

The Ortovox "F-1 Focus" Avalanche Transceiver

The Ortovox "F-1 Focus" transceiver is a combination transmitter and receiver that operates on a frequency of 457 kHz. It must be used with other transceivers that work on this frequency. "Dual frequency" transceivers operate on both the old (2.275 kHz) and new (457 kHz) frequencies.

All transceivers contain complex electronic circuits that are vulnerable to damage caused by impacts, humidity or magnetic fields. Handle these units with care, and always test them before taking them into the field and again just before using them in the field.

Using the "F-1 Focus"

Step A: Test all of the units you will be using for function and compatibility. There are four stages to the test:

1. Test the batteries of each unit. First make sure the rotary switch is in "transmitting mode" . Plug the yellow bayonet into the switch hole and rotate it 90 degrees. Count the rapid (2x per second) flashes. Fresh batteries will give 30 or so flashes, poor batteries about 15, and barely adequate batteries only 5 flashes. Note that you must wait at least 3 minutes with the bayonet unplugged before repeating the test. Carry spare batteries if you see fewer than 15 flashes. The "F-1 Focus" is powered by 2 "AA" cells. Use only alkaline batteries.
2. Test the speaker of each unit. Push the lock back and turn the rotary switch to receive ("search") mode. If the speaker is working you will hear a hissing noise that becomes louder as the knob is turned counter-clockwise.
3. Test all units for reception. Set on unit to transmit. Set all the other units to receive (at the 80 meter, i.e. to the full counter-clockwise position). Walk the transmitting unit away from the group. Note the distances at which each unit can no longer hear the signal. The minimum range must not be less than 20 meters.
4. Test all units for transmission. Set the unit previously set for transmission to the receive mode (at the 80 meter, i.e. full counter-clockwise position). All other units are set, one at a time, to transmit, and are then walked past the receiving unit. This time, note the distances at which each unit can be heard. The minimum range must not be less than 20 meters.

Step B: Review and practice beacon procedures so that everyone in the group knows exactly how to conduct a rapid and efficient search.

Step C: Make sure that everyone is carrying a probe and a shovel.

Step D: Put on the beacon. Insert and rotate the bayonet plug, be sure the unit is set to transmit, put the long strap over your head and shoulder, then secure the elastic end around the chest using the Fastex buckle. Leave the elastic portion snapped together (shortened), and tighten the strap as needed so that it is securely attached. Always wear the beacon under layers of clothing. (If you are caught, your outer layers may be torn off.) Leave the unit turned on (transmitting) for the duration of your exposure to risk of avalanche.

Step E: When traveling, stay alert, plan the route to reduce exposure to high risk zones, use test pits and other techniques to assess the stability of the snowpack, expect variation in stability due to changes in terrain, elevation and weather, and cross any potential avalanche slopes properly (one at a time, with all eyes on the exposed skier, and escape route(s) understood by all).

Step F: If an avalanche occurs:

1. Note the point of capture, the last seen point, the direction of travel and the speed of the slide.
2. Try to estimate the most likely burial area.
3. Be aware of the potential for secondary avalanches!
4. All searchers turn transceivers to receive ("search") mode, and keep packs (with shovels, probes,

first aid gear etc.) on.

5. Do a visual search of the area. Look for any clues (e.g. gear, clothing, body parts). Move toward victim(s) and if a signal is received begin the "fine search" (see below). Mark any clues even if no signal is heard.
6. Begin a "coarse" search. See the diagrams. When a signal is heard, immediately begin a "fine" search.
7. Do a fine search. There are two different methods. Both require practice! Note that the "F-1 Focus" indicates signal strength through sound level and a set of three lights: green (weak), yellow (moderate) and red (strong). When using either of the following methods, try to find the orientation of the receiver that produces the strongest signal, then try to maintain that orientation during the search. This will help increase the efficiency of the search, though it is not essential.

A. Induction lines method:

- a) Hold the transceiver horizontally, with the arrow pointing away from you.
- b) Rotate yourself until the signal is loudest.
- c) Walk approximately 5 meters in this direction. Stop.
- d) Turn again until the loudest signal is heard.
- e) Walk approximately 5 meters in this new direction. Stop.
- f) Repeat these steps, being careful to turn the search mode to the next lower level when the red light comes on. Avoid turns of more than 90 degrees.

B. Grid pattern method:

- a) After hearing the first signal during the "coarse" search, turn the receiver to the next lower range.
- b) Walk in a straight line. If the signal gets weaker, reverse course, return to the point of maximum signal, then continue on to the point of maximum signal.
- c) As soon as the maximum signal is reached, or if the red light comes on, stop, then turn to the next shorter range. (Each lower setting on the rotary knob reduces the sensitivity of the receiver.)
- d) Turn 90 degrees and walk straight ahead to the point of maximum signal. If the signal gets weaker return to the first point of maximum signal, then continue on to the point of maximum signal.
- e) Repeat these steps until you have reached the shortest range (0 to 2 meters).
- f) Do a "pinpoint" search: Standing at the point of maximum signal reached by steps 1 to 5 above, scan the snow in a small version of the same pattern used in steps 1 to 5 above, until a point is found such that moving away from it in any direction causes a reduction in signal. Note! It is possible, if the transmitting unit is horizontal for there to be two points of loudest signal. If this occurs, probe and dig half way between the points.

WARNING! Using avalanche beacons can shorten your life! If you are caught in an avalanche there is a very good chance that you will die before rescue, with or without beacons. Beacons do not alter the odds of an avalanche occurring! Too often, the use of beacons leads to less caution and higher overall risk.

Getting Information on Local Conditions

Check the avalanche forecasts (Mt. Hood 503-326-2400, Crater lake 541-382-6922), but be a skeptic; avalanche conditions vary dramatically a short distance north or south of these stations. Web page sources include forecasts of Oregon weather and avalanche conditions from the Cyberspace Snow and Avalanche Center (<http://www.csac.org/Bulletins/Northwest/current-or.html>) and Northwest Weather and Avalanche Center (<http://www.nwn.noaa.gov/sites/nwac/>).

Avalanche Safety Equipment

Make sure that your group has enough expertise and the necessary tools to plan a safe route, recognize hazards, assess the snowpack, and conduct an efficient rescue. When traveling in avalanche terrain each person should carry an avalanche probe (or a set of probe poles), a shovel and an avalanche beacon. A snow study kit (with 2 thermometers, slope meter, hand lens and crystal card) is also recommended for each small group. The video "*Avalanche Rescue Beacons: A Race Against Time*" is also a good reference.