

Appendix J:

The Snow Conveyor Shovelling Method

(by Manuel Genswein)

The search portion comes to an end once the location of a buried person is confirmed by a probe strike. Shovelling to extricate the Subject is the start of the rescue phase. Systematic shovelling is important to reach the Subject as quickly as possible. There are some important issues that must be addressed with shovelling. The shovelling must be efficient and safe for the Subject. Efficiency must consider depth of burial, shoveller numbers, and strategy. Safety comes from a technique that does not involve standing on the Subject and potentially damaging the air pocket or compressing their chest cavity.

Snow Conveyor Method

The distance between shovellers in this method is measured by the distance between shovels both front and behind. The shovellers align themselves in a V shape with the apex of the V at the avalanche probe that marks the Subject. Here it is important to have already marked the Subject with Position Probing. The alignment is set downhill from the Subject.

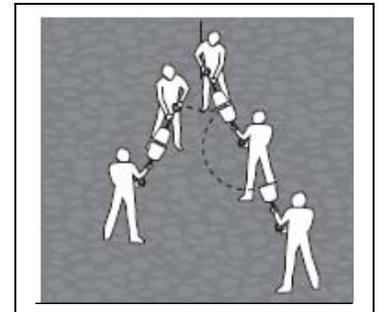
Length of the V:

- Flat terrain (0 to 5 degrees slope inclination) = 2x burial depth
- Steep terrain (20 to 25 degrees slope inclination) = 1x burial depth
- 1 rescuer for each 80cm of the V

For example: Burial depth 2m in steep terrain - length of the V = 2m - > 3 shovellers = optimal, 2 shovellers = minimum.

Any other situation will be less than optimum and will result in improvising as best as possible.

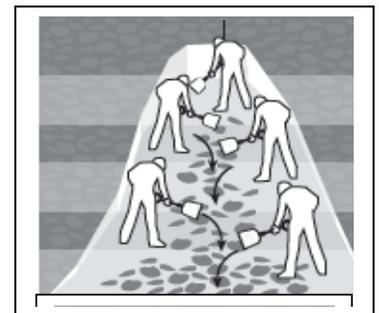
In the case illustrated (right), the Subject would be 2m down and on flat terrain. This measurement of snow and people allows for the clearer allocation of resources in single and multi-burial accidents. There are of course additional resources needed if it is flat.



2) The shovellers shovel offset from each other.

- Each shoveller is responsible for the area immediately to the left and right to keep it clear of snow.
- As the width increases on the V the shoveller does not need to go as deep and therefore has less cutting.
- They shovel a ramp down to the Subject.

The technique is for the people at the apex to cut and dig snow and the ones in the back to use a paddling motion to clear snow without lifting it much. Cutting is done but progressively less to the back end of the V. In this manner the shovellers gain efficiency. The ramp reduces the lifting of the snow and from one shoveller to the next.



3) As stated before, the shovellers move different snow densities when they are shovelling with this method.

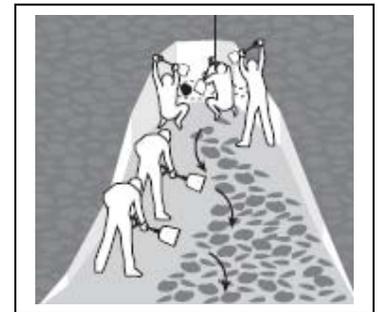
- The apex person cuts into avalanche debris and the people behind shovel a higher percentage of the loose material the front person feeds them.
- Because of this it becomes important to rotate positions every four minutes in a clockwise fashion commanded by the apex person. This is effective for three reasons:
 - The first is potentially psychological. Knowledge that a rotation is pending allows the person to push harder. (The cycling drafting principle is a good example).
 - The second reason is to change the ergonomics of shovelling and the use of different muscles rotates some taxed muscles out of the load.
 - The third is to allow some shovellers to move more loose snow potentially reducing the workload of shovelling hard snow at the apex, even though the volume may be greater.



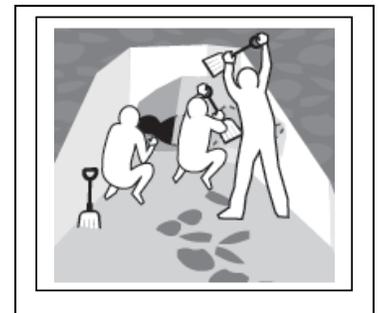
4) When the Subject is reached, the head side of the orientation can be determined.

- A second and third shoveller widen the apex and begin hollowing a cave to extract the Subject being careful to not injure the Subject.
- The probe can now be removed because there is direct contact with the Subject.
- The remaining shovellers continue to clear the ramp to facilitate easy extrication.

It is here, when the head is reached, that the rescuers determine whether or not an air pocket exists. Air pocket assessment at this stage critically affects the type of care that is administered and should not be overlooked!



5) Once the head is reached one rescuer takes vitals and administers Basic Life Support (BLS) while the additional shovellers carefully clear the rest of the body and the ramp for extrication.



6) When advanced life support arrives, the shovellers move to a position where they can prepare a path for the Subject to be extricated with a stretcher & toboggan. This is the interface to organized rescue.

