



What's Amateur Radio All About?

Presented to

LARC Basic Ham License Course
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What is Ham Radio?

Amateur radio is both a hobby and a service in which participants ("hams") use various types of radio equipment to communicate with other radio amateurs for recreation, self-training and public service

...It's a hobby...

The main reason most hams are involved in Ham radio is because it's fun.

- making brief contacts or lasting friendships with people around the city and the world
- taking part in contests, field day, clubs
- building your own radio gear and antennas
- trying unusual radio operations: talking to astronauts, moonbounce, microwave...

Do it yourself Antennas

2 Meter Ham Antenna

(No trombones were
harmed in the making
of this antenna)



... and it's a Service...

Providing communications support for public events: competitions, bike tours, parades

Providing **emergency communications** in times of disaster, assisting Red Cross, Police, Municipal emergency plans...

“When all else fails, there's Amateur Radio”

Chinese Earthquake – May 12, 2008

Chinese government officials and the news media have recognized that when communications failed after the earthquake, Amateur Radio operators stepped in to provide vital links...

...right after the earthquake, "Two ham radio operators drove to the center of the earthquake area and had a repeater set up by the morning of May 13. This repeater enabled the transmission of rescue instructions and status reports, and was a main communication channel for public use..."

..various types of radio communications

Radio Types

Portable (fits in your hand)

Mobile (fits in your vehicle)

Base Station (fits on your desk)

Usually, a bigger radio, with a bigger antenna, has more capabilities
(and a bigger price tag)

Antenna Sizes

Portables ----->

– inches

Mobile

– Several feet

Base Station

– 20 to 400 feet

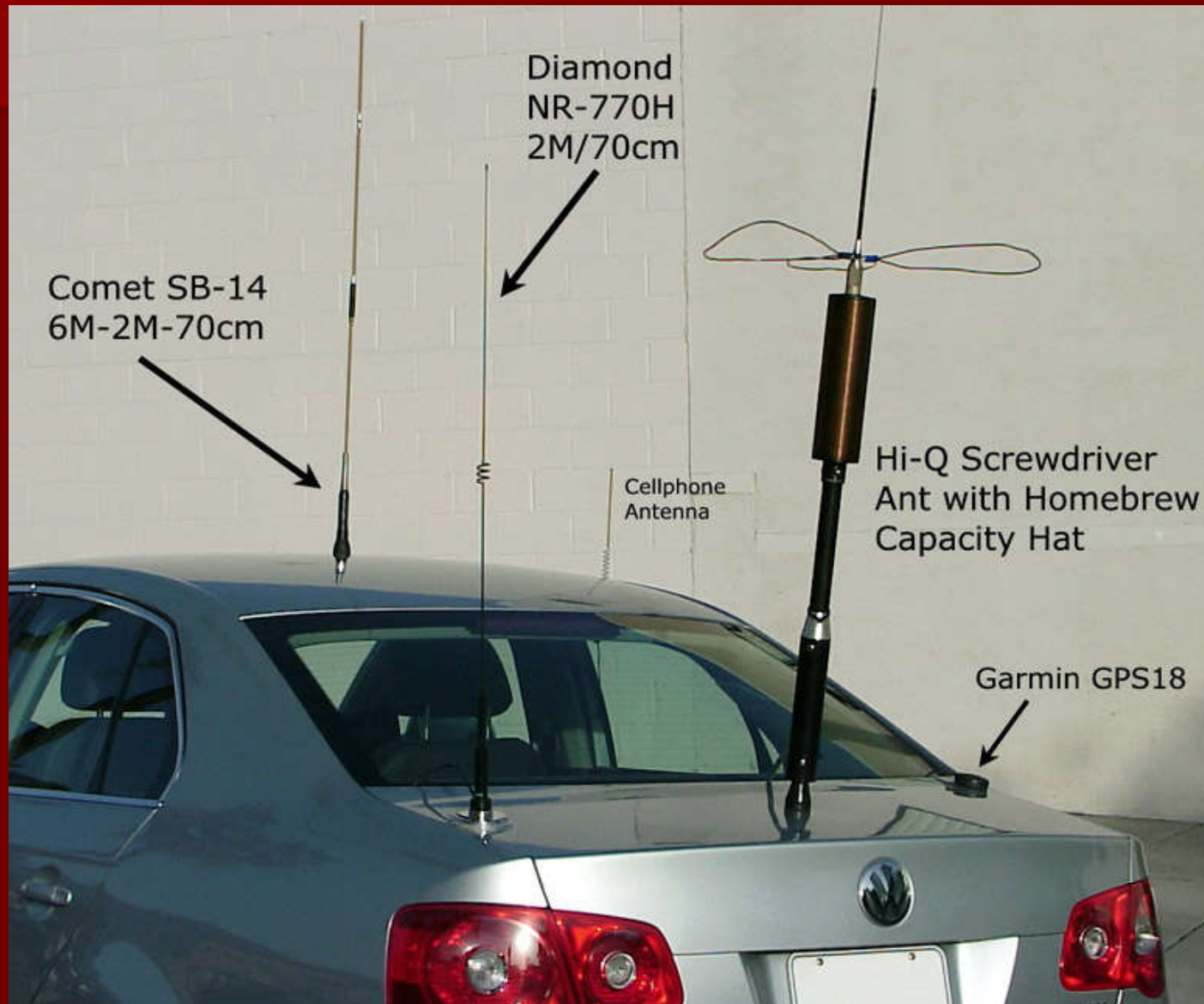


Mobile Radio



- about the same size as a car radio
- A little more expensive
- may need a bigger antenna
- more powerful than a portable
- can be used in a vehicle, or as a base station
- hard to lose

Mobile Antennas



Base Station Radio

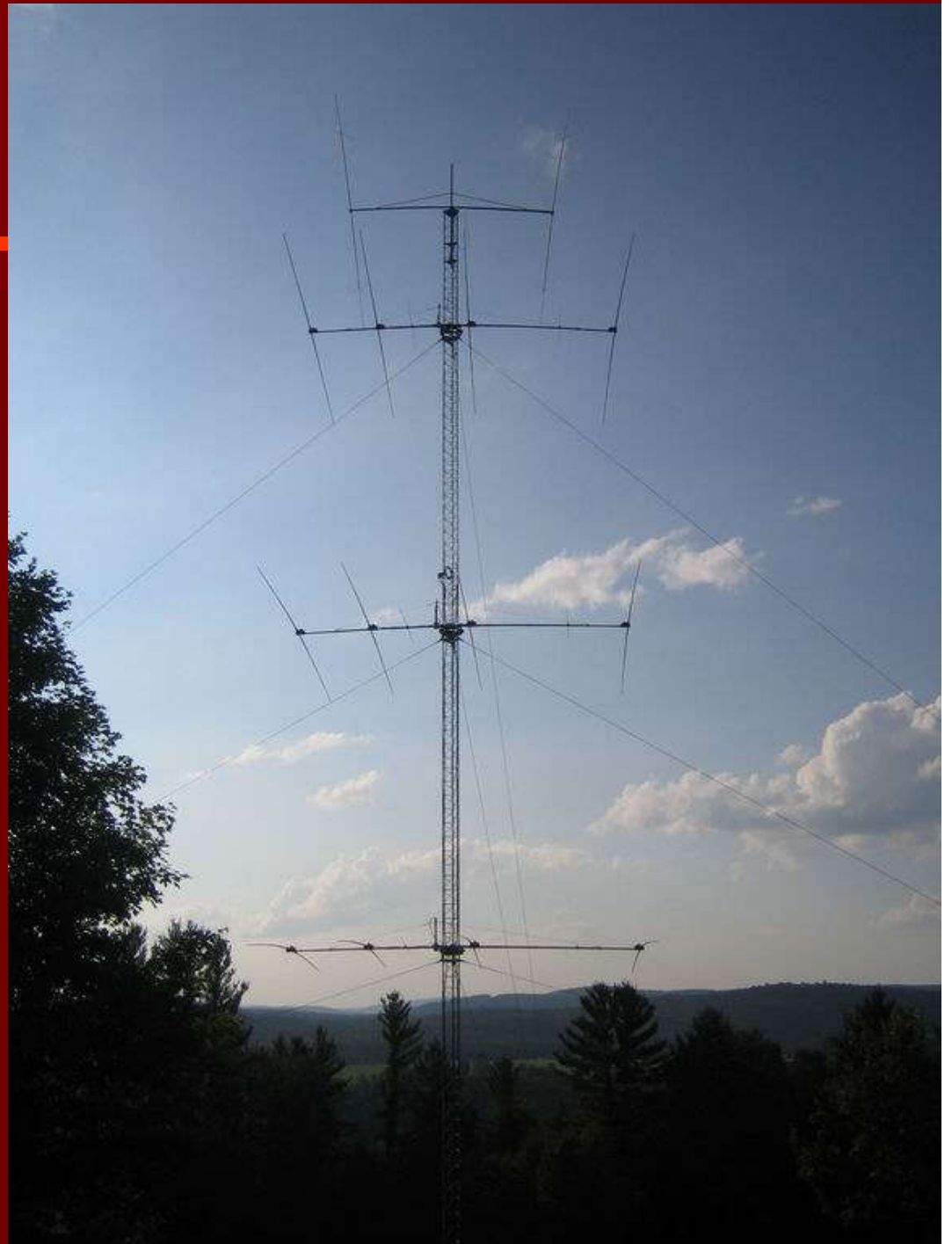


- biggest
- most expensive
- highest quality
- variety of models
- used for world wide communications
- more and more computerized

Base Stations

Every ham dreams of having a big tall tower "some day"

City dwellers are often limited to smaller simpler base antennas



More Typical Base Station Antenna

- typical tower based antenna
- directional
- Has multiple antennas
- We won't talk about stealth antennas



..various types of radio communications

- **Voice** –simplest, and most popular
 - **Morse Code** – workable when voice isn't
 - **Computer data** – better speed, reliability, reach
-

Repeaters – central rebroadcasters that amplify and re-send transmissions

Internet Linking – radio > internet > radio

How Do We use Radios? **Handheld Radios**



Convenient
Portable

Built-in Antenna
Don't need power outlet



Limited distance
Batteries need recharging

How Do We use Radios? **Mobile Radios**



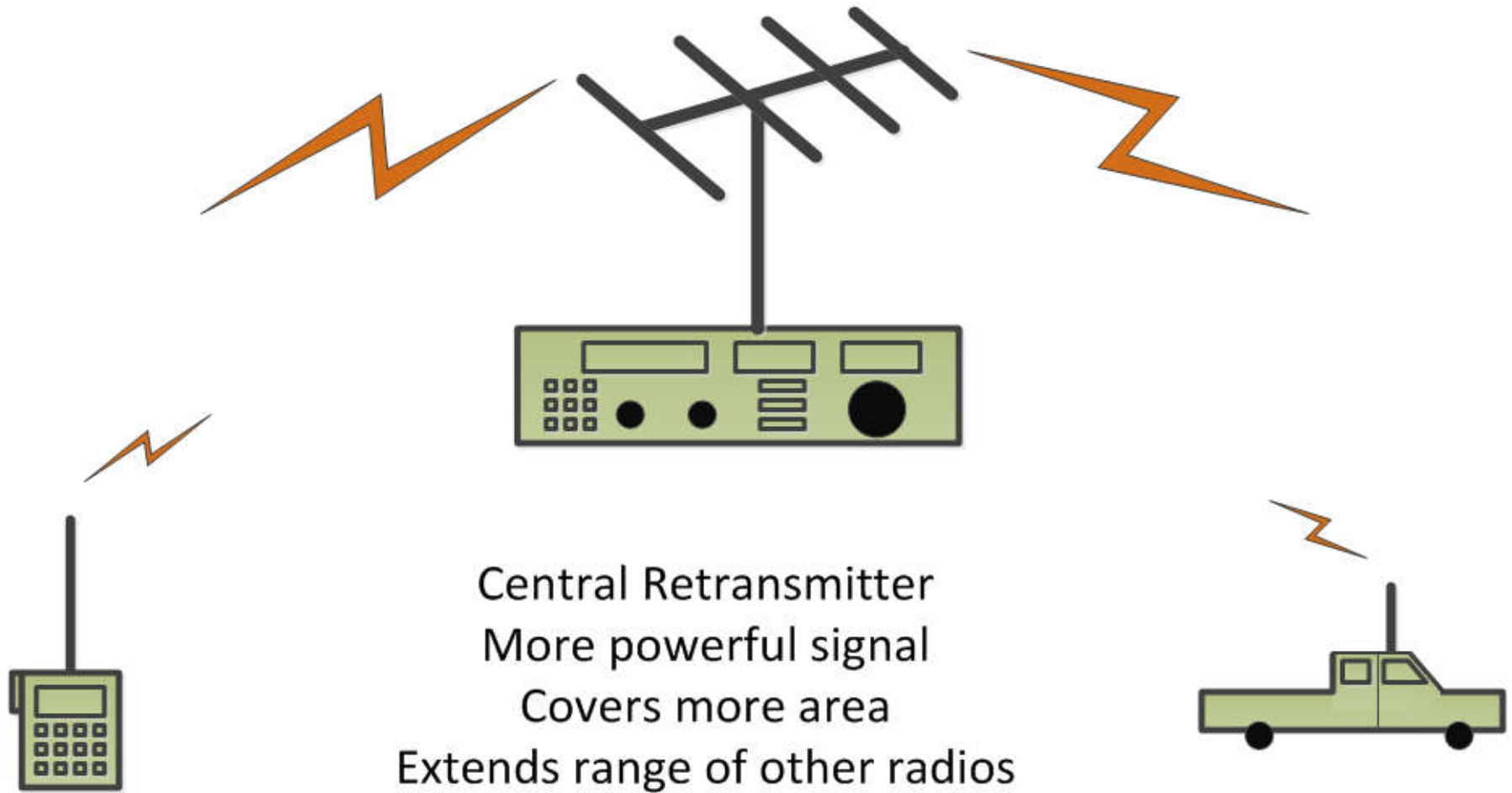
Vehicle mounted radio
Powered from vehicle
Bigger antenna
More range



Limited to use in vehicle



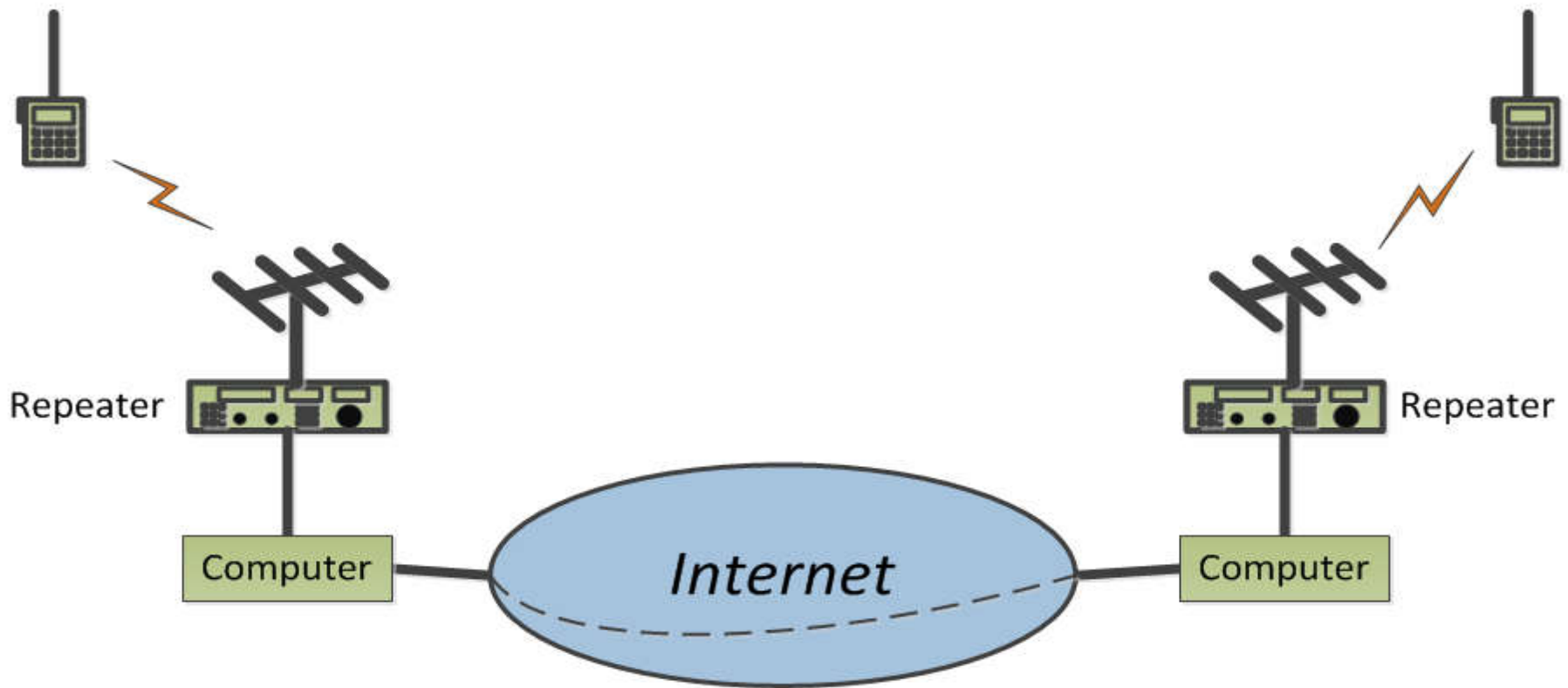
How Do We use Radios? Repeaters



Central Retransmitter
More powerful signal
Covers more area
Extends range of other radios

Needs good location
Needs reliable power

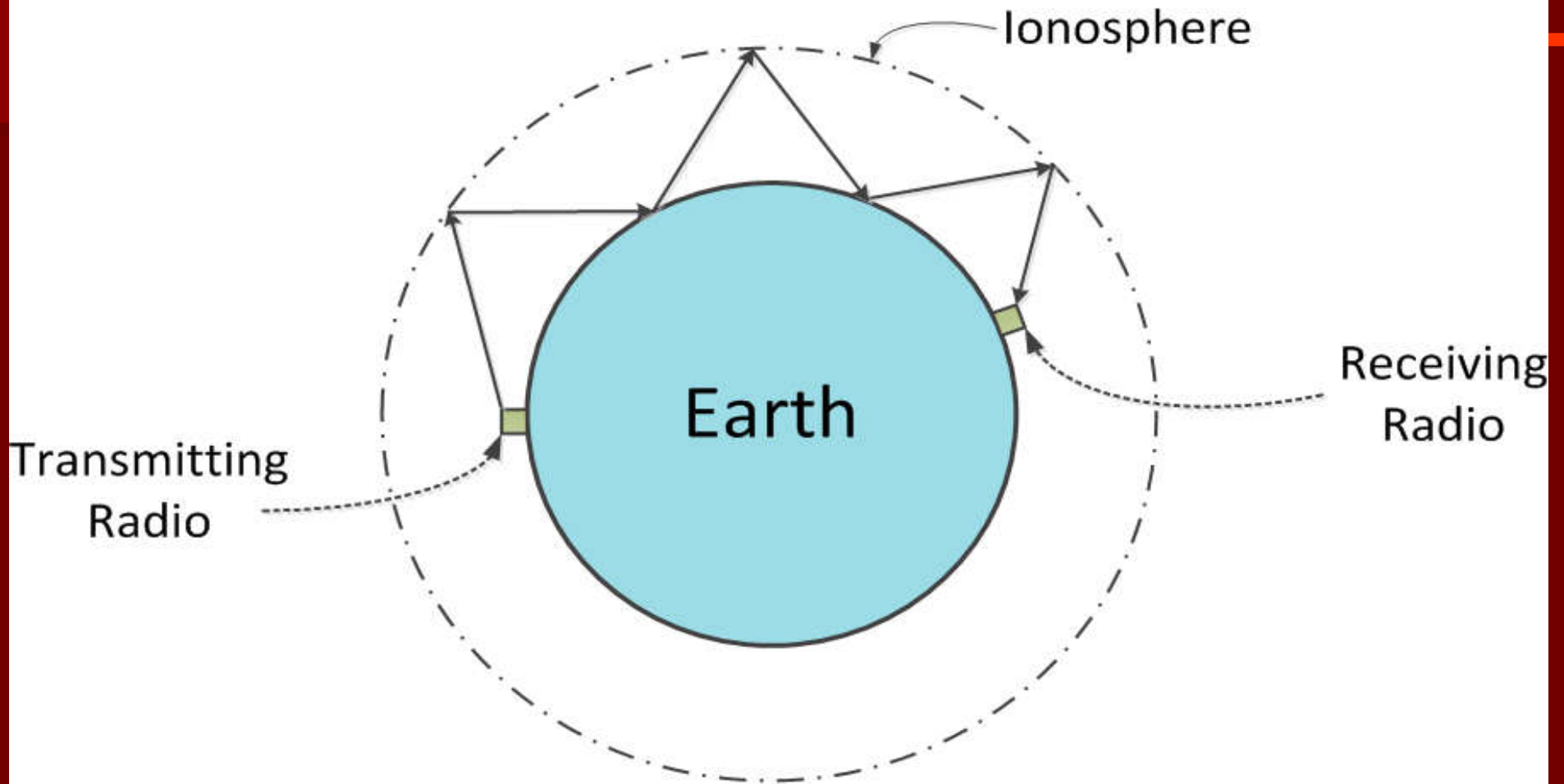
How Do We use Radios? Internet Repeater Linking Protocol



Reach around the world
Uses simple cheap radios

Depends on Internet access

How Do We use Radios? **Extended Distances**



Signals from medium power radios in certain frequency bands bounce between the Earth and the Ionosphere

What is Ham Radio?

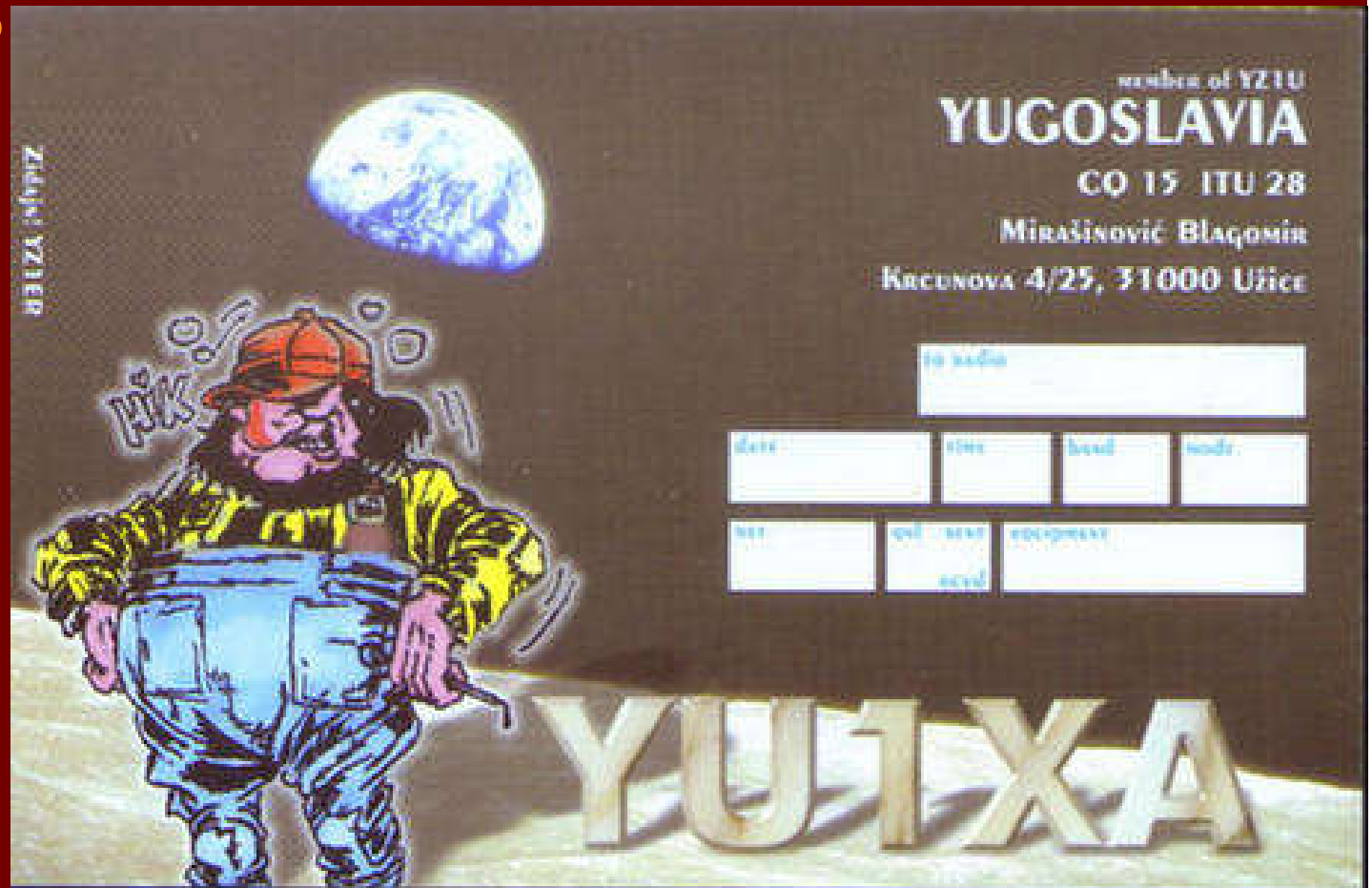
Amateur radio is both a hobby and a service in which participants ("hams") use various types of radio equipment to communicate with other radio amateurs for recreation, self-training and public service

... to communicate with other amateurs

- Hams must pass an exam to be **licensed** by Industry Canada
- There are **selected radio frequencies** set aside for hams
- Hams can only talk to hams, **only on ham bands**
- Ham transmissions must be **non-commercial**, and hams can never accept money for use of radio

...for recreation and self-training...

- long distance friendships, challenge, contests



...for recreation and self-training...

- to **learn** about electronics, radio career
- endless number of different aspects of ham radio to **explore** (satellite, DX, low power, microwave, fox hunts, tv over radio, building equipment, APRS, digital radio, emergency response, contests, meteor scatter, public service, moon bounce, mobile operations, military radio, alternative energy operation...)
- more **advanced licenses** recognize training and grant more privileges

... and for Public Service

- In return for use of frequencies, hams provide their skills for public service when needed
- emergency communications is a natural, since:
 - have our own equipment, training & licenses
 - have a variety of gear and frequencies available
 - can still operate when infrastructure fails
 - in many cases have special training and practice for emergency situations = ARES

Agencies We Support in London Area

- Memorandum of Understanding between Red Cross and RAC/ARES at the national level
- London Police Services and City of London, through the city's Emergency Response Plan
- Salvation Army Team Emergency Radio Network
- Environment Canada CANWARN service
- Community Emergency Management Coordinators in London and surrounding counties
- Middlesex London Health Unit

Other Community Support Services

- Communications and logistics for the Rona MS Bike Tour (Grand Bend/London and back)
- London Search and Rescue competition, February, 2011
- Warriors Day Parade support
- Goblin Patrol, mobile vandalism surveillance for London Police for Devils night and Halloween.

The End

We hope we've given you a glimpse
into the world of **Ham Radio**.

It's yours to explore, likely for the
rest of your life

We'd be glad to answer any
questions you may have.