

Map & Compass Training
with Neil Suneson, Sr. Geologist of the OK Geological Society
March 27th & 28th, 2010
Wichita Mountains Wildlife Refuge

Neil Suneson has a BA Amherst College, MS Arizona State, PhD UC Santa Barbara – all in geology. He worked for the USGS producing geologic maps in Arizona and California, and worked for Chevron Geothermal producing geologic maps in Oregon and Nevada. Neil started with OK Geological Survey in 1986. His major project was mapping the geology of the northern part of the Ouachita Mountains. After that, Neil was involved with mapping the geology of parts of the OK Panhandle and the OKC metro area. Neil has spent his whole geological career mapping.

Currently, Neil still works for the OGS, also teaches OU's summer field camp in Canon City, CO. This involves, for the most part, teaching students to appreciate the value of and effort that goes into producing geologic maps.

Training Description: This an in-depth, hands-on, outdoor classroom to learn the fundamentals of using a map with a compass, an opportunity to orient through short orienteering courses, and a four hour topo feature field hike. Class objectives:

Orientation Night, Wednesday March 10, 2010 6pm -9pm – Required In Oklahoma City; exact location soon to be announced

- How to read a topographical map – Students will need to pass 3 map tests to show competency
- Importance of using a map and compass together
- How and why you should know where you are on the map
- Make pacing beads

Weekend Training, March 27 & 28, 2010, at Wichita Mountains Refuge

- Adjusting for declination
- Using a compass with a map
- Taking a bearings
- Finding your line of travel
- How to measure your distance
- Triangulation
- Combining all skills with orienteering courses and a 4 hour hike

This weekend training officially begins at 8:00 am Saturday morning at Doris Campground Group Campsite C and ends Sunday afternoon at noon. Doris Campground Group Campsite C has been reserved for those who wish to campout on Friday and Saturday night. There is only room for 8 -10 vehicles at this site but overflow parking is close by.

Participation Limits: Training is limited to 30 people. Children 12 years old and up are welcome. **RSVP is required by Saturday February 27, 2010.**

Required Materials:

- Your own compass (see [compass requirements](#) below)
- Quanah Quadrangle Geologic Map (only couples or parent/child may share a map). Supplied at orientation.
- Clip board, supplemental handouts, 3 -4 sheets graph paper, pencil
- Pacing beads

Coordinator: Adrienne Holmes - adrienneholmes@sbcglobal.net, 405-935-8507 wk, 715-0811 home.

Level of Difficulty: Moderate. This trip will involve hiking over open SW Oklahoma grasslands and possibly up and down mountainous terrain. Participants will be spending the entire time outdoors exposed to the elements (sun, wind, light rain, cold temps). **Be Fit and Be Prepared!!**

Fees: A \$22 per person fee will cover the cost of supplies and catered lunch. Camping at Group C will be \$5 per car per night.

Sleeping Arrangements: Group camping has been reserved at the Doris Campground. Medicine Park has cabins and Bed and Breakfast. Rooms run about \$115 - \$165 per night for double occupancy. Occupancy varies between 2 and 8 people. Lake Elmer Thomas Military Recreation Area has trailers for \$45 per night, sleeps 6.

Food & Cooking: You will be on your own for food and cooking. Saturday's lunch will be catered. Medicine Park has several restaurants. Lawton, Cache, Meers are about 15 min away.

Weather: As a local trip, normal Oklahoma early spring weather applies. The trip will not be canceled due to light rain, but severe thunderstorms may result in cancellation. If there's any question, please contact Adrienne Holmes at work on that Thursday.

Outing Rules: No firearms, pets, or alcohol. Go to <http://www.fws.gov/southwest/refuges/oklahoma/wichitamountains/> for maps, directions, campground rules.

Emergency Contact Info:

[Wichita Mountains Visitor Center](#)

for General Information: (580) 429-3222

For Tour Reservations: (580) 429-2151

8:00 am - 6:00 pm 7 days a week

Nearest Sheriff's office is Comanche County: 580-353-4280

Closest hospital is Comanche County Memorial Hospital: 580-248-2288

Other Links:

Housing: <http://www.medicinepark.com>

Compass Parts and Desirable Features

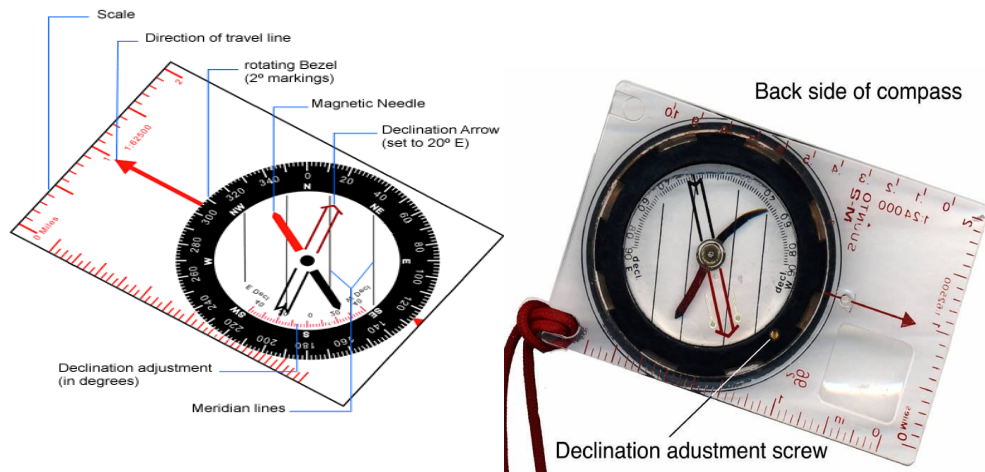
Adjustable declination: A moveable orienting arrow, which provides a built-in declination adjustment. If there is one feature that simplifies map and compass work, this is it. Compasses with adjustable declination can often be identified by the presence of an adjustment screw on the back of the housing (on the underside of the compass, look at the bezel - the screw is usually brass or copper colored).

A transparent rectangular base plate with a direction of travel arrow or a sighting mirror. Transparency allows map features to be seen underneath the compass. The rectangular shape provides straight edges and square angles for plotting and triangulating on the map.

A bezel (the rotating housing) marked **clockwise** from 0 to 360 degrees in increments of two degrees or less. (Some compasses are numbered backwards, in a counterclockwise direction. These are not suitable for use in this course.) In general, bezels should be large to allow use while wearing gloves - the larger size also improves accuracy. Black bezels with sloping sides are preferred.

Meridian lines: Marks on the bottom of the interior of the circular compass housing, marked with parallel 'meridian lines', which rotate with the bezel when it is turned. The meridian lines run parallel to the north-south axis of the bezel, however turned. Meridian lines are necessary for plotting and triangulating on the map.

A ruler and/or gradient scale engraved on one of the straight edges, used for measuring distances. A 3 to 4-inch base plate. A longer straight edge makes map work easier.



A sighting mirror in the cover: This reduces errors introduced when moving the compass from eye-level after sighting to waist-level for reading the dial. A liquid-filled housing to reduce erratic needle movement (only needed on some compasses). In some cases, steadying the compass needle can be difficult. An inclinometer: a gravity driven arrow that allows you to measure slope angle. Note: Stay away from "quadrant-type" compasses marked from 0 to 90 degrees, 0 to 90, 0 to 90, because they are difficult to use.

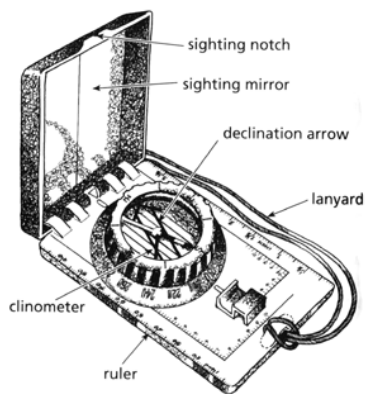
Recommended compasses

Compasses must have the first 6 features listed, **including** a declination adjustment mechanism. Don't buy a new compass without this declination adjustment feature. The declination adjustment can usually be identified by the presence of a small adjustment screw on the back of the bezel (on the underside of the compass).

The following list includes compasses that are equipped with appropriate features. This list is not all-inclusive, but is representative of good quality, fully equipped compasses suitable for this course and for other mountaineering activities. Prices for a good compass start at \$20 without a mirror, more with a mirror.

Compasses SUITABLE for the course include:

- SILVA 25 Ranger Pro
- SILVA 15 Ranger
- NEXUS model ProElite 25
- NEXUS Ranger 15
- SUUNTO model M2D Locator (around \$20 - a best value for a compass without a mirror)
- SUUNTO M3G
- SUUNTO M2
- SUUNTO M5
- SUUNTO MC1D Professional
- SUUNTO MC2
- SUUNTO MC2 Global



Undesirable Compasses

Compasses are unsuitable for mountaineering if they are too small for accurate bearings, do not have meridian lines, are numbered in 5 degree increments, have non-transparent housings, do not have degrees from 0 to 360, or cannot be used for measuring and plotting bearings on a map.

Features which make a compass undesirable or unsuitable:

- Lack of a straight edge for plotting lines on a map
- Lack of declination adjustment
- Lack of meridian lines inside the bezel
- Small size -- less than 3.5" x 2.2"
- Small bezel - less than 2" in diameter

UNSUITABLE compasses for this course:

- SILVA model Guide Type 26
- NEXUS model Star 7N2
- BRUNTON model 8020 GPS
- BRUNTON model 9020 G