

School Bus Runs On 100% Alcohol

"Almost impossible," say the experts to operating a vehicle on 100% alcohol and reach the efficiency of gasoline. This did not deter Holt Motors, Inc., of Cokato, Minn., from converting a school bus to alcohol for Cokato Transportation, Inc., a sister corporation. It is believed to be the first school bus in the nation on regular routes to use alcohol for fuel.

After only a few days transporting students to Dassel-Cokato schools with the bus, Greg Holt stated that "We are very close to equal mileage on alcohol, compared to gasoline on the unit." The bus was initially used on three routes earlier this year. The first two days there were minor carburetor problems, but the third

day it operated "beautifully" after a few adjustments. Holt is vice-president of Holt Motors, Inc., and Cokato Transportation, Inc.

Engineering, fabrication of parts and conversion was done by Dick Olson, working service manager for the Holt firm. Completing the project took about a month. Reason for the idea was to study the feasibility of using 180 proof alcohol in buses. If this proves itself, and preliminary tests indicate it will, all buses in the Cokato Transportation fleet will be converted to burn alcohol.

Bus No. 7 now carries bright red letters proclaiming it is "alcohol powered." This vehicle, a 1976 Ford 72-passenger model, was selected for

the test because it was one of the later models in the fleet. It is powered by a 389 cu. in. V-8 engine, has an automatic transmission and full-power accessories.

Cost for the conversion is not yet available. Everything had to be handmade for this first model, and was quite costly according to Holt. But if the experiment proves successful, and there is no reason to believe it will not, conversion kits could be produced in quantity, thus lowering cost.

In order to use 180 proof alcohol for fuel, modifications had to be made to the carburetor and fuel system. Cylinder compression ratio of the engine had to be increased. This was accom-

plished by changing pistons.

Fuel for the bus, denatured 180 proof alcohol, is furnished from the distillery of Energy Independent Corporation of Montrose, Minn. The still used, the first model of this type, fabricated by Ron and Jeff Ellefson, president and vice-president of the corporation, produces 20 gallons per hour from corn grown in the area. Denaturing is done according to regulations from the Federal Bureau of Alcohol, Tobacco and Firearms.

When producing alcohol, higher proof grades can be achieved, but distilling beyond the 180 degree proof point radically increases cost. Therefore the 180 proof grade is used. It is about the lowest proof that can be used satisfactorily and efficiently in an internal combustion engine, according to Holt.

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VIRTUALLY ELIMINATE PROBLEMS WITH CORROSION, MOISTURE CONDENSATION

Plywood Bins For Grain, Fertilizer

Reduced moisture condensation on inside walls and natural corrosion resistance are big advantages of round plywood bins for grain or dry fertilizer built by Revelstoke Companies Ltd., Crossfield, Alberta, Canada. The 14 ft. dia. plywood bins have a 2 in. wooden floor covered with 2 mil. polythelene film and 5/16 in. pine, spruce or fir plywood. Two 1 1/4 in. steel bands, plus a four-layer laminated plywood band at the roof line provide added strength. Vertical 4 in. plywood bats cover joints in sidewall panels.

The roof of Revelstoke's bins is made of 3/8 in. pine, spruce or fir plywood, supported on 14, 2 x 4 rafters, with all joints covered by plywood bats (or the roof ladder). The 20 in. (inside-diameter) roof loading hatch is covered by an aluminum cap. A 22 1/2 x 42 in. door with removable auger hatch provides access for grain removal, bin inspection and clean-out.

"Sidewalls may be painted if desired. However, if bins are used for fertilizer, we recommended that the bin interior be painted also," says Marcel Brule, Revelstoke manager at Crossfields. He reports that the bins have been used successfully for several years in that area and that rodent damage has not been a problem. He also points out that the bins can be easily moved if necessary.

Capacity of the bins with 8, 9 and 10 ft. sidewalls are approximately 1170, 1290 and 1410 bu. respectively, or 41, 45 and 49.5 tons of fertilizer. The bins are pre-built in the Revelstoke shop and shipped fully assembled. Or, they can be pre-cut and assembled on-site, depending on shipping distance and costs. Price of the 8 x 14 ft. dia. bin is approximately \$930, F.O.B.

For more information, contact: FARM SHOW Followup, Revelstoke Companies Ltd., Crossfield, Alberta, Canada TOM OSO (ph 403 946-5522).



Wood grain bins are built with 3/8-in. plywood. They can be moved easily, if necessary.

Many Uses For New Fold-up Water Tank

A portable and collapsible tank, originally designed for use as an auxiliary water supply for fire fighting, is catching on fast with farmers and ranchers who have discovered dozens of other uses for it.

Made by the Fol-Da-Tank Co., Rock Island, Ill., the fold-up tank comes in capacities from 600 to 3,000 gals. It's available in 17 oz. or 20 oz. DuPont Hypalon, that will not rot or mildew; 18 oz. water-proof canvas is also available.

When filled, the Fol-Da-Tank measures 30 in. high and the length varies, depending on the capacity. A 1,000 gal. tank folds to a 99 by 30 by 6 in. package and weighs only 103 lbs. It fits in a pickup truck or car trunk, and can be set up by two men in less than a minute. After use, a fast-

emptying 12 in. dia. drain sleeve lets the remaining water out in seconds. So, even with a full tank, it can be emptied, folded and loaded into a car or pickup in a matter of minutes.

The Fol-Da-Tank is widely used by rural fire departments as an auxiliary water supply for an additional tank truck. However, a company spokesman reports that it's becoming popular among farmers and ranchers for use in irrigation, water storage, livestock watering and other uses.

Tanks with 17 oz. liner range in price from \$500 to \$1,300. The 20 oz. liner tanks range in cost from \$600 to \$1,400.

For more details, contact: FARM SHOW Followup, Fol-Da-Tank Co., Box 361, Rock Island, Ill. 61201 (ph 309 788-6935).



A 1,000-gal. tank can be emptied, folded and loaded into a car or pickup in minutes.