



# Winter Operating Outdoors

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Tue 20 January 2026

# Winter Field Day Forecast (weather.com 5PM 1/20/26)

## Sat 24

Day

**18°**   NNW 10 mph

A mix of clouds and sun early, then becoming cloudy later in the day. High 18F. Winds NNW at 10 to 15 mph.

 UV Index  
2 of 11

 Sunrise  
7:14 am

 Sunset  
5:07 pm

Night

**9°**   61%  
 NNE 7 mph

Watching a potential winter storm. Cloudy with periods of snow after midnight. Low 9F. Winds NNE at 5 to 10 mph. Chance of snow 60%. Snow accumulating 1 to 3 inches.

 UV Index  
0 of 11

 Moonrise  
10:03 am

 Moonset  
11:38 pm

 Waxing Crescent

## Sun 25

Day

**15°**   76%  
 NE 11 mph

Watching a potential winter storm. Snow likely. High near 15F. Winds NE at 10 to 15 mph. Chance of snow 80%. 3 to 5 inches of snow expected.

 UV Index  
1 of 11

 Sunrise  
7:13 am

 Sunset  
5:08 pm

Night

**12°**   55%  
 N 8 mph

Watching a potential winter storm. Snow showers. Low 12F. Winds N at 5 to 10 mph. Chance of snow 60%. 1 to 3 inches of snow expected.

 UV Index  
0 of 11

 Moonrise  
10:29 am

 Moonset  
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 First Quarter

# Cold Weather Safety

# Hypothermia (Red Cross)

Hypothermia can kill you. It occurs when your body loses heat faster than it can produce heat. This causes a dangerously low body temperature. **Older adults**, babies, children, and **people with certain health** conditions are more at risk.

- Shivering is one of the first signs of hypothermia; other signs include confusion, drowsiness, and slurred speech.
- What to do for hypothermia: Seek emergency medical care right away. Move to a warm place. Remove any wet clothing and warm the body slowly.

# Frostbite (Red Cross)

Frostbite is when a part of your body freezes. Your nose, ears, cheeks, chin, fingers, and toes often are the first affected. People may experience pain, numbness, and a change of skin color.

- What to do for frostbite: Move to a warm place. Warm the affected area gently by soaking in warm water (NOT hot) until the skin appears normal and feels warm. Seek emergency medical care.

# Preventing Frostbite and Hypothermia (REI)

## Stay warm

- It's so much easier to stay warm than to get warm. By dressing appropriately, you can maintain a comfortable temperature, which is much simpler than trying to warm up after getting too cold.

## Don't try to tough it out

- If you feel your fingers or toes getting cold, stop and take the time to check on them and warm them up. Placing cold fingers in your armpits or **cold toes on a partner's warm belly** are good ways to warm up. Using hand warmer and toe warmer packets is also effective.

## Keep an eye on your friends

- A good hiking partner keeps an eye on their buddies. Regularly ask your friends how they're doing and if you see pale spots on your friend's face or they're starting to get clumsy on the trail, make them stop and cover up exposed skin or add a warm insulating layer.

# Cold Weather Clothing

# Wear layers

## (REI)

- Layering is a three-part system that includes a base layer that wicks perspiration away from your skin, a mid layer that insulates you from the cold and a shell (or jacket) that keeps wind and moisture out.
- The goal with layering is to add and remove layers throughout your hike so you can stay warm and comfortable without overheating and getting sweaty.
- It can feel like a chore to stop and change clothes, but it's really important to stay dry.
- Getting wet on a cold day can possibly lead to hypothermia.

# Say no to cotton

## (REI)

- When cotton gets wet, it takes a very long time to dry, which can leave you feeling damp, cold and miserable.
- Synthetic and wool layers dry much faster and will move perspiration away from your skin.

# Cover your skin

## (REI)

- **For your hands**, try wearing lightweight or midweight fleece gloves under waterproof shell mittens or shell gloves. It's also a good idea to bring an extra pair of fleece gloves that you keep stowed in your pack in case the ones you're wearing get wet.
- **For your feet**, wear synthetic or wool socks that fit well. Thicker socks provide more insulation but make sure they don't cause your boots to fit too tight, which can cut off circulation. It's also important to keep your feet dry, so carrying an extra pair of socks to change into is a good idea. Wear waterproof boots if you'll be trekking through snow, and if you'll be in very cold temperatures, you might require boots with built-in insulation.
- **For your nose and cheeks**, try a neck gaiter for face mask.
- **For your ears**, a winter hat or headband can do the trick. A neck gaiter or face mask may also provide coverage for your ears.

# Add heat

(REI)

- Hand warmer and toe warmer packets are a great way to warm up your digits, especially if you're prone to cold fingers and toes.

# Cold Weather Food & Hydration

# Remember to eat and drink

## (REI)

Your body's metabolism is its best heat source, so you need to keep it fueled up with food and water.

- **Keep food from freezing:** Nobody enjoys chomping on a rock-hard energy bar. Foods like candy bars, chocolate, nuts and cheese tend to stay softer than some other items in cold weather. You may have to experiment to figure out the foods you enjoy that will stay edible in cold weather. Whatever you choose to bring, stowing food close to your body will help keep it thawed.
- **Use water bottles:** Hydration reservoir drink tubes can freeze. Bottles can freeze, too, and it usually happens from the top down, which means the bottle tops are prone to getting stuck shut. Flipping your bottles upside down will solve that problem (just be sure your bottles don't leak and that the tops are screwed shut securely). Putting the bottles in your pack rather than in exterior pockets will help insulate them from the cold.
- **Pack warm drinks:** Fill up a vacuum-insulated bottle with hot tea or hot chocolate to sip on when you take a break.

# Cold Weather and Your Radio

# Temperature Range of a Modern Radio (Yaesu FTX-1)

- Operating Temperature Range
  - +14 F to +122 F (-10 C to +50 C)
- Frequency Stability (Yaesu FTX-1)
  - +/- 0.5 ppm (after 1 minute @ +14 F to +122 F (-10 C to +50 C))
  - Most modern rigs have a temperature-compensated crystal oscillator (TCXO)

# Cold Weather Operating

# Radio operating suggestions (NU3E)

- Sit on a dense, closed-cell foam pad
- Cover legs and shoulders with blankets
- Over-the-ear headphones can act as earmuffs
- Front panel controls may may require bare fingers or thin gloves
- Capacitive touch screens may require bare fingers or conductive gloves
- Microphones and Morse paddles may be usable with gloves
- Morse straight keys may be usable with mittens

# Cold Weather Battery Power

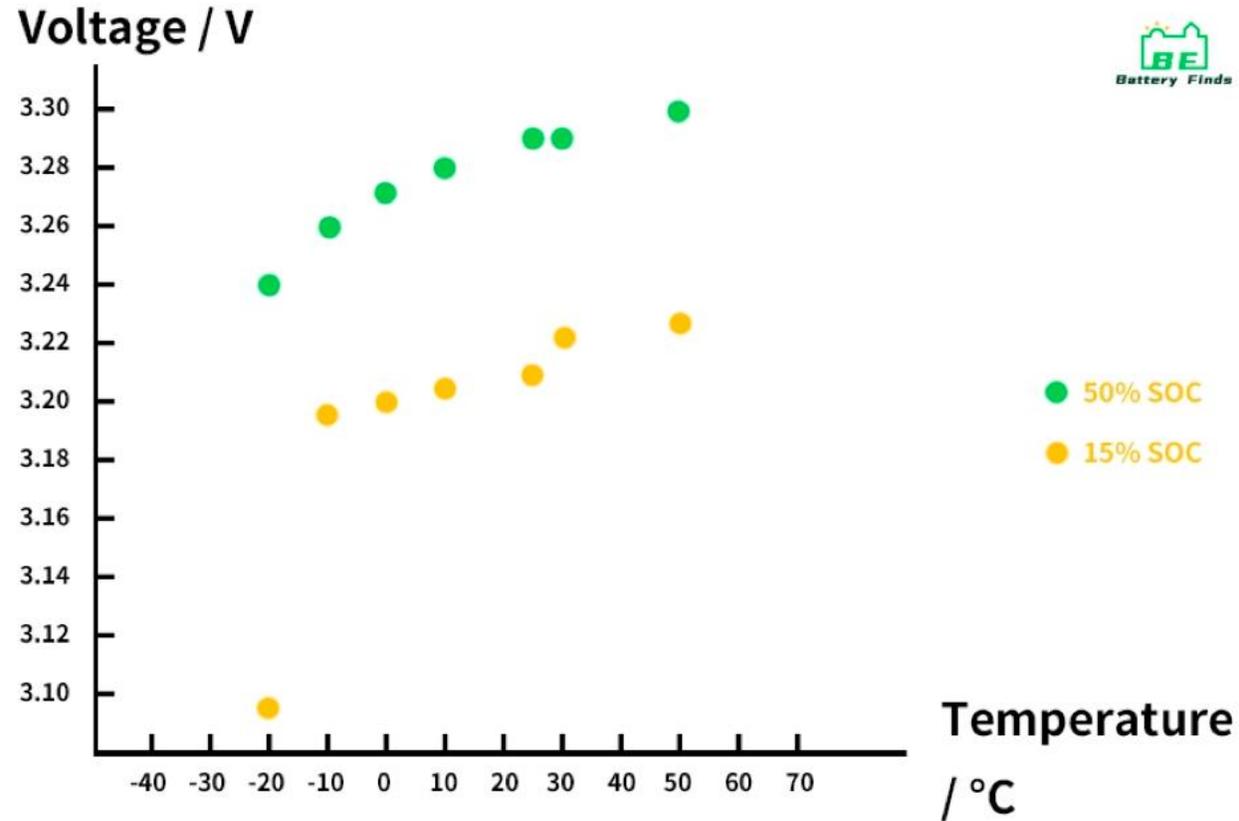
# LiFePO4 Ideal Operation Temperature Range

(LiTime.com)

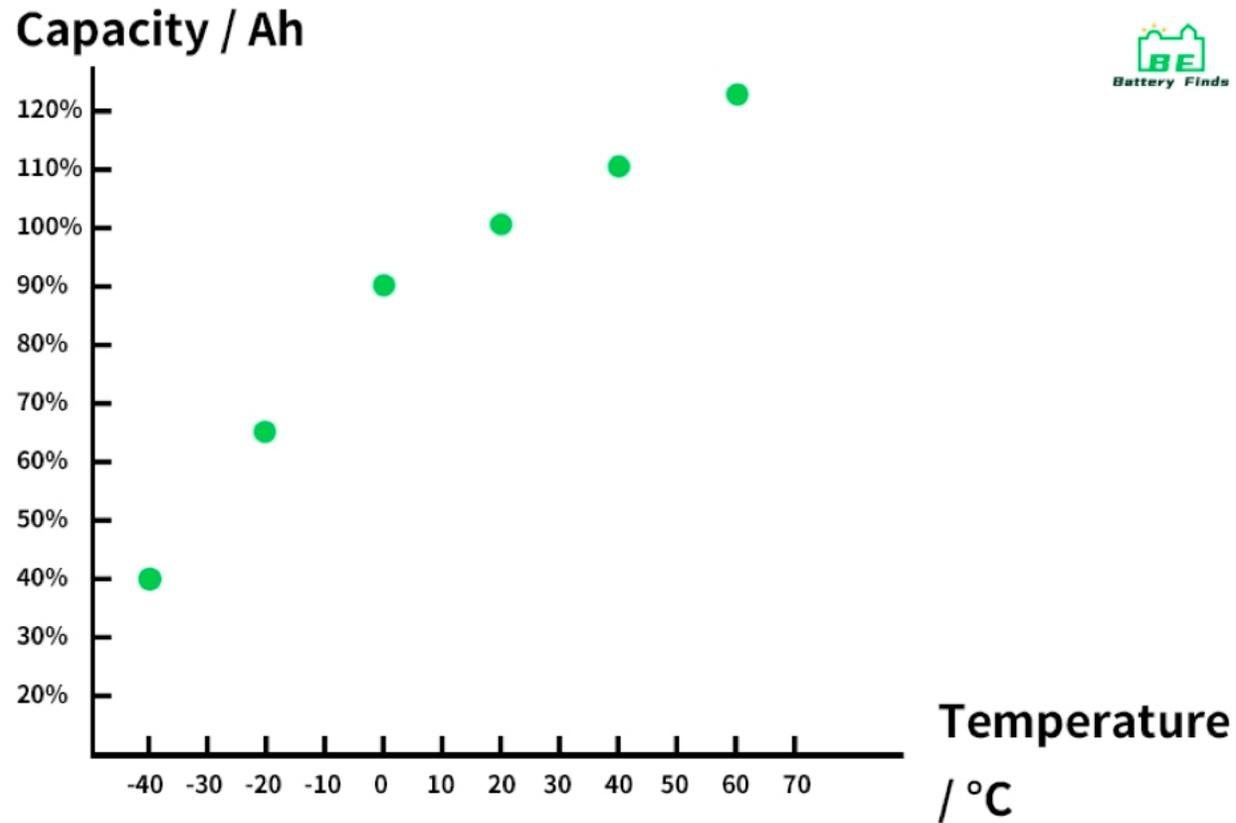
Specification	Temperature Range
Charge Temperature	0°C to 50°C / 32°F to 122°F
Discharge Temperature	-20°C to 60°C / -4°F to 140°F
Storage Temperature	-10°C to 50°C / 14°F to 122°F

 Don't charge in cold temperature 

# LiFePO4 Voltage vs. Temperature (acebattery.com)



# LiFePO4 Capacity vs. Temperature (acebattery.com)



# Lead Acid Capacity vs. Temperature (Rolls Battery Engineering)

PERCENTAGE OF CAPACITY VS. TEMPERATURE

