HTI EXPEDITION PACK

33 CANADIAN BRIGADE GROUP

CAMBRIAN PATROL 2007

CAMBRIAN PATROL
WHAT IS IT?

- Cambrian patrol is an international Long Range Patrol (LRP) competition held amongst the highest mountains in the Brecon Beacon area of Wales (U.K.)
- It is designed to test a patrol's ability to operate covertly behind enemy lines with little to no direct support or resupply.

TERRAIN

- Held annually in the Brecon Beacon Mountains of Wales.
- This happens to be the same area where the famed British Special Air Service (SAS) conduct selection.
- Mostly grass with some planted forestry blocks.
- Sparsely populated with most land being used for pasture of sheep, cows and horses.

WATER SOURCES

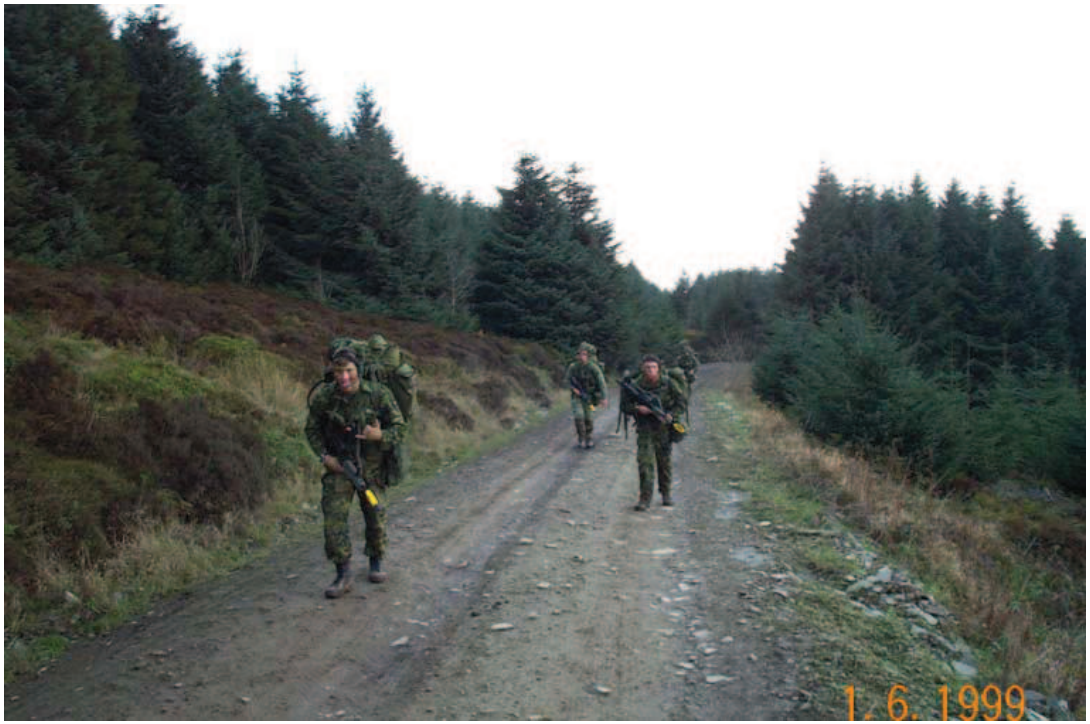
- NO potable open water sources for drinking without treatment.
- All water sources where to be considered contaminated with animal feces.
- Most water sources our patrol used were either standing bog water or temporary streams of rain run off.

BLACK SWAMP

TACTICAL CONSIDERATIONS SELF –SUFFICIENCY

- Our patrol needed to be as self-sufficient as possible to avoid dangerous re-supply operations. Each time contact needed to be made with outside agents it greatly increased the chance of being compromised and mission failure.

TACTICAL CONSIDERATIONS WEIGHT CARRIED



- We needed to minimize the amount of water that each soldier needed to carry due to weight considerations.
- The average weight load without water was 70 to 90lbs per soldier.

TACTICAL CONSIDERATIONS TIME AT WATER SOURCE

- Water sources are considered high risk areas and are observed by enemy or used as ambush sites.
- The length of time a patrol is required to be at a water source is a major tactical consideration.

PURIFICATION OPTIONS CONSIDERATIONS

- We needed a system that would be man portable at minimum weight.
- The purification process must require as little effort as possible.
- The system must be easily maintained and easy to clean in a field environment.

PURIFICATION OPTIONS

- Iodine tablets.
- Commercially available water purification pump.
- HTI Expedition Pack.

IODINE TABLETS

- Iodine tablets are not a realistic consideration due to the length of time required for the process. Also, due to the physical demands from carrying our weight loads in the mountains, we consumed more water than could have reasonably been treated in a timely manner.
- Purification with Iodine tablets creates a product that has an undesirable taste and leaves sediment in the water. This leads to soldiers not wanting to drink adequate water.

COMMERCIALLY AVAILABLE WATER PURIFICATION PUMP

- Traditional water purification pumps sold at outfitting stores require far too much time to be spent at the water source.
- Our patrol was spending between 30 to 40 minutes at the water source to get between 9 to 10 litres of water.
- The porcelain filter clogs quickly and is fragile when being cleaned.

COMMERCIALLY AVAILABLE WATER PURIFICATION PUMP

- Cleaning the pump in a field environment is difficult and time consuming.
- A spare parts bag had to be carried and was costly compared to the amount of water we averaged per the real product life of the filter.
- This turned out to be tactically restrictive and not an overly realistic option.

HTI EXPEDITION PACK

- Most dependable, expedient and tactically appropriate option the team could find.
- Allowed a two man team (one for cover and one working) to collect 20 litres of water in less than 5 minutes.
- Filtered water on the go without effort from soldier.

HTI EXPEDITION PACK ADDED VALUE

- The technology used for the filtration system means that the soldiers are drinking what equates to a sports drink with electrolytes.
- The benefit that this provided the patrol cannot be overstated.
- The constant intake of electrolytes and carbohydrates helped fight the fatigue factor and kept sugar levels balanced.

HTI EXPEDITION PACK ADDED VALUE

- Due to time constraints and tactical considerations the patrol wasn’t able to stop for a meal until 20 hours into the patrol. The nourishment we were getting drinking from the HTI expedition pack was enough to keep us mentally alert and minimize hunger pains.

HTI EXPEDITION PACK ADDED VALUE

- The patrol used a high fat diet because fat is a source of high density calories. This helped minimize the amount of food we needed to carry therefore reducing our weight load. Our research taught us that in order for the body to use fats efficiently, carbohydrates are required. We felt that the carbohydrates contained in the syrup used by the HTI expedition pack were sufficient for our bodies to burn the fats we consumed and therefore carried little additional carbohydrates.

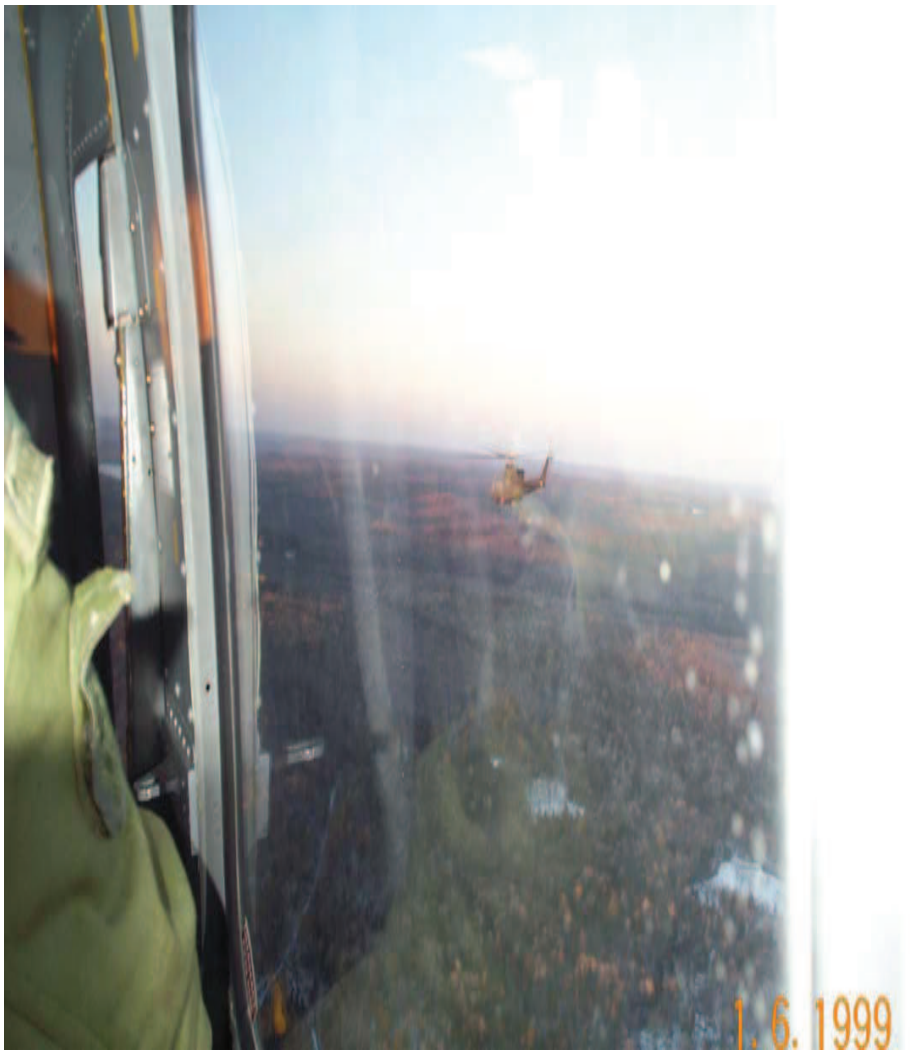
HTI EXPEDITION PACK USE CONDITIONS

- Our patrol team used the HTI Expedition pack for aprox 4 months. It should be noted that we were not gentle with the packs.
- If we were going to use them on the competition we needed to be certain that the pack would hold up under our normal use conditions.

HTI EXPEDITION PACK USE CONDITIONS

Listed below are some of the situations / environments we used the packs in:

- Weighted forced marches (up to 150lb loads for 30kms);
- Airmobile operations (tactical loading and unloading drills where rucksacks are thrown into and out of the helicopters at heights of up to 8 feet)



HTI EXPEDITION PACK USE CONDITIONS

- Land obstacle course and crossings;
- Amphibious operations using assault boats and high speed water insertions;
- Close Target Reconnaissance operations (extreme stealth movement);
- Wheeled vehicle insertion / extraction (rucks are thrown / dropped up to 10 feet while traveling at 20km/hr);

HTI EXPEDITION PACK USE CONDITIONS

- OBUA (Operations in Built Up Areas) fighting, also know as urban warfare;
- Offensive operations such as section attacks, vehicle ambushes and raids.

HTI EXPEDITION PACK
WATER SOURCES USED

We used water sources such as:

- Beaver ponds, swamps, and bogs;
- Creeks, rivers, and lakes;
- Human urine;
- Rain water in ditches;
- Water from livestock watering containers;
- and even unknowingly from a sewage water treatment lagoon.

HTI EXPEDITION PACK POSITIVE POINTS

- Little to no maintenance required over the period that we used them;
- Carrying one litre of syrup (the equivalent of a normal canteen) meant each person could purify 25 litres of water!
- It is a simple one step, no effort, fool proof process.
- The electrolytes and carbohydrates kept us functioning at higher levels for much longer than if we were only drinking water.

HTI EXPEDITION PACK POSITIVE POINTS

- Very little time required at each water point;
- By not needing resupply from external sources it allowed much more flexibility for mission planning;
- The level of commitment that both KAYCOM and HTI have to this product is amazing. The service and product support was outstanding.

HTI EXPEDITION PACK POINTS FOR CONSIDERATION

- Filling technique – using the collapsible cup that comes with the pack is very time consuming. We used our canteen cups. It would be best if the unit could be dunked without fear of potential contamination of the different connection points.

HTI EXPEDITION PACK POINTS FOR CONSIDERATION

- We had some bladders pop open along the seams. Part of this is from our tactics and the way the bladders were treated, but it is still our normal usage.
- Having longer drinking tubes. When we attached the pack to our rucksacks the tube was a bit short for easy use.
- Some of us found that after a day of only drinking the water with the solution in it that we were getting upset stomachs and gas.

HTI EXPEDITION PACK CLOSING COMMENTS

- This product outperformed our expectations.
- By having the HTI expedition pack our patrol was able to operate in ways that simply wouldn’t have been practical otherwise.