

P. O. Box 440 Newcomb Hall

Charlottesville, VA 22903

INSTRUCTOR'S LESSON PLANS

Cover Sheet

COURSE: <u>AUXILIARY TRAINING COURSE</u>
LESSON: <u>Part 2: SURVIVAL</u>
PREPARED BY: <u>KEITH CONOVER</u>
DATE: <u>21 Sept 1979</u>

All reviewers please sign (N.B. please initial all comments in text)

Date	Name	Comments
10 Oct 79	K. CONOVER	TO BE REVISED & TIME ADDED AFTER 6 MO. EXPERIENCE WITH LESSON PLAN
(Continue on reverse if necessary)		

<input checked="" type="checkbox"/> APPROVED	<u>10 OCT 79</u> Date	<u>Keith Conover</u> Training Officer
<input type="checkbox"/> REVISED AND APPROVED (original with comments in Group files)	_____ Date	_____ Training Officer

TIME (ELAPSED) ACTUAL	CONTENTS	AV AIDS INSTRUCTOR NOTES								
	<p>I. <u>Introduction</u></p> <p>A. Survival priorities:</p> <p>B. How long can you be lost in VA?</p> <p>C. <u>Short-term</u> survival is important here.</p> <p>D. Short term survival means <u>shelter</u> from environment, mostly temp. extremes.</p> <p>II. <u>Heat balance concept</u></p> <p>A. Body produces heat; must regulate heat loss to maintain stable temp.</p> <p>B. Body core temp. must be close to 99°F for chemical reactions to work right.</p> <p>C. Challenge: to use equipment and knowledge to help body stay near 99°F., in harsh environments.</p> <p>III. <u>Heat loss and compensation</u></p> <p>A. How is heat lost?</p> <p>B. 3 major causes of outdoor heat loss:        --temperature (primarily cond. &amp; rad.)        --windchill (convection)        --wetchill (conduction &amp; evaporation)        NOTE: most clothing has a conductivity near that of water when wet.</p> <p>C. Winter cold gives temperature chill, but worst is around 32°F with <u>wind</u> and <u>rain</u>: HYPOTHERMIA WEATHER.</p> <p>D. People often caught unprepared by storms in summer; wind &amp; wetness can cause cold problems even at 60°F!</p> <p>E. Proper gear is important:        --adequate raingear important, but even with raingear, wetness is still a problem; so,</p>	<p>Chalkboard</p> <table border="1" data-bbox="1055 409 1550 546"> <tr> <td>Food</td> <td>weeks</td> </tr> <tr> <td>Water</td> <td>days</td> </tr> <tr> <td>Shelter in a storm</td> <td>hours</td> </tr> <tr> <td>Air</td> <td>minutes</td> </tr> </table> <p><u>SLIDES</u></p> <ol style="list-style-type: none"> <li>1. TEMPERATURE BALANCE</li> <li>2. NARROW RANGE</li> <li>3. MOUNTAIN SCENE</li> <li>4. HEAT LOSS WAYS</li> <li>5. CONVECTION (stress)</li> <li>6. WINDCHILL FACTOR 6.5 WET WINTER SCENE</li> <li>7. RELATIVE CONDUCTIVITY</li> <li>8. GLACIER</li> <li>9. STORM</li> <li>10. STORM CARTOON</li> <li>11. RAINGEAR CONDENSATION</li> </ol>	Food	weeks	Water	days	Shelter in a storm	hours	Air	minutes
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	<p>(III.E.)</p> <p>--clothes must be <u>warm when wet!</u></p> <p>--cotton is useless as insulation when wet, and <u>wicks</u> water.</p> <p>F. The 3 "W"s for cold/wet protection:</p> <p>--WOOL</p> <p>--WINDPROOF</p> <p>--WATERPROOF</p> <p>G. 2 plastic leaf bags, a plastic tube-tent, or a tube storm shelter gives light, cheap wind &amp; rain protection.</p> <p>H. With proper knowledge and equipment (not necessarily fancy or expensive) you can be comfortable in hypothermia weather.</p> <p>IV. <u>Heat loss physiology</u></p> <p>A. How does body first react to threats to core temperature?</p> <p>B. By changes in the skin.</p> <p>C. Hot → flushing (expanded blood vessels near skin) &amp; sweat.</p> <p>D. Sweating causes loss of salt and water; too much loss of either one, or simply excessive heat, may cause heat emergencies (will discuss later).</p> <p>E. In a hot environment, cover up with loose clothing, <u>ration your sweat, not your water</u>, and recognize dehydration: <u>Dark urine</u>, dizziness, nausea, tunnel vision, thirst (although thirst not a good indicator of water depletion)</p> <p>F. Cold → shrinking of blood vessels, cooling skin.</p>	<p>12. FABRIC COMPARISON</p> <p>13. WOOL AND WINDPROOF</p> <p>14. WATERPROOF</p> <p>15. STORM SHELTER</p> <p>16. HAPPY WINTER HIKER</p> <p>17. FIRST LINE OF DEFENSE..?</p> <p>18. NORMAL SKIN</p> <p>19. HOT SKIN</p> <p>20. BODY WATER IS LIMITED!</p> <p>20.5 HOT ENVIRONMENT note it's also a winter problem.</p> <p>21. COLD SKIN</p>

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	<p>(IV.)</p> <p>G. This cooling creates an insulating shell around the core; but note the neck and head stay warm because of continued blood supply to the brain.        "If your feet are cold, put on a hat."</p> <p>H. If core is still cooling, <u>shivering</u> will occur, increasing heat production, but at the cost of <u>exhaustion</u> (depletion of energy stores) and <u>fatigue</u> (buildup of waste products).</p> <p>V. <u>Cold problems</u></p> <p>A. Of the two major cold problems, <u>hypothermia</u> is far more serious than <u>frostbite</u>, because hypothermia → death.</p> <p>B. Hypothermia = decreased core temp.; when skin cooling, shivering, and adding clothing aren't enough.        --physical + mental impairment        --shivering        --withdrawal        --may not notice in self due to mental effects        --often occurs above freezing, even in VA summer nights        --most who get to stage of not being able to stop shivering <u>can't</u> rewarm self without external warmth.</p> <p>C. If person gets hypothermic in field,        --recognize the problem        --stop exposure        --change into dry clothes        --force candy or gorp, hot drinks.</p>	<p>22. PERIPHERAL COOLING</p> <p>22.5 BALACLAVAS</p> <p>23. EXHAUSTION AND FATIGUE</p> <p>24. HYPOTHERMIA AND FROSTBITE</p> <p>25. TOO COOL!</p> <p>26. BODY COLD PROBLEMS</p>

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	<p>(v.)</p> <p>D. If a person must be rewarmed, use a sleeping bag with another warm body in it; DON'T put in bag alone.</p> <p>E. Rapid rewarming (e.g. in tub of water) may cause shock and heart failure; do so only if you know how.</p> <p>F. Above all, <u>prevent</u> hypothermia!</p> <p>G. Frostbite is the freezing of tissues</p> <p>--"Frostnip" is in upper skin only, should be rewarmed in mouth, armpit, etc.</p> <p>--Deep frostbite is white, numb, and "wooden"; can walk on frozen feet, but not on thawed ones.</p> <p>--Frostbite should <u>never</u> be rubbed; ice crystals will damage tissue.</p> <p>--Treatment is to rewarm rapidly in 105°F water (but no hotter--no temp. sensation in frozen limb).</p> <p>--Frostbite is always caused by unusual, preventable causes:</p> <p>-fatigue, exhaustion, illness, or hypothermia</p> <p>-sudden intense cold (e.g. super-cooled gasoline or alcohol, or cold metal against the skin)</p> <p>-Restriction of circulation (e.g. tight boots.</p> <p>--Trench, or immersion, foot is like frostbite, but caused by cold and wet above freezing, and by tight boots.</p> <p>--Frostbite turns red and blisters,</p>	<p>27. HYPOTHERMIA</p> <p>28. WINTER SCENE</p> <p>29. FROSTBITE</p> <p>30. FROSTBITE BLISTERS</p> <p>31. FROSTBITE LATE</p>

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	<p>(V.G.)</p> <p>then turns black and automatically amputates injured parts.</p> <p>H. Important point: hypothermia and frostbite are easily prevented, but difficult to treat.</p> <p>VI. <u>Heat Problems</u></p> <p>A. Lack of salt, lack of water, and heat caused (usually) by summer weather may cause 3 major problems:</p> <p>B. <u>Heat Cramps</u></p> <p>--caused by lack of salt replenishment</p> <p>--usually in legs or abdomen, not relieved by massage</p> <p>--replace the salt (best at meals)</p> <p>--if salt tablets used, take plenty of water.</p> <p>C. <u>Heat Exhaustion</u></p> <p>--dehydration → collapse</p> <p>--looks like shock: cold clammy skin, rapid pulse, temp. normal.</p> <p>--normal response to overexertion in hot environment.</p> <p>--rest in shade, drink salty fluids, put feet up.</p> <p>D. <u>Heatstroke</u></p> <p>--A true medical emergency: 50% mortality.</p> <p>--failure of part of brain regulating temperature → sweating stops.</p> <p>--skin hot, dry, red; person appears very sick.</p> <p>--<u>Must</u> lower, and control, temperature.</p> <p>--Transport with standard first aid.</p>	<p>31.5 WINTER SCENE</p> <p>32. HEAT AND DEHYDRATION</p> <p>33. HEAT CRAMPS</p> <p>34. HEAT EXHAUSTION</p> <p>35. HEATSTROKE</p>

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	<p>(VI.)</p> <p>E. Review:</p> <p><u>Heat Exhaustion</u>--normal response; cold, clammy, pale; rest with feet up in shade, and drink salty fluids.</p> <p><u>Heatstroke</u>--true emergency; hot, dry, red, sick; cool off and transport.</p> <p>VII. <u>Survival</u></p> <p>A. <i>Avoid panic; use the <u>Stop Think Observe Plan</u> mnemonic</i></p> <p>B. Know your abilities; don't overextend yourself.</p> <p>C. Don't let artificial goals (like finishing a summit climb) cloud your judgement.</p> <p>D. Be prepared for sudden changes in weather, and other problems, by keeping spare food, water, clothing, and shelter in your pack. Your pack is your life-support system in a hostile environment, so</p> <p>E. DON'T GET SEPARATED FROM YOUR PACK!</p>	<p>36. COMPARISON</p> <p>37. WILD SCENE</p> <p>38. PEAK</p> <p>39. BACKPACKERS</p> <p>40. CARTOON</p> <p>41. SUNSET</p>