



# *Electronic and High Tech Equipment*



**Wow!**

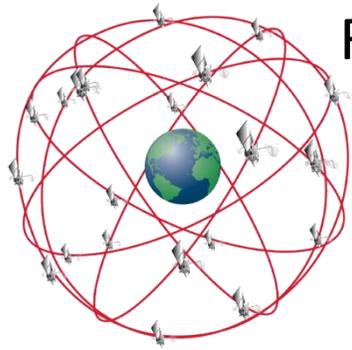
# *Why would you want any of this stuff?*

- Find out where you are.
- Call for help and provide location.
- Send a message.
- Two way messaging.
- Voice communication.

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# *Information in the backcountry comes from:*

US  
(32)



Russian  
(24)

**GPS  
Satellites**

Global Star  
(32)



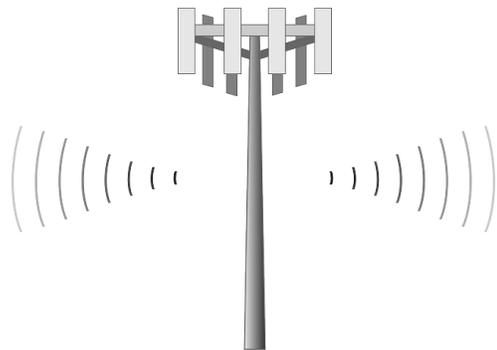
Iridium  
(66)



COSPAS/SARSAT  
(12)

**Communication  
Satellites**

ATT Sprint Verizon



**Cell  
Towers**

# *Where am I?*

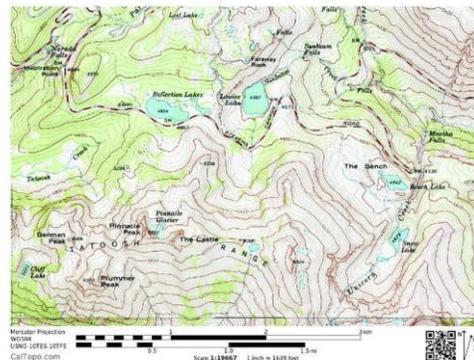


Altimeter  
\$37

*Simple and Cheap*



Compass  
\$21



Topo Map  
Free

# *Where am I?*



Handheld GPS

*Not so cheap*



Smart Phone and  
GPS app

# SOS – Need Rescue

*I am here!*



PLB – Personal Locator Beacon



Send Device



But don't forget your



Send and Messaging Device

And sometimes.....

Smart Phone



Or Even...



Laser Flare

# *Communication*

*I'm OK, back tomorrow.*



Send Device

Check in,  
one custom message,  
tracking



Send and  
Messaging  
Device

Check in,  
two way texting,  
tracking,  
pair with smart phone

# *Meet some devices.*

## Smart Phone



- Expensive, but you probably already have one.
- Voice and data communication only when near a tower.
- GPS works without towers and in airplane mode.
- Must install GPS app like GaiaGPS, Backcountry Navigator or Garmin Earthmate.
- Must download topo background maps before leaving cell phone coverage.
- Can provide GPS or barometric elevation as well.
- Limited battery life, recharge from USB power source.

# Handheld GPS

*Meet some devices.*



Garmin eTrex 22x  
\$200



Garmin GPSMap  
\$400

- Solid, mature devices and technology
- Garmin compatible topo backgrounds available for most places.
- Will record, save and download detailed tracks.
- Can preload trails, tracks and waypoints.
- Provides compass and altimeter functions.
- Many other functions, navigation, speed, distance.
- ~15 hrs on a pair of AA batteries, carry spares.

# *Meet some devices.*

## PLB



ACR  
ResQLink  
\$300

- Uses international military COSPAS/SARSAT system.
- 5 watts transmitter power.
- SOS and location only.
- Response handled by military centers.
- Also sends a shorter range homing beacon signal.
- One time usage, return to mfg. for free replacement.
- Will transmit for 24 hours.
- Remember to register the device.
- Battery must be replaced by service center.
- No annual subscription required.

## *Meet some devices.*

### Send



SPOT Gen3  
\$150

- Uses commercial Global Star system.
- 0.4 watts transmitter power.
- SOS and location.
- Help, check in and custom message functions.
- Will sending tracking signal.
- Response handled by commercial center.
- Must see GPS and Global Star satellites to work.
- Will transmit for 6-13 days.
- Remember to register the device.
- Runs on 3 AAA batteries, carry spares.
- Required annual subscription - approx. \$150

## *Meet some devices.*

# Send and Messaging



Garmin  
InReach  
Mini  
\$350

- Uses commercial Iridium system.
- 1.6 watts transmitter power.
- SOS and location.
- Help, check in, message and tracking functions.
- Two way texting with all functions.
- GPS functions (Explorer+ has topo background)
- Pairs with smart phone for expanded features.
- Response handled by commercial center.
- Must see GPS and Iridium satellites to work.
- Will transmit for 100 hours.
- Battery must be recharged from USB power source.
- Required annual subscription - \$144 and up.

# Satellite Phones



Iridium GO!  
\$700



Iridium 9555  
\$1000

- Coverage varies by satellite system.
- All phones require air time purchase.
- Rental plans available.

# Voice Communication.

## Ham Radio

- Requires Ham License.
- Needs line of sight to repeater tower.
- Outside communication via ham operator relay.
- No annual cost.



BaoFeng  
BF-F8HP  
\$64

# FRS/GMRS Radio (Walkie Talkies)



~\$30 and  
up



## *Voice Communication.*

- FRS limited to 7 channels, 0.5 watts.
- GMRS adds 14 channels, up to 2 watts.
- GMRS transmission requires \$65 FCC license.
- FRS range is very limited, ½ to 1-1/2 miles.
- GMRS power will add some range. Use with a repeater will add a lot of range.
- Good for group communication within range.
- Communication can be heard by anyone on that channel/code.
- Very limited for outside communication – someone needs to be monitoring your frequency and within range.

# *Location Only.*

## Laser Flare



Greatland  
Rescue  
Laser Light  
\$100

- Produces a fan pattern of red light.
- 1 – 3 miles daytime, up to 20 miles night.
- Safe for signaling aircraft.
- 40 hours on CR 123 battery.
- Waterproof.
- 2.4 oz.
- Provides flashing red light homing signal for approaching rescue teams or searching aircraft.
- Includes aiming sight.

## *Before you buy.*

- Check for sales, rebates, discontinued and refurbished deals.
- Download the manual and study.
- Check the internet and YouTube for reviews.
- Establish your priorities for features.
- Remember technology is changing rapidly! New devices and apps are constantly appearing.



## *As you use.*

- Read the manual.
- Practice at home.
- Don't expect much from customer support.
- Check YouTube.
- Carry spare battery power.
- Electronics fail – have a backup plan.