

Thawing a Culvert with a Tar Kettle

When the safety inspector told Waukesha County (Wisconsin) its 30-year-old culvert steamer was close to retirement, Fleet Manager Joe Gorski started looking for a replacement. New steamers cost about \$35,000, he found.

"It's the kind of thing that can stand around for years and never be used," says Gorski, "then suddenly you're running it 24 hours a day."

When a friend at an antique steam engine club remarked on Minnesota's stringent boiler requirements, Gorski wondered how that state's highway crews opened frozen culverts. With a little detective work he discovered a thawing device that used hot water -- available for about \$5500 from a Green Bay dealer.

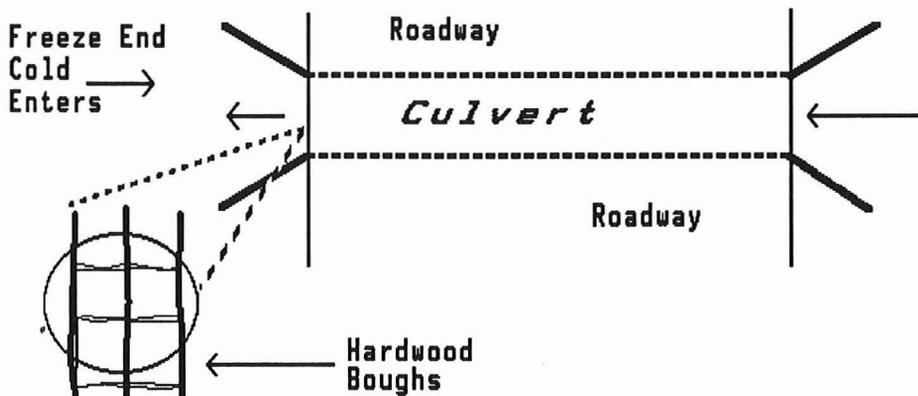
But Waukesha's inventory of unused tar kettles gave him an idea. For about \$2000, they mounted a 7 hp gas engine and a small water pump on a tar kettle and fitted it with a 60 foot wand. The pump is reversible, so it can refill the kettle from a nearby ditch. Crews used it this spring, and found it actually works faster than steam.

One problem was the leftover tar. The hot water loosened it and it plugged the components. The kettle had to be completely cleaned with repeated applications of solvent and steam.

For more information about the hot water culvert opener, contact Joe Gorski, Fleet Manager, Waukesha County Transportation Department, (414) 548-7740

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FIGURE 1: Preventing culvert freezing using hardwood boughs



Frozen Culverts

An old time remedy for reducing frozen culvert problems

One of the more pesky problems a road agent or highway worker has to deal with is frozen culverts. Culverts with slow running water have a tendency to freeze when we experience an open winter -- a cold season with little snow. When a culvert freezes it can no longer do the job it was designed to do and trapped water on the inlet side will begin to cause one problem after another with your roadway. If you can keep a culvert from freezing, your job will be made a lot easier and your budget should reflect the improvement. I'm sure that the person who finds an effective low cost solution to frozen culverts will also become very rich. In the mean time, there may be something that you can do to help prevent freezing.

Walter Somero, Road Agent for the Town of Sharon, New Hampshire, has been using an *old time* solution. "I have had good luck with my method which I learned many years ago from John Crosby, a former road agent from the Town of Rindge, New Hampshire." Walter (most of his friends call him Butch) explained, "I put spruce or hemlock limbs or pieces of hardwood cut to whatever length I need against the culvert end. If you've got snow take and shovel the snow on the top of the boughs. I also have used pieces of blanket insulation if no snow was available." (see the figure below on this page)

The culvert usually freezes from the outlet end into the culvert and then the problem begins. A steam jenny is usually the quickest way to get the water to run again after the culvert has frozen. However, according to Butch, the insulation of limbs and snow on the end of a culvert prevents cold winds from going up the pipe and freezing the water. "I have used this method for many years. If we have snow to cover up the end these problems do not happen." ■

Scrambled Disks and Fried Drives

Understanding Disk Organization and Protection from Data Loss

Many New Hampshire municipalities are beginning to use computers to help them in their work. Not only are computers being found in the town office assisting with payroll, taxes, and other municipal accounting operations but we are beginning to see an influx of computers into public works and highway departments. The following article discusses information necessary to efficiently operate an MS-DOS microcomputer equipped with a hard drive (MS-DOS machines are the most common computers on the market -- sometimes referred to as an IBM or IBM clone).

DISK ORGANIZATION

Today's computers can have large hard drives containing more than 300 million bytes (300 megabytes) of information. That's the equivalent of 240,000 pages of written text. Even the relatively common 40 megabyte drives, found in many of our municipalities, contain about 32,000 pages of information. Managing that amount of data requires the same care as you would take to organize your office files. In many respects, the procedures are the same.

The root directory on the disk is much like a file room. It represents the largest unit available. Many people put all files in this directory. This is like throwing all of your files in the middle of the floor. It rapidly becomes impossible to find anything. An office filing system organizes office files into file cabinets, file drawers, and file folders. The design for disk drive management is much the same. Directories are the file cabinets, and subdirectories are the file drawers.

Subdirectories allow one to organize software into different categories or types. For example, you may create a subdirectory for word processing, another for spreadsheets, another for databases, etc. Each of these can be subdivided into additional subdirectories. Your word

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