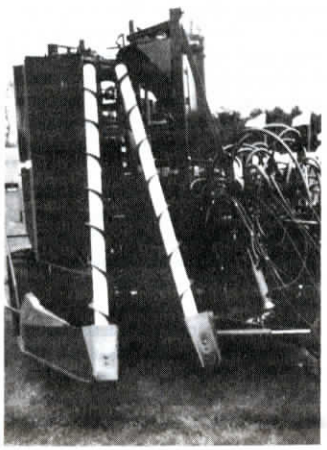
Wood-Powered Electrical Generator

"Farmers can make more money growing trees than crops," says Bernard Wilkins, developer of a new wood-powered generator system that he says produces more than double the annual income per acre of wheat, corn and other crops.

Wilkins exhibited a working prototype of his wood gas generator along with a first-of-its-kind tree harvester at the Royal Show. All components of the generating system mount on a single portable platform. It consists of a wood burning firebox that produces wood gases that are fed to a VW Beetle engine that's been modified to run on wood gas. It in turn drives a 100 kw generator. The electricity generated is either used on the farm or sold to utility companies.

Farmers can produce a wood "crop" in 3 years by growing hybrid poplars, according to Wilkins. They can plant the trees on set-aside acres, and harvest the wood with a special-built harvester that cuts and chops wood in one pass. The wood is then fed into the generating system which burns 24 hrs. a day, every day.

The system has been in testing for three years. Wilkins hopes to have a commercial unit on the market next year.



This first-of-its-kind tree harvester cuts down rows of 3-year-old poplars with a ground-level circular blade and then bundles them up for further processing.

Contact: FARM SHOW Followup, Bernard C. Wilkins, Power Management Associates, Henshaw Farm, Todmorden, Lancs. OL14 6QR England (ph 070681 4911).

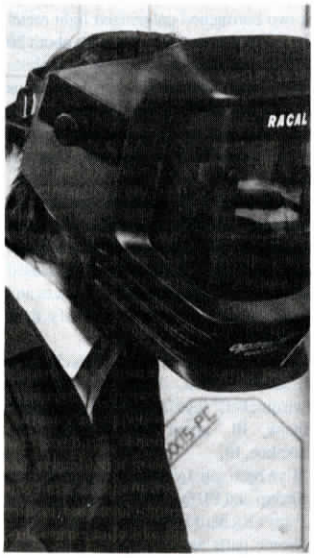
"Solar" Welding Helmet Darkens Instantly When You Strike Arc

The light of your welding arc provides power to this new electric welding helmet with solar cells that power a unique new lens that darkens instantly when you strike an arc and clears up again when you stop welding. No need to flip up the hood to see.

The Racal helmet darkens up in just two miliseconds. It only gets as dark as needed according to the type of welding in use. The light of the arc powers the solar cells that power the back-up lithium batteries. The lens differentiates between natural sunlight and the arc so you can still weld in bright sunlight.

The helmet has controls that let you adjust darkness of lens for different light sensitivity of users. Blocks ultra violet and infra red light. Fully adjustable to fit any size head. Can be fitted with Racal filters and air cleaning attachments. Price ranges from about $275 for the basic helmet up to $1,000 when fitted with air cleaning filters. It's available through Racal's U.S. distributor.

Contact: FARM SHOW Followup, Airstream Dust Helmets, P.O. Box 975, Elbow Lake, Minn. 56531 (ph 800 328-1792 or 218 685-4457).



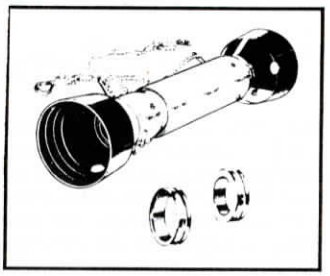
Add-On Guard For Pto's

There's a law in England that requires guards over pto shafts, even on older equipment, so the manufacturer of a deceptively simple new add-on pto guard had a lot of buyers at the recent Royal Show.

"Safety officials travel around the country making surprise inspections on farms. If you don't have guards over pto shafts you can be fined as much as $3,600 per violation," says Brian Mitchell, manufacturer of the new guard, which was invented by a farmer.

The "greasable" PVC guard consists of two collars that cover the yoke and base of the shaft, and a pair of adjustable length center pipes that run between them. A pair of bearing races are tack welded to either end of the pto shaft. Greasable bearings inside each collar fit into the grooves on the races.

"We can fit any pto shaft. All we need to know is the width of the yoke," says Mitchell, noting that there are three different size collars. A short length of nylon rope snaps onto the guard to keep it from turning while the pto shaft turns inside. "It's far superior to any other guard on the market because it covers the entire shaft, not just the top of it, and it doesn't get in the way so farmers aren't tempted to remove it. We sell them to manufacturers for installation on new equipment as well as for any existing pto-driven equipment."



Sells for $80.

Contact: FARM SHOW Followup, Coba Plastics Ltd., Marlborough Drive, Fleckney, Leicestershire, LE8 0UR England (ph 0533 404045; fax 0533 403871).

"Early Warning" Mastitis Detector

A revolutionary new system that detects mastitis while it's still at the "sub-clinical" stage allows you to take preventive action to keep infection from getting to the point where you'll have to take the cow out of production.

The "Black Box" detector is installed at each milking point. It has no moving parts and takes only hours to install the entire system in an average size parlor.

"It detects infections long before clinical signs appear. When a problem does develope, some farmers choose to strip out the indicated cow every hour for a day which often eliminates the infection," says manufacturer John Edwards of Action Plan Ltd.

The detector, which has been in development for 15 years and was shown to the public for the first time at the Royal Show, lets you check each cow every day. It works on the principle that mastitis infection alters the electrical conductivity of milk. When harmful bacterial counts rise, changing the conductivity, an audible alarm is set off. You can even determine which quarter is causing the problem by pinching each hose in turn until the signal goes off.

Sells for $175 per unit. The company is already negotiating with U.S. milking equipment distributors.

Contact: FARM SHOW Followup, Action Plan Limited, 2 Shortbridge St., Newtown, Powys SY16 2LW England (ph 0686 622600; fax 0686 622-601).

New Straw Compacting Machines

Two new machines that compact straw for use as fuel are attracting a lot of interest in Britain where straw burning will soon be illegal. Both machines were developed by an ag engineering research center which is negotiating with manufacturers to bring the machines on the market.

One is the new mobile straw wafering machine which was first featured about a year ago in FARM SHOW. The machine has nearly completed it's final testing and should be on the market soon. It's a big rig that uses high pressure created by two giant drums to press chopped straw into small wafers a couple inches across at a rate of about 6 tons per hour. The compressed wafers make transport economical from the farm to industrial users to burn as fuel. The machine picks up straw in the field and feeds it through the wafering drums that are controlled by a pressure sensing roller that adjusts the speed of the drums to the amount of crop flow. As the rollers compress straw they cut off the edges of each wafer so the crop doesn't have to be chopped.

A second machine, also developed at the British engineering institute, uses a different approach to handling straw. The "high density" baler makes bales two to three times as dense as those produced by conventional balers. Key to its success is a new rotary packing mechanism that flattens the tubular structure of the straw as it packs it in thin layers into the bale chamber. Makes conventionally sized small square bales.

Contact: FARM SHOW Followup, British Society for Research in Ag Engineering, Wrest Park, Silsoe, Bedford MK45 4HS England (ph 0525 60000; fax 0525 60156).