

## NO MORE UTILITY BILLS

# Home-Made Generator Heats All-Electric Home

Mike Brown, Draper, Utah, built his own power plant for less than \$500 out of junk parts and now heats his all-electric home with virtually free fuel.

Designed by mechanical engineer Larry Pendell, the generating system produces 27 kw per hour powered by a junked auto engine. The key to success of the idea is the use of salvaged 3-phase electrical motors converted into generators.

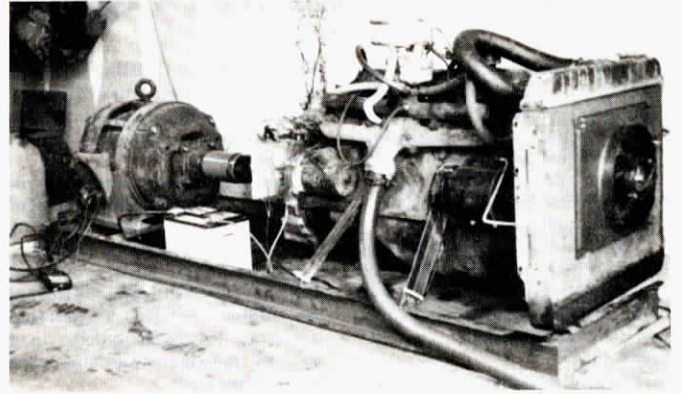
"It's easy to make generators out of used or junked 3-phase electrical motors, of which there's a plentiful supply. They're used to run lots of industrial equipment. A junk dealer in California told me recently that he bought three 25-hp. 3-phase motors for \$30. To turn a 3-phase motor into an induction generator all you have to do is speed it up past the speed it's meant to operate at as an electric motor," explains Brown. "For example, a 3-phase motor that's designed to run at 1,725 rpm's will, when speeded up to 1,875 rpm's, turn into an induction generator. The current must, however, be "excited" by an outside source to get it to work. In my case, I simply run current to my generator from power lines already connected to my house."

The entire generator system consists of a 250 cu. in. auto engine, with an oversize radiator (he pulls heat off it with a fan to heat his garage), the converted 3-phase motor, and a rear axle shaft from a Volkswagen that connects the two. In addition to generating electricity and heating his garage, he has plans to heat hot water for his house with heat off the engine.

Brown says the most important factor in building a home generation system is hooking up wiring on the generator. The wiring must be specially hooked up to convert the 3-phase power to single phase.

Since Brown is also manufacturer of the Fish carburetor, which is designed to be used with alternative fuels, the engine is Fish-equipped and runs on most any flammable liquid, including paint thinner, alcohol, crude oil, and many other chemicals which he says are available as waste materials from many industrial processes.

"It's perfect for farmers producing farm alcohol who don't have a market for the alcohol but could use the by-product distiller's dried grain to feed livestock," says Brown, explaining that there's a ready market for the electricity because by Federal law the



Heat pulled off generator's oversized radiator provides "free" heat for Brown's garage in winter.

power companies must buy surplus electricity. "To sell power to the utilities you have to install a separate set of meters and safety devices."

Currently Brown's system generates 27 kw. per hour. At most he uses 58kw to heat his all-electric house during winter so he's gearing up to sell 22 hours worth of electricity to the power companies. At 4.4 cents per kw that earns about \$1.19 per hour running 24 hrs. a day. "How-

ever, the power company must accept up to 250 kw an hour so I could make up to \$11.99 per hour 24 hours a day by building a bigger generating system, which could easily be done," says Brown.

For more information, contact: FARM SHOW Followup, Brown Carburetor Co. Inc., P.O. Box 89, Draper, Utah 84020-0589 (ph 801 571-9452).

## GETS BURNING HAY OUT TO SAVE LOWER STRUCTURE

# Fire-Fighting Hay Fork Helps Save Dairy Barns

"Most of the value of a dairy barn is in the lower part. If we can save the cows, pipe line, barn cleaner, stanchions, waterers, feeders, fans, and so on, we'll save the bulk of the value of the building," says Bill Michalek, of the Chippewa Falls, Wisc., fire department who's built a new hay fork that lets firemen remove burning or smoldering hay bales from hay mows in dairy barns.

Michalek points out that in most cases fire departments have no choice but to let a barn burn down if the fire starts in stored hay because there's no good way to remove the hay. They simply try to protect surrounding buildings. But if the hay can be removed before it burns through to the lower part of the barn, the farmer will probably still be able to milk and take care of animals while the upper part of the barn is rebuilt.

"We can now save most barns with fires in the hay mow. That means the farmer can move back in — sometimes the very next day — and milk," says Michalek, noting that the success of the hay fork has actually resulted in lower insurance rates for dairymen in the area. In two years of use, the fork has been used for 14

fires. In all cases the lower barn has been saved. The procedure by the fire department is simply to get the initial fire under control with water and then remove the bales as quickly as possible while continuing to put out fire that erupts.

Michalek built the hay fork from scratch after first building a wooden model to test it out. It weighs 2,500 lbs. and has long steel teeth that'll grab as many as 14 bales at once. If needed, the teeth can be quickly fitted during a fire with steel sheets that turn it into a solid-sided bucket for scooping up loose hay.

The Hay Bucket is operated by a crane. The Chippewa Falls fire department has agreements with several construction companies in the area that loan cranes to the department when a fire starts. The bucket itself is carried on its own special trailer and is pulled by a fire truck. It is also "on call" for several surrounding fire departments. Besides the crane and bucket, a Caterpillar is needed at the scene of the fire to push burning bales away from the barn as they're removed from the loft. Michalek says that in most cases insurance companies pay the cost of the



Teeth on the 2,500 lb. bucket grab up to 14 hay bales at a time.

extra equipment.

Michalek has had lots of interest from other fire departments in his hay bucket and he is taking orders. Cost is \$7500, including transport trailer. He says one bucket can take care of a 100 mile radius area since the bucket is not needed at the fire until the initial burning is under control.

For more information, contact: FARM SHOW Followup, Bill Michalek, Rt. 4, 1400 Town Line Rd., Chippewa Falls, Wis. 54729 (ph 715 723-7614).



Success of hay fork has helped lower fire insurance rates for area dairymen.