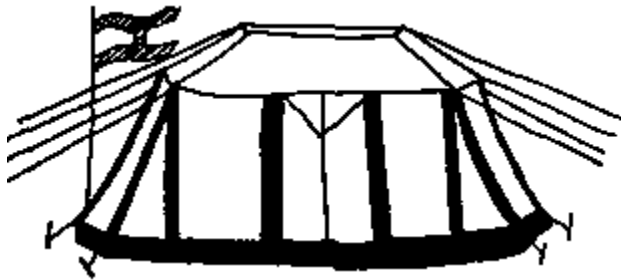


Making a Tibetan Maikhan

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Historical Notes

The maikhan of the modern-day Tibetan Plateau and Mongolian Steppes is a sprawling network of poles and ropes, supporting a felt of yak hair that is so fine, that visitors comment that these shelters offer only minimal protection from wind and cold. They are large enough to house a modest Tibetan nomadic family. They more resemble the tents of the modern-day Arabic nomads, than the stately structures of 13th century Tibet.



The peaked roof of the 13th century maikhan was supported by a ridgepole, supported in turn by two upright poles. Guy ropes served to stabilize these uprights at each end of the maikhan. The guy ropes which were made of yak hair, were adorned with prayer flags, which served to both mark the guy ropes (notorious trip hazards), and to

send prayers to heaven for the Buddhist inhabitants. Smaller maikhans belonging to Buddhist ascetics included an iron trident, which probably fastened to the top of one of the two uprights.

Side ropes were connected to the junction where the roof met the walls, which pulled the walls out and held the roof taut. (This design is echoed in the modern-day American Army tent.) The walls were further drawn out at the base and were staked to the ground, which offered a sloping silhouette, which stood up well to high wind.

In the 13th century, these tents were large enough for several people to stand in. The maikhan of a wealthy family was made of thick felt that was whitened with a coat of lime, as a white tent was a symbol of great wealth. Strips of black cloth were appliquéd to the gores, doorways and at the bottom edge, probably to act as reinforcement at the stress areas.



Traditional maikhans dating from Marco Polo's time are still used for Tsaagan Sar (Lunar New Year) Naadam (Midsummer) and other festivals in Tibet and Mongolia. These tents are by tradition, white with the black trim, and often elaborately painted or appliquéed.

To see additional modern festival tents (in other colors!), check out the [photos at this German website](#).

How I Built My Maikhan – Part I: the 'Two Man Tent Cozy'

The maikhan that I built started out as cover for a 2-man nylon pup tent. My first step was to set up the pup tent, and cut bamboo ridgepoles to support a felt cover. The ridge poles, aside from being the necessary support system for the finished maikhan, also prevented the pup-tent from collapsing under the weight of the felt, which can absorb a lot of water during inclement weather.



Using 1" diameter bamboo poles, I cut two poles 4" taller than the nylon tent. I secured these uprights to the metal pup tent poles with twine. I cut the primary ridgepole 6" longer than the length of the pup tent and lashed this to the two uprights. I followed the same process for the secondary ridgepoles. The uprights for these secondary ridgepoles were secured to

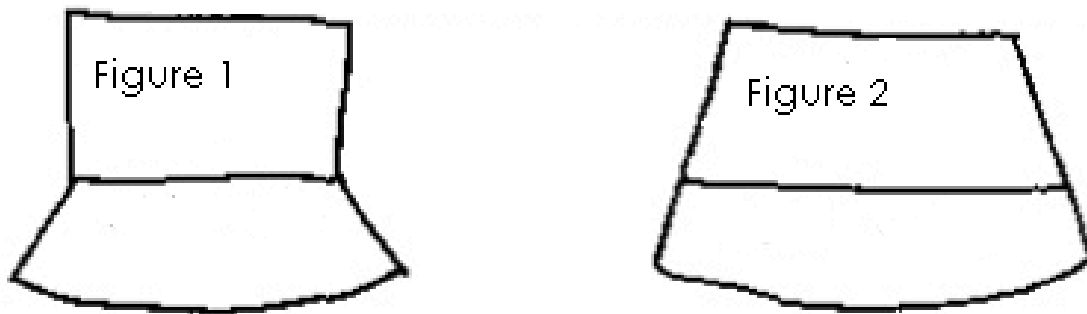
the guy rope grommet and stake on each side of the pup tent.

For the body of the maikhan, I used felts that had been used on display boards at the department store I was working in at the time, that else wise would have gone into the trash. The fiber content was a 70% wool / 30% rayon blend. I would have preferred 100% wool, but it was not available through standard commercial outlets at the time. I chose black for the top because it was the color used by common nomads, and because I hoped that it would absorb the heat of the day and keep me warmer at night. I used grey for the sides, because I ran out of black. I discovered that the felt, combined with the nylon of the pup-tent, trapped a layer of air between the two textiles which made great insulation, which factored into the design for the interior, which I finished the following year.

I cut the roof panel the width of the primary ridgepole. I laid this piece of felt over the roof of the pup tent, and cut it off so that it hung over the secondary ridgepoles by 12". Since I am not a draftsman, I employed the pin-and-cut method for the

rest of the sections. For the sides, I pinned a felt to the edge of the roof section, and laid it over the guy ropes, which gave me a panel that was axe shaped (Figure 1, shown below). In hindsight, I should have run a piece of twine from the end of the ridgepole to the end of the guy rope, which would have given a more suitable shape (Figure 2).

I then sewed this side panel to the roof using flat felled seams. I followed the same procedure for the other side.



This is how I cut my roof panel and this is how I -should- have cut the roof panel

I draped the completed panel back over the ridgepoles, and wait for a rainstorm so that the felt would shrink. If I had been in a hurry, and if water had not been rationed that year, I would have hosed it down to speed up this process.

When the felt had dried, I centered the roof section over the primary ridgepole. Full size maikhans have a slit down the center of the roof, which acts as a smoke hole. I chose instead to cut a hole around the end of the ridgepole, to act as a smoke hole. I secured the bottom edges of the side panels to the guy rope stakes, and pulled the felt taut. I then laid a felt over the back of the tent (which included a guy rope), and pinned it to the roof and side sections. I cut out the resulting piece that was sort of an isosceles triangle, allowing 5" at the base and 1" for seam allowances.



This photo is from the National Geographic archives and shows the profile I was going for. The ends of my maikhan was cut like this, with the flaps overlapping by several inches. Laying the end pieces over the guy rope gave it a more traditional pitch which made the maikhan more wind resistant. I sewed the back and front felts to the roof section, and returned it to the frame in time for the next rainstorm.

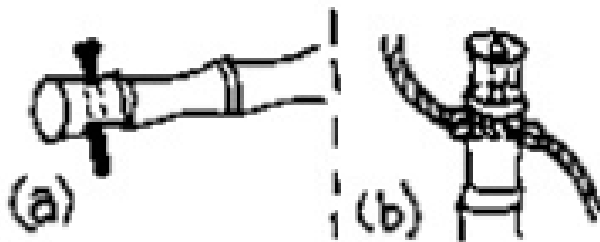
I was happy to find that the felts did not shrink more than I expected them to. My next step was to waterproof my maikhan. I had read that Mongolians waterproofed their gers with milk, so I decided to put this experiment to the test. I bought a gallon of milk and a house painting brush, and went to work. The dry felt soaked up the entire gallon, which also acted as a sizing. When it was dry, it actually did repel heavy moisture, although I found that I needed to renew my maikhan with a milk bath after every three rainstorms.



I decorated the roof of my maikhan with a Tibetan Snow Lion, which I painted on with yellow latex paint. I added red filigree appliqués to the corners of the roof, and made plans to add more appliqués the following year.

My pup tent wore out the following year, which prompted me to transform my felt maikhan from a cover, to a fully self-standing structure. To accomplish this, I designed an interior support structure that relied on both ridgepoles and interior ropes to support the felt.

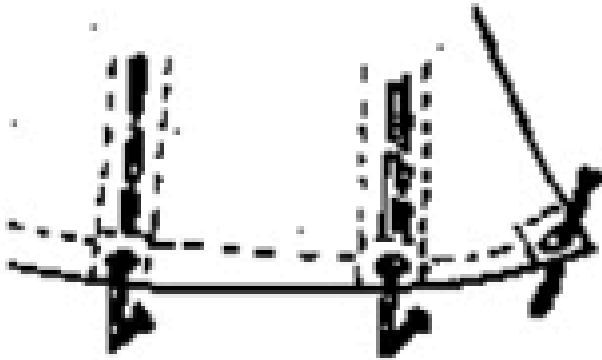
Building the Maikhan Part II: Structure and modern adaptation



I replaced the 1" poles with bamboo that was 3" in diameter. I cut these new poles so that there was a natural joint at each end. I drilled the ridgepoles through at each end to facilitate a bolt (Fig. a). I filled the end joint with air drying clay and ran the bolt through to form a channel. I felt

that this would strengthen the end of the pole, and be a guide for the bolt. I filled

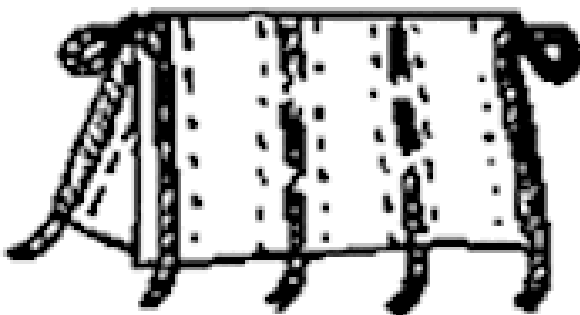
the end joint on the upright with the same clay, and used the bolt to make a channel. I drilled a hole through the upright, underneath the end joint, and ran a rope through this hole (Fig. b). The bolt dropped through the ridgepole, into the upright, and was secured by the rope, which was tied over the top of the ridgepole. The combination of bolt and rope formed a sturdy joint between the bamboo upright and ridgepole.



Weather in the Pacific Northwest can be inclement even during the summer, so I decided to augment my milk saturated felt with a nylon ripstop liner. I chose black so that it would be indistinguishable from the felt. If I were doing this tent again, I would choose a white or pale color, which would give better visibility inside. I cut a panel of rip stop 10" wider than the roof panel, and long enough to drape

over all three ridgepoles and extend a few inches past the bottom edge of the side panels. I put a deep hem into the long edges (the front and back ends) which would act as rope casings. I cut two strips of rip stop and sewed them down the length of the rip stop panel about a third of the way in from each edge, and ran hemp ropes down all four of these casings. The guy ropes were now enclosed in the ripstop, and ran over the ridgepole, and became structural components which took the stress off of the felt and ripstop when they were staked to the ground.

I assembled the 3 ridgepoles and set them up, using twine as guy ropes. I laid the rip stop panel over the center ridgepole, sliced the center of the edge hems to expose the rope, and looped the rope around the end of the ridgepole. I followed the same process for positioning the secondary ridgepoles. I staked the ropes to the ground to keep everything upright. I attached a back wall to the ripstop, using the same method as with the felt. I did not line the front flaps, although I would do so if I ever made another maikhan.



I laid the felt over the ripstop liner, and trimmed both felt and liner at the bottom so that they were even. I applied 2" square patches of ripstop to the backside of the felt and made a buttonhole in the center. I removed each guy rope from its stake, ran it through this buttonhole, and ran it back to the stake. I hemmed the ripstop by hand and ran

a running stitch along the edge of the felt to give it some support. I also applied patches to the end panels so that they could be staked out also. This afforded me a low sloping profile which was wind resistant from all sides, and which shed rain away from the main living area.

If I had hemmed both the felt and ripstop together, it would have made a stronger and more finished hem. I chose not to do this, because I could push the liner up on the inside for additional ventilation, without losing my privacy by having to push up the felt wall as well. I attached heavy twine to the outside of the maikhan where the roof met the sides, so that on very hot days I could raise both the felt and ripstop sides. I also attached ties on both the inside and outside of the door flaps so that they could be secured.

Setting up and camping in my maikhan

To set up my tent, I laid the tent on the ground, paced off the footprint, and staked down the sides. I assembled the center ridgepole, then walked it inside and stood up. On a good day, I had paced off the correct space and the staked ropes would provide enough tension for me to assemble and walk in the side ridgepoles. Once the ridgepoles were standing, I tightened the ropes and moved rugs, bedding and other furnishings inside. I remember it taking about 45 minutes on a good day, and 2 hours on a bad day...



This photo was taken circa 1985, and shows me in a very simple Tibetan costume, standing at the doorway of my maikhan. The folding chair was from a discount furniture store and was nearly identical in construction to a thirteenth century Chinese folding throne that resides in the Metropolitan Museum of Art. I do not have any shots of the interior, but it was pretty sparse, just a clothing basket and kitchen boxes that I custom built to fit into the Saab Sonnet that I was driving at the time.

I found this tent to be pretty versatile in various types of weather, including high wind, rain and snow. Being able to raise the sides during the summer was a bonus, as was having a ridge pole that I could hang lighting from. The felt ends and sides provided enough ventilation that I could use a table top cook stove inside the tent, and it was spacious enough to sleep two people. As it turned out,

having to use grey felt instead of black for the sides, also allowed for just a little more light when I slid the interior ripstop up.

It was also very distinctive in both profile, material and other senses :) On those days where there had been an evening rain or heavy morning dew, followed by brilliant sun, the tent became very aromatic from the milk coating. I got used to it pretty quickly, but I learned to camp several yards away from others who did not appreciate such an 'authentic steppe nomad' camping experience.

My maikhan met its demise in a week-long sandstorm, which destroyed the grey felts that apparently had less wool content than the black felt. It was eventually replaced by a yurt, which I will cover in a different article.