

# Improved home sewage system alternative to septic tank

UNIVERSITY PARK — Improved decomposition of sewage is possible in a home sewage system developed by agricultural engineers at Penn State University. The new system could become an improved alternative for home septic tank and backyard disposal field now used commonly in many areas.

The system features a large fiberglass bag positioned inside a metal tank holding as much as 1000 gallons of organic solids and effluent. Raw sewage enters the top of the fiberglass bag as the continuous process of decomposition takes place.

Air is the key to the system, according to Dr.

Kermit Q. Stephenson, professor of agricultural engineering at Penn State. Air seeping into the bottom of the bag builds up microorganisms which feed on the sewage solids and decompose or digest them. The air flowing through the bottom of the bag also keeps the bottom from clogging so that effluent free of solids can flow out into the tank.

The tank gradually fills with effluent which is removed through a pipe at the top. The effluent can then be chlorinated to destroy harmful bacteria.

"Our experiments look very promising thus far," professor Stephenson said.

"Now we must test the system on a full-scale 1000 gallon tank, the septic tank size required by state law, in an actual home situation."

The need for an alternative home sewage system is indicated by the many areas unsuited for septic tanks and disposal fields, he pointed out. Presently, many rural home owners are bothered by odorous, bacteria-laden effluent from their disposal fields. This occurs, he claimed, when organic solids accumulate in the absorption bed to the extent that the soil pores clog and the disposal field no longer functions.

The big question, he indicated, is to determine the proper size for such a system serving an average family of

four to six people. In earlier experiments, 600 gallon tanks were used. The latest experiments, testing air seepage into a fiberglass bag, used a 100 gallon tank in the developmental stage.

Air treatment of sewage, known as aerobic digestion, offers much faster decomposition of solids than the anaerobic or no-air treatment used in present septic tanks. The air serves to agitate and keep solids circulating within the fiberglass bag while supplying oxygen needed for aerobic bacteria to decompose organic solids into water and carbon dioxide, chiefly. When decomposition is completed, the effluent is relatively stable and less contaminated

than effluent from a septic tank, Stephenson noted.

He said the chlorinated effluent from this system is pure enough to use as irrigation water—much like the effluent from Penn State's long-term experiments on crop and forest

land. The effluent could be discharged underground during the Winter, he suggested. He added that more studies are needed regarding the storage and use of effluent from air-treated home sewage systems.

## York 4-H Council meets

YORK — Tom Perry of the Loganville 4-H Club, was presented with the Sr. Vegetables Trophy for being the county winner at the 4-H County Council meeting on November 2 at the 4-H Center, near Bair. David Norman, Ass't. County Agricultural Agent, made the presentation.

Tim Markovits, Ass't. County Agricultural Agent, announced that York County's Ellanna Kern received second place in the state competition of the Poster Art Contest. Her poster title was "4-H-The Sound of Youth". Posters made by Bonnie Wire and Julie Kline received Honorable Mention.

Members decided to place a sign titled "HALL OF FAME" in the hall of the 4-H Center where the pictures of York County State and National winners are placed. Brooke Palmer, social

chairman, reported that a semi-formal Christmas Dance will be held on December 17 from 7:30 to 11:00 p.m. at the 4-H Center for all Capital Region 4-H members.

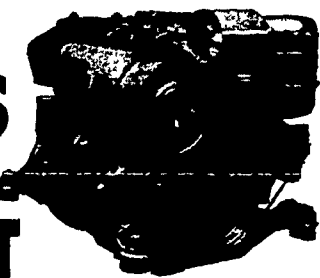
The winners of the Halloween Costume Contest were Tom, Greg, and Jeff Perry, and Linda Ebaugh. Mr. and Mrs. John T. Smith served as judges.

Coming events include: Franklin County Hayride on November 26; Roller Skating Party on November 21; and National 4-H Congress from November 27 to December 1.

### Dieter's Special

Top 1 slice whole wheat toast with 1/4 cup creamed cottage cheese, garnish with 1 level tablespoon raspberry jam

**ALL AIR-COOLED DIESEL ENGINES ARE NOT CREATED EQUAL.**



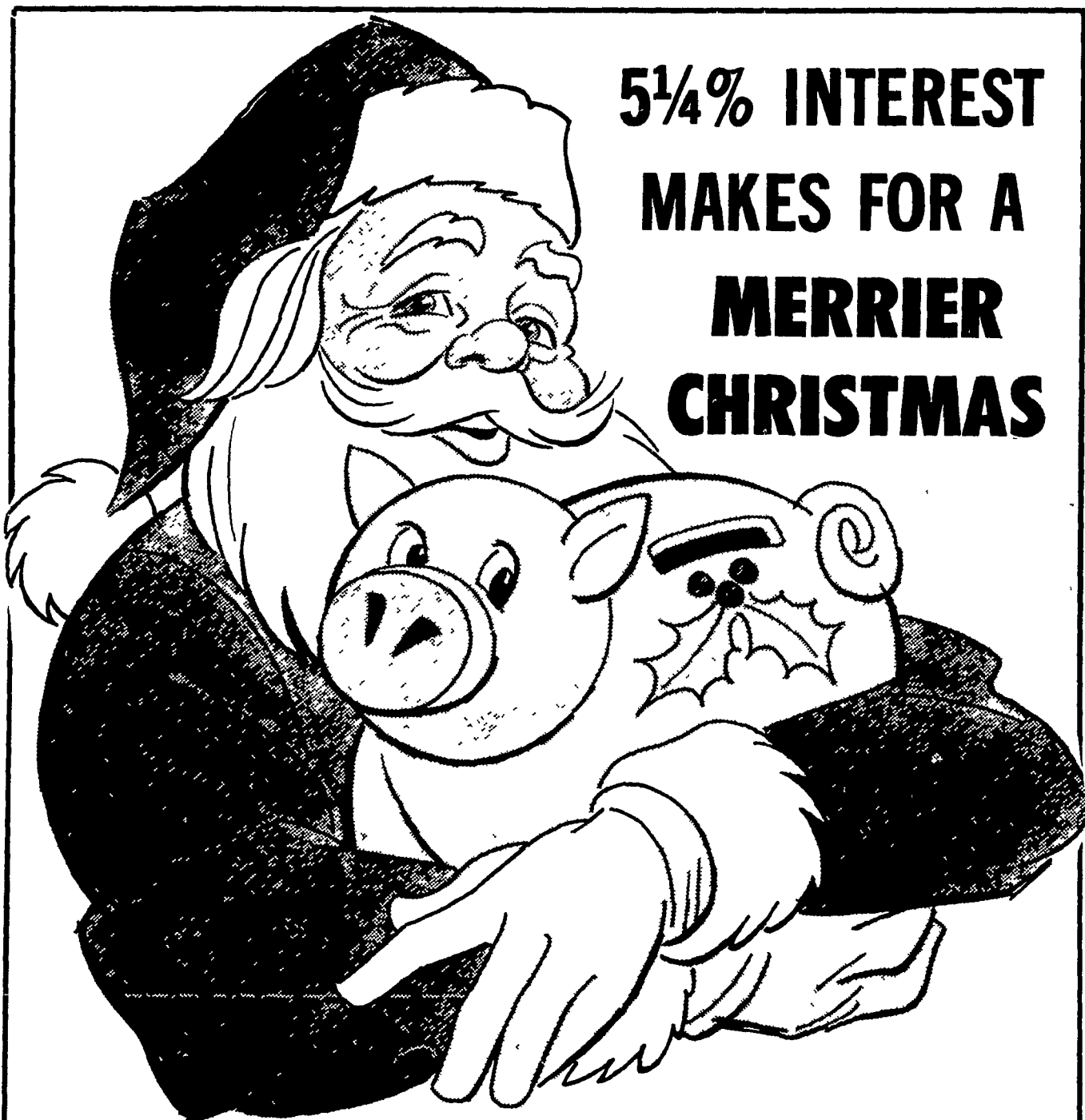
It's easier to call an engine "heavy duty" than it is to build it that way. Superior performance and long life are the result of special alloy heads, integral lube coolers, oil-cooled pistons, and the Deutz highly efficient axial-flow cooling blowers. These features plus 100% direct air-cooling result in substantial fuel savings — 20 to 40% according to users — and far less pollutants. Deutz air-cooled diesels — 5 to 500 bhp

**DEUTZ** AIR-COOLED DIESELS

- We stock rebuilt: starters, generators, injectors, for Deutz
- We have complete road service since 1955
- We supply free application engineering
- We have facilities for any mechanical fabrication required to apply new Deutz diesels

**STAUFFER DIESEL, INC.**

312 W. Main St. New Holland, PA  
Ph: 717-354-4181  
Retail, Wholesale & O E M. Sales



**5 1/4% INTEREST  
MAKES FOR A  
MERRIER  
CHRISTMAS**

**IT'S TIME TO JOIN OUR  
1978 CHRISTMAS CLUB!**

First Federal's Christmas Club accounts earn you 5 1/4 percent interest and make it easier for you to fill next year's gift list. Be a smart Santa — Join Now!

Christmas Club Accounts in \$1, \$2, \$5, \$10 or \$20 per week amounts.



**First Federal**  
SAVINGS AND LOAN ASSOCIATION OF LANCASTER



OFFICES IN:  
Lancaster, Lititz, New Holland,  
Park City, Millersville, & Mount Joy

