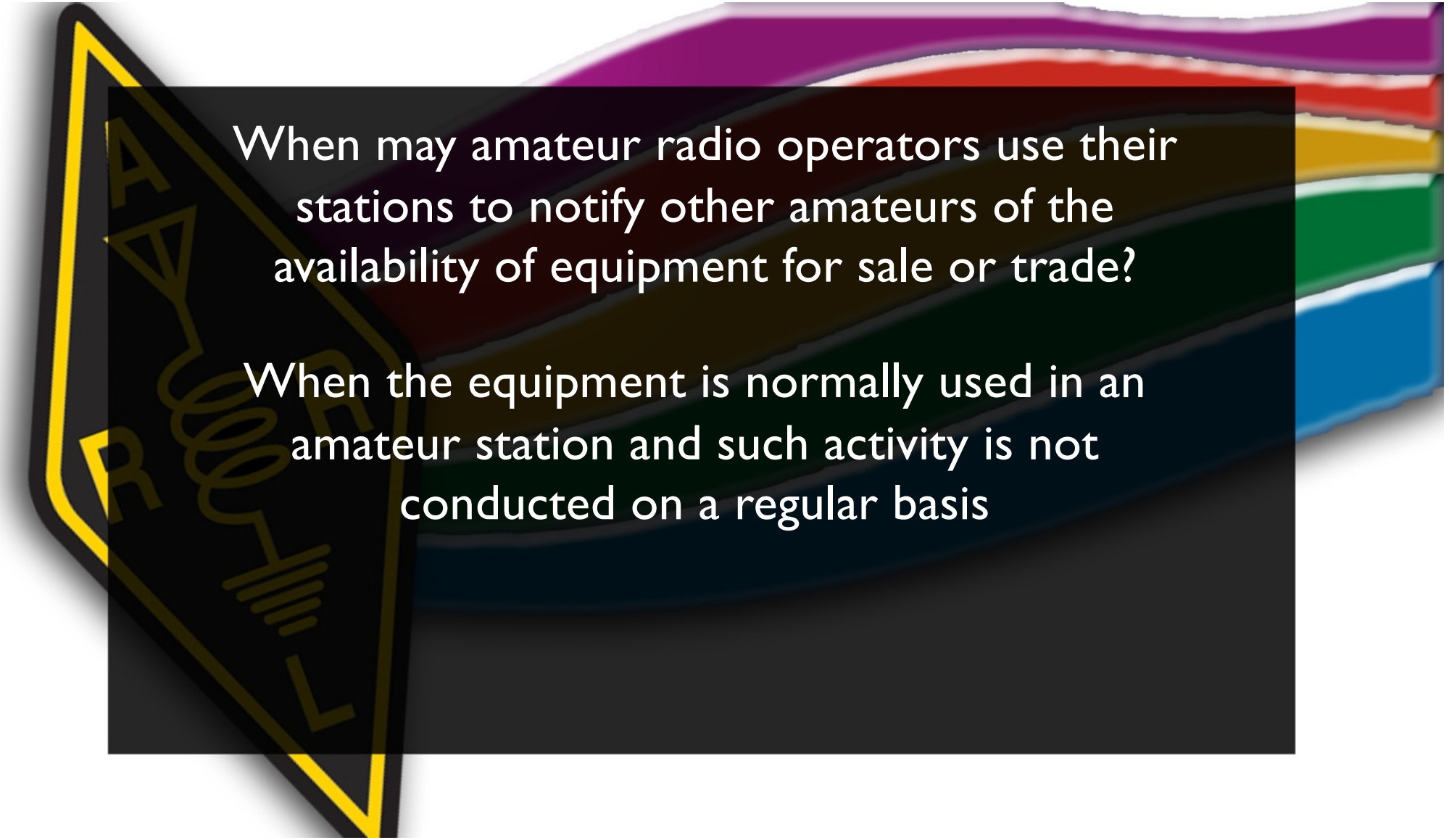

When is the transmission of codes or ciphers that hide the meaning of a message allowed by an amateur station?


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


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

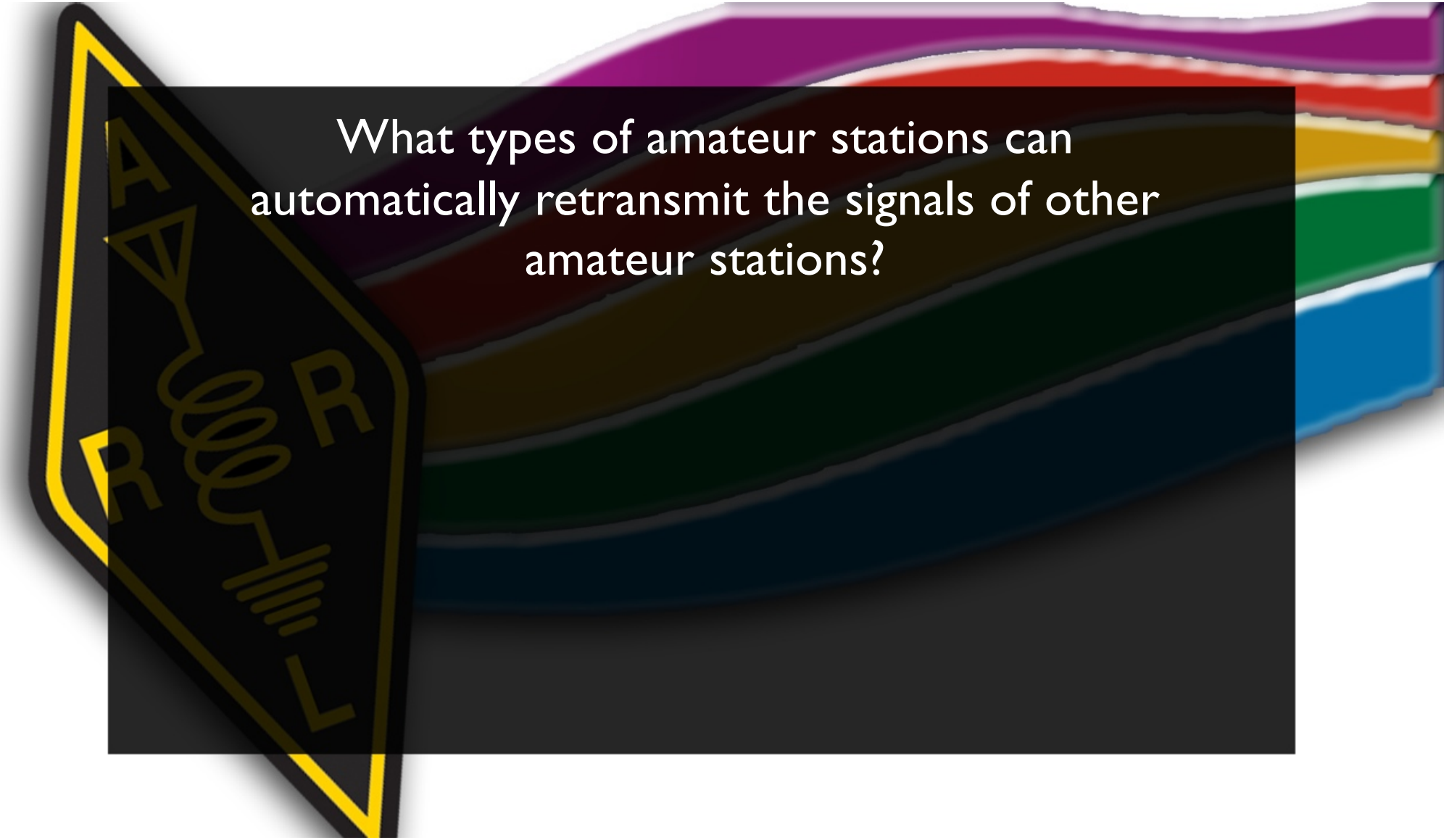

What is the only time an amateur station is authorized to transmit music?
When incidental to an authorized retransmission of manned spacecraft communications

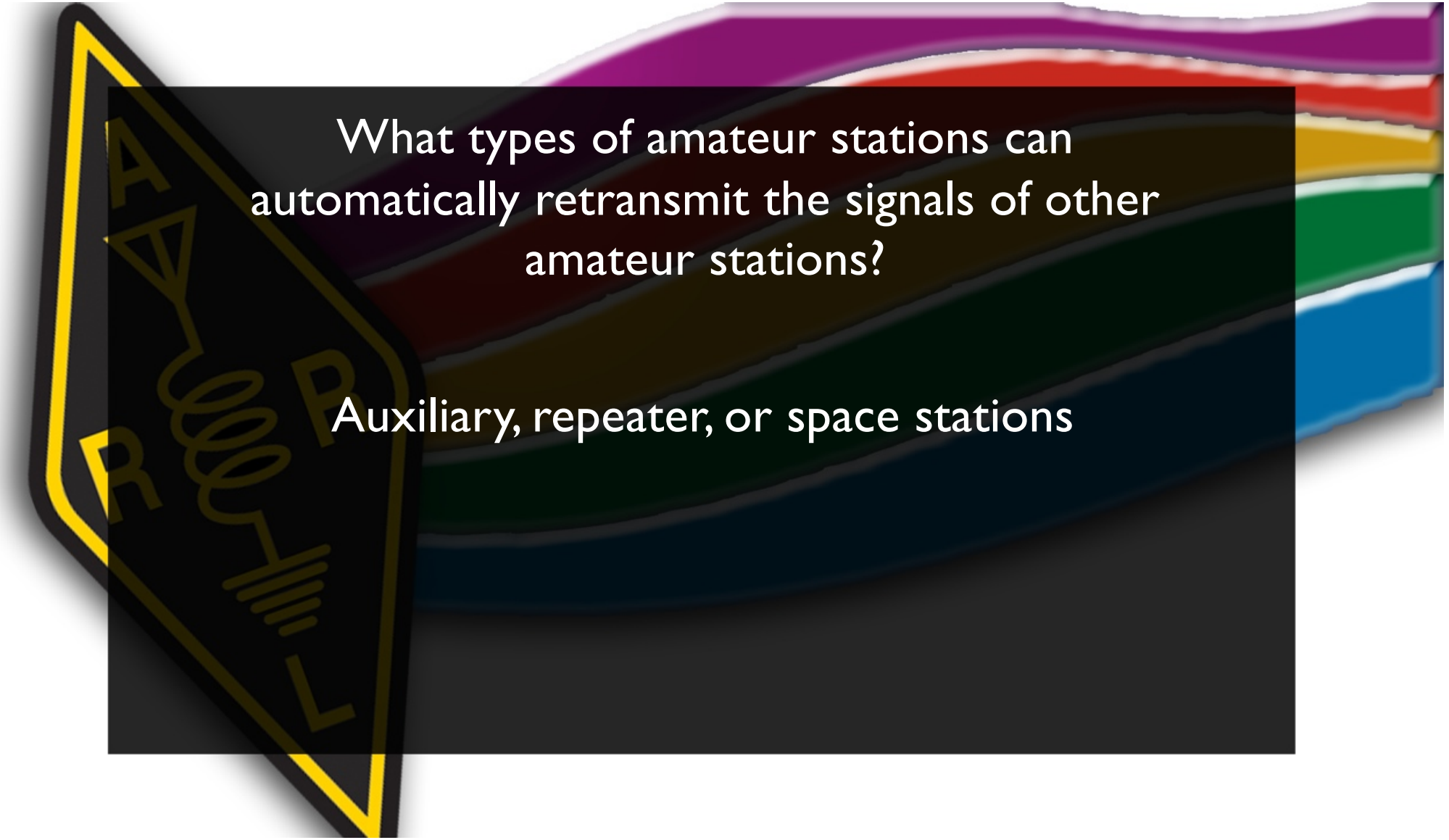
When may amateur radio operators use their stations to notify other amateurs of the availability of equipment for sale or trade?


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


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

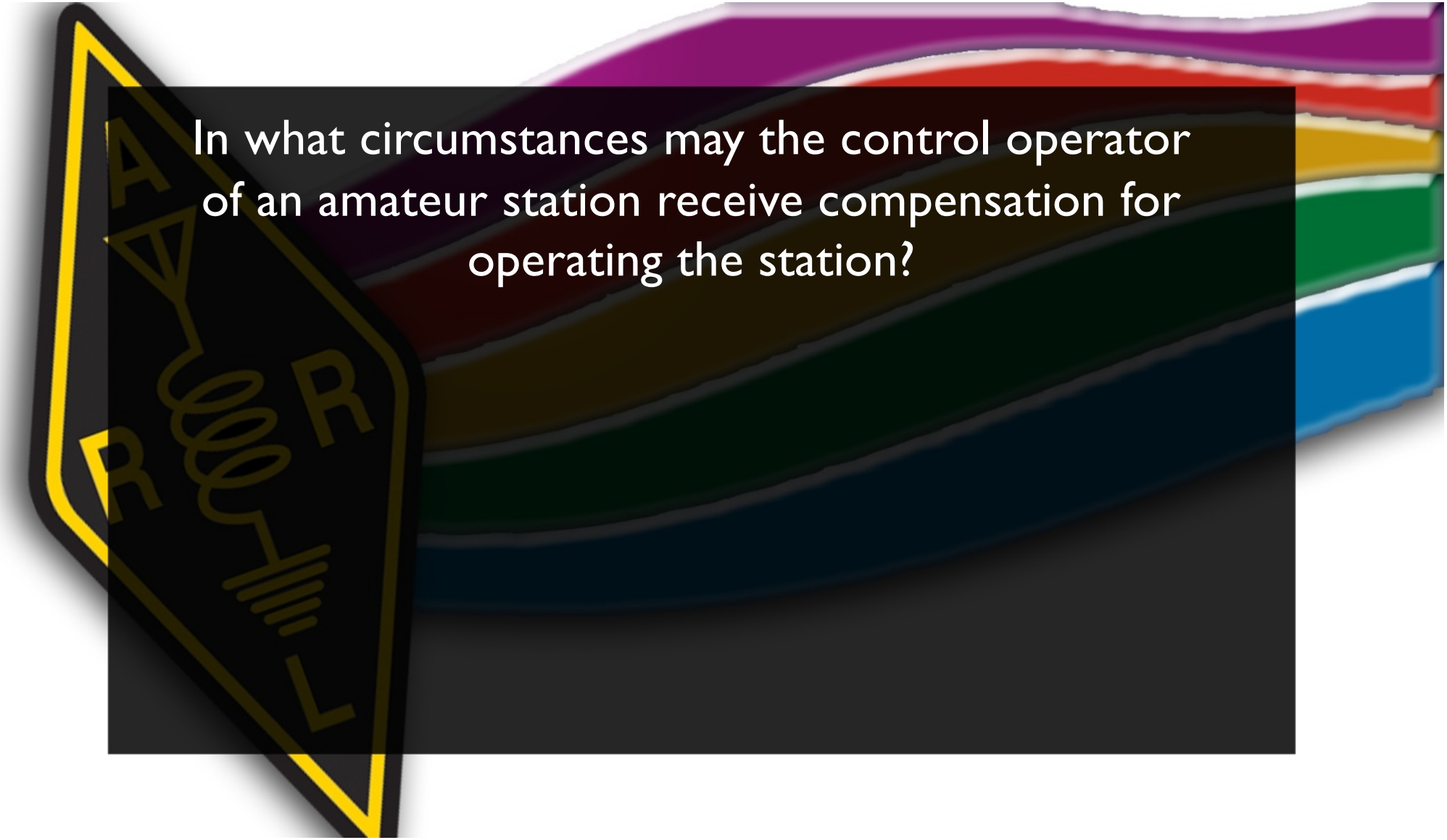

What, if any, are the restrictions concerning transmission of language that may be considered indecent or obscene?
Any such language is prohibited

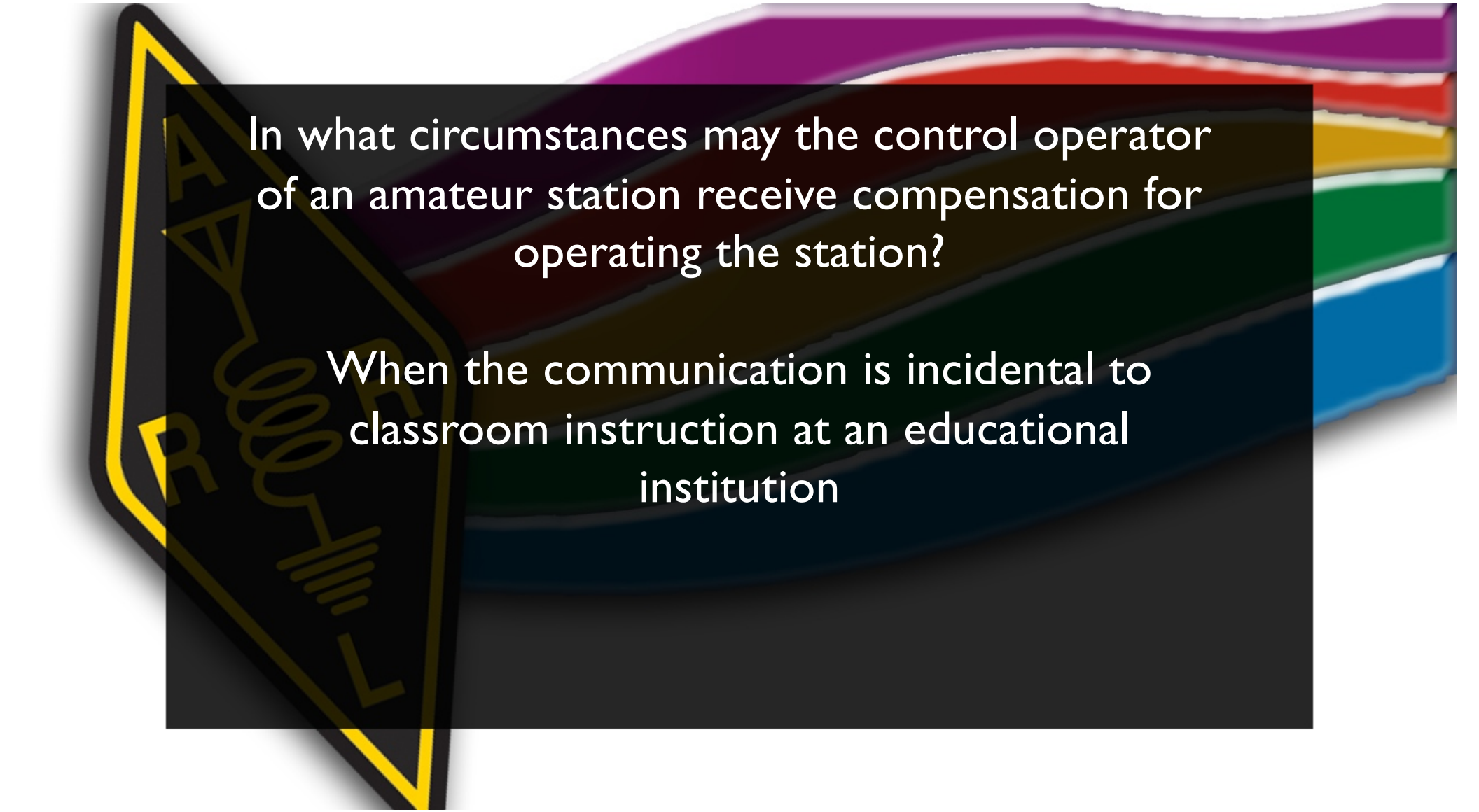

What types of amateur stations can automatically retransmit the signals of other amateur stations?

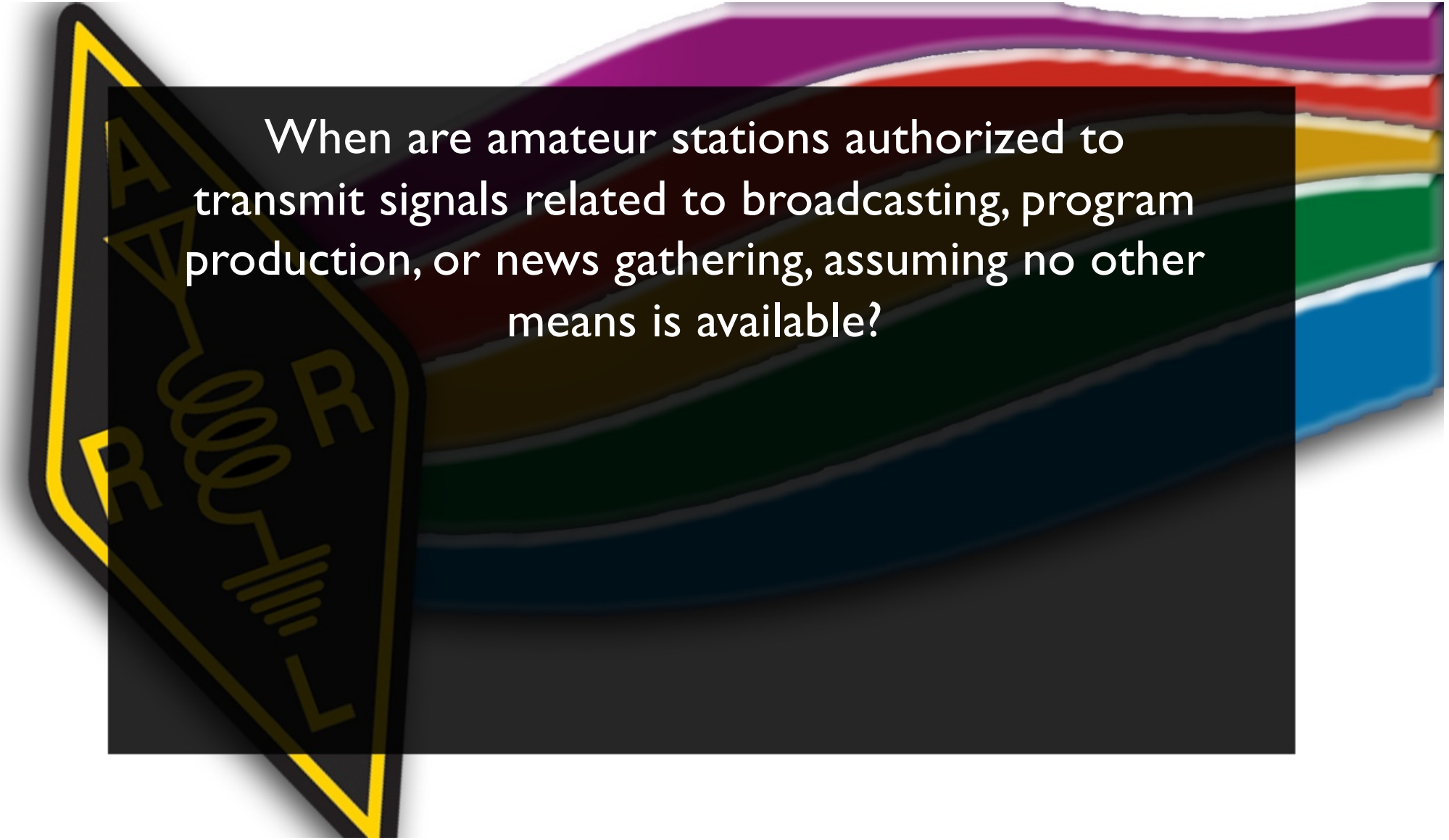


What types of amateur stations can automatically retransmit the signals of other amateur stations?

Auxiliary, repeater, or space stations


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

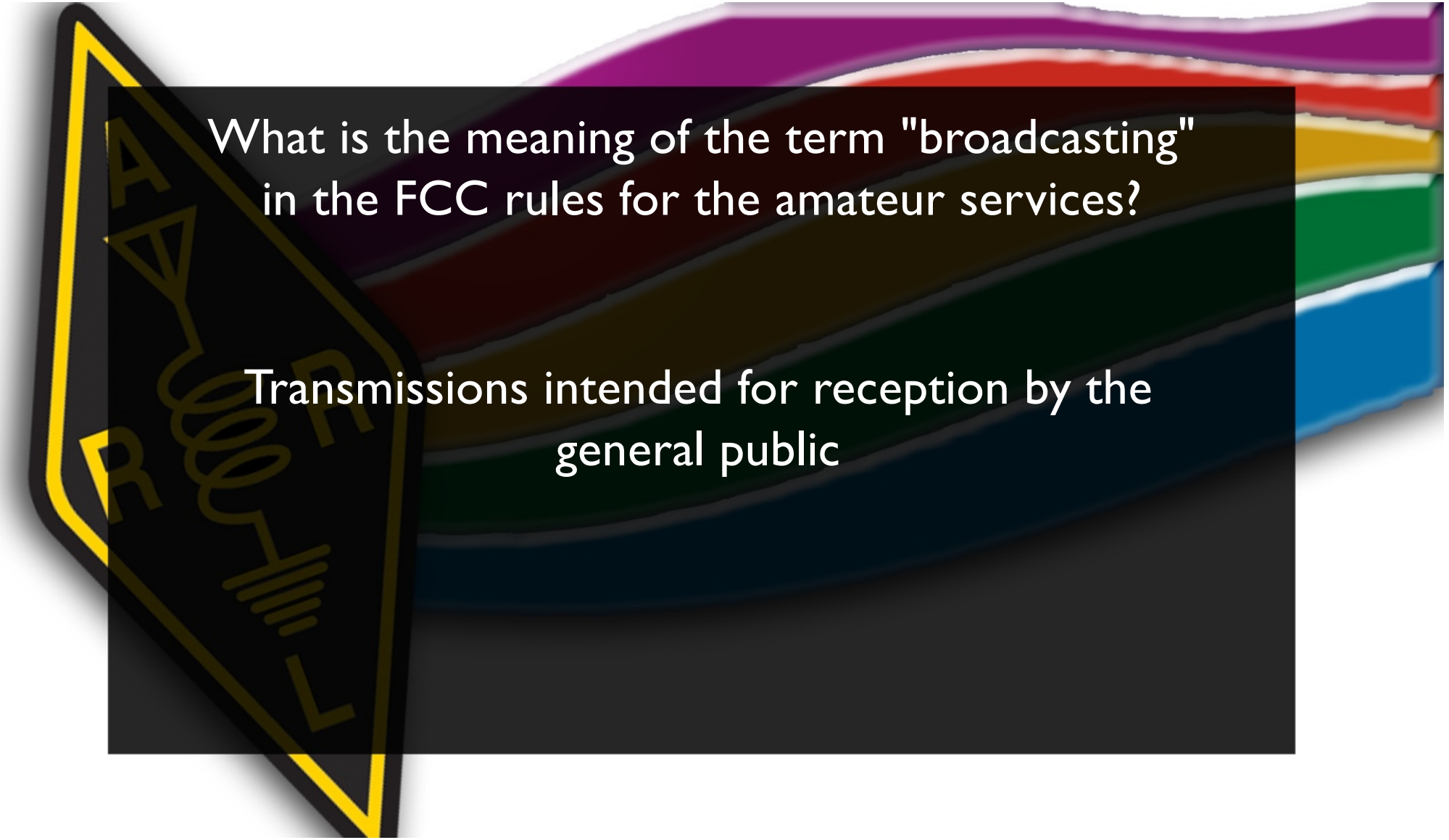

In what circumstances may the control operator of an amateur station receive compensation for operating the station?
When the communication is incidental to classroom instruction at an educational institution


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

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

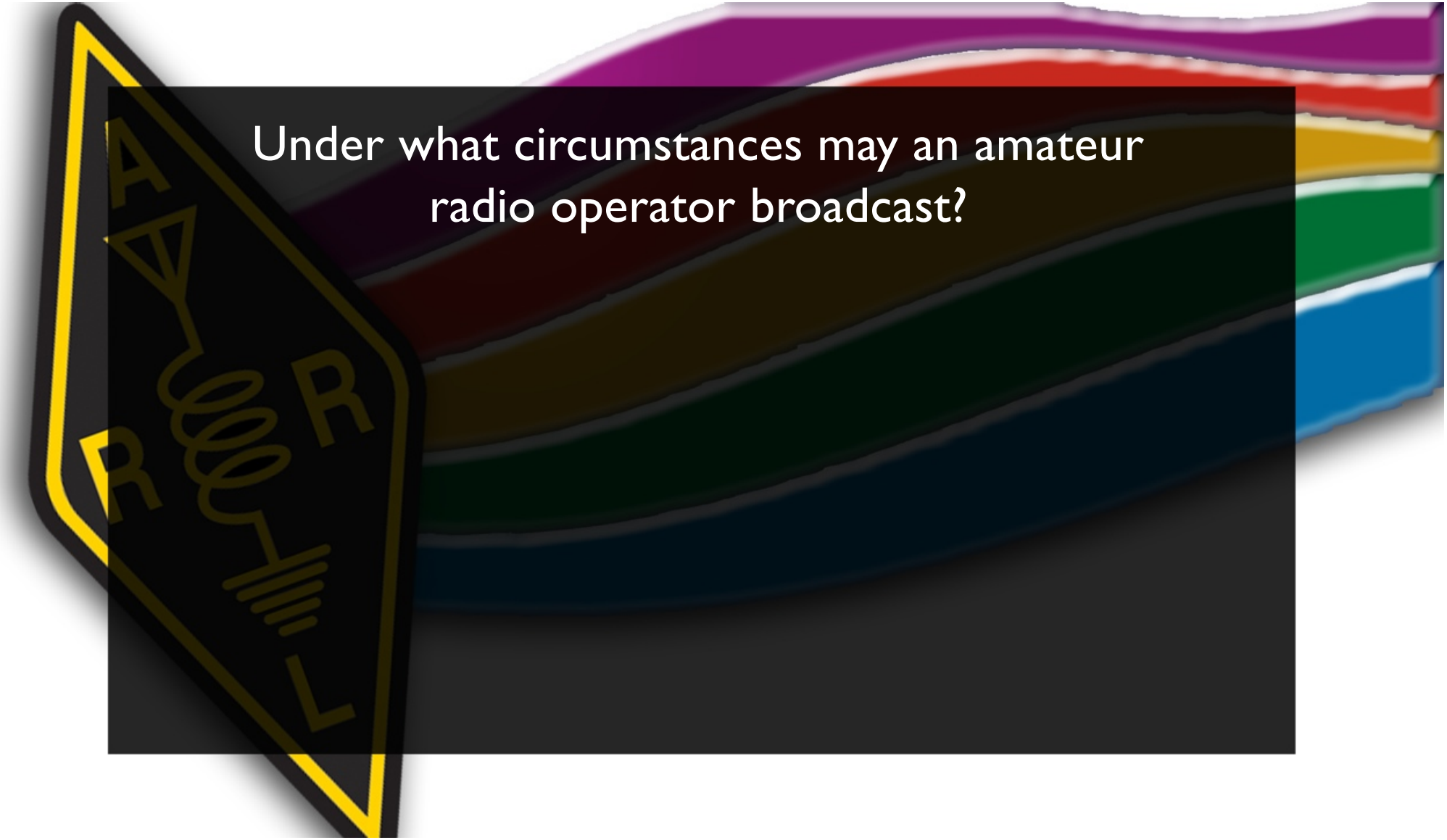
Only where such communications directly relate to the immediate safety of human life or protection of property

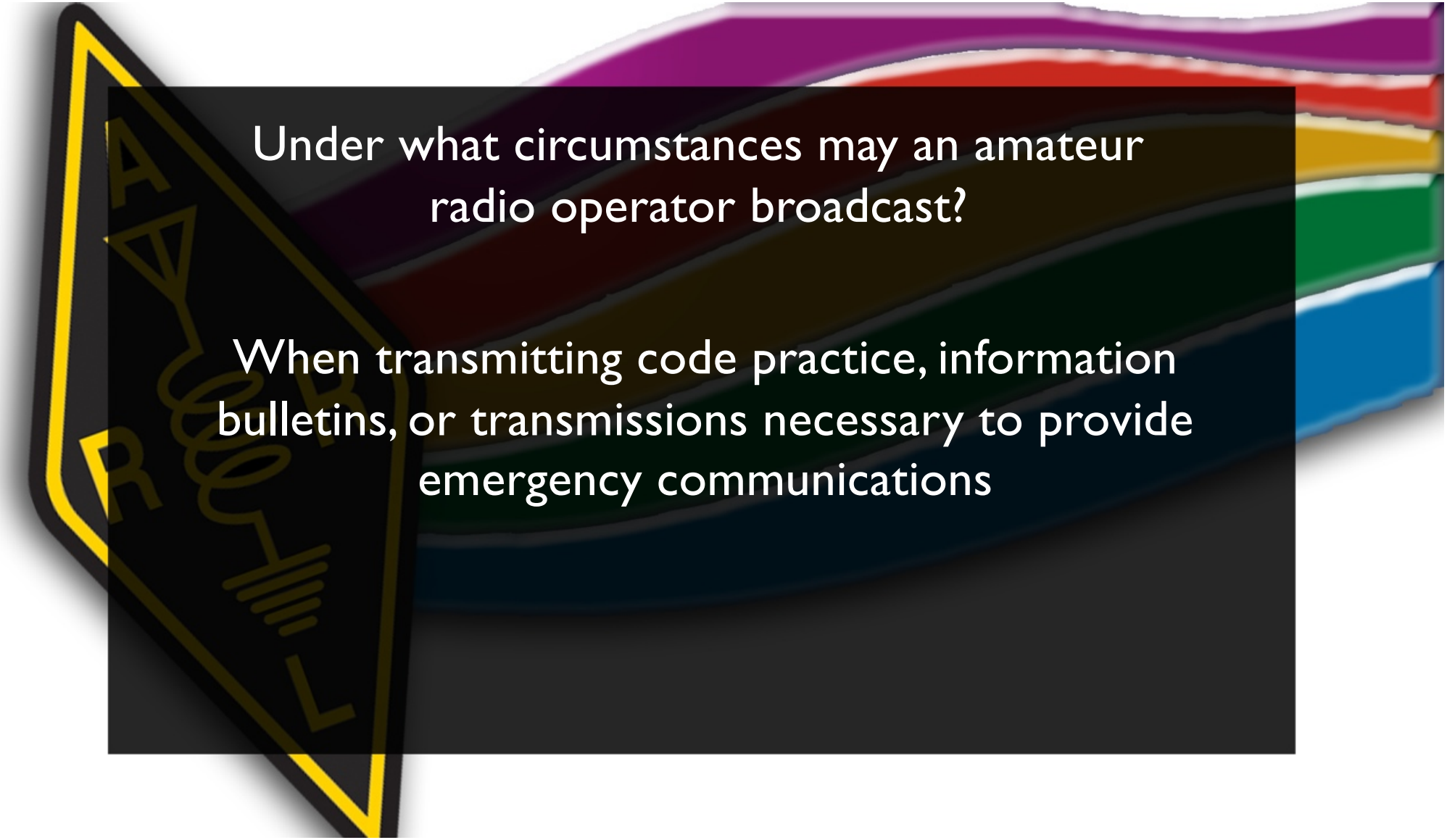

What is the meaning of the term "broadcasting"
in the FCC rules for the amateur services?

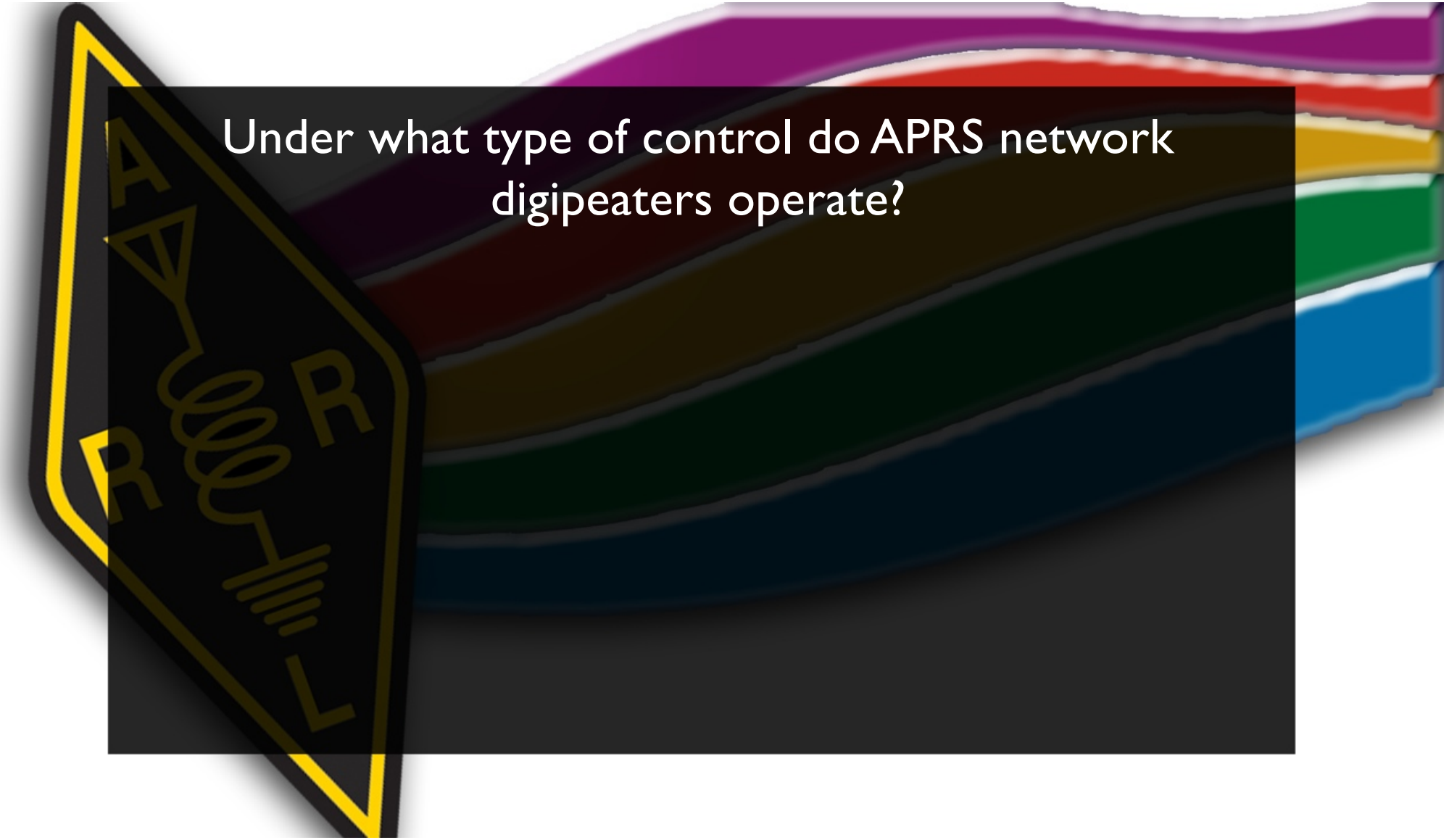


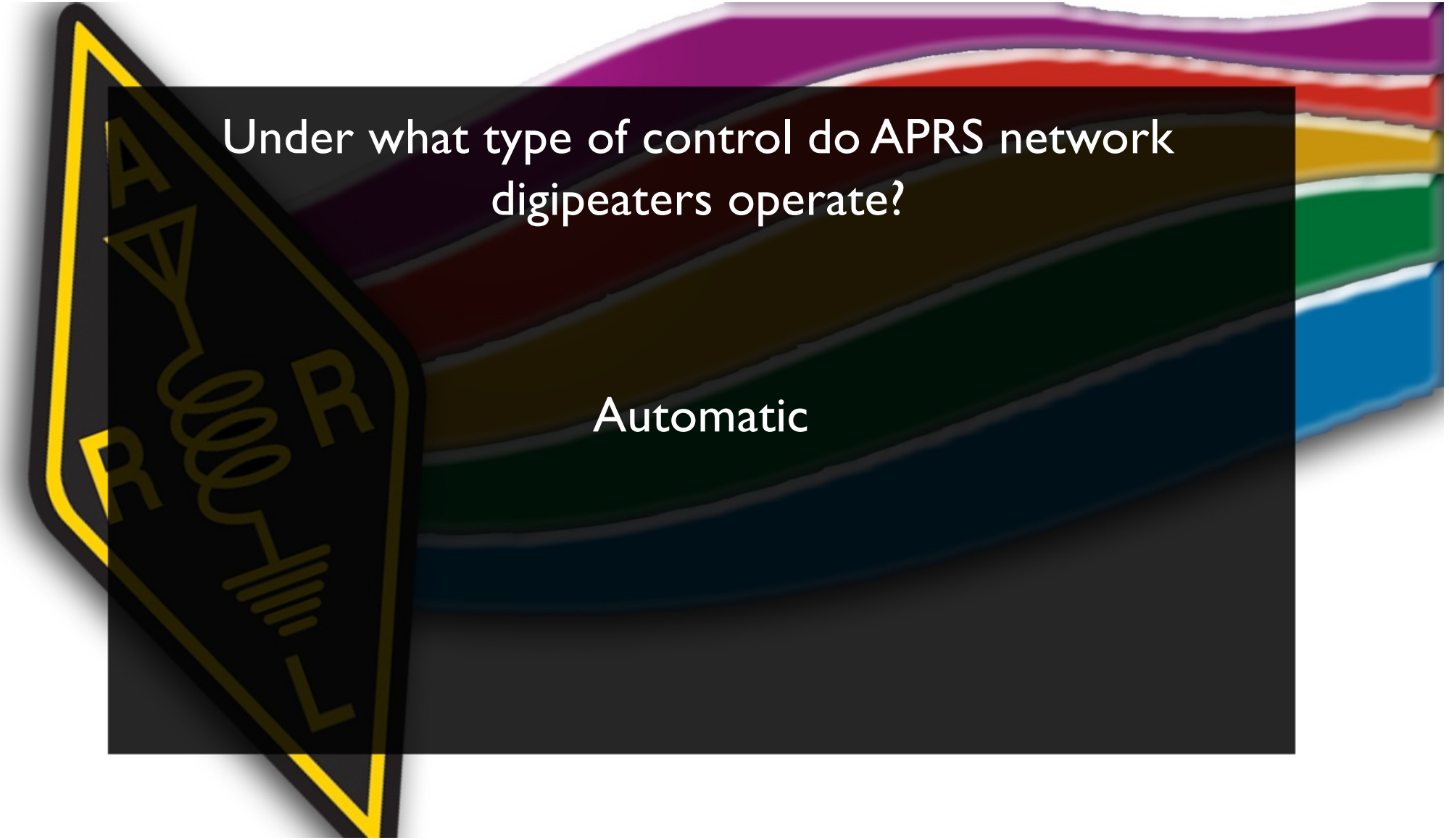
What is the meaning of the term "broadcasting" in the FCC rules for the amateur services?

Transmissions intended for reception by the general public


Under what circumstances may an amateur radio operator broadcast?

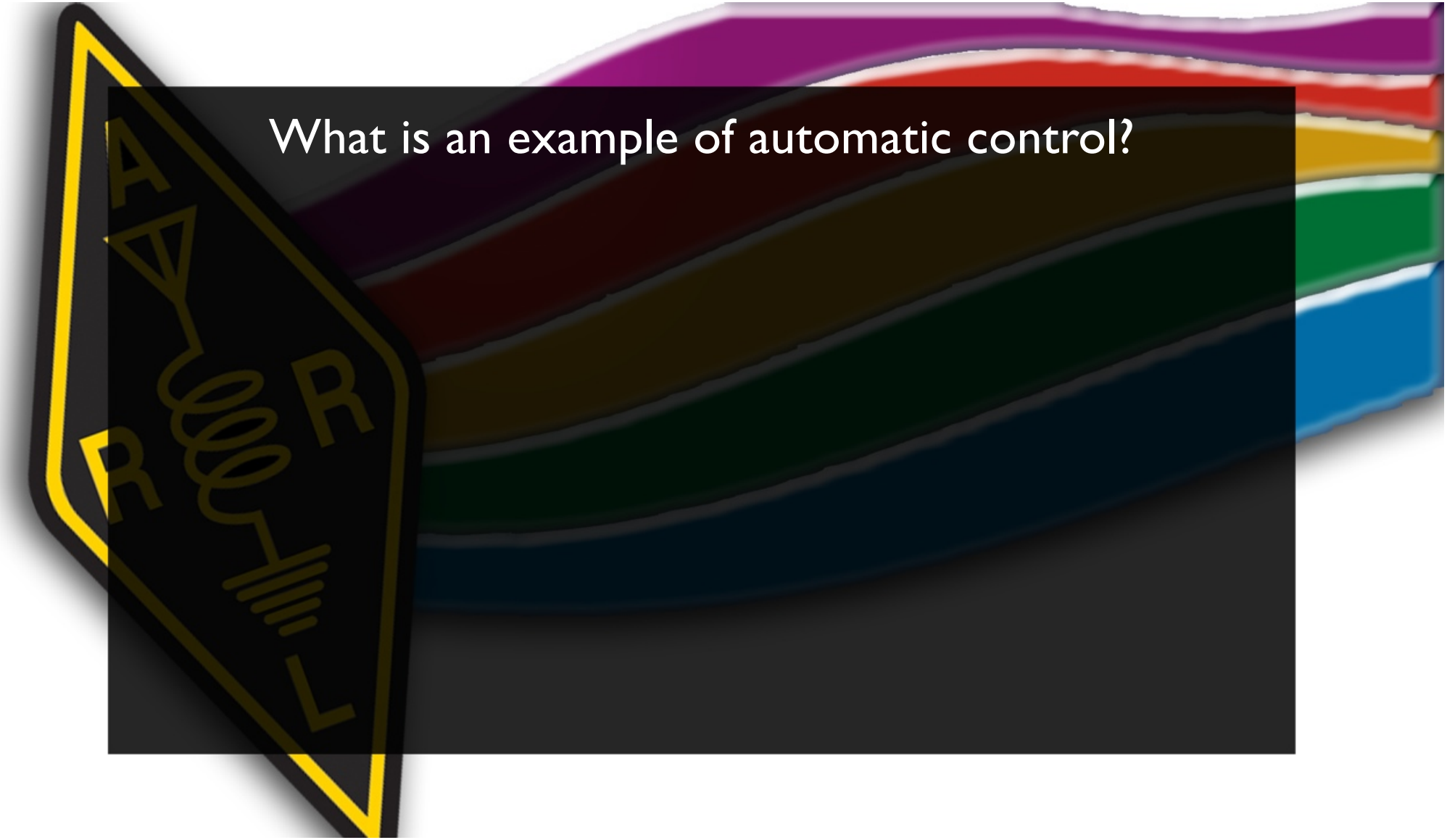

Under what circumstances may an amateur radio operator broadcast?
When transmitting code practice, information bulletins, or transmissions necessary to provide emergency communications


Under what type of control do APRS network digipeaters operate?



Under what type of control do APRS network digipeaters operate?

Automatic


What is an example of automatic control?

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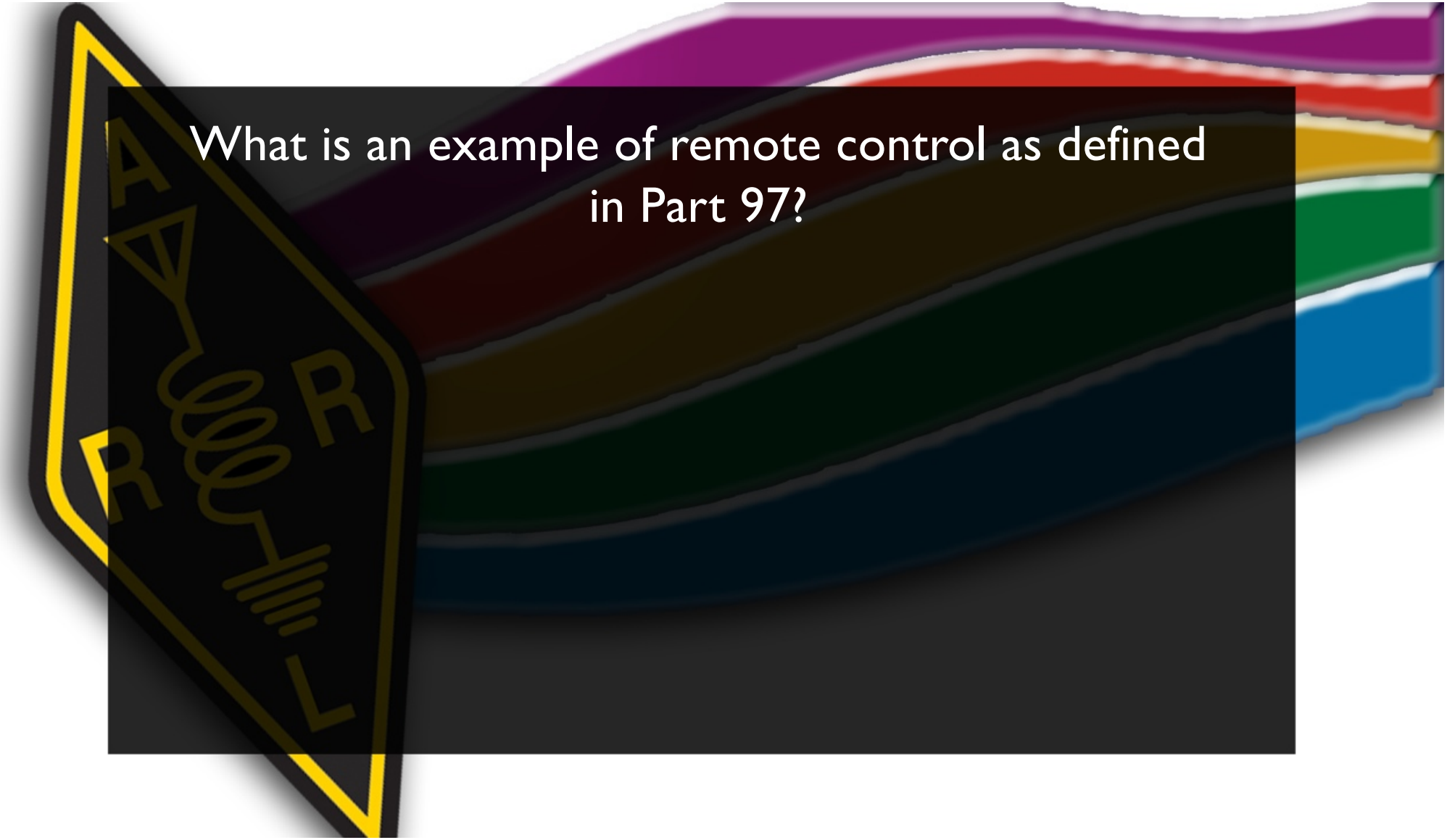
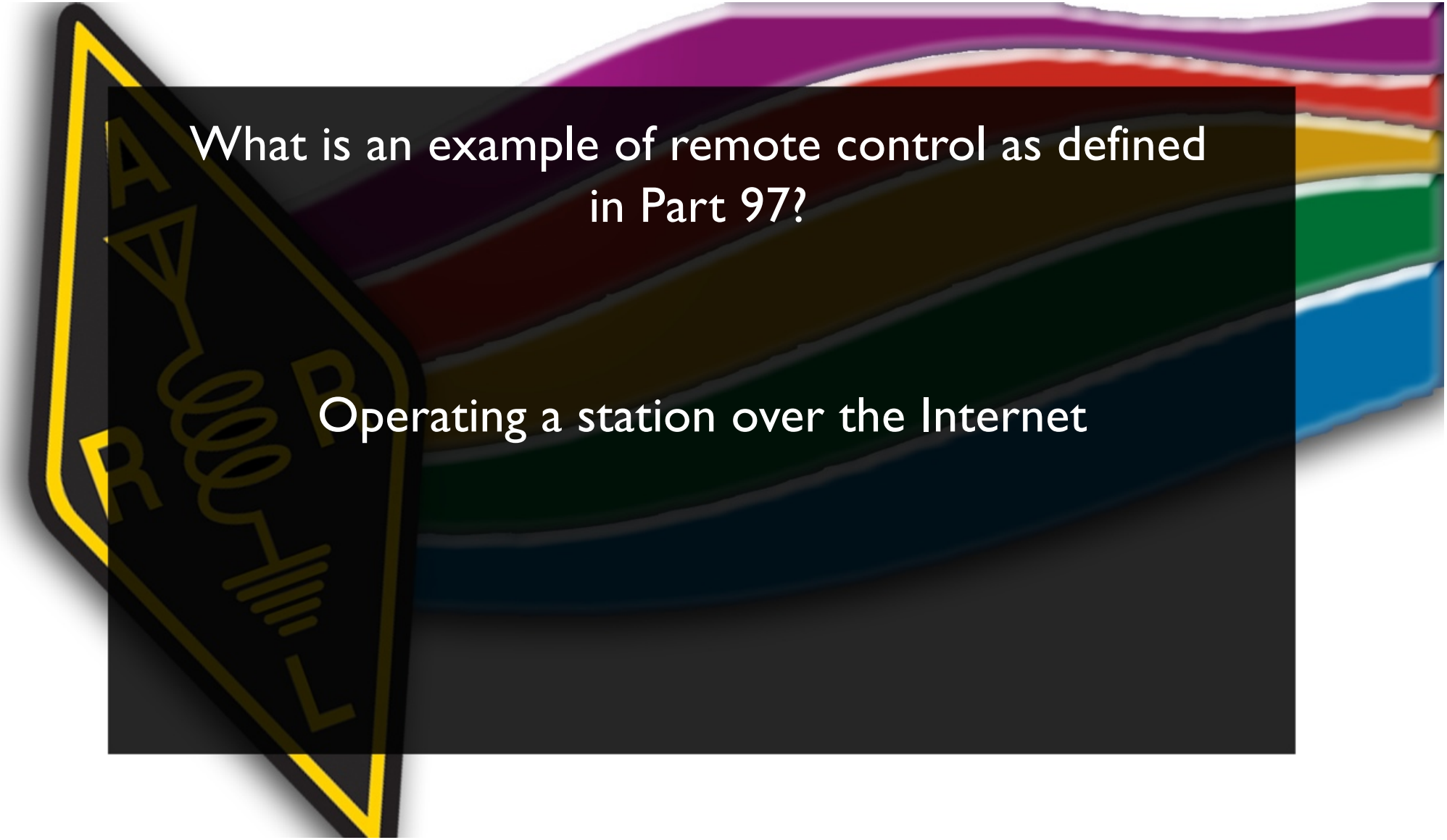
Repeater operation


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

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

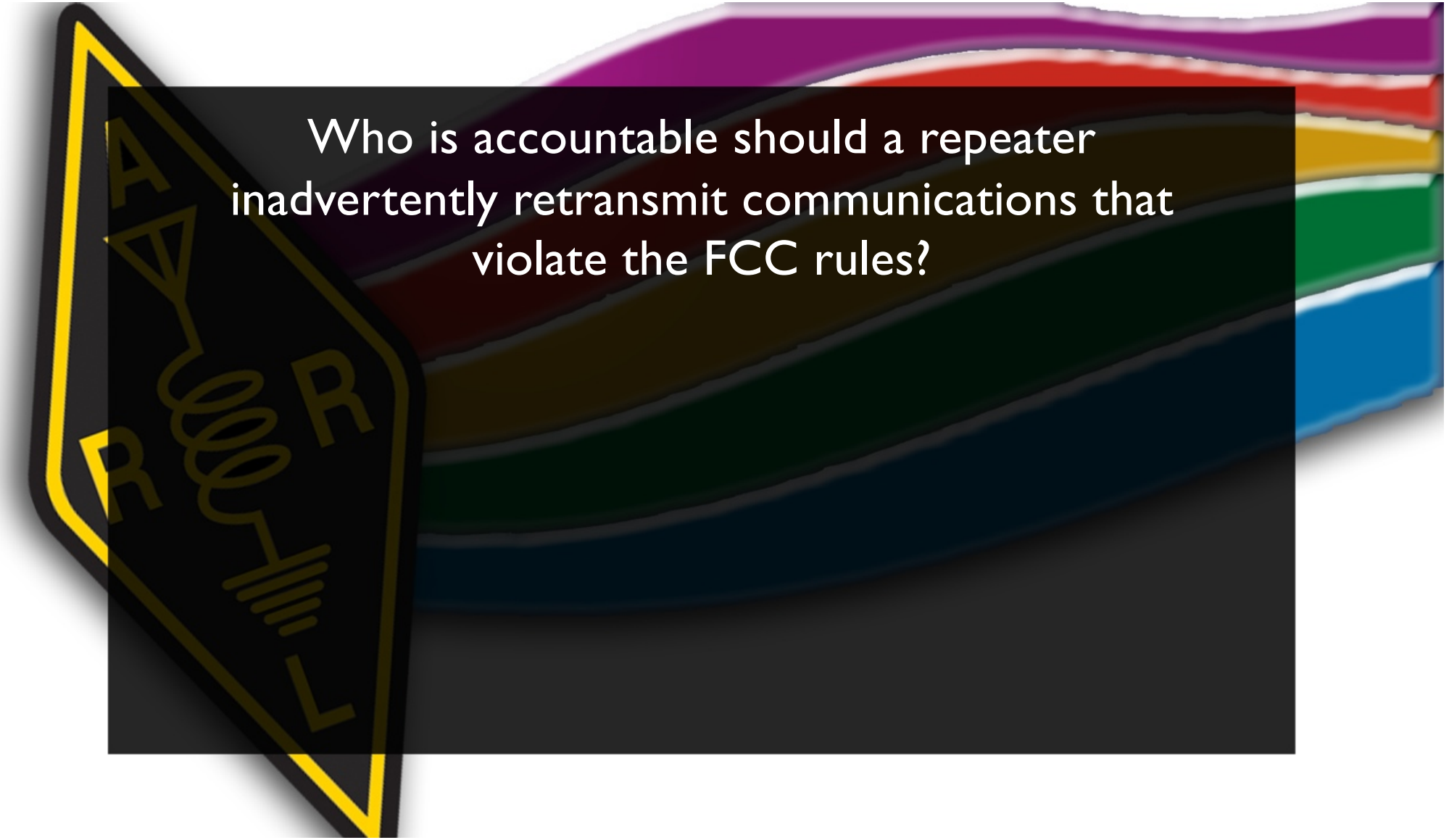
Local control

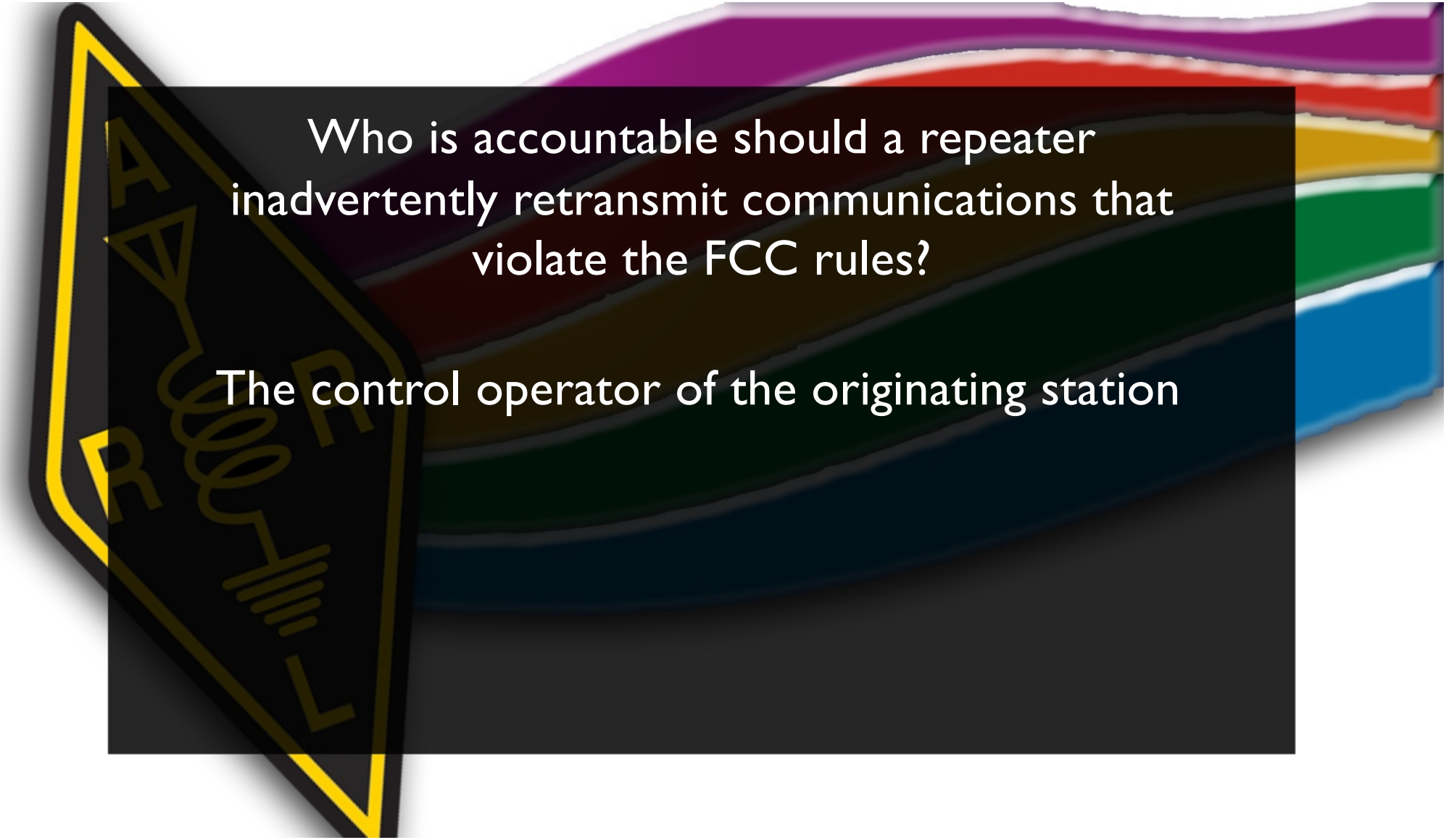

What is an example of remote control as defined in Part 97?



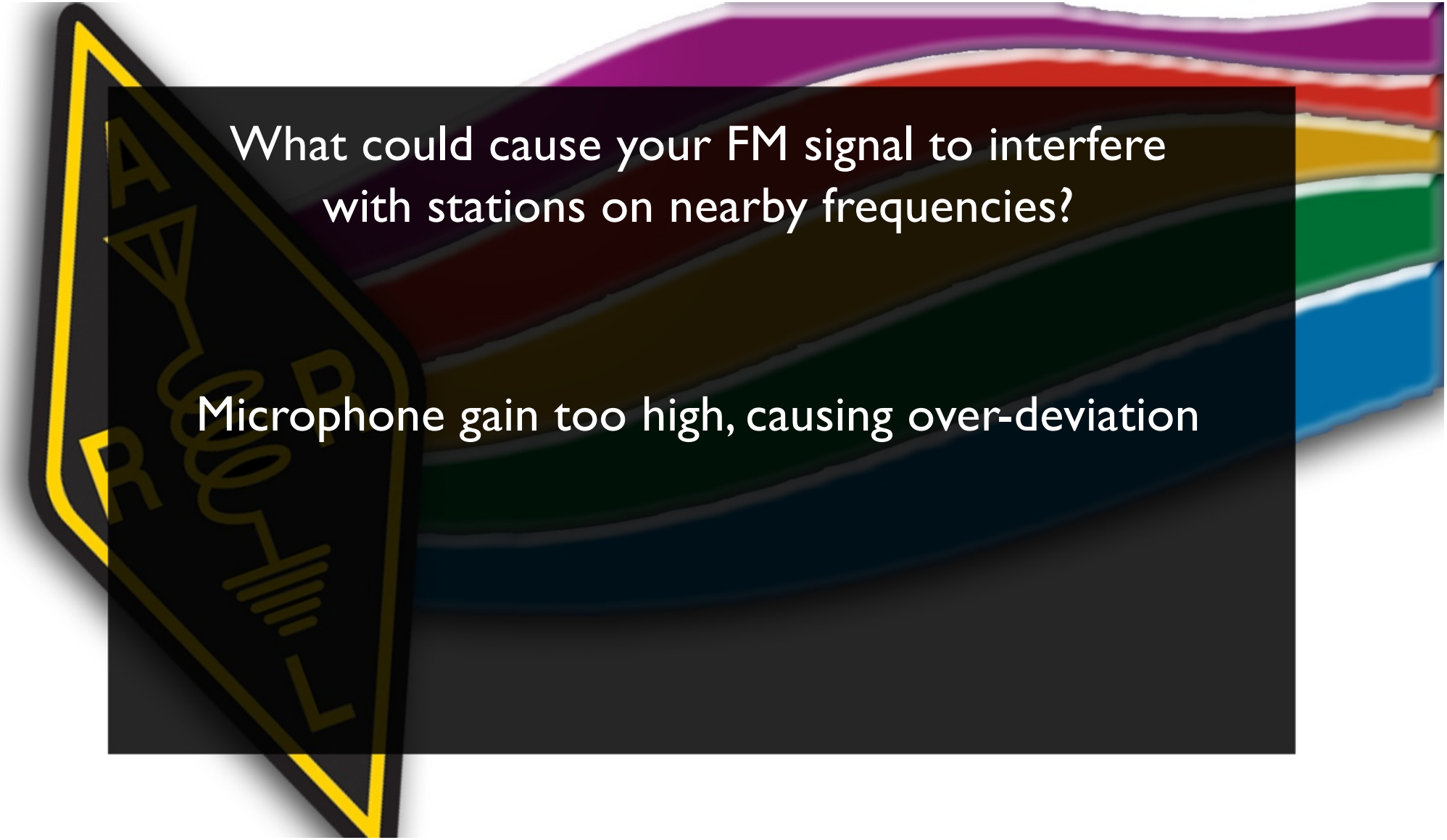
What is an example of remote control as defined in Part 97?

Operating a station over the Internet


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

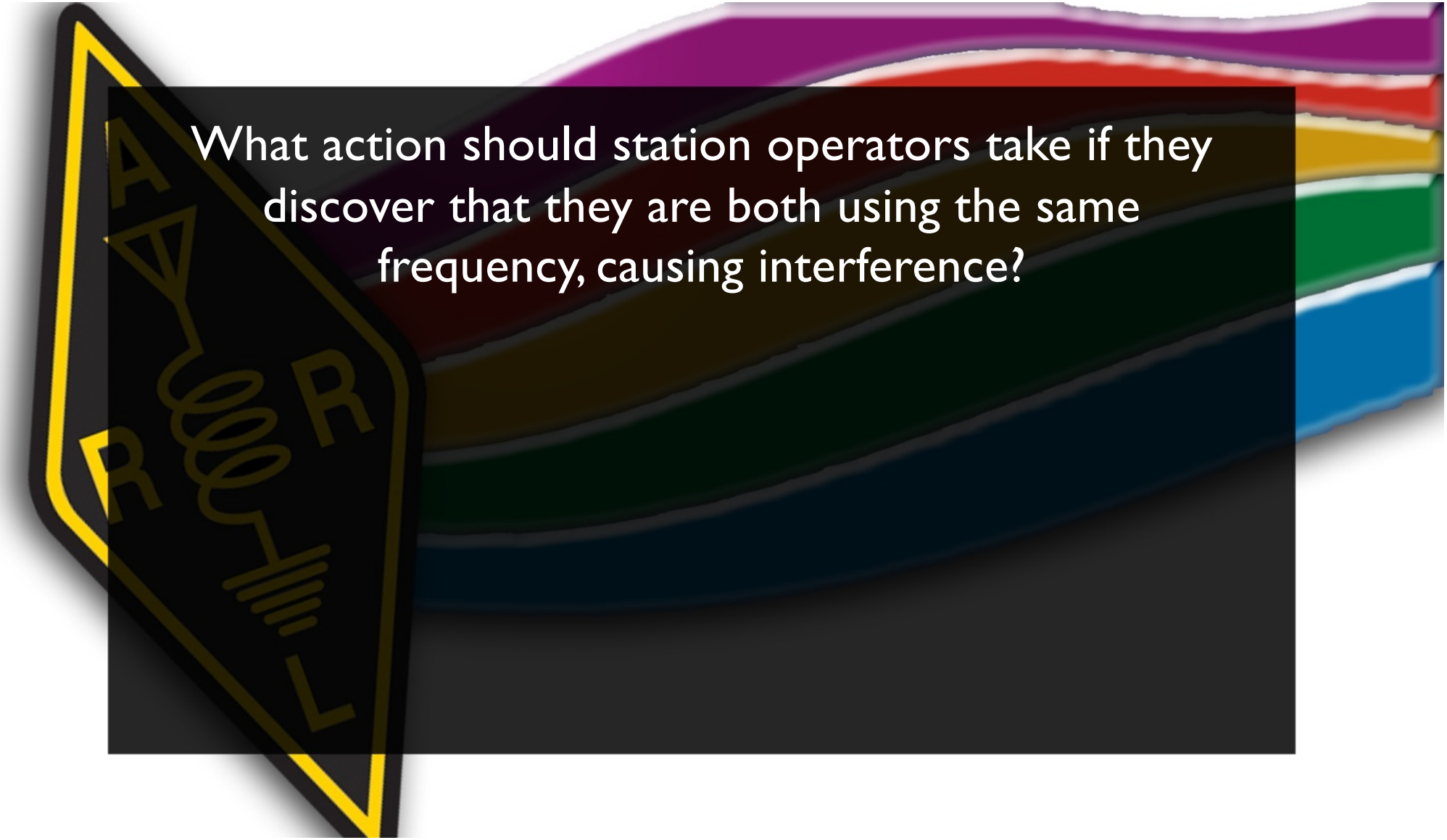

Who is accountable should a repeater inadvertently retransmit communications that violate the FCC rules?
The control operator of the originating station


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



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

Microphone gain too high, causing over-deviation


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

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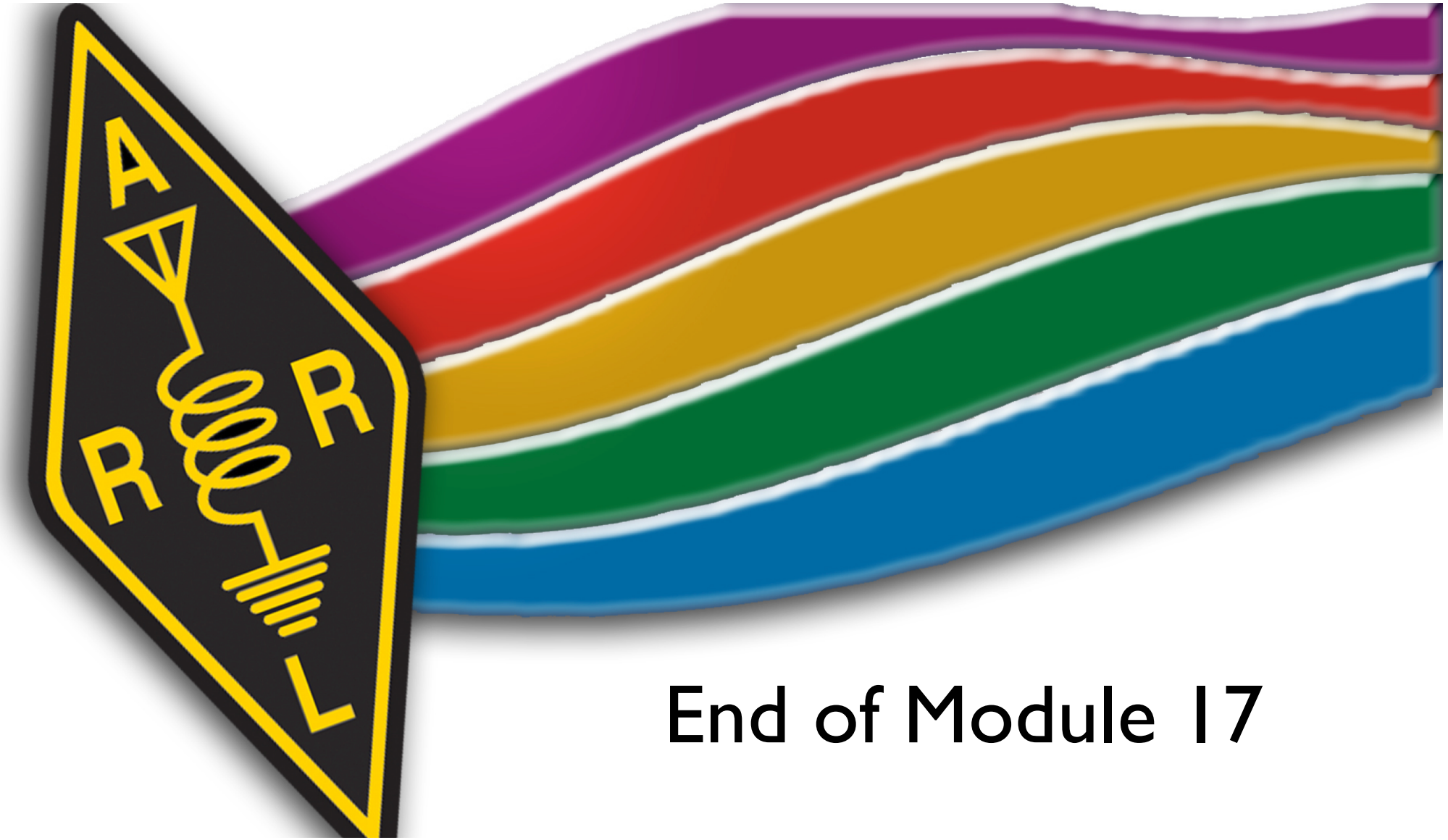
Common courtesy should prevail, but no one has absolute right to an amateur frequency



End of Module 17