

Langtang Intensity Assessments EMS 6.5-7

An account from a mountaineer indicates that he and a companion were thrown down by the earthquake when they were about ten minutes below the summit of Tserko Ri, the mountain north of Kyanjin Gomba, i.e roughly 1 km above the valley floor. This would qualify for EMS intensity >8. However, there is abundant evidence from tourists accounts and videos that shaking intensity in the valley was considerably less.

The following account describes the earthquake and debris slide
<http://www.colinhaley.com/earthquake-in-the-langtang-valley/>
(Last accessed 1 July 2015)

“People were darting out of buildings all around us, and at first we all just stood in the open spaces between buildings and **watched as they began to fall apart. Although a few of the newest buildings were built better, most of the buildings in Kyanjin Gomba were made basically of just very carefully stacked granite blocks, with the bare minimum of cement in between, if any at all. The buildings came apart very easily, and all around us blocks of granite were falling to the ground.** My instinct was to get out of the village, away from the collapsing buildings, and obviously I wasn’t the only one thinking that way, because it seemed like everyone started pretty simultaneously walking and running towards the grassy meadow plateau at the east end of the village.

I was just about free of the last buildings, almost into the grassy meadow, when I glanced back and saw the avalanche. No one had heard it beforehand, because there was so much noise of collapsing buildings and people screaming. No one saw it beforehand because of the thick cloud ceiling not far above the village. I saw a humongous cloud of snow descending through the cloud layer and down-valley towards us (coming from the basin immediately uphill, at the base of the east face of Lantang Lirung). I have seen plenty of big avalanches in Alaska and Pakistan, and none of them were anything like this. The avalanche that was coming down through the clouds and across the moraine seemed to be 300-400m tall. It was merely the powder cloud, the actual debris of ice and rock having stopped on the uphill side of the moraine, but was moving much faster than I’ve usually seen in powder clouds. I think I was one of the first people to see the avalanche coming down out of clouds. I pointed and yelled, and because I was in the mode of speaking in French and thinking in French, “Regarde!” is what came out without thinking. Almost no one around me spoke French, but people turned to see, and within a moment everyone was screaming and running. At this point I lost track of where Pauline went, or where Aymeric went with Margeaux. I simply started running as fast as I could across the meadow, away from the direction the avalanche was coming.

The avalanche was upon me about halfway across the meadow, and I crouched down on my hands and knees. At first I wasn’t terrified. I’ve been in many other powder clouds, where tents get blown around a bit, and snow gets packed into crannies, and although I knew this one was much bigger, I optimistically thought it might be a similar experience. The wind was incredibly thick with snow, and I pulled my hood down past my face, creating a little pocket in which to breath. Within a few seconds there was so much snow in the air that it blocked out all light. Seriously, it went pitch dark. I could feel snow accumulating around me. Now I was scared. Although it had been windy since the moment the powder cloud was upon me, it now started to get much stronger, and despite desperately trying to stay in

place, I started to get pushed across the meadow, still crouched on my hands and knees. I had only been pushed for a couple seconds and a few meters when the real blast hit. I guess it could be described as a pressure wave. I was hit by an incredibly powerful blast of wind, completely in another league from the worst winds I've ever seen in Patagonia, and in an instant I was airborne. Now I was truly terrified. In scenarios like this your body goes completely limp. I was just rag-dolling through space, and it felt very violent. I definitely thought, "OK, this is it. This is the avalanche I die in." It's really hard to know, but I estimate that I was blown a horizontal distance of about 30-40 meters. The meadow is a sort of plateau, and I was blown off the edge. I landed partway down the bushy and grassy slope below, now covered in snow, and slid the rest of the way to the valley floor. I ended up with all sorts of bruises, cuts and injured muscles for which I of course have no specific recollection of the impact. The only impact I distinctly remember is hitting the ground with my head, very hard, but luckily not on a rock.

At the base of the hill I had barely come to a stop, from the most violent "fall" of my life, but I immediately stood up and started running. I was terrified that more avalanches might be coming behind, or that the debris was still on its way. Within a hundred meters my run slowed to a brisk walk, and I followed the tracks of a yak that was clearly bleeding profusely. At what seemed roughly to be the middle of the valley floor, I stopped to look around. A Nepali man stopped beside me. For a couple minutes we stood staring at each other, hyperventilating and trembling, with neither of us even trying to say a thing. I shook out my hair, which was matted with about 10cm of snow. I shook the snow out of my clothes, and shook the snow out of my shoes, which had miraculously stayed on my feet. I could tell immediately that I had hurt my neck, but my body seemed to be working fine. Some people appeared atop the hill, at the edge of the meadow, yelling and gesturing for us to come. The Nepali man started walking back towards the village, but I was still too afraid to head in the direction the avalanche had come from. Within the span of about a minute, the entire wide, grassy valley had accumulated about 20-30cm of snow, so even though we were "only" hit with the powder cloud, there was clearly a lot of snow in it. In every direction there was enough steep relief that I could easily imagine more huge avalanches coming down. No spot seemed safe. I hadn't yet explored enough up-valley to know if there were any big lakes. I realized that by standing on the floor of the valley I was in the path of any big lahars that might come down, and with some reluctance started walking back towards the village.

The village had been hit by a double-whammy of sorts. When the earthquake hit the stone buildings fared poorly, but wooden structures did pretty well. What was left of the stone structures fared well in the avalanche, but less-dense materials were flattened or blown away by the avalanche. Down in the valley floor lay pieces of corrugated metal, pieces of plywood, and other detritus. I was lucky that none of those building materials had hit me in the air. Many of the roofs had been blown off the buildings. The village helicopter pad had been encircled by a barb-wire fence. Despite the fact that a barb-wire fence has almost no wind resistance, every single thick, steel post had been bent flat to the ground. – “

The video below shows stones falling from the building just as seismic shaking started. Shaking caused panic and alarm; a shower of dressed stones fell from the corner of the building over a time span of ≈ 10 seconds.

<http://www.cnn.com/videos/world/2015/05/06/ct-nepal-langtang-earthquake-video.cnn>



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^wall crumbling^

The structure is OK

The picture below shows an end-wall collapse , whilst the building behind seems undamaged. We provisional assign EMS intensity 6.5-7 to the shaking intensity here.



Reuters shows a longer segment of the same movie

<http://www.reuters.com/video/2015/05/06/video-shows-the-moment-nepal-earthquake?videoId=364126510>

On the next page: The village above Langtang from BBC footage. The house on the left may be the one filmed during shaking above. The debris avalanche took its roof off and corrugated iron sheets have now been stacked neatly in front of the building.



<http://www.cnn.com/videos/world/2015/05/06/ct-nepal-langtang-earthquake-video.cnn/video/playlists/nepal-earthquake/>



Above from the BBC movie is a view of a building I visited in Langtang. The upper floor was blown away by the landslide, leaving the lower floor with its interleaved wooden beam and stone infill intact. The beams are doweled together at the corners. The sign and flag were erected during search and rescue and had been removed during a later visit.



Kyanjin Gompa village: broken yet still standing (pic: Pasang Sherpa)





<http://imgur.com/gallery/Nftez> a Malayan hiker survived the avalanche and trekked out from the Langtang valley through this village on 26th

This is about 5 km west of Langtang- EMS 6.5?