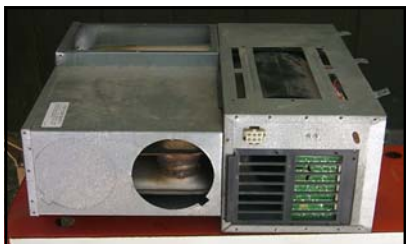




The Mystery of the Burning Vent



Keith Carson could have died two years ago. He's alive today thanks to two safety devices: a propane detector and a smoke alarm. But, let's have him share his story:

"After hearing both the propane detector and smoke alarm, I rushed outside, turning the furnace off on the way out — leaving the door open. After about five minutes, the alarms stopped, so I ventured in and opened all three roof vents while turning on the Fantastic Fans. It took ten minutes for the smoke to clear.

"After going back inside, I found that the vent cover (grille) in the kitchen had somehow caught fire. The ductwork, which ran underneath the kitchen cabinets, was also smoking. When I asked the RV manufacturer what happened, I was told that the combustion chamber 'busted' and I needed to replace the furnace. But when I talked with the people at Atwood, they told me that what I described couldn't have happened — that it was 'impossible'. When I had the furnace replaced, the certified Atwood technician told me that when he turned the furnace on, it made a sound like a shotgun — at which point he turned it off and insisted that I never use it again. He told me nothing else. No one seems to have an idea what went wrong and whether it can happen again — to me or others."



Keith sent the furnace to us to see if we could help. Although we are not set up for this type of testing, we went ahead and conducted some tests. We checked the furnace passages for clogs, then we pressure-tested the combustion chamber with water and with smoke. There were no obvious leaks. All our tests left us with a mystery and raised the following questions:

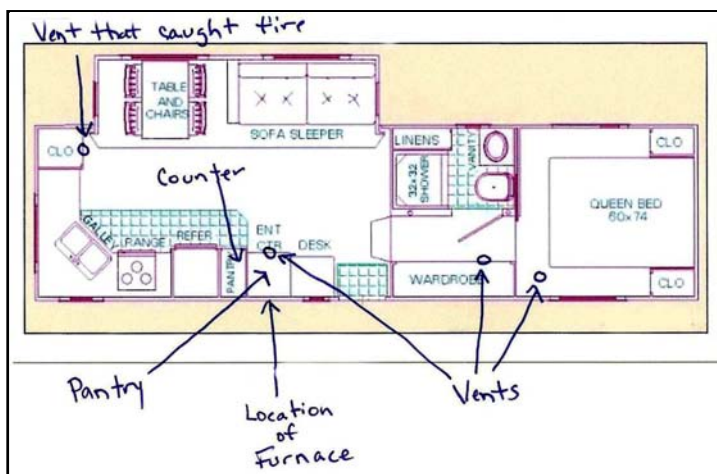
Question: How did propane get into the duct and why did it burn the vent without burning the ductwork? As we scratched our heads to figure this out, we've come up with nothing except possibilities. Let's assume there was a propane leak at the furnace.

Possibility: The plastic outlet vent (grille) could have been clogged with lint that trapped the gas. When the propane ignited, the lint in the grille kept the fire burning — thus causing the smoke.

Problem with this theory: This fifth wheel was almost new, so excess lint is improbable.

Question: Why didn't the Atwood technician find a leak? Why did it explode like a "shotgun" blast? Again, we scratched our heads.

Possibility: A faulty circuit board or sensor could cause the propane to ignite after filling the combustion chamber. However, our technicians don't think this could happen.



Question: How did the gas get from the combustion chamber to the duct? If a leak in the chamber was large enough to allow so much gas to flow into the duct, why did it not show up in the various pressure checks?

The questions go on and on. We've puzzled over it for six months and haven't come up with anything conclusive. Maybe you have an idea. Have you heard of a similar problem with an RV furnace? Here's your chance to be brave and venture into the world of guesswork.

To add to the ongoing mystery, please send your email to: staff@rv.org