

# NAVIGATION

## SECTION II-E

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- **GPS**



# GPS

- Device Orientation
- Pre-Search Prep
- Field Use
- Converting Coordinates



# GPS – DEVICE ORIENTATION




FIND	Select to open the search menu.
MARK	Select to save your current location as a waypoint.
QUIT	Select to cancel or return to the previous menu or page. Select to scroll through the main pages.
ENTER	Select to select options and acknowledge messages.
MENU	Select to open the options menu for the page that is currently open. Select twice to open the main menu (from any page).
PAGE	Select to scroll through the main pages.
▲▼◀▶	Select ▲, ▼, ◀, or ▶ to select menu options and move the map cursor.
IN	Select to zoom in on the map.
OUT	Select to zoom out on the map.

# GPS – DEVICE ORIENTATION

## Changing batteries

- 1 Turn the D-ring counter-clockwise, and pull up to remove the cover.
- 2 Insert two AA batteries, observing polarity.



- 3 Replace the battery cover, and turn the D-ring clockwise.
- 4 Hold .

### Battery care:

- keep warm
- carry spares
- keep backlight low

# GPS – DEVICE ORIENTATION

## Battery Type

When changing batteries, if you are replacing alkaline batteries with lithium-ion batteries, or vice versa, you need to change the battery type settings, following this process:

1. Press **Menu** twice to access the Main Menu
2. Select **Setup**
3. Select **System**
4. Select **AA Battery Type**
5. Select Alkaline, Lithium, Traditional NiMH, or Precharged NiMH

# GPS – PRE-SEARCH PREP

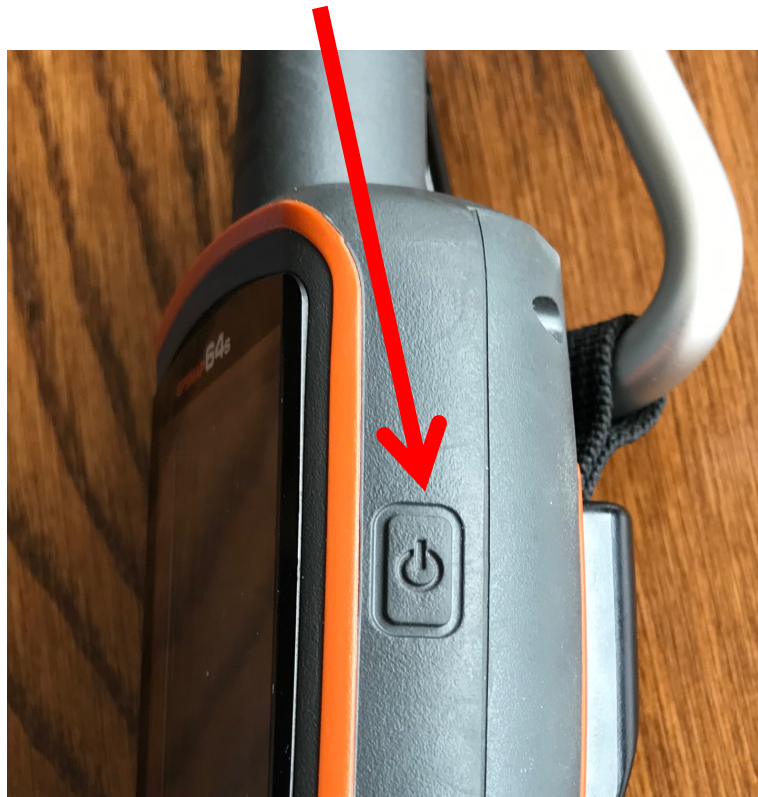
1. Turn on
2. Check battery and backlight
3. Acquire satellites
4. Clear tracks
5. Clear waypoints\*
6. Set Position Format and Datum
7. Ensure tracks are recording

\*clear waypoints if SSAR device – if personal device, may not want to

# GPS – PRE-SEARCH PREP

## 1. Turn on GPS

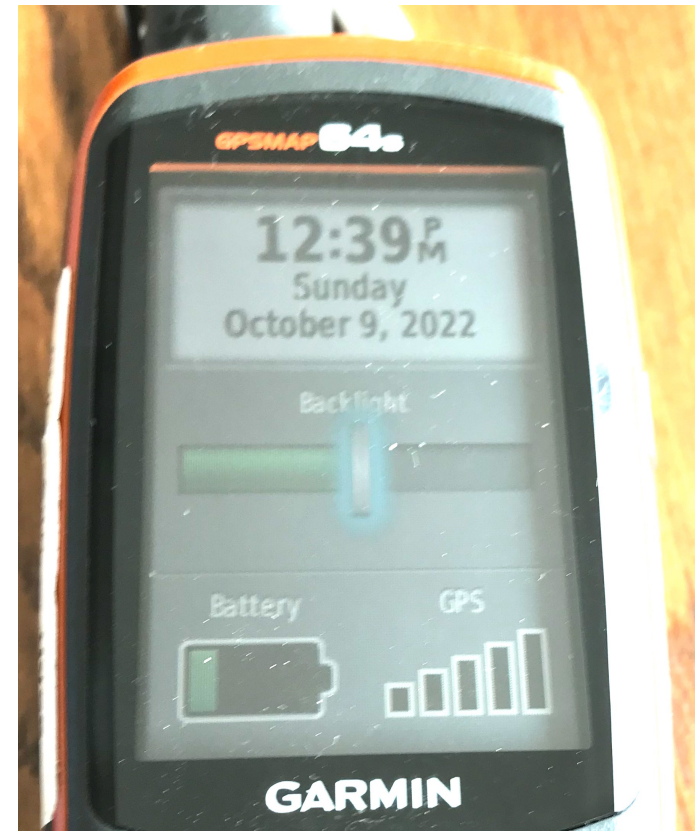
- Press and hold power button on right-hand side



# GPS – PRE-SEARCH PREP

## 2. Check battery and backlight

- Press power button x1
- Press power button to adjust backlight
  - higher backlight = shorter battery life



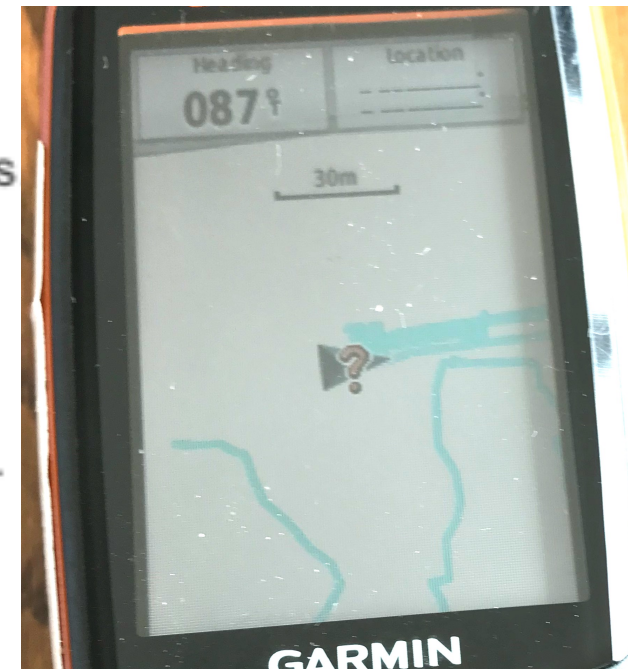
# GPS – PRE-SEARCH PREP

## 3. Acquire satellites

### Acquiring Satellite Signals

It may take 30 to 60 seconds to acquire satellite signals

- 1 Go outdoors to an open area.
- 2 If necessary, turn on the device.
- 3 Wait while the device searches for satellites.  
? flashes while the device determines your location.  
■■■■ shows the satellite signal strength.

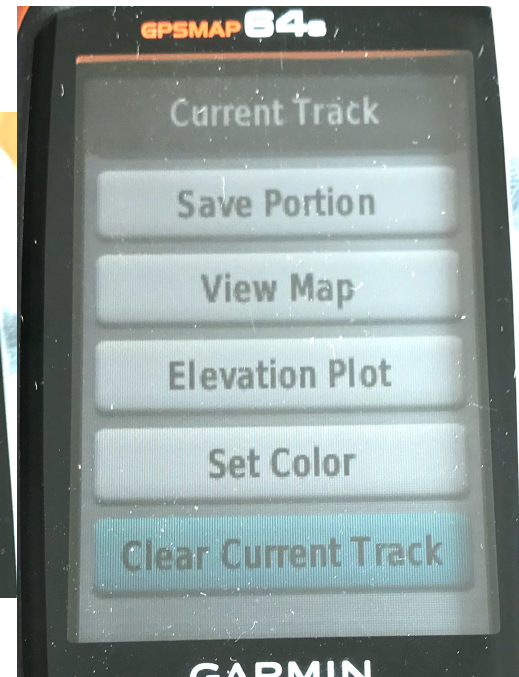
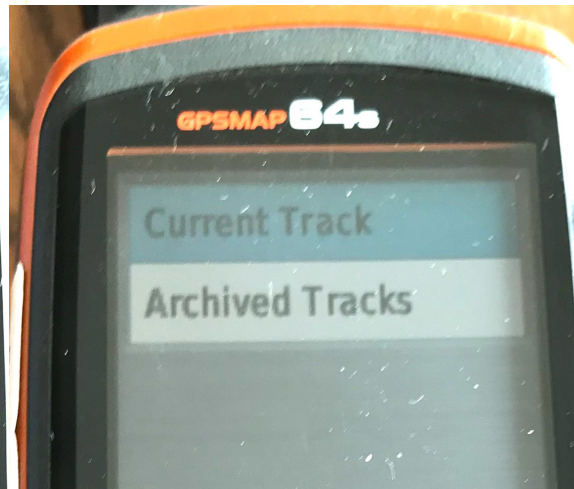


# GPS – PRE-SEARCH PREP

## 4. Clear tracks

Main menu (press **MENU** x2)

- Select **Track Manager** → select **Current Track** → select **Clear Current Track** → select **Yes**



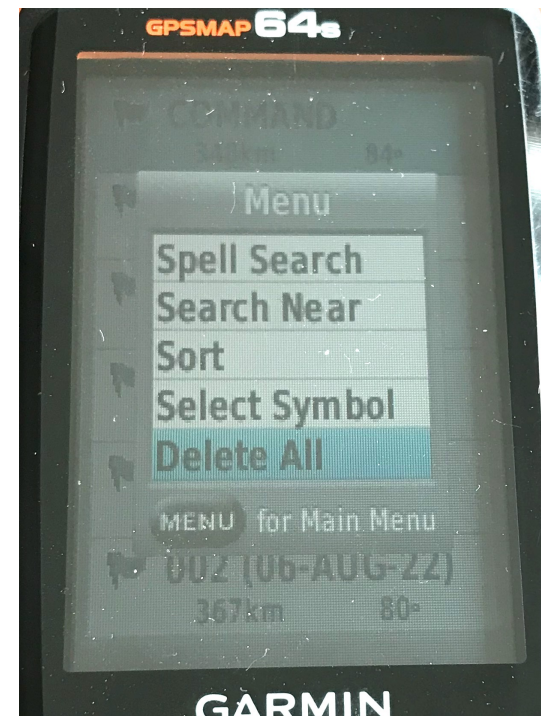
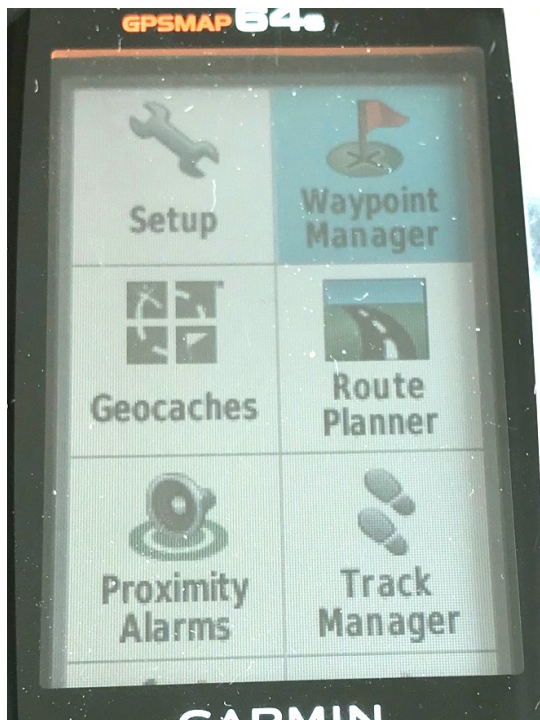
Note: Satellites must be acquired before clearing current track, or you'll still get a weird straight line on your new track

# GPS – PRE-SEARCH PREP

## 5. Clear waypoints

Main menu

- Select **Waypoint Manager** → press **MENU** → select **Delete All** → select **Yes**

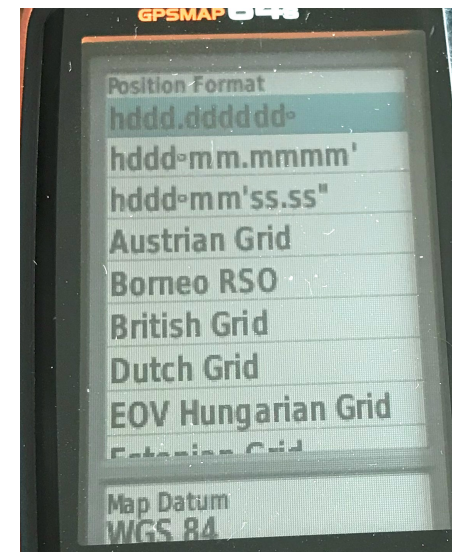
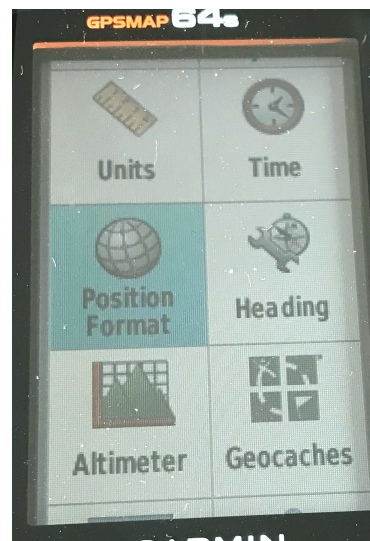
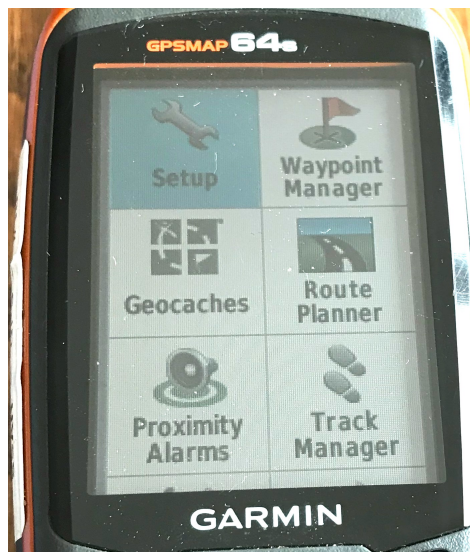


# GPS – PRE-SEARCH PREP

## 6. Set position format and datum

### Main Menu

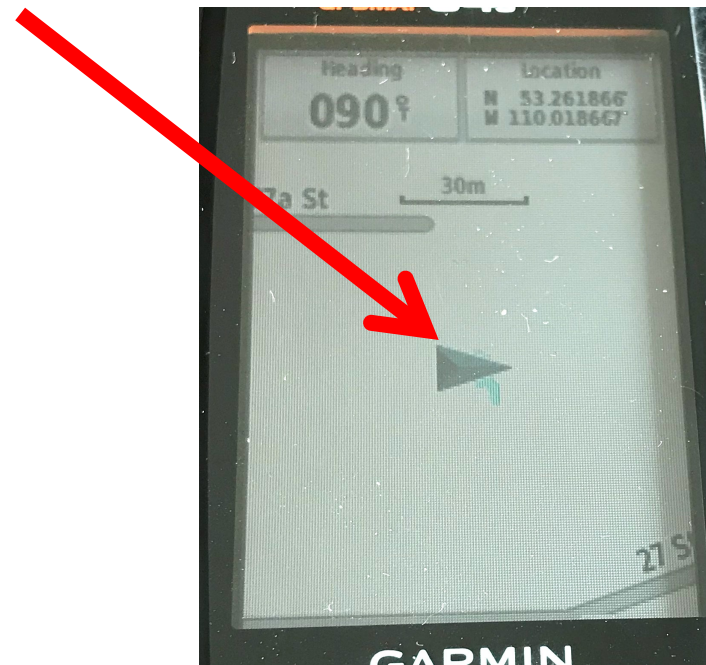
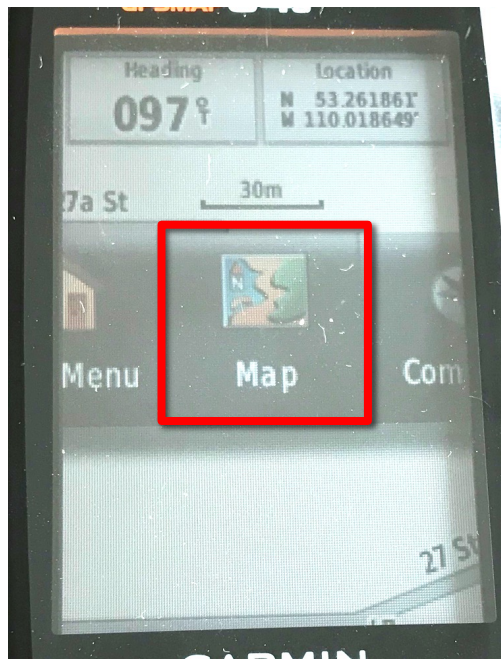
- Select **Setup** → select **Position Format**
- Select either **Position Format** or **Map Datum** (with arrows and enter button)
- Scroll through the list and press **ENTER** when desired format or datum is highlighted (**SSAR default: decimal degrees, WGS 84**)



# GPS – PRE-SEARCH PREP

## 7. Ensure tracks are recording

- Should automatically record
- Check before starting your search by going to Map view
  - press **PAGE** or **QUIT** until you see the map, or until **Map** is the centre icon
  - should see a line (usually cyan) by arrow



# GPS – FIELD USE

## Three main purposes in SAR:

1. **Recording tracks** (ideally everybody)
  - Allows the search manager to see what areas have been searched
  - Allows you to see what portion of your search area you have covered
2. **Marking waypoints** (everybody will mark some, not all)
  - Mark command post or start point before searching
  - During the search, record the location of clues or important landmarks. Important ones should be communicated to command.
3. **Navigation** (often delegated to one person on your team, but all should know how!)

# GPS – FIELD USE

## Recording Tracks

### **WHEN?**

- Ensure device is tracking prior to leaving command post or start location
- Continue to record until tracks are downloaded by command

# GPS – FIELD USE

## Recording Tracks

### HOW?

- Should automatically record
- Ensure device continues to track as you search
  - monitor battery levels, keep warm

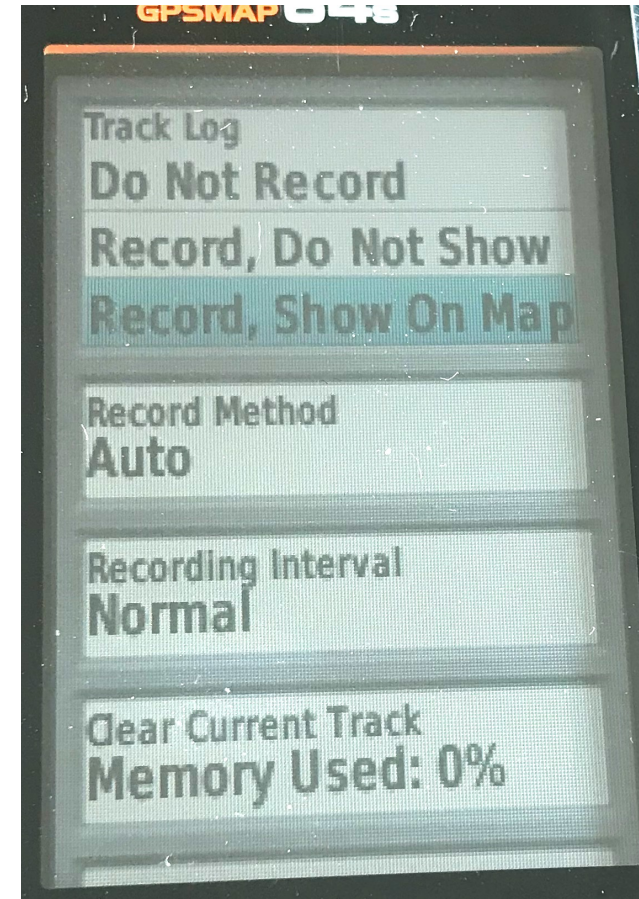
# GPS – FIELD USE

## Recording Tracks

### Troubleshooting

If not tracking:

- Ensure satellites are acquired
  - Press power button to view GPS signal strength
- From Main Menu, select **Setup** → select **Tracks** → select **Track Log**
  - Track Log: “**Record, Show on Map**”



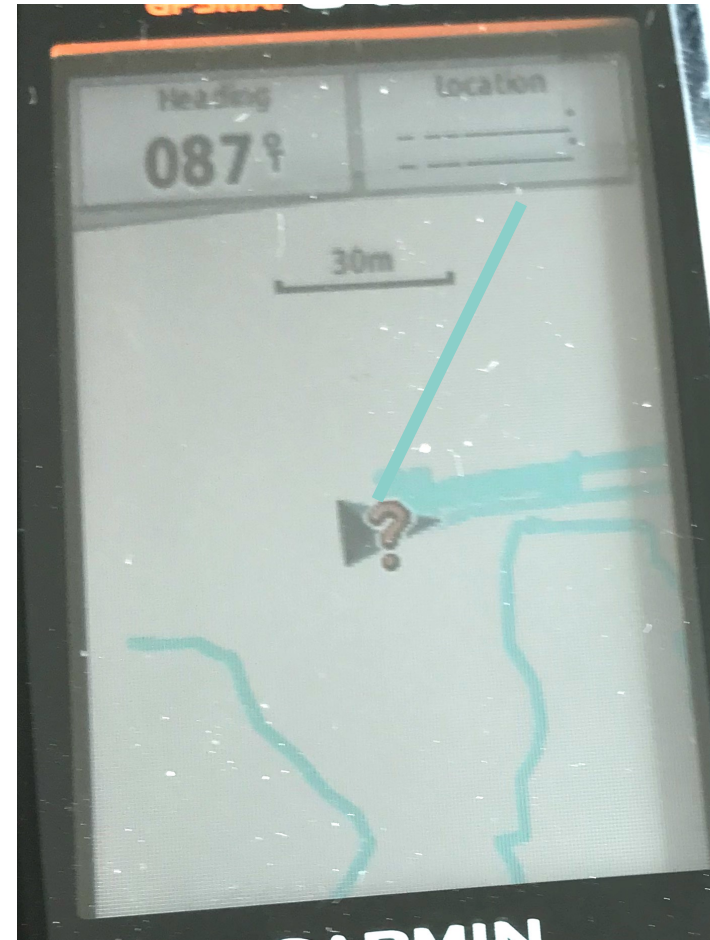
# GPS – FIELD USE

## Recording Tracks

### Troubleshooting

If long straight line at start of track or see a long track on map:

- **Clear current track again**



# GPS – FIELD USE

## Marking Waypoints

### **WHEN?**

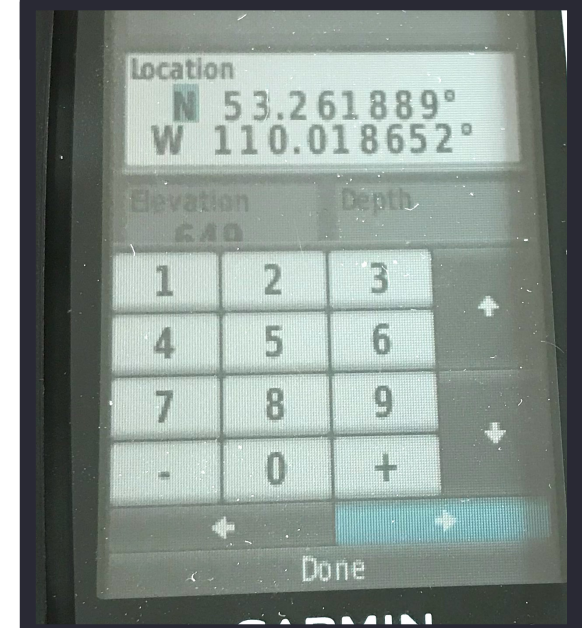
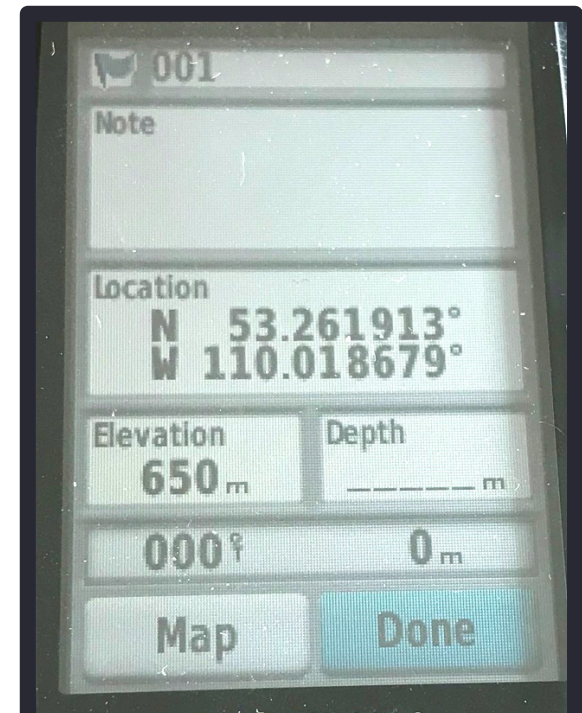
- Before leaving command post or start location
- When a potential clue or the subject is located
- At your discretion to assist with navigation or note taking

# GPS – FIELD USE

## Marking Waypoints

### HOW?

- Press **MARK**
- Navigate with arrows to different fields to change the name, add a note, or edit the coordinates
  - automatically marks your current location
  - to add a waypoint for a different location, select the “Location” field and change the coordinates
- Select **Done** when finished



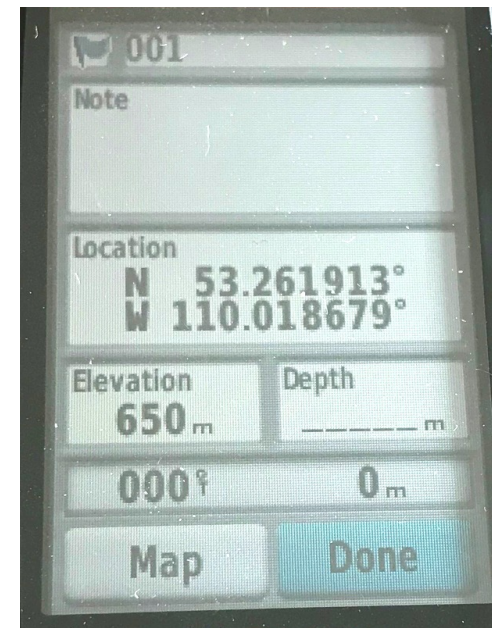
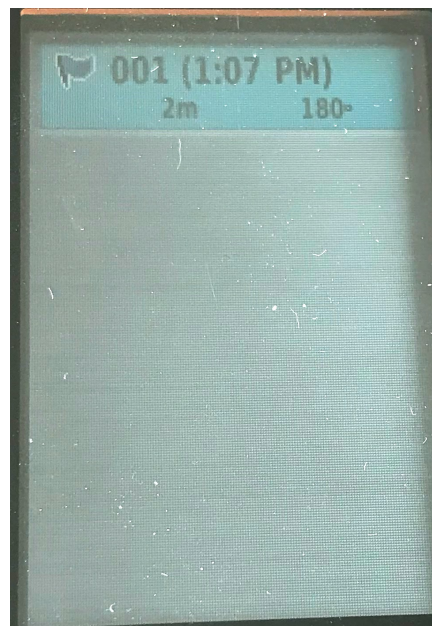
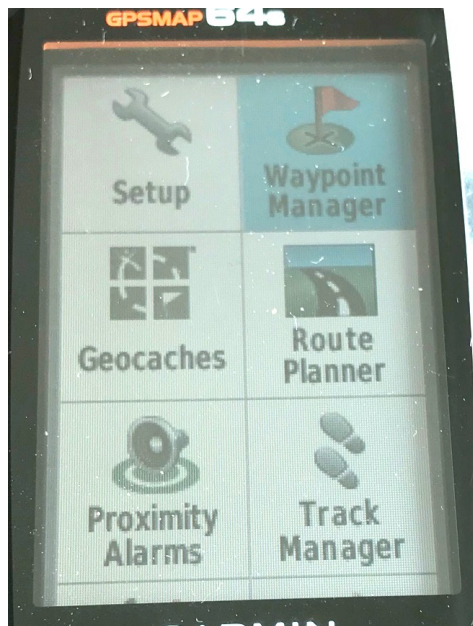
# GPS – FIELD USE

## Marking Waypoints

### HOW?

To edit a saved waypoint:

- Go to main menu and select **Waypoint Manager**
- Select desired waypoint and make necessary changes
  - (changes are automatically saved when editing)



# GPS – FIELD USE

## Marking Waypoints

### RECORDING IN YOUR NOTES

ALWAYS record:

- waypoint name
- coordinates
- description

(Reminder: general note-taking standards also apply, such as documenting time, communication with command, if/how evidence was handled, etc.)

1652 – WP 001 53.261913°, -110.018679° blue shirt  
men's XL in grass, radioed CP, instructed to  
leave there

# GPS – FIELD USE

## Navigation

1. Navigating to waypoints or dropped pins

2. General navigation

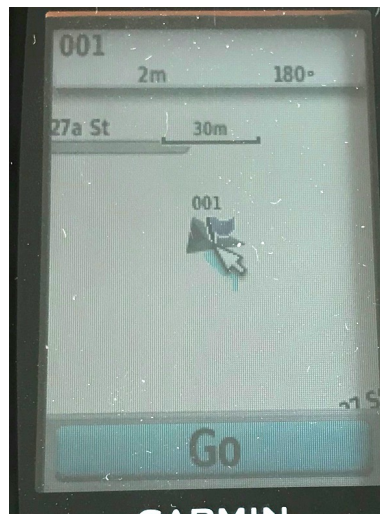
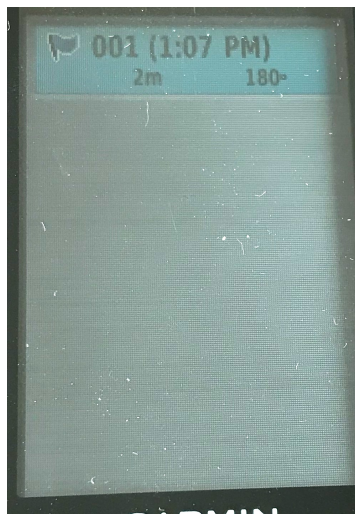
- Location
- Direction
- Distance

# GPS – FIELD USE

## Navigation – Waypoints & Pins

### Navigating to a waypoint

- Press **FIND** → select **Waypoints**
- Select a waypoint
- Select **Go**
- Takes you to Map view, will see pink line
- Can also use Compass view (next slide)



# GPS – FIELD USE

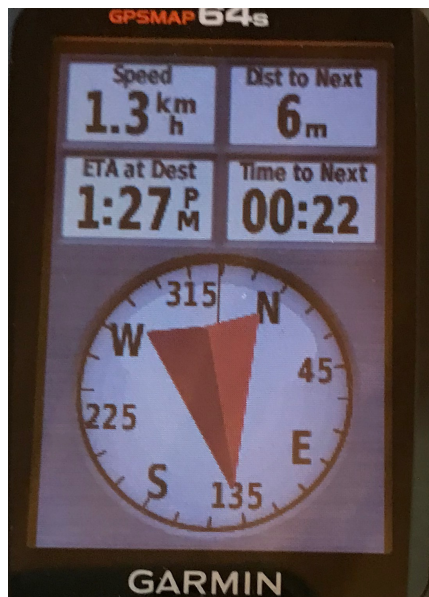
## Navigation – Waypoints & Pins

### Navigating to a waypoint

#### Compass View

- Press **PAGE** until **Compass** is the middle icon
- Arrow points to the direction of your destination – follow it!
- Top of the compass shows your current direction of travel

wrong  
direction



right  
direction

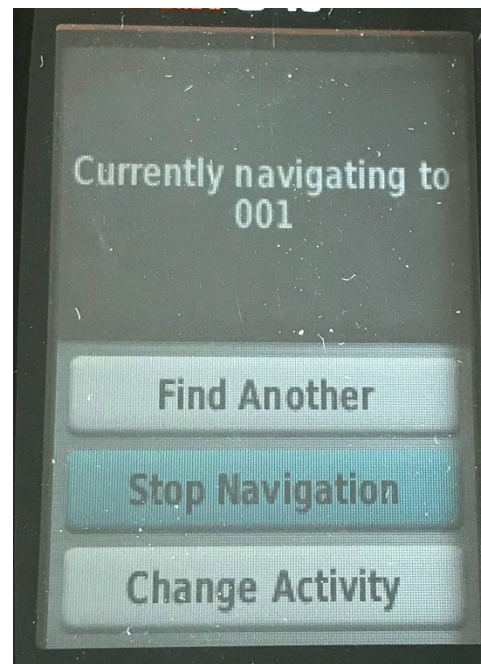


# GPS – FIELD USE

## Navigation – Waypoints & Pins

### Ending navigation to a waypoint

- Press **FIND** → select **Stop Navigation** or **Find Another** (if you want to select a new waypoint to navigate to)

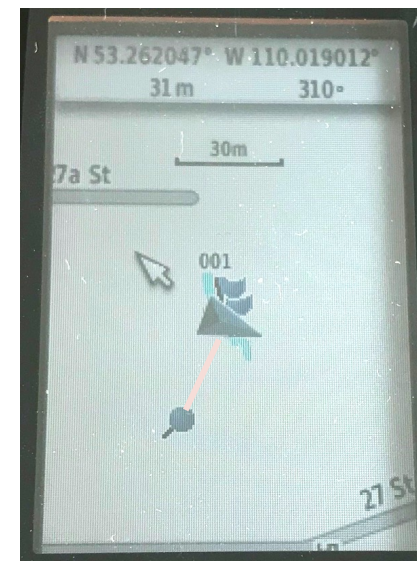
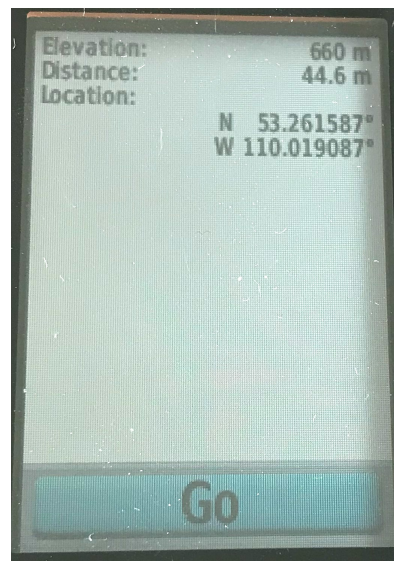
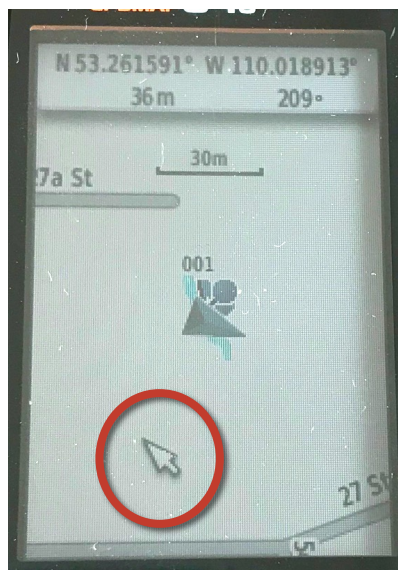


# GPS – FIELD USE

## Navigation – Waypoints & Pins

### Navigating to a dropped pin

- Go to Map view
- Use arrows to move the cursor
- Press **ENTER** when cursor is where you want to go
- select **Go**



# GPS – FIELD USE

## Navigation - General

General navigation:

- Location
- Direction
- Distance

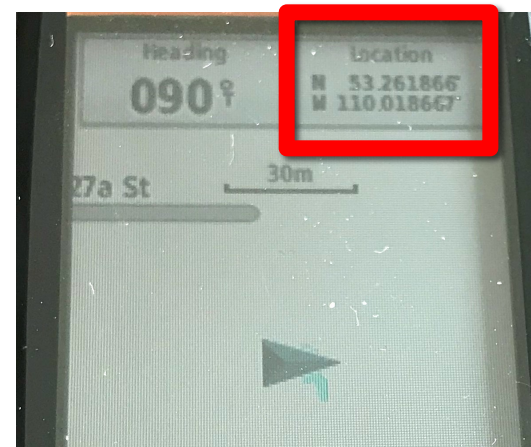
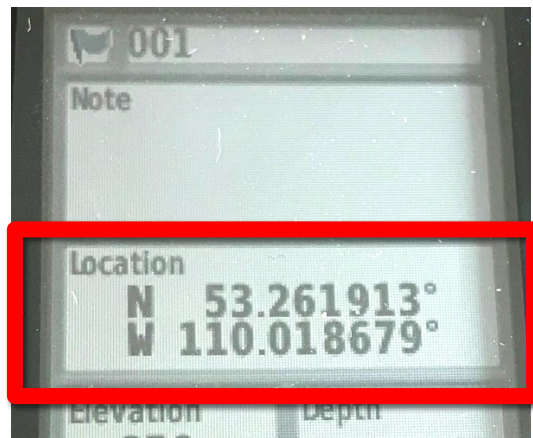
# GPS – FIELD USE

## Navigation - General

### Location

#### Finding your current location

- Press **MARK**
  - shows your current coordinates
  - can press **QUIT** if you don't want to save the waypoint
- OR you may have a “Location” box at the top of your Map view



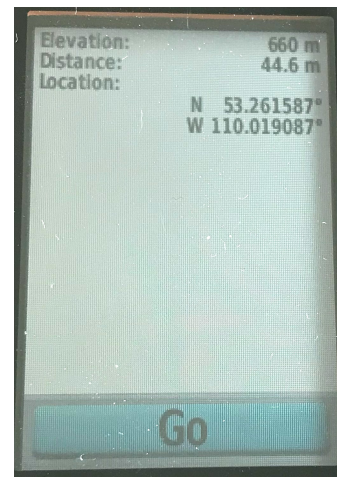
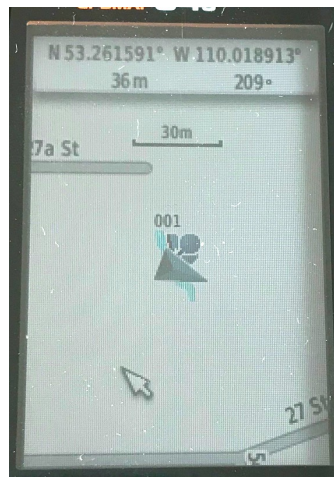
# GPS – FIELD USE

## Navigation - General

### Location

Finding the location of a point on the map

- Go to Map view
- Use arrows to move the cursor to a landmark on the map
- Press **ENTER** when cursor is where you want to go
  - screen shows elevation, distance, and coordinate



# GPS – FIELD USE

## Navigation - General

### Direction

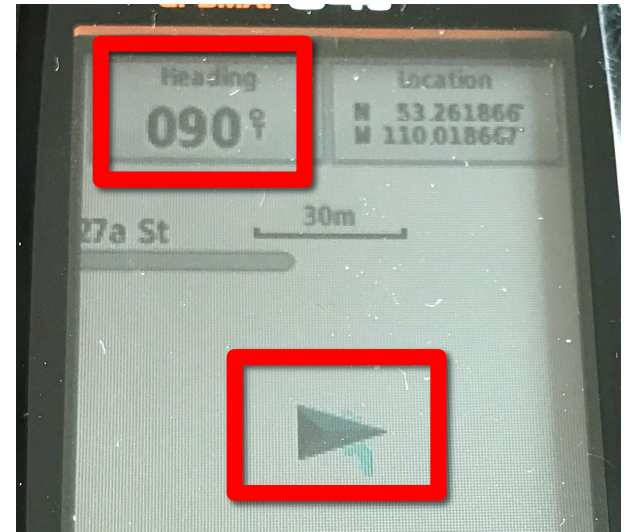
#### Finding your direction of travel

Map view:

- Arrow seen on Map view shows your current direction of travel
- May have a “Heading” box at the top of your Map view

Compass view:

- Top of compass points to current direction of travel
  - Note: 64s have an electronic compass and will adjust direction even when stationary, but some GPS devices require you to be moving to get an accurate reading of direction



# GPS – FIELD USE

## Navigation - General

Note re: accuracy of the electronic compass

- Technically supposed to recalibrate after:
  - moving long distances
  - experiencing temperature changes
  - changing the batteries
- Good for keeping an eye on your general direction of travel
- NOT preferred method for shooting or taking a specific bearing
  - recommend using a physical compass instead

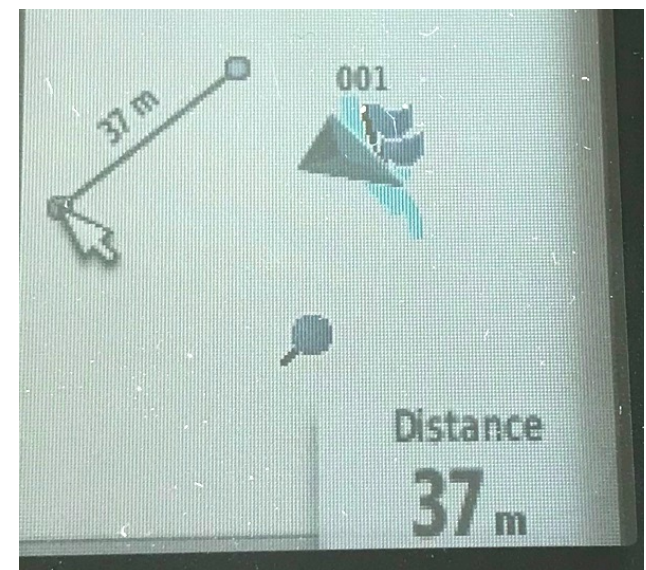
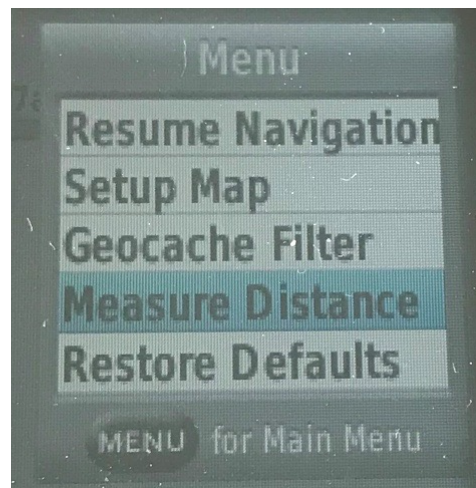
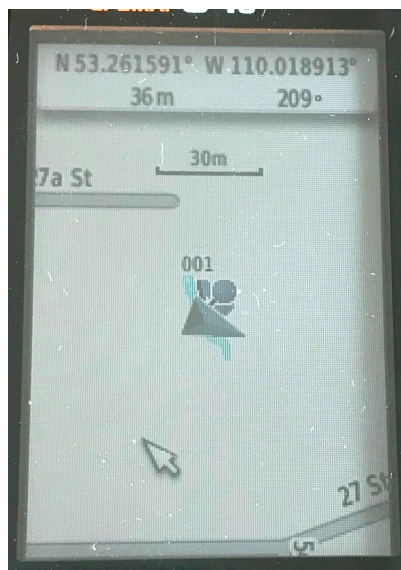
# GPS – FIELD USE

## Navigation - General

### Distance

Measuring distance between two points on the map

- Use arrows to move cursor over 1<sup>st</sup> location
- Press **MENU**, select **Measure Distance**
- Use arrows to move cursor to 2<sup>nd</sup> location



# GPS - CONVERTING COORDINATES

Using the GPS to convert coordinate format (or datum):

- Select **Position Format** and set the format to whatever format the coordinate you want to convert is in
- Press **MARK** – enter the coordinate you want to convert and save it as a waypoint
- Return to **Position Format** and change the format to the one you want to convert the coordinate to
- Select **Waypoint Manager**, then select the waypoint you just entered
- Waypoint will now be shown in the updated format

