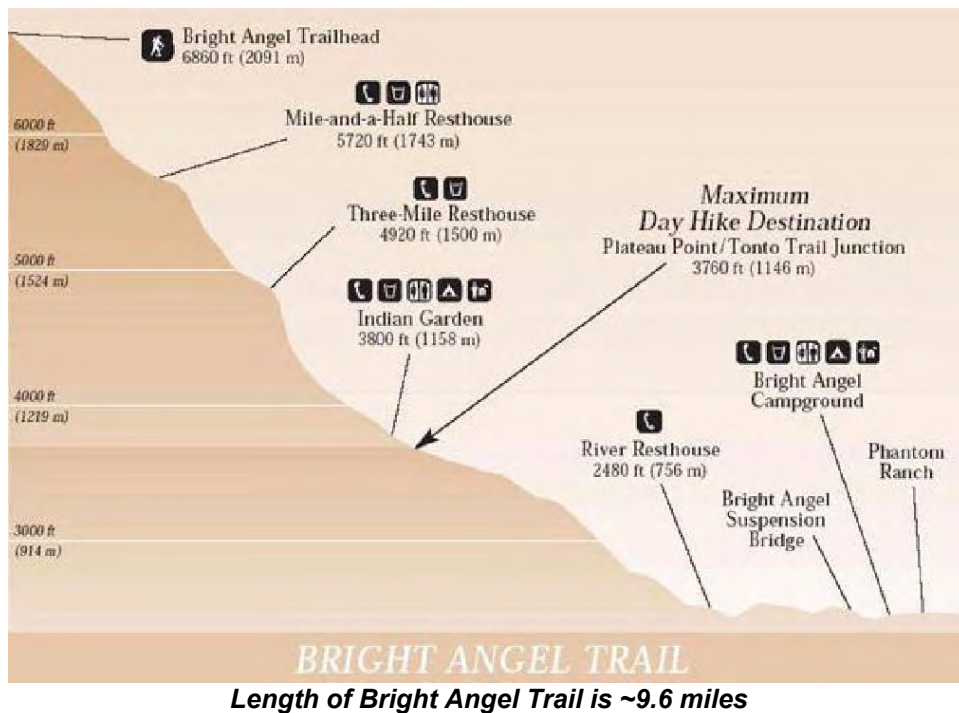


## Grand Canyon Single Crossing Report

by Bill (The Trailgeezee) Rumbaugh

The day promised perfect weather for a single Rim to Rim (R2R) crossing of the Grand Canyon. The predawn temperature was 47° F and the stars were out, with little wind. My Sweet Wife dropped me off near the mule corral which is right next to the Bright Angel trailhead on the South Rim. An obligatory picture and I was off to do my thing and she and the couple we were vacationing with (her sister and her sister's husband) departed to find a parking spot for their sunrise tour of the canyon. The plan was for them to view the sunrise, have a leisurely breakfast, check out of the hotel and then drive the 220 miles to the North Rim and pick up their runner, who hopefully would be there for them.



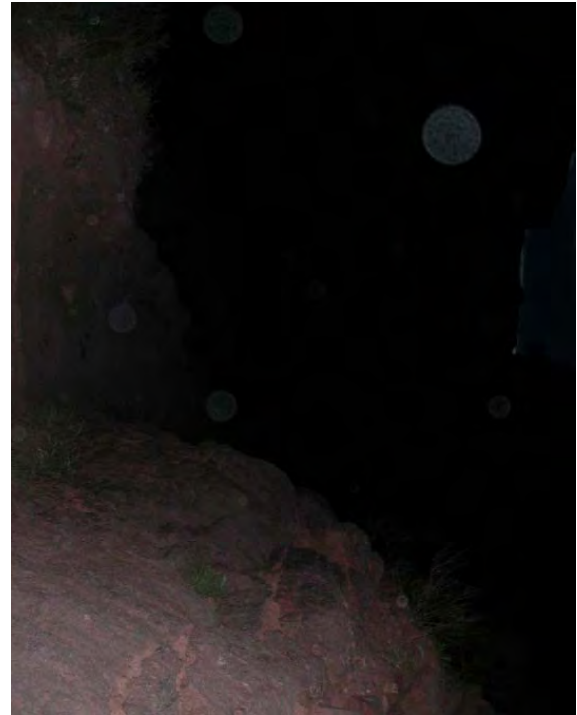
As I turned on my headlight, the first problem of the day was discovered. My fairly expensive headlight which worked fine a week ago was not working this morning for reasons unknown. New batteries. Not working. And no time to sort it out. I was irritated, but undaunted, and left it in the van. My flashlight was more than equal to the task, and I use it all the time by itself on training runs anyway. So I took my first picture (the trailhead sign), started my watch and headed down the Bright Angel trail in the predawn darkness.



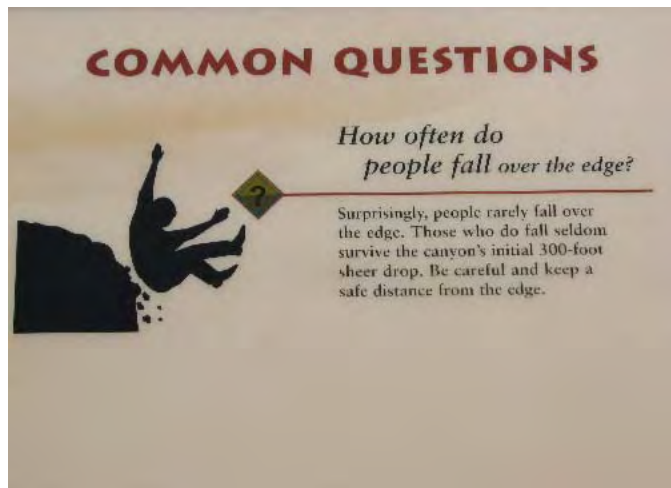
← Here I go!

The trail started out as ridiculously easy, all downhill at a reasonable grade. I have never seen a trail that was so inexorably, relentlessly, inescapably downhill. (Hello, maybe that's why it's called the Grand Canyon!) Since the trail dates back to the days before the white man's arrival, I expected there to be level spots where the trail takes advantage of natural features which may have a different grade. But no, it was all downhill at a pretty uniform rate. I think to myself that this trail must be a real

bear to get back up, once you have headed down it. But that was not my problem today. Later, on the other side perhaps, but not now. I maintained as steady a pace as I could, given the numerous erosion control measures and the loose rocks on the trail. The first brief leveling off was a mile and a half into it, near the water point at Mile and a Half Resthouse. I did not see the house, but I guess it was there. In the dark, I was blissfully unaware not only of the house, but of the sheer drop-offs which were present in many places just to one side of the trail. A few bats buzzed me on this section of trail as they gathered their nightly repast. Otherwise, my world became the short section of trail just ahead which was lighted by the flashlight. Some trails are creepy in the dark. This one was not. There was no indication of progress relative to the top or bottom of the canyon. It was just me and the trail, and I hammered it. Tracing switchback after switchback, I caught myself several times reverting to my normal mode of running to the outside of the turns. I had to make a mental reminder that just one more step to the outside could be a sheer drop of hundreds of feet. Like Wilson, (Tim the Toolman Taylor's neighbor) telling him, "No, no, no, Tim." I had to say, "No, no, no, Bill, that's not the way we want to do it today."



***The Bright Angel Trail before dawn***



***Over the edge -- will I be next???***  
***(A helpful sign from the visitor's center.)***

The sky began to show a small amount of light as I continued on. At Three Mile Resthouse, it was lighter in the distance, but still not enough where I felt comfortable running without the light. I hit the split button on my watch and pressed on.

Gradually between Three Mile Resthouse and the Indian Gardens campground, it became light enough to see the trail easily. I left my light on for awhile anyway, in the hope that my "crew" could possibly see me from their vantage point far above. Eventually, however, I turned it off and stowed it in my pack.



***Along the Bright Angel Trail***

☛ ***Sun coming up on Bright Angel Trail***

Indian Gardens is a developed campground most of the way to the Colorado River. I saw a young couple packing up their campsite as I trotted by. I called out a 'Good Morning' but there was no response. A short distance later I happened upon a large deer munching calmly on the low-hanging limbs of a cottonwood. She took little notice of my transient presence.



***Sign at Indian Gardens Campground***





**Obligatory Picture of Warning Sign near Indian Gardens --  
"Do not attempt to hike from the canyon rim to the river and back in one day."**



***The Devil's Corkscrew, viewed from above***



← *Part of Devil's Corkscrew as seen from the trail*

Given the distance, I expected to be at the bottom of the canyon in about two hours. Elapsed time was about 2:10 before I got my first unobstructed view of the Colorado.



*First view of the Mighty Colorado.  
Flowing West, since it's West of the Continental Divide*

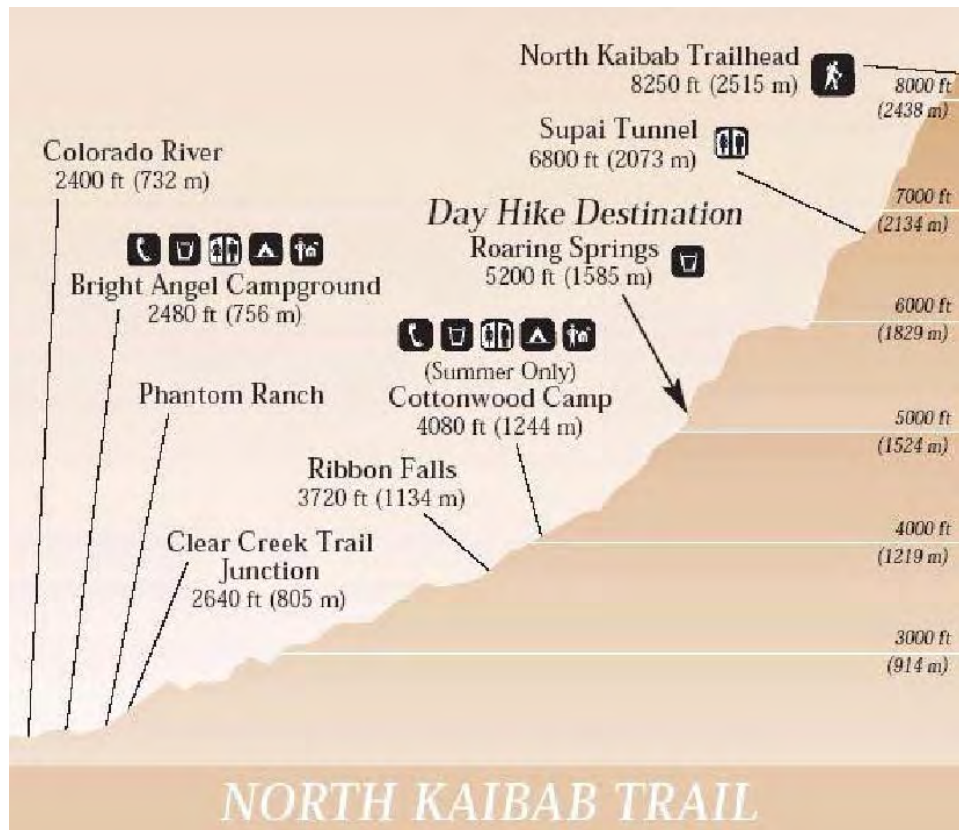


I was about a hundred yards above it for about a mile or so before I got to the "silver" suspension bridge. Part of the trail along the canyon floor was uphill, the first significant uphill of the run. Eventually I got to the bridge and ran across, stopping to take a few pictures in the middle. In the distance was the other bridge which serves the South Kaibab trail.



***Ahh, the bridge at last. Still feeling good.  
Note the other (black) bridge in the distance.***

My first view of other people on the trail was about a half mile before the Colorado presented itself. An interesting mix of people on the trail overall. The only other runners I saw was a group of three not far from the river, they were headed North to South, opposite from me. The rest appeared to be hikers, either day hikers or backpackers, the latter intending to spend at least one night in the Canyon. Those first hikers who met me returned my greeting with a German accent, an indication of the wide assortment of people who came to have a "below the rim" experience. Ones and twos, small groups and even some larger groups. Some jovial and talkative, others quite serious and taciturn. Me? I was having a blast!



**Length of North Kaibab Trail is ~13.8 miles**

A short distance past the bridge I came to the Bright Angel campground, another established village that was just coming to life for the day ahead.



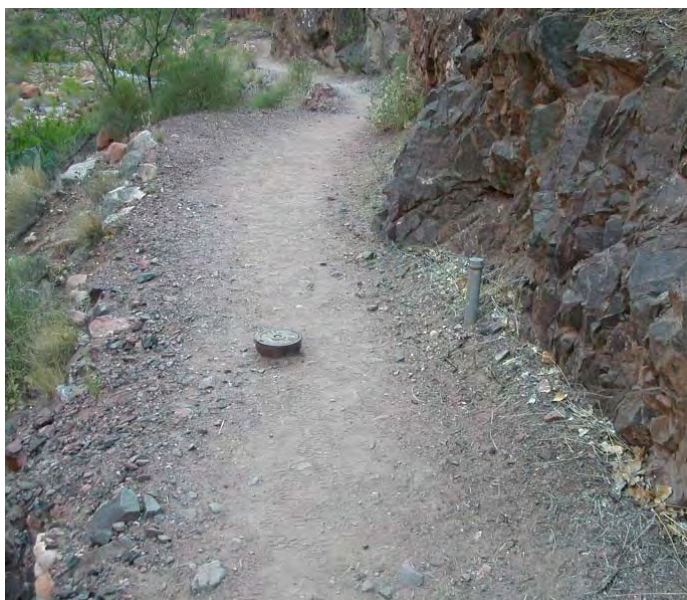
**Deer grazing near the Bright Angel Campground. Can you see all 3 of them?**



I stopped at the campground's water point and changed into my sleeveless Grasslands shirt, refilled my Camelbak, donned sunglasses, and fished out a Clif bar for the trail. Walking as I unwrapped and started on the Clif bar, I caught up to two men and a woman. All were from the Tucson area. The woman seemed to know what she was about. The men, not so much. It came out that she had made several Canyon crossings, including a couple of double crossings (R2R2R's). The muscular definition on her calves spoke of many miles on the trail. One of the men said it was his first crossing. They evidently came down the shorter South Kaibab trail, since they said they started about the same time I did, and I had not see them on the trail ahead of me. They seemed to be paced by a man in the lead who had a pair of trekking poles and who was not very fast. The three of us got to nearby Phantom Ranch just as some mules were being loaded by their wranglers for a trip up the canyon. About that time I realized that there were more appetizing places to eat than near a mule corral. I finished the snack and then worked my way through the trio and passed them as I resumed my running/walking.



***Phantom Ranch***



The trail came to a section known as The Box, where the trail followed the Bright Angel creek, which was actually a small stream, at least on that day. The canyon walls were steep on both sides and the trail was good. It was shady back in the canyon and the noises of the stream were a pleasant backdrop to my heavy breathing as I ran the runnable parts of the trail, of which there were many.

← ***One of numerous unexpected tripping hazards on the canyon floor. Seemed out of place.***





*This would be "The Box." Very pleasant running.*



*North Kaibab Trail beside the Bright Angel Creek*



***Trail, blasted out of solid rock***

I came upon a guy about my age who had a broad-brimmed hat and a light jacket. He was hiking his way along at a pretty good clip. I passed him with a brief greeting and continued my practice of running the runnable parts and walking the uphill. There were numerous places that were pictureworthy, and I noticed each time I stopped for a picture that the guy was not that far behind. He was maintaining a good pace, though I never saw him running. A few miles into the box I lost the trail. How does one lose such a well-defined trail? It seemed to branch and either cross the Bright Angel stream to the left (not a well-marked crossing) or go through some reeds to the right. I decided to check out the reedy route, since they appeared to have been beaten down from passing hikers. I found that there were rocks placed in the marshy area where, with a little skill, one could keep his feet dry. I made it across the first section, but traversing the second section (about another 20 feet or so) I could not maintain my balance and managed to get both feet wet. Not enough skill, evidently. The guy I had passed caught up to me about then and said that there was a trail across the stream, but it was pretty dicey when the water was high. I noticed that he was taking the same route, so it appears that I made the right choice. I led and he followed for awhile. His name is Tom and he is semi-retired, living in Tucson. He mentioned that he had started out that morning with the woman (named Wendy) in the trio I passed earlier. He had crossed the canyon several times before and was doing this one today and then crossing back to the South Rim tomorrow. He had managed to reserve a cabin in the North Rim area due to a last minute cancellation. We paused at a small waterfall which crossed the trail. I washed my hands and face in the cool, clear water. Tom dunked his jacket in the water and then tied the arms around his neck indicating that practice worked really well for evaporative cooling in the region's arid climate.

The Box was behind us by this point, and we started into what he called the tough section. And it was. Full sun, steep uphill grades, temperature in the low 80's. The elevation was about 4,000 feet at that point (on the way to 8,000+) and the thin air was starting to become noticeable for me.





***North Kaibab, nearing the tough section.***



**← *Ribbon Falls, at a distance***

Eventually Tucson Tom took the lead when I became winded on some of the climbs. Presently we came to the Cottonwoods campground where we took a short break and I refilled my Camelbak.



***Ranger Station at Cottonwood Campground.  
"Only" 7 miles to the North Rim.***

I noticed a large poison ivy bush near the ranger's cabin that had a wire fence around it, as if to protect it from harm! Tom mentioned that there was an artist's colony up the trail about a mile where there was another water point. He was planning to take a more substantial break there, since it was such a pleasant place. We left together, chatting about this and that. I fell behind on another of the daunting climbs, but I caught up to him at the rest stop. He was right, the shade was very inviting. There were log seats around a patio table. Tom was occupying one, with two others occupied by a couple from Wyoming. I topped off my Camelback to be certain that I would have sufficient water for the next section of the trail and we left after he re-wetted his jacket. He mentioned that when the artists were there, some of them would leave a pitcher of lemonade out under a tree for passing hikers. He had availed himself of the lemonade on more than one occasion and attested to its refreshing properties. I had read of a retired Park Ranger who did the same thing, plus I had heard of the Aiken house, a residence down in the canyon. All were in this same general location, and I suspect that they are all three this same place. Part of the lore of the Canyon.

I mentioned that I was thinking about the side trip to Roaring Springs. Tom said it would add significantly to the time required for my crossing. An hour or so would probably not be a problem. He said it would probably be more like two, given my decreased performance with the additional distance and the warmer temperatures that I would have to face that much later in the day. I deferred the decision for later and would let my condition at the time be the deciding factor. The side trail to Roaring Springs was near the beginning of a long steep grind.

I decided I needed to conserve my energy, and bypassed the side trip, taking a few pictures of the spring-fed falls instead. Tom had dropped me shortly before this point, not to be seen again. The combination of the increasingly thin air, full sun, warm temperatures (mid-80's by then) and steep trail was taking its toll.



*Falls below Roaring Springs →*

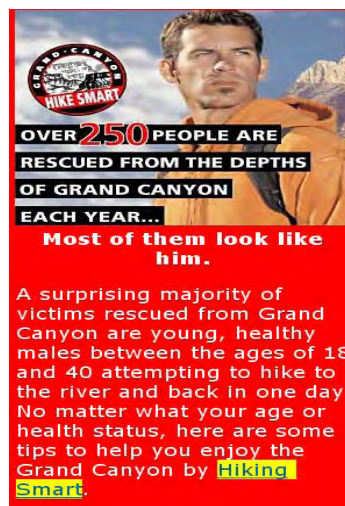


***Full sun, thin air, steep climbs.  
Your troubles have only begun, Grasshoppah!***



I found myself stopping often to catch my breath, when I could find a place in the shade to sit or at least lean on something. When my heart rate returned to normal, there was never any problem getting going again, and I felt refreshed for the next section. My fears of my heart rate refusing to settle down, or of not being able to get going again promptly, never materialized and the rest stops were what made it possible to continue. To press on without the stops was to risk heat exhaustion or possibly worse. With all the warnings I had mentally jeered at, the last thing I needed was to be carted out on a mule.

*I saw this poster everywhere. →  
Did not see any posters for 61 year  
olds, though, so I'm good to go, right?*



The Coconino Sandstone is a thick, prominent layer of light-colored rock near the top of the canyon which is easily seen from a distance. I focused on it, for when I got that far I knew I would have it in the bag.



***The Coconino Sandstone as viewed from way below.***

Stopping occasionally to take a picture looking back down the canyon showed me that I was making significant progress. There were several sections that hugged the cliff on one side and had a sheer drop-off on the other. Since I have a problem with vertigo, I did not look away from the trail immediately ahead until I got to the next section where there was earth on both sides. This was not a problem with the trip down, since much of it was in the dark. When the drop-off was to the right of the trail and I saw hikers

coming toward me, ordinarily I'd pass on the right, but not today. This only happened a time or two, but I used the opportunity to stop for a rest break and lean against the cliff while they passed, so I did not get any closer to the edge than necessary. Ya do what ya gotta do.



← ***It's a long, long way down at many places on the trail***

I crossed a nicely made steel bridge just as a hiker was crossing it from the other side. As I took a picture of it later from above, I noticed he was still by the trail on the far side getting something out of his pack. I was getting pretty tired long about then, beginning to wonder if I was going to run out of gas and have to put it into granny gear to finish this thing.



After a couple of rest stops, the hiker who had turned back just below the bridge, caught up to me. I asked him how much farther it was to the Supai tunnel, hoping he would know, since he had just traveled that ground. He looked at his GPS unit and told me that it was 4.7 miles and rattled off a number of feet of elevation. I told him that 4.7 miles just could not be right, that I meant from where we were to the tunnel. He gave me a puzzled look, consulted his GPS again, and told me another number that was almost as depressing as the first. I didn't believe the second number, either. He did mention that the tunnel was at the top of the red sandstone formation (the Hermit Shale), which meant that it was at the bottom of the Coconino sandstone. This also meant when I reached it, I would also have reached the goal I had in my sights for the past three hours. In response to another of my questions, he said that the water was turned on at the tunnel. I thanked him as he headed out of sight. Much to my relief, the tunnel appeared soon after the next switchback. It was now about 8 hours since I started, and 2 miles to go to the trailhead. The time was a bit disappointing, but I was OK with it.



***You've come a long way, baby. Note bridge and trail in the distance.***

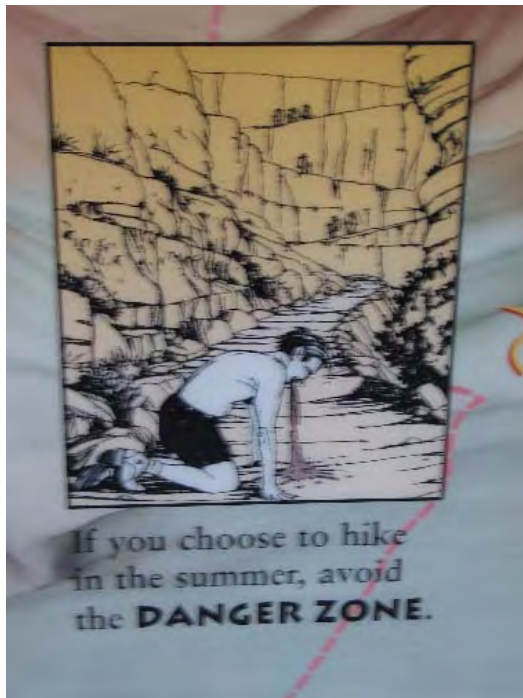


**← *The Supai tunnel -- 2 miles to go!***

A group of about 40 teenagers with 3 or 4 young adult leaders were taking a break in and around the tunnel, and the water point, and nearby rest rooms. Ya gotta love 'em, they were everywhere. They had taken a day hike down from the trailhead and that was their turnaround point. Knowing it would take at least a few minutes for this group to get together and head back, I topped off my Camelbak for the last time and headed up the trail hoping to put some distance between us. I was caught by a small group of the older boys fairly soon, however. This was no great surprise, having been around Scouts in a former life – there are always a few macho types who feel the need to forge ahead of the others.



A short distance later, a group of about 6 rangers came down the trail toward me. From the spiffy new uniforms and the fresh faces I figured these were newbies to the job, getting an orientation hike. They all smiled and gave me a greeting as they passed. The lead ranger, a young lady, stopped and turned after she passed and asked, "Sir, did you come from the South rim today?" I answered in the affirmative, adding that I was doing a single crossing. Evidently my haggard look and lack of camping equipment was a dead giveaway, to someone who knows the signs. Expecting to be upbraided for my cavalier disregard of the numerous warnings, she instead asked when I started, and told me I was making good time. The others in the group were also clearly impressed as well. She was the only one with a radio, so I figured



she was the coach. Impressing the young rangers bolstered my spirits for awhile. About a half mile above the tunnel, a rest stop or two later, I started feeling a little queasy, so I stayed put for an extra minute while a few more of the teenagers straggled by. Presently, a familiar feeling came over me and I had another visit from my old pal, ralph. It happened just as one of the leaders came into view rounding the nearby switchback. He seemed genuinely concerned, and asked me if I was going to be OK. I assured him I was all right, that this was entirely normal for me. He asked if I had water and I told him that I just refilled at the tunnel and that I really was fine, and thanked him for asking. As usual, I felt better immediately after I ralphed. I consumed a couple of antacid tablets, washed them down with water and headed stubbornly up the trail.

◀ *Guess I'm not the only one with ralph for a running companion (another helpful sign from the visitor's center)*

***A last, fond look at the Coconino Sandstone ➔***

Though it was a steep trail, knowing I had a fairly short distance to go made all the difference in being able to stay focused and keep things positive. I was further encouraged by the appearance of Ponderosa Pines and Aspen trees trailside, which do not grow in the rocky soil of the canyon.





After leapfrogging several small groups of teenagers (one of whom was named Allison by the embroidery on her L.L.Bean daypack) we all eventually got to the trailhead. The last two miles took just over an hour, but I got it done, and was still in good spirits at the end.

***Made it, and lived to tell about it! ➔***

My Sweet Wife was nowhere in sight in the trailhead parking lot. This was expected – it would have been the coincidence of the year had we arrived at the same spot at the same time. The plan was for me to walk what I thought was the ¼ or ½ mile to the North Rim Lodge and visitor center and hang out there until my crew arrived. If they got there first, they were going to see the sights at the North Rim while they waited for me to show up. I headed up the road to the left, and after 10 minutes of steady walking I saw a sign for the lodge and visitor center and another reducing the speed limit to 25 mph. So the lodge was just ahead. Great. I kept walking. No lodge, only cars on the road going by in both directions. More walking. I began to wonder if I had somehow turned the wrong direction on the road, what a bummer that would be. But no, I did remember the signs. At long last, about 30 minutes from the trailhead, I finally came to the lodge's parking lot. It was about two miles from the trailhead, not a half mile, but at least I was there. Feeling a bit like a homeless person, I washed my face, arms and hands in the restroom sink and changed into my remaining clean shirt. I gathered my pack and headed for the watering hole to wet my whistle. My dusty gaiters drew an odd glance or two as I savored the opportunity to just sit and relax. My next move was then to go by the snack bar, get their largest Coke, sit back in a strategic place and watch for my crew to pull into the parking lot. But first, I needed to cruise through the parking lot to see if they had already arrived while I took care of my post-run rehydration. As I came to the parking lot, I spotted my crew, walking toward the visitor center! We had reconnected. Concerns about missing each other, or one having to wait for hours wondering what had happened to the other were left for another run, another time.

What a great experience this was, getting to cross this natural wonder and seeing its grandeur up close and personal. I was gratified to notice my crew mentioning my R2R to a number of people they encountered later in our travels. The folks always seemed impressed and would give me at least an interested look, if not some questions. Our vacation continued for another 10 days. I was sore for the usual few days, though the aches were in slightly different places than I am used to, obviously a consequence of the grades involved. Would I do it again? If I were in the area for other reasons, I would definitely consider it. Would I attempt an R2R2R? Not likely. The last few miles were brutal. Perhaps with a rest at the trailhead before starting back down, it might be possible, but the steep unrelenting climb out on the Bright Angel trail would undoubtedly be in the dark, much of it probably at a death march pace. Not a pleasant prospect. All in all, my single crossing was a wonderful running experience, one that I will treasure.



## ADDENDUM

The following section is added in case you are considering a GC crossing of your own some fine day.

**Reconnecting:** There is a lot that can happen between the time a runner is dropped off at one trailhead and picked up at the other. What makes it more worrisome is the poor cell phone coverage, a problem we don't normally see here in the Metroplex. Besides the issues which may befall a runner in a demanding run, the road around the rim is not a chip shot, being about 220 miles. There is a shuttle bus which makes one run per day (for a fee of \$65 at this writing). But, if you have problems and miss it, your options are few. There are ranger stations and emergency phones at several places along the trail, so you are never more than a few miles away from help in the event of a serious problem. Once daylight arrives, hikers pass every few minutes, particularly in the upper part of the trails near the rim. My crew had concerns about being able to find out anything if I did not show up for several hours after I was expected. Though there are places that are manned 24/7, since the park is always open, the published numbers that we could find were all available only 8 – 5, not of much use when we would need them. However, after asking around, they did find out that the dispatcher for the NPS does have a phone which is manned 24/7 and they are likely to know of any emergency situation in the park. The dispatcher's number is 928-638-7805 and would be a good one for both runner and crew to have available (call it first to confirm, though, in case it has changed). The upside of this is that the runner need not carry a cell phone, or be concerned with it having a full charge. One less thing to worry about.

**Clothing:** Another unknown is the weather and what to wear. I probably took more clothing than I needed, but it did not rain, either. I took three shirts, a long sleeve, short sleeve and sleeveless. Starting out with the short sleeve, I changed to sleeveless at the first significant rest stop after I crossed the Colorado. Probably should have started with the sleeveless shirt. The temperatures on the North Rim were expected to be in the 40's but they did not materialize, being in the upper 60's there. A tad chilly after a run, but not bad. The long sleeved shirt felt good after I washed up in the restroom and I did not have need for the Sunmart Tyvek jacket I took. Had the weather been wet or cold I would have been glad I had it.

**Hydration/Equipment:** Regarding water, it's a personal decision how much to take. My Camelbak "Mule" has room for 3 liters of water. I started with 2 ½ liters and topped it up to about the 2 liter mark at each water stop. I never came close to running out, and I think the more popular sized 70 ounce bladder would probably have been plenty. Since this model of Camelbak has a fair amount of storage space, it may seem like belt and suspenders, but I also used a small fanny pack. The Camelback is not something I wanted to mess with every time I needed something, and I don't like to run with a lot of "stuff" in my pockets. So I put the camera and other items I might need quick access to in it, and wore it with the pouch in front. Though somewhat dorky, this combination was a pretty workable solution. I saw a lot of people with trekking poles. I have to admit that I wished for them in the last 3 – 4 miles, but would not want to carry them the other 20 miles of the run just to have them at the end. They are not in keeping with the 'light and fast' approach trail runners aspire to, so they are not recommended. Gaiters are optional, but recommended, for the usual reasons.

**Food:** By ultrarunning standards, this was a relatively short run, but be sure to take a significant amount of food just in case. Water can be replenished at numerous places as mentioned above, but if you need food, and the one or two places on the trail where you can buy additional food are closed, a 'bonk' on the trail would not be good. Passing hikers may have some extra food they can offer you, but it is not a source that anyone would want to depend upon. I took a little over 800 calories worth of various forms of concentrated food. I consumed less than 500 calories and did fine on my run, but my R2R is only a single data point. As a side note, the water near the bottom of the canyon has a high mineral content and is quite brackish. Washing down Cran-razz flavored Clif Blocks with brackish water was an interesting taste sensation that I'll try to avoid in the future.

**Route:** Regarding route, there are two trails to the bottom from the South rim and only one back up from the bottom to the North rim. There are numerous other trails in the GC and surrounding area, but for a



trans-canyon run, these are the only reasonable choices. The three trails are quite well-traveled and well-maintained and are plenty wide. After all, they need to carry mule traffic and have clearance on the sides for the rider's legs and feet. So concerns about washouts on the trail leaving the hapless runner to cross narrow sections while clinging to rocks and roots never occurred. If I were to do it again, I would probably go down the South Kaibab trail rather than the Bright Angel. It is shorter and not much steeper. A good part of the difference in length is due to a section of Bright Angel which parallels the river. The South Kaibab is more exposed and probably a little scarier, but probably no more so than other points on the North Kaibab, which is unavoidable. Having to take a shuttle bus to the South Kaibab trailhead complicates logistics a bit, since they don't allow private cars there. So it restricts your starting time to when the busses are running, but is not a big deal in the grand scheme of things. The other thing I would do differently is wait until it is light enough to run without lights so that the view could be enjoyed on the way down canyon.

**Running:** The run down the canyon is easy, and the grade gradual enough to not shred your quads. The erosion control measures (logs or rocks embedded across the trail every few yards) and the rocky nature of the terrain limit how fast you can run. I had expected to be across the bridge in about 2 hours, but it was more like 2:30, as mentioned in the report. Running up the other side was fine for the first few miles. It was mostly in the shade and there were many level sections, or others that climbed only gradually. With the trail running alongside the Bright Angel Creek, the sound of its running water makes for really pleasant running. But it doesn't last. Too soon the shade becomes less and less, and the climbs become steeper and steeper. The good thing about this is that a backward look shows that some vertical progress is definitely being made. I started to get winded from the climbs from this point on, and decided that it made sense to walk or power walk the last 7 miles to the top. Whereas the grade of the Bright Angel Trail is relentless and steady, the grade on the North Kaibab varies significantly. It is more what I expected, a trail which takes advantage of natural features and hacks its way through the rocks and cliffs only when necessary. If one is a strong runner and is trying for a time worthy of bragging rights, there are many runnable sections in the second half of the North Kaibab trail. For those like me, who are of modest ability and are interested in both completing a decent crossing and enjoying life the next day, I suggest walking the second half of the North Kaibab. Walk with purpose where you can, keep moving where you must, don't let the necessary breaks last too long and you'll do fine. As a safety tip, though, it makes sense to be familiar with the symptoms of heat exhaustion and watch for them in yourself and others who may be along with you.

**Tip:** The term Kaibab is a Native American term which means, "Mountain lying on its side." I heard the last syllable consistently pronounced by those who should know, to rhyme with "dab" rather than as "bob" (as in a shish kebab).

**Mules:** Much has been written about the mule trains on the trail. I passed three of them going the opposite direction and used them as opportunities to take short breaks. They were no bother. I have been told that if you come up behind a mule train it may take awhile to get around it. This may be true. If you are in a large group, it may take longer, but an individual runner may be allowed to pass them pretty quickly. I tend to think they are not anything to be concerned about. The other thing about the mules is what they leave behind on the trail, both liquid and solid. Some places on the trail you would not know mules had ever been there. Most places, if you were interested in such matters, I suppose you could detect evidence of their presence if you looked diligently for it. Other places there was a definite presence, both visual and olfactory, but you pass through these areas quickly. Then there are a small number of other places where it's, like, the barnyard from hell. Must be where there was a traffic jam during rush hour on the trail, or maybe where they took a break. Again, you pass them relatively quickly and then it's clean air again. Mules are no big deal. I purposely left early to avoid them. As mentioned earlier, if I were to do it again, I would wait for early daylight in order to enjoy the view going down the canyon.

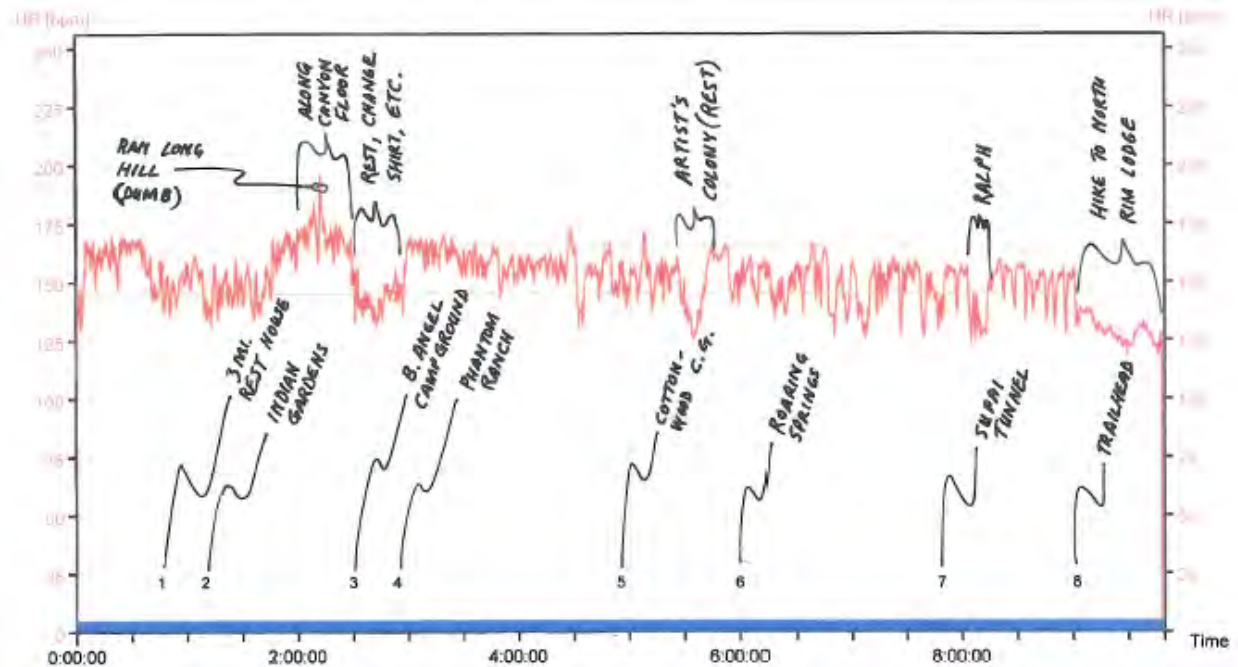
As an afterthought on this topic, I remember from fifth grade that horse feces can be a source of tetanus germs. Mules are half horse, and I would expect, if primitive science from the freaky '50's is still correct, mules probably have the same germs (maybe half as many?). Though I've never read in any of the Grand Canyon reports where anyone mentioned this, if you fall on the trail and cut or abrade your skin, it

makes sense to consult a doctor about it promptly. A shot beats getting the disease, which can be serious bidness.

**Geologic Time:** During our time at the South Rim, we took a bus tour to the East end of the Canyon. The bus driver was a fountain of information about a wide variety of topics. Some of the information he spouted as facts sounded more plausible than some others. One was especially interesting, though, and it turned out to be fairly easily verified without having to resort to the internet or other arcane sources. The rather preposterous-sounding statement was that, "For every step downward on the trail, you go back 1,000 years in geologic time." This would mean that by the time my pack was cinched down properly, long before the first bead of perspiration appeared, I would have blown past not merely the time of the Pharaohs, but literally all of mankind's existence. Having some idea of how many steps there are in a mile, and having seen a display where the age of the oldest rocks in the bottom of the canyon was pegged at 2.2 billion years, I decided to find out for myself what the "real" number was. Let's suppose a hiker starts down the longer of the three trails, the North Kaibab, which is about 13.8 miles in length. If each step averages 3 feet in length, that's a total of  $13.8 * (5280/3) = 24,288$  steps. Dividing this into 2.2 billion years, each step represents not 1,000 years, but a mind-boggling 90,580 years!



**Heart Rate Info:** I have been using a heart rate monitor so long that it is a part of every run or strenuous activity that I do anymore. (Except for honey-do's, those are exempt!) I've included the printout from my R2R in case you have any interest in how my heart rate correlated with what I was doing at the time. Since this is of interest to few (maybe only me) it is on the last page, and can easily be skipped.



**Plot of Author's heart rate during his crossing of the Grand Canyon**