

PREPARING TO STAND

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“In this age, just prior to the second coming of Christ in the clouds of heaven, God calls for men who will prepare a people to stand in the great day of the Lord.” SW 3-21-1905

Primitive Direction Finding

by Jim Buller

One of the main reasons many people are reluctant to go into natural areas is because they are afraid of getting lost. Culturally, we have not done a very good job of teaching ourselves, and our children, directional awareness. This lack of direction finding ability, together with the fear of the unknown and a dislike of potentially comfortable situations, keeps many people from ever going into the wilderness —unless someone else is leading the excursion. Thus, they may never experience the wonders that the Creator has for us in nature.

Although directional awareness *can* become almost instinctual, we must make a conscious mental effort to keep track of which way we are going —especially at first. Unlike certain animals, humans have no inherent "sense of direction." Therefore, we cannot rely on being able to "just know" which way to go. We have to use things outside ourselves to tell us which way is which, and we must pay attention to these things, and mentally keep track of them.

Neither does simply knowing which way is North, South, East, or West tell us which way we need to go. Many people get into trouble with compasses over this. They go into the woods, and when they get ready to come back they pull out their compass, and it tells them which way is North —So what? Compasses, and all the other directional indicators, don't *know* which way we need to go. All they can do is tell us which way is which. If we wait until after we have gone some distance to figure out the directions, it may be too late. For example, we have to *know*, and remember that we left in an Easterly direction, to know that to get back, we need to head West. Only if we have taken the time at the beginning of our excursion to think about which way we are heading, will we know which direction we need to go to get back.

Why People Get Lost

People get lost for two basic reasons. The first as mentioned above, is simply because they don't pay attention to where they are going. The second reason is because they don't *trust* the things that tell them the directions. Instead, they go the way they *think* they need to go. There are stories about people who got turned around and wanted to go the wrong way even though they had a compass, or some other clear directional indicator

—they thought the compass *had* to be broken, or that the creek was even flowing the wrong way.

There is a spiritual lesson in all this too, for people are lost spiritually because of these same two reasons. Either they are not paying attention to where they are going spiritually, or they don't trust that the way God has told us to go is really the best. "There is a way that seems right to a man, but its end is the way of death." Proverbs 14:12. And, as it says in Jeremiah 7:24, "Yet they ... walked in the counsel and in the imagination of their evil heart, and went backward and not forward." If we try to direct our own lives we will be lost, but if we trust God's guidance, He will lead us the right way. "Trust in the Lord with all your heart, and do not lean on your own understanding, in all your ways acknowledge Him and He will direct your paths." Proverbs 3:5-6.

What to Do If You *Do* Get Lost

If you should get "turned around" and become lost, remember this helpful acronym based on the word "S-T-O-P." This word is used because many people have a tendency to panic and run when they get lost. Panicking and running is not only foolish, it is dangerous. After you get too exhausted to run any more, you will still have to deal with your survival. You may also have dropped helpful items behind, or possibly even injured yourself. People have died because they panicked and ran. Memorize this acronym, and when you are out hiking, mentally go through "what if" scenarios for practice.

Stay —the opposite of running

Think —the opposite of panicking (your brain is your best survival tool)

Observe —look around for things that can help you

Plan —make a plan, and carry it out

* "P" also stands for: **P**riorities —your plan should be based on the Survival Priorities, (see box →); and

Pray —if you haven't already

Survival Priorities

1. Shelter
2. Water
3. Health Concerns
4. Fire
5. Food

Developing Directional Awareness and Skill

We *can* get over our fear of getting lost and have the confidence to wandering freely by: (1) practicing directional awareness, (2) developing direction-finding skills, and (3) gaining experience. Although most of us don't even think about directions unless we are going some place new, whether we realize it or not, we already have *some* direction finding ability. We use it every day, as we go from home to work or school, or to the store. To develop our direction finding ability it needs to be recognized for what it is, and then we need to use it consciously.

Studies have shown that there are two basic methods that people use to find their way. The first, is by using Landmarks. This involves memorizing a certain path and/or noticeable things along the way. For example, "turn left at the gas station, and go on down until you get to the bank, then turn right." We also use angles from landmarks. For example, "You need to go a little to the left of the big tree."

The second method is having a Mental Map. This involves having a "picture" in your head of where things are spaced in relation to each other as if viewed from high above. For example, you know the general direction of the place you want to go to and

the layout of the streets between here and there. It really doesn't matter whether you go four blocks over and two blocks down, or two blocks over and four blocks down.

It has been found that women tend to use the Landmark method more, whereas men are more inclined to use the Mental Map method. All of us, would be wise to use both of these methods. Occasionally one method will be better than the other, but usually a combination of the two is what works best.

Direction finding skill is developed by learning ways to determine the directions, and then practicing until it can be done quickly and easily. Directional awareness comes from developing the habit of always being conscious, (or subconscious), of the directions. When one becomes skilled at determining the directions and has developed the habit of always being aware of the directions, direction finding becomes almost instinctual. As we learn *how* this works, gaining experiences that give us the confidence that it *does* work, we will become more willing to venture out and explore.

As long as we stay on planet Earth, directional skills and awareness are the same whether we are in town or in the wilderness. Develop the habit of thinking about the directions, and figuring out which way is which. Begin by learning ways to determine the directions, (such as the ones listed below). Then, determine the directions at, and between, the places you go day to day. For example, ask yourself: "Which way is my front door facing?" "Which direction am I going when I go to work/school?"

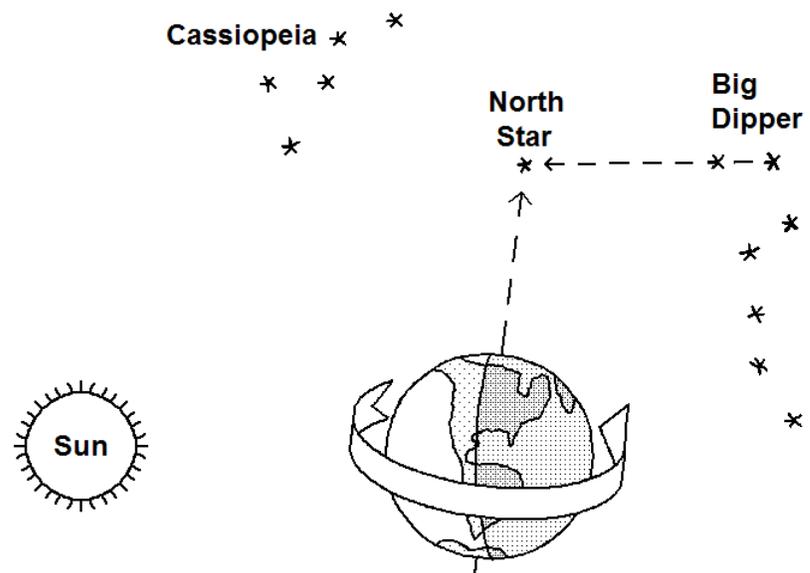
The Basis for the Directions —the Rotation of the Earth

On a spherical object such as the globe of our planet earth, there are no edges or corners. Since one point isn't really any different than any other, there are no points of reference. However if the sphere, or globe, is spinning, the axis it rotates on gives us two observable points of reference—a "North Pole" and a "South Pole."

Thus, the basis for all directions is the rotation of the earth. If you think about what you will observe in the apparent movement of the sun and stars

as the earth rotates throughout the day and night, you will almost always be able to figure out which direction is which. The sun appears to rise, cross the sky, and set. The stars also appear to rise and set, "spinning" around the "Pole Star"—Polaris or the North Star. Then you just need to pay attention to which direction you are going, and you will rarely get lost.

The time is also measured by the rotation of the earth. So, there are several things time has in common with the directions. Because the earth's rotation is the basis for both directions and the way we keep track of time, simply knowing the general time of day can

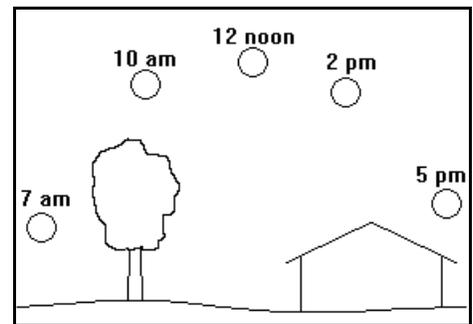


be very helpful in finding directions. In the same way, you need to know the directions in order to be able to "tell time by the sun."

The "Path-of-the-Sun"

Choose a spot where you live or work, with a clear view of the sky, that you can go to several times throughout the day. Go there as early as possible in the morning and notice where the sun is in the sky. On a piece of paper, mark the position of the sun in the sky along with a note of the time. Although the paper is flat, imagine that it is curved like a quarter of a sphere, with the top edge representing directly overhead, and the lower left and right edges representing the horizon out to your far left and right. Be sure not to look directly at the sun because it will damage your eyes. Just take a quick glance to see where it is so you can mark its position on your sketch. If you are in the northern hemisphere, place this first mark at the far lower left edge of the paper. In the southern hemisphere, mark the position of the sun at the lower right edge. Make a rough sketch of objects along the horizon so that you can keep things lined up each time you come back to make an observation. Every so often, throughout the day, go back to the same spot and observe where the sun is, making another note of the sun's position and the time on your sketch. Doing this should help fix the path the sun takes through the day in your memory. Throughout the year, the sun takes this same path, day after day, (except for a little seasonal variation due to the tilt in the earth's axis).

Two of the four main directions should be obvious after doing this —East and West. In fact, in many languages the word for East literally means "the-direction-toward-where-the-sun-comes-up," and West means "the-direction-toward-where-the-sun-goes-down." Unfortunately, in English we have to memorize that East means "toward-the-sunrise," and West means "toward-the-sunset." Even if you have trouble remembering which is East and West, you can still use



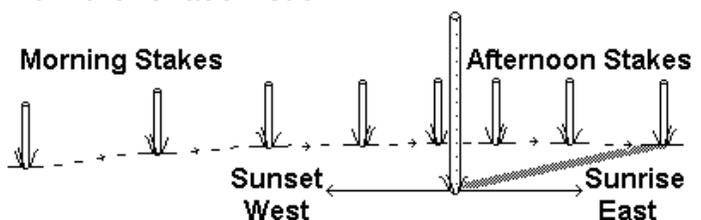
"toward-the-sunrise" and "toward-the-sunset" to keep track of you travels.

It is also worth noting at this point that there is no "East Pole" or "West Pole." As the world turns there is always some place on the globe that is experiencing sunrise, and another place that is experiencing sunset. One could travel indefinitely to either the East, or to the West, and only be going around and around the globe.

Shadow Stick

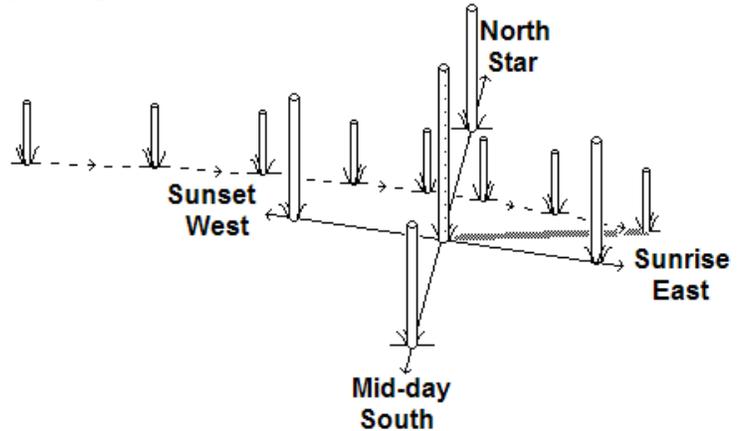
Place a straight stick, about 1 to 2 feet/0.5 meters long, in the ground. The stick needs to be as straight up and down as possible in an area that will be in full sun for most of the day. This stick is your "shadow stick." Get several smaller sticks, or rocks, and use one of them to mark the *tip* of the shadow from the "shadow stick."

Every so often throughout the day check the shadow stick, and mark the tip of it's shadow with another stick or rock. Notice the pattern that these markers make. They fall in a slightly curved line.



Because the shadow from the shadow stick falls on the opposite side of the stick from the sun, the end of the line marked in the morning, will "point" toward the direction of Sunset, and the end of the line marked in the afternoon will "point" toward Sunrise. This gives you an East-West line. If you try this at different times of the year you will find that in the spring and summer the ends of the line curve around the shadow stick, and in the fall and winter the ends curve away from the shadow stick. Regardless of the season, the line during the middle of the day will be fairly straight East and West.

Also notice that as the morning progresses, the shadow from the "shadow stick" will be getting shorter, and in the afternoon it will be getting longer. Somewhere in the middle of the day will be the shortest shadow. This shortest shadow will be perpendicular, or exactly crossways, to the East-West line. This shortest shadow gives you a North-South line, and now you have all four directions. If you are in the Northern



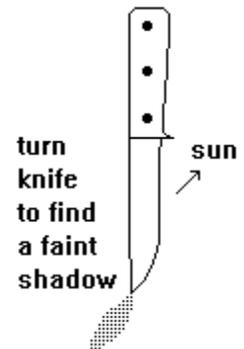
Hemisphere, North of the Tropic of Cancer, notice that at mid-day the sun is to the South of straight up from the shadow stick. So at precisely mid-day, the shadow would "point" due North. If you come out at night, and find the North Star, it should be pretty much in line with this North-South line through your shadow stick. (If you are in the Southern Hemisphere, South of the Tropic of Capricorn, at mid-day the sun will always be to the North of straight up from the shadow stick, so the mid-day shadow will "point" due South.)

When the sun is in the position where it casts the shortest shadow, it is "solar noon" for your location. (This may, or may not, correspond to 12:00 o'clock depending on where you happen to be in your time zone, and whether or not you are on day-light saving time. Knowing the difference between solar noon and clock time, is essential to being able to tell time by the sun.)

While we are still talking about the shadow stick, it is also worth seeing how long it takes to make a noticeable shift in the shadow. Depending on how long the shadow stick is, you can usually notice a change in about 10 to 20 minutes. So if you need to determine directions, you can set up a shadow stick, and in just a few minutes have a basic East—West line.

Using the Sun by Itself

By knowing the pattern of the path the sun takes through the sky, and having a basic idea of the time of day, you should be able, with a little practice, to roughly determine the directions simply by noting the position of the sun. On a sunny day it should even be possible to do this while blindfolded! —just feel which side of your body the sun is warming. For example, in the Northern Hemisphere, the morning sun will be in the Southeast, and in the afternoon it will be in the Southwest. (In the Southern Hemisphere, the morning the sun will be in the Northeast, and in the afternoon it will be in the Northwest.)



If the weather is cloudy or foggy and the sun can not be seen, you can still roughly determine its position. Go to an open area where you will not be in the shade of a tree or other object. Take your knife, or another flat item with a distinct edge, and hold it up and down on a flat surface such as the back of your hand. Slowly twist the blade around. You should see a faint shadow cast by the blade. The shadow should be the narrowest when the blade is in-line with the sun, and the widest when the blade is cross-ways to the sun. You can practice this in full sun, but it is valuable to know that it works even in the fog. Although these methods of finding directions using just the sun are not as accurate as a full shadow stick set-up, they are reasonably close, and frequently that is all that is needed, if used together with remembering some landmarks.

"The-Star-That-Does-Not-Move"

Stand under a high leafy branch of a tree, and begin rotating slowly to your left, turning around and around. Turn s-l-o-w-l-y so you don't get dizzy. (Kids, this is not a race!) Pretend you are the earth rotating, and the objects that you can see out from you are the heavenly bodies. As you look straight out in front of you, notice how you first see objects on the left, how they move across your field of view, and then pass out of your field of view on your right.

As you continue to turn around, slowly look higher and higher. Notice how things still cross your field of view, but they make a shorter arc across it. Keep turning around looking higher still. High overhead, somewhere in the tree, you should find a spot that does not move, but that everything else appears to "rotate" around. Where is this spot in relation to you? —straight overhead, in-line with the axis of your rotation.

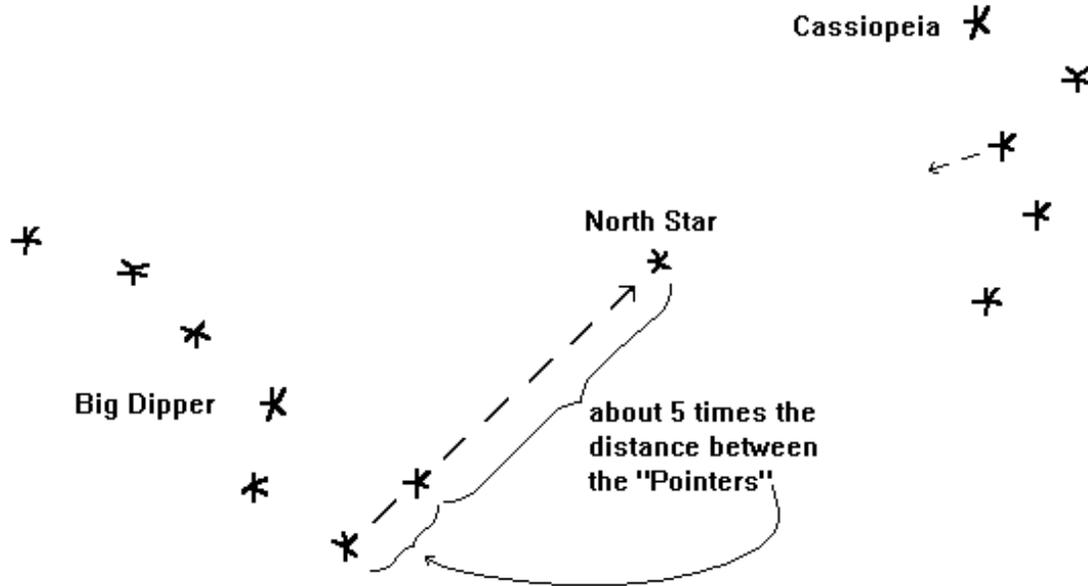
Now lay face up on the ground with your arms outstretched at right angles to your body, your left arm pointing toward the direction of sunrise, (East,) and your right arm pointing toward the direction of sunset, (West). Imagine yourself lying there for several full days visualizing what will be happening in the heavens above you as the earth you are lying on, rotates. Early in the morning, you would see the sun at your far left, it would rise, and begin to cross the sky. About noon it will be almost straight above you. Through the afternoon it would continue to cross the sky always moving to your right. In the evening it would set on your far right.

After sundown it would get dark and the stars would come out. In your imagination choose a star on your far left and keep track of it through the night. What path would it take? —basically the same path as the sun. It too would rise, then about midnight be almost straight up, and then toward early morning it would set on your far right. As it sets, the sun would be coming up on your left.

Continue to imagine the sun crossing the sky through another day. The next "night" chose a different star, one that first appears on the horizon about half-way between straight out to your left and straight out from the top of your head, (that is, to the Northeast). As you follow it's path, notice how it would never be directly over head, but it would make a shorter arc around above you. Towards morning, it would set about half way between straight out from the top of your head and straight out to your right, (in the Northwest).

After another "day," the following "night" imagine a star that would neither rise nor set, but that all the other stars would seem to rotate around —the star that would correspond to the spot that was directly above your head in the high leafy branch that

everything appeared to spin around. Where would that star be in relation to the globe?—directly in line with the earth's axis. In the Northern sky, there is just such a star. Some of the Native Americans called this star, "The-Star-That-Does-Not-Move." For practical purposes it is located directly above the North Pole. For this reason we call it Polaris, or the North Star. Wherever we are, the direction toward the North Star is due North.



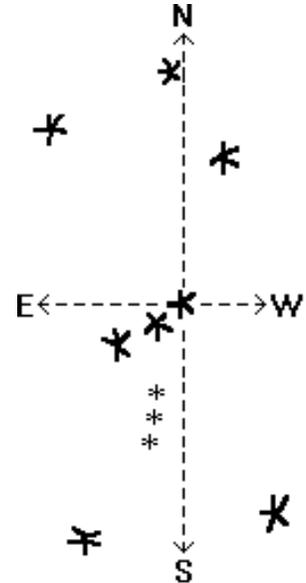
The classical way to locate the North Star is to find the Big Dipper or Ursa Major, (the "big bear") as it is also known. The Big Dipper is a large constellation that is close to "The-Star-That-Does-Not-Move." It is usually visible at night in the Northern Hemisphere. As it rotates throughout the day/night and yearly cycles it could be right side up, on one of its sides, or upside down, depending on when you happen to see it. Once you find the Big Dipper, locate the two stars that are on the front edge of the "dipper." These two stars are known as "The Pointers." The North Star is basically in line with these two, and about five times the distance between them out from the "opening" of the dipper. There are no other bright stars in the area around the North Star, (except for the two stars on the far edge of the Little Dipper). The North Star is the last star in the handle of the Little Dipper. (In the Southern Hemisphere learn to recognize the Southern Cross, and how to determine South from it.) Stay out some night when you can see the stars, and notice how all the other stars seem to "rise" and "set," or "spin" around the North Star which stays in the same spot.

Finding the North Star from Cassiopeia

In its apparent rotation, sometimes the Big Dipper may be hidden behind a mountain or some other object. So, it is a good idea to also learn to recognize the constellation Cassiopeia, and its relation to the North Star. Cassiopeia is roughly on the opposite side of the North Star from the Big Dipper, and about the same distance away. Because they are opposite the North Star from each other, either the Big Dipper or Cassiopeia is almost always visible.

Finding Directions from Orion

While we are in the night sky, let's point out the constellation Orion. Orion "the Hunter" is a large easily recognized constellation that can also tell us the directions. The top star in the "belt" is essentially on the Celestial Equator. This means it is straight out from the Earth's Equator —half-way between the North and South celestial poles. In other words the point on the horizon where this star rises is due East, and the point where it sets is due West. The arrangement of the other stars in Orion are also helpful as the constellation is laid out pretty much in a North–South direction. The "head" of the constellation points basically North, and the "legs" point basically South.



Other Helpful Ideas

Landmarks don't have to be large objects on the horizon. They can be just particular rocks, trees, or anything unique along the way. If necessary, you can make your own landmarks such as setting up small rock piles, called cairns or "ducks," or simply place a rock on top of a log or boulder in an unnatural position. Over the years, there have been many different, and very creative ways various people and cultures have come up with to mark trails and help remember these markers.

A creek or well road can also be a landmark. Which brings up the idea of "backstops." A "backstop" is a long object like a stream, or ridge, or road, that can be used as an edge, or imaginary boundary for an area. Knowing which direction the "backstop" runs, and which direction it is from you, can be very helpful. Having two "backstops" that cross through an area is better yet! For example: We know that we are hiking basically along the South side of a stream that is flowing more or less to the West. Downstream from where we are, this stream is crossed by a road. If we need to, we know that we can always go downhill until we come to the stream, and then follow it out to the road.

When you get the chance, climb up high to get a "birds eye view" of the area. Figure out the directions and compare what you see with a map if possible. Pick out as many landmarks as you can, and note their relationship to each other. This can be a great help for visualizing your "mental map."

And don't overlook some obvious aids to finding your way —especially when you are learning. When hiking up a well maintained trail, the obvious thing to do is to turn around and follow the same trail back. The same thing works well with creeks. Hike in going upstream, and then come back going downstream. You can get a lot of experience in natural areas with essentially no risk of getting lost by using this simple method of finding your way. But of course, you would be wise to take the time to determine the directions, and get the experience of keeping track of them while you are out hiking.