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TECHNICAL
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WORKING SAFELY IN SUMMERTIME HEAT

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INTRODUCTION: As logging operations continue in the hotter months of the year, a new safety hazard appears-heat stress. Loggers are particularly at risk, because the combination of hard physical work and outdoor conditions puts high demands on the body. While loggers rarely die **from** heat stress, they may suffer heat illness symptoms ranging from the discomfort of heat rash to nausea or heat cramps. The best prevention is awareness. Workers and supervisors need to understand heat illnesses and know how to recognize and prevent them.

GENERAL FEATURES: The human body has to keep its internal temperature under control. When heat is added to the body, either by working hard or by being in hot conditions, the body must get rid of excess heat. In your car, the cooling system circulates water **from** the engine to the radiator and back to



Fig. 1: In summer, logging workers may lose as much as 6-8 liters of water per day through perspiration. Drink plenty of fluids to keep your body's "radiator" full!

keep the engine **from** overheating. In your body, the cooling system circulates blood from muscles and organs to the skin where it is cooled through sweat evaporation. A logger may sweat as much as 6-8 liters per day to cool the body. As long as your cooling system can keep up with the heat, you are **fine**. However, if your cooling system fails, your body can overheat and develop a heat illness.

Heat rash occurs when the sweat glands become plugged and sweat backs up in the skin. Heat rash is primarily a problem under restrictive clothing like chain saw leg protection or when you fail to

clean up well enough after greasy or dirty work like equipment maintenance.

Heat syncope or fainting occurs when a person is standing around in the heat. The body tries to circulate a lot of blood for cooling, but standing tends to pool blood in the legs and feet. Without enough blood to go around, you faint. (This malady is probably not common in logging, since nobody stands around very much!)

Heat cramps are the result of drinking water to make up for sweat loss without adequate replacement of salt and electrolytes. A normal diet should contain enough salt for workers that are used to working in the heat. However, unacclimated workers and those who are on salt-restricted diets are more likely to develop this problem.

Heat exhaustion may occur after hard work and heavy sweating. The worker may feel weak, tired, dizzy, nauseous, or have a headache. In extreme cases the worker may act odd or even pass out. Important: in heat exhaustion, the skin remains moist* if the skin is dry, treat it as heat stroke. Heat exhaustion occurs because the body has lost too much fluid and the amount of blood in the body is actually reduced. This condition affects the function of your brain and your work capacity.

Heat stroke is a killer. Heat stroke is your engine overheating when the cooling system breaks down. People with heat stroke act odd; pass out, or suffer convulsions. The skin is hot and dry because sweating has stopped. When the cooling system stops, your internal temperature rapidly rises, leading to serious health risks. Heat stroke is an emergency medical situation, and victims should be taken to the nearest hospital. First aid during transport includes cooling the body with water, fanning, or other methods to reduce temperature.

People do get used to working in the heat. Over a period of about two weeks of working in the heat, the body changes its responses to heat exposure. Sweating starts sooner, is heavier, and contains less salt (your body learns to keep its salt balance up). Heart rate is also more stable after getting used to hot work.

APPLICATION: The following are concerns to bear in mind when working in the heat:

- 1) Drink plenty of water. Figure 1 shows how much water can be lost during sweating in one day. You have to keep your radiator full. Drink frequently through the day, even if you do not feel thirsty.
- 2) Some people are more likely to have heat stress problems. People who are overweight have a harder time shedding excess heat. People taking medications that affect fluid balance in the body, **such as** blood pressure pills or diet pills, are at a greater risk. People who are not used to the heat on their jobs, **such as** new employees or those who recently returned to work, will have a harder time until they get acclimated. People that drink alcohol may be more susceptible, because alcohol affects hormones that control body fluid balance. People that have suffered heat illness in the past may be more likely to be affected again.
- 3) You are only used to the heat that you have been working in. When temperatures take a sudden rise during a heat wave, everyone needs several weeks to get used to the new level of heat. Be careful during this period.
- 4) A worker who gets sick during the summer with an illness that includes fever can lose any acclimatization that he or she may have had. Returning to work after a fever should be treated as a special case.
- 5) People are generally aware that they are beginning to suffer heat stress symptoms. Self-pacing and awareness are important factors in preventing a problem. Don't try to "tough it out" in the heat.
- 6) Pay close attention to all aspects of safety in the heat. People get distracted, irritable, and less focused in the heat and may be more likely to have an accident. Heat is not an excuse to avoid wearing necessary items like leg protection or hard hats. Be safe.

STAFF COMMENT: For more information on heat-related illnesses and prevention in timber harvesting, see APA Technical Release 93-R-61, Heat Stress: A Summertime Risk for Woodworkers, and consult your doctor.

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