## Avoid heater trouble

During the cold winter months ahead, don't get stuck with a heater that doesn't work.

car's heating system is much like its cooling system. In addition to the ductbasic work. elements of any car heating system are: 1) the heater core which is in essence a miniature radiator, and 2) two hoses, one of which transports hot coolant to the heater core in the compartpassenger ment while the second hose returns this coolant to the engine.

To help familiarize you with some causes and cures of heating system problems, The Gates Rubber Company has developed this troubleshooting guide.

Troubleshooting guide.

When your car heater is not producing enough heat, any of the following may be the cause:

1. The flow of air under the dash may be blocked.

Coolant level in the radiator may be low.
 Heater hoses may

be leaking. If a leak is the problem, the hose must be replaced.

4. Heater hoses may be failing. If hoses are mushy or cracked, they should be replaced. An obstruction in the hose may also be the cause for hose failure.

5. Hoses may be bent or kinked.

6. If the car's heater hoses have recently been removed for any reason, they may not have been properly reconnected.

7. Air may be trapped in the system. This would restrict the coolant. The solution to this is to bleed the system.

8. The blower motor may not be properly working. This could be caused by a blown fuse, faulty blower resistor, bad blower motor switch, a loose connection, or a burned-out motor.

9. The cooling system thermostat may be stuck in the open position. When this happens, the coolant will not heat up properly. And if the coolant is too cold, heat output will be insufficient. The thermostat should be removed, tested, and replaced if necessary.

10. Doors to the heater assembly may be stuck.

Good idea

It's a good idea to have your car's heating system checked out as part of the "winterizing" which should be performed before cold weather hits.

## Emergency kit is vital item

The editors of Popular Mechanics Magazine say these are the things you should keep in your car if you live in a blizzard-prone region of the country.

• Red flares (for protection against plows and to help guide rescuers).

• Two fresh, powerful flashlights.

· Blankets.

 Heavy sweaters, parkas, double mittens and strong lacing for parka hoods,

Skier's face masks with very small eye slits.
One knife for slitting seat cushions or other emergency use.

Several cans of canned heat; or several thick candles and tins to put them in.

• Full gas tank. Buffalo drivers who ran their engines without stop burned eight gallons overnight. (Run your engine intermittently to prevent carbon monoxide poisoning.).

· CB radio.

· Snowshoes and ski poles.

· Heavy boots and warm socks.

· A change of clothing and socks.

• Sandwiches and coffee. (Not necessary for survival, perhaps, but they will help to keep you warm and your strength up.)

• An axe you can use to chop branches to provide shelter (especially if you may be caught out in wild country).

· A good storage battery in your car.

· A winter-tuned engine (important).

Blanket or tarp to seal off engine against snow.
 Once a car stops snow quickly fills the engine compartment.

• Insulin or other medicine needed by a passenger.

 Plastic garbage bags sometimes help. (They are windbreaks and keep in body heat).

• Long-handled shovel (shorties are hard to use)

or a hoe.

• De-icing fluid for windshield.

• One army (or outdoorsman's) compass in a









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