Basic Emergency Vehicle Operators Course

Acceptable Vehicle Control Methods
& Acceptable Methods for the Use of Radio Communications

Acceptable Vehicle Control Methods

Objectives:

By the end of this module, students will be able to:

Identify acceptable vehicle control methods before they are allowed to operate and EV.

Identify acceptable vehicle control using:

- Acceleration and deceleration
- Braking
- Vehicle Positioning and Steering
- Wheels off road recovery

Acceptable Vehicle Control Methods

Acceleration and Deceleration

The driver will have to make conscious adjustments in acceleration and deceleration habits based on the following criteria:

- Engine Power
- Traction Conditions
- Roadway Characteristics

Acceptable Vehicle Control Methods

Acceleration and Deceleration

Acceptable strategies and methods for acceleration or deceleration are:

Acceleration and deceleration should be smooth, rather than rough, sudden, or aggressive.

Acceleration or deceleration should be in direct relationship to the vehicle's intended path of travel.

Acceptable Vehicle Control Methods

Braking

The amount of braking necessary is usually determined by the available stopping distance

Early detection reduces kinetic energy levels, allowing for smoother stopping.

Rapid or hard braking usually leads to dramatic, rough braking and increased chances for loss of vehicle control.

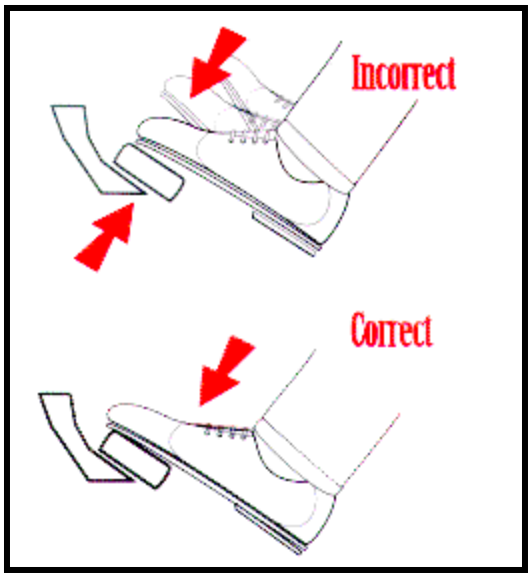
Brake Fade - Vehicle braking system fade, or brake fade is the reduction in stopping power that can occur after repeated application of the brakes, especially in high load or high speed conditions. Brake fade is primarily caused by a buildup of heat in the braking surfaces.

Acceptable Vehicle Control Methods

Braking

Necessary skills

- Use the heel /toe method
- Never use your left foot
- Avoid Tunnel Vision to the front



Acceptable Vehicle Control Methods

Braking

Conditions

Controlled Braking / Threshold Braking

– The driver has control of the stopping distance

Sudden Stops

– The driver is forced to quickly stop in the shortest possible distance

Emergency Conditions

– The driver combines the strategies above in an effort to respond to an emergency situation as quickly and efficiently and as safely as possible

Acceptable Vehicle Control Methods

Braking

Controlled Braking / Threshold Braking

Early and Smooth

Just shy of lock up

No Jabbing or Pumping

Acceptable Vehicle Control Methods

Braking

Sudden Stops

Locked Brakes

Antilock Braking Systems (ABS)

Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

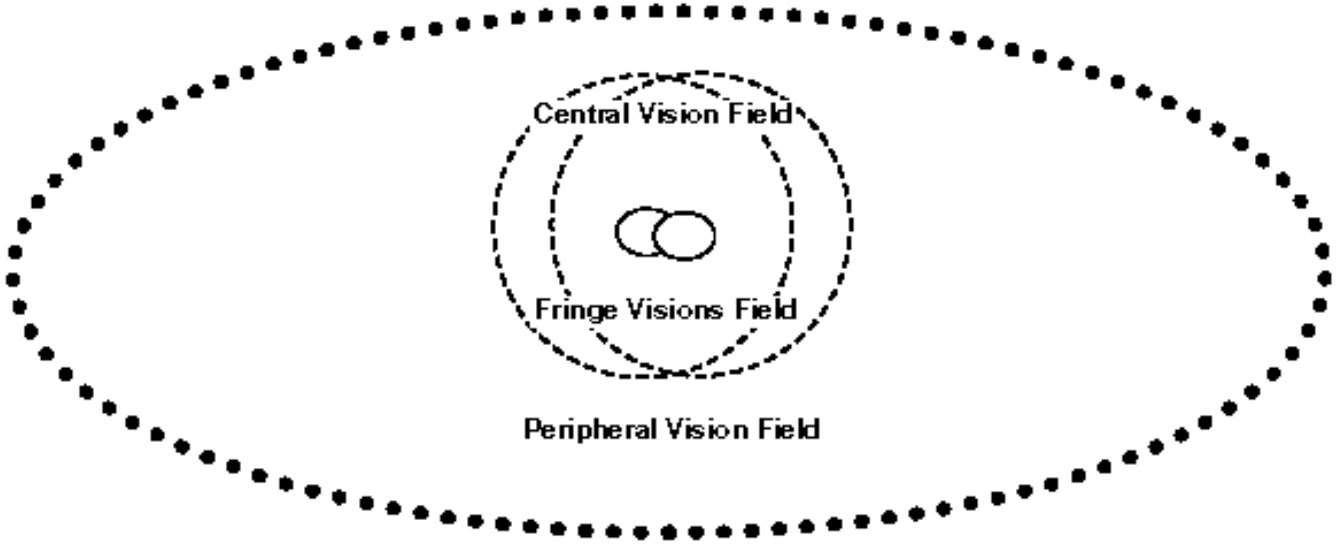
- **Use Ocular Steering**
  - **Where you look is where you go**
- **Hand Positioning**
  - **9-3 or lower**
- **Steering Methods**
  - **Shuffle Steering**
  - **Hand-over-Hand**
  - **Push–Pull Steering**
  - **Evasive Steering**

Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Vision Characteristics

Basic Visual Fields

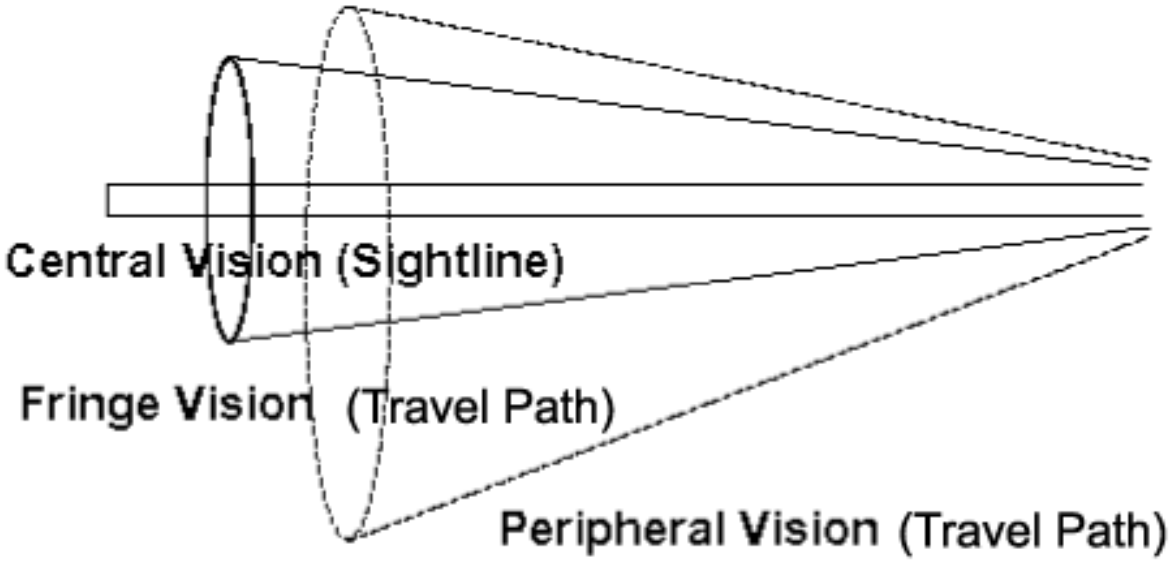


Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Vision Sightlines

Travel Paths

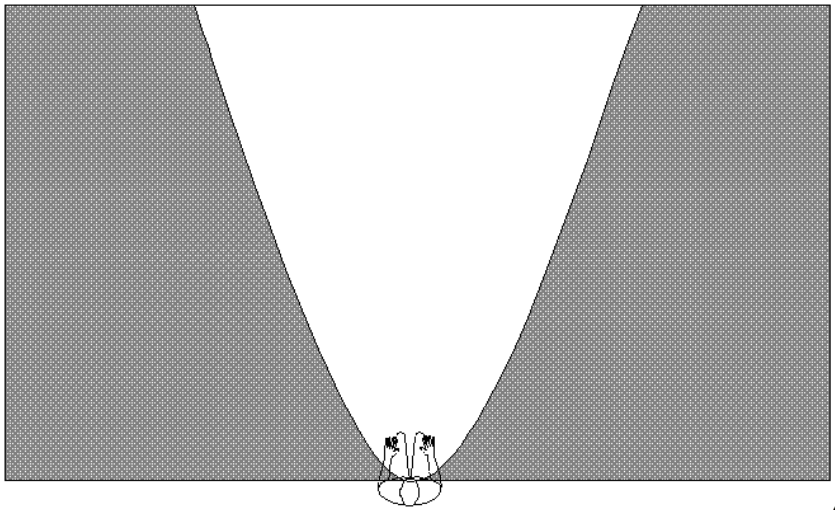


Acceptable Vehicle Control Methods

Vehicle Sightlines

Tunnel Vision

Tunnel vision is the loss of peripheral vision with retention of central vision, resulting in a constricted circular tunnel-like field of vision

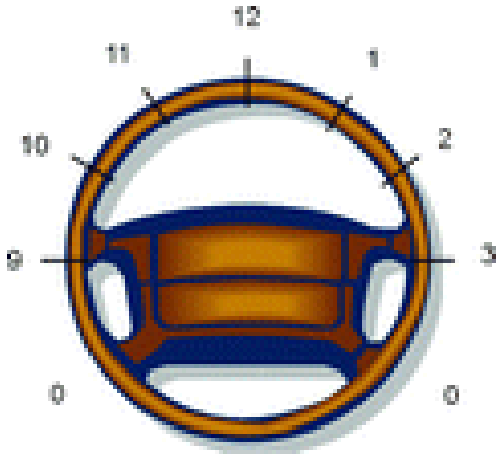


Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Hand Positioning

- **Hands should be at 9 & 3 o'clock or lower on the steering wheel. This will allow the largest possible turn without moving the hands.**
- **This hand positioning on the steering wheel allows maximum directional control and less weight transfer using PUSH/PULL steering.**
- **This hand positioning also keeps the drivers arms out of the area if the airbag deploys and is less fatiguing on the operator.**



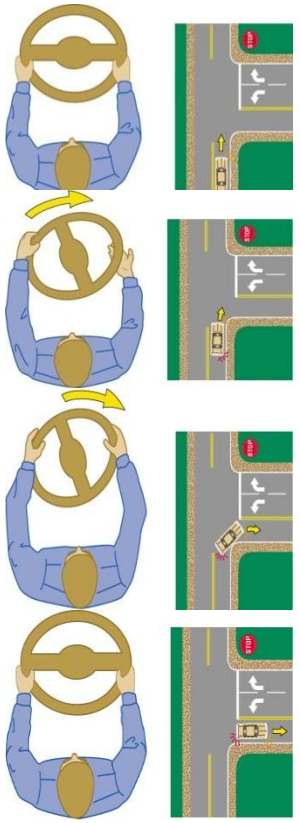
Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Steering Methods

Shuffle Steering

- Avoid crossing the hands
- Use small amounts of steering wheel adjustments
- Best for gradual or anticipated turns



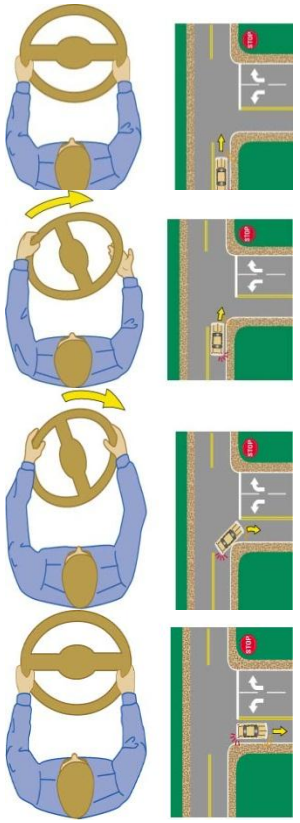
Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Steering Methods

Hand-over-Hand

- Avoid crossing the arms
- Turns the steering wheel maximum amount
- Fastest method for skid control



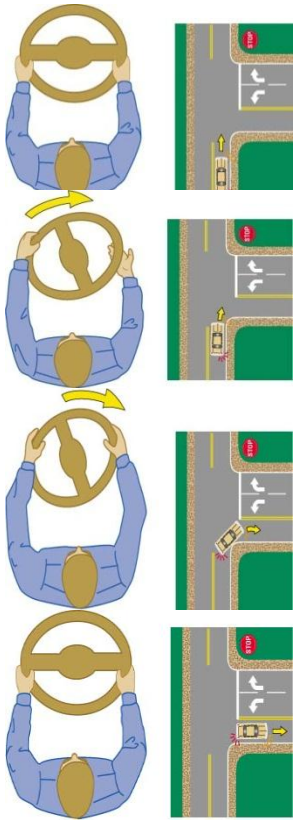
Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Steering Methods

Push – Pull Steering

- Push up while the other hand slides down
- Pull down while the other hand slides up
- Return to the original position



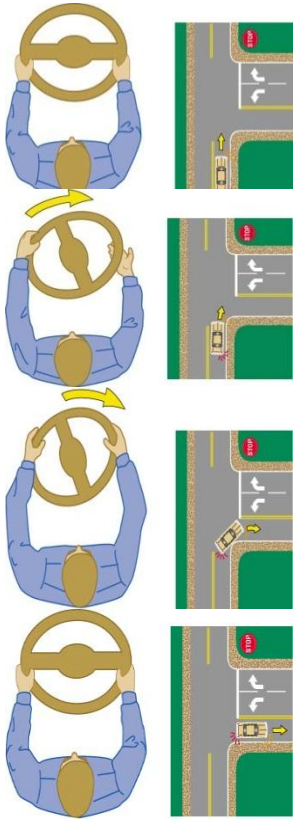
Acceptable Vehicle Control Methods

Vehicle Positioning and Steering

Steering Methods

Evasive Steering

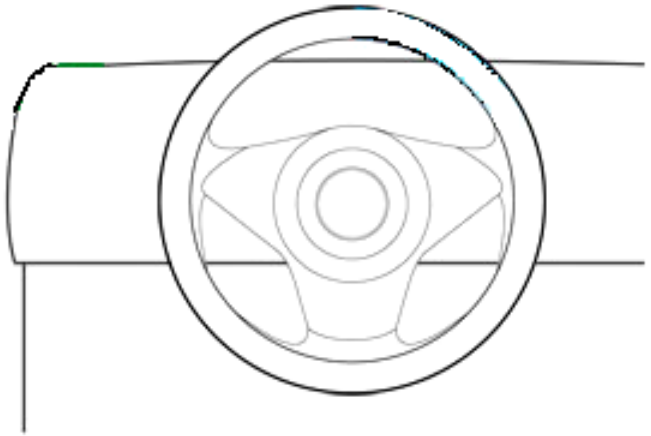
- Hands need to be at 9/3
- Turn the steering wheel ½ rotation, then a full rotation in the opposite direction
- Finally back to the original position



Acceptable Vehicle Control Methods

Making Left and Right Turns

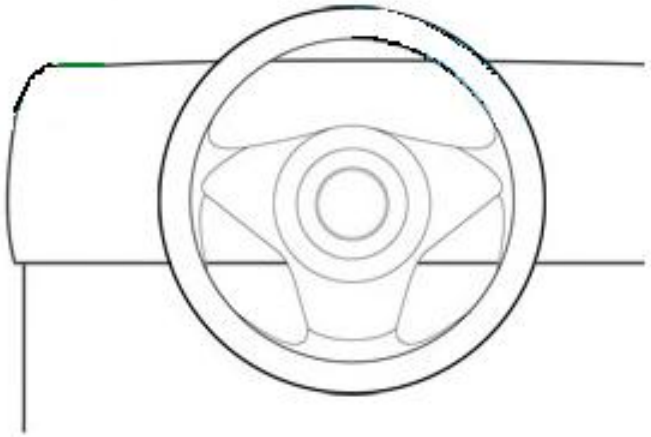
- **Where do the hands need to be?**
  - **Right Turn**
  - **Left Turn**



Acceptable Vehicle Control Methods

Lane Changes

Where do the hands need to be?



Acceptable Vehicle Control Methods

Wheels Off-Road Recovery

If at some time the EV's wheel's leave the road surface (intentionally or unintentionally), the operator will have to perform an off road recovery. This can be dangerous unless performed properly:

- Don't Panic
- STAY OFF THE BRAKES
- Hold Steering wheel firmly, steering may be difficult until you return to the paved portion of the road
- Check for vehicles ahead and to the rear
- Reduce speed by easing off the accelerator

Acceptable Vehicle Control Methods

Wheels Off-Road Recovery

- If brakes must be applied to reduce speed, brake very gradually.
- If shoulder is gravel or muddy, skidding is a strong possibility
- If there is a significant difference between the level of the roadway and the shoulder, or if the composition of the roadway and the shoulder are significantly different the vehicle may pull to one side.
- Center the vehicle over road edge and regain control before returning to the pavement.

Acceptable Vehicle Control Methods

Wheels Off-Road Recovery

If the operator must avoid an obstacle off the road, steer sharply towards the road, turning the steering wheel about 9 degrees each time and make adjustments with accelerating.

This procedure should only be used to avoid a collision:

Two dangers:

- Skidding
- Ending up in the opposing lanes when returning to the roadway

Acceptable Vehicle Control Methods

Summary

•Vehicle control methods, when misused or improperly employed, will certainly increase the likelihood of a collision. When the driver develops a foundation of acceptable control methods and acceptable perceptual and decision making skills, the likelihood of a collision is greatly reduced.

REVIEW QUESTIONS

1) When is the only time the 12 o'clock hand position is primarily used?

2) Which field of vision is used most when driving?

3) Define threshold braking?

4) Name two factors to avoid if your vehicle wheels leave the paved portion of the roadway?

5) What is Tunnel Vision?

Basic Emergency Vehicle Operators Course

Acceptable Methods for the Use of Radio Communications: Emergency & Non- Emergency

Acceptable Methods for the Use of Radio Communications

Emergency Driving

Identify factors that contribute to the effective use of the radio during an emergency response

Non-Emergency Driving

Identify factors that contribute to the effective use of the radio during a non-emergency response

Acceptable Methods for the Use of Radio Communications

Goal:

Value and Importance of Radio Skills

Of the many skills that emergency responders are expected to master, few are more important than the operation of the radio.

Accurate and precise use of the radio is important in both non emergency and emergency situations.

Acceptable Methods for the Use of Radio Communications

Objectives:

By the end of this module, students should be aware of:

- **Use of the radio without losing control**
- **Identify factors that could affect radio transmissions**
- **Preventing the radio from creating a distraction**

Acceptable Methods for the Use of Radio Communications

Discussion topics:

- **Routine & mission related communications**
- **Communication equipment**
- **Standard codes v/s plain language**
- **General communication techniques**

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

- **Terminology**
- **Slang terms**
- **Police/Fire jargon**

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

- Tone of voice should be calm, natural and relaxed
- Control Emotions
- Calm voices are easier to understand
- Attempt to control rate of speech

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

EV operator informs dispatcher whenever leaving the vehicle

- Provides protection for the operator
- Dispatch is aware you are out of vehicle
- Not likely to be put on a “failure to answer” message

Include the what, why & where information

Acceptable Methods for the Use of Radio Communications

Include the what, why & where information

Why are you getting out of the unit?

- flagged down
- suspicious activity
- restroom break
- fueling the vehicle

Where are you at?

- give the address or Bldg #
- street name
- name of business

What do you have?

- describe situation
- description of vehicle
- description of suspect

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

EV operator informs dispatcher whenever leaving the vehicle (emergency)

- Description of the emergency
- Exact location to include address and any other identifiers
- Priority type

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

EV operator informs dispatcher whenever

arriving at the scene/destination

Dispatcher can advise or update other units based on information you will provide

Dispatch is aware of your current location that might alter your next route or destination

Advise dispatcher when you clear and location

Acceptable Methods for the Use of Radio Communications

Routine & mission related communications

EV operator informs dispatcher of any major conditions likely to cause disruption to emergency or community services

- Possible water main break
- Traffic Control device missing or out of operation
- Debris in the roadway
- Bus broke down along the curb
- Heavy Traffic

Acceptable Methods for the Use of Radio Communications

Required Mission Related Communications

Radio Transmission Content

- Who you are (assigned radio number or unit)
- What your need to be on the radio is for
- Why (short but concise description)
- Where (your location)
- When (sometimes is help going to get there**)**

DEPARTMENTAL POLICY WILL DICTATE WHAT INFORMATION IS TO BE TRANSMITTED DURING EMERGENCIES.

Acceptable Methods for the Use of Radio Communications

Communications Equipment

- **Portable radio**
- **In vehicle equipment**
  - Radio
  - MDT terminals
  - Lap tops
- **Optional items**
  - Cell phones
  - Pagers
  - CB radios
  - Ham radios
  - Scanners

Acceptable Methods for the Use of Radio Communications

Standard Codes v/s Plain Language

Necessity or Convenience

10 Code System

- No Standard
- Constantly changing
- Time Saving
- Some degree of security

Plain Language

- Clear & Concise
- Time Consuming
- No Security

Acceptable Methods for the Use of Radio Communications

General communication techniques

When you have a partner, let the passenger not the operator conduct radio business, so the driver can devote their full attention to the driving task.

Do not place microphone over mirror on dashboard or in lap.

Don’t try to talk over the siren.

Think before you speak, be careful what goes out on the air.

Acceptable Methods for the Use of Radio Communications

General communication techniques

- **Be brief and concise.**
- **Use codes if appropriate or required.**
- **Weigh communications against driving task.**
- **Use an alternate channel or frequency if radio traffic is lengthily or unnecessary.**
- **Do not tie up the air with unprofessional transmissions.**
  - **Use a phone**

Acceptable Methods for the Use of Radio Communications

General communication techniques

- **Common names**
- **Nicknames**
- **Bldg #’s**

Acceptable Methods for the Use of Radio Communications

Factors that affect Radio Transmissions

- Transmission Power
  - Weak Battery (portable)
  - Bare cable or short in cable (fixed unit)
- Receiver Sensitivity
  - Quality Product
- Antenna Design
  - Low profile antenna
  - Internal antenna
  - Misaligned dish
- Obstructions
  - Buildings (downtown – central business district)
  - Internal building design

Acceptable Methods for the Use of Radio Communications

Accuracy

Information transmitted should be accurate as possible

Inaccurate information delays response of other EV's

Information must be understood to be of value

ABC's Communication:
A = Accurate
B = Brief
C = Concise

Value and Importance of Radio Skills

- Improve EV operator's effectiveness by reducing response time
- Increases the likelihood of obtaining help when it's needed
- Makes the difference between effective response and ineffective response

Acceptable Methods for the Use of Radio Communications

Student Exercise:

Remember to utilize “standard codes” or be “short & concise” if using “plain language.”

Spend no more then ten minutes time.

Summary

The Goal of Good Communications Techniques Is to Communicate All Necessary Information With Minimal Disruption of the Driving Tasks.

The radio is the emergency responders source of communication between the dispatcher and fellow, Officers, Firefighters, EMS personnel.

Use it effectively and efficiently in order to avoid disaster

> You never, never, never want to be caught saying something you wish you didn't over an "OPEN MIC"

REVIEW QUESTIONS

1) Why should you notify dispatch when leaving the vehicle (non-emergency)?

2) What are the ABC's of Communication?

3) What are some factors that effect radio transmissions?