

Snow scooter course at UNIS

A. Theoretical part

1. Theory, laws and regulations

- a. Driving inside the settlements, speed and right-of-way
 - i. Snow scooters have got duty to yield for all other kind of traffic.
 - ii. Scooters should use the scooter tracks and not the roads.
 - iii. Speed limits inside town is **30 km/h**
 - iv. Speed limits in the terrain is **80 km/h**
 - v. UNIS limit with student groups in the terrain is **45 km/h**
- b. Use of helmets is mandatory.
- c. Rules regarding alcohol are the same as for driving a car. Maximum 0,2‰
- d. You need a driver's license for a car or snow scooter.
- e. UNIS "Thumb rules":
 - i. You do not drive if you can't see the whole group because of the weather.
 - ii. You do not drive if you can't see the surface you are driving on.

2. Clothing and equipment

- a. The outer clothing must be wind proof. You need very warm clothing underneath, and you need to be able to protect all bare skin with windproof items. Bring extra / spare clothing.
- b. A BIG thermos bottle of hot water.
- c. Extra goggles are nice to have if your goggles are fogging down.
- d. You need to bring emergency equipment for staying out over night (UNIS Emergency camp kit).
- e. First aid kit and avalanche search probe easy accessible on the snow scooter.
- f. Communication tools (Satellite phone / emergency beacon), there is also GSM coverage in limited areas.
- g. Navigation equipment, GPS, map, compass.
- h. You need to bring equipment that could help you out of critical situations on glaciers, sea ice and in avalanche areas (UNIS glacier rescue kit).
 - i. Scooter equipment:
 1. fuel
 2. oil
 3. spark plugs
 4. anti freeze solution
 5. cooling liquid
 6. spark plug hats
 7. ropes for hauling
 8. tools
 9. extra variator belt
 10. funnel
 11. equipment and tools to do repairs on the scooter and the sledge.
 12. Cover for the snow scooter.
 13. axe

3. The most common injuries and how to prevent them:

- a. Frost injuries (cold related injuries)
- b. Fractures
- c. Compression injuries to the spine.

4. The most frequent reasons for accidents with snow scooters:

- a. Too high speed in relation to the conditions.
- b. Ramming someone from the back because of being inattentive or having poor visibility. (Either because of the weather or because of fogged up goggles)
- c. Overturn as a result of uneven terrain or sloping terrain.
- d. Driving off cliffs or steep slopes as a result of poor visibility (as above)
- e. Losing control of the scooter as a result of blows to the skis or a frozen gas wire.
- f. Ramming objects you can't see along the route because of snow or poor visibility. (Keep in the track!!)

5. SHE documentation for field work at UNIS

- a. HSE documentation

B. Practical part, mechanics and driving techniques

- Main difference between two and four stroke engines.
- Different kinds and brands of snow scooters in general.

6. Engine, mechanics and driving gear

- a. In general about mode of operation and driving gear
- b. In general about mechanics
- c. Source of error and how to fix it
 - i. Changing the variator belt.
 - ii. Changing spark plugs
 - iii. Use of anti freeze solution
 - iv. Check of the under gear, slider and more.
 - v. How to warm a frozen engine with hot water.
 - vi. Cleaning the air filter.

7. How to pack the sledge

- a. Weight limits for different types of sledges.
- b. Balance
- c. Use of straps
- d. NB: Check the sledge after a short distance and regularly during the trip.

8. Preparations before starting the snow scooter:

- a. Check the belt and chassis.
- b. Lift the belt so it's clear of the snow.
- c. Loosen the skies from the snow.
- d. Remove snow from the engine room and variator. (NB! Engine NOT running)
- e. NB: Check that the throttle wire is running free!
- f. Check that the parking brake is off.

9. Starting the engine:

- a. Use of choke and primer functions.

10. After starting the engine:

- a. Let the snow scooter run warm before driving.
- b. Spin the belt.
- c. Check function of brakes and lights.
- d. Fasten the emergency stop strap.
- e. Start driving carefully
- f. Make sure the engine is warmed up properly before pulling heavy loads.

11. After you finish your trip:

- a. Run the belt free of snow.
- b. Raise the belt from the surface.
- c. Check for snow and ice in the tunnel (under the seat)
- d. Check under gear; remove snow and ice.
- e. Refill oil, gas and cooling liquid.
- f. Protect the engine room from snow.

12. Driving techniques

- a. How to sit and how to place your feet.
- b. Stop procedures:
 - i. Raise your left hand
 - ii. Turn out of the track.
 - iii. Park next to each other if possible.
 - iv. Try to park on flat terrain or slightly downhill (especially with a sledge)
- c. Emergency stop procedures:
 - i. Use of the emergency stop button.
- d. Driving up and down in steep terrain. (NB! If in doubt, hook off your sledge and try without first!).
- e. Driving in sloping terrain
- f. Distance between the scooters.
- g. Stop if something does not feel right, you are cold, your goggles are fogging or something is wrong with the machine.
- h. You are responsible for keeping track of the person behind you. You need to be active and alert when driving!
- i. Keep driving in the track all the time!

13. Emergency procedures

- a. If you lose the person in front of you or the whole group:
 - i. Stop immediately. Stay in the track; keep the engine running and full beam lights on. Keep on / by the scooter. Wait.
- b. If you lose sight of the person behind you:
 - i. Stop immediately. Stay in the track; keep the engine running and full beam lights on. Keep on / by the scooter. Wait.

NB: The two rules above are extremely important. If you start driving around looking for a lost group or someone lost behind you, it could be very hard for the excursion leader to find you.

- c. Overturn:
 - i. If you feel that you are about to overturn you need to get off the scooter. Do not try to support the scooter with your foot.
- d. How to get a scooter loose from deep snow.
- e. How to get a scooter out of surface water.
- f. How to transport a broken scooter

C. Driving exercise

14. Driving exercise with emphasis on these factors:

- a. Flat terrain, start and stop procedures.
- b. Turning and keeping control of the machine
- c. Driving as a part of a group.
- d. Steep terrain up and down
- e. Sloping terrain
- f. Getting snow scooters out of deep snow and other difficult situations.

NB: the practical training must be adapted to present day weather, the terrain and the standard of the "weakest" student in the group.