

Home-Built DC Generator Ideal For Off-Grid Living

When Rob Davis priced commercial AC generators for his off-grid home, he felt they were too expensive and used too much fuel. Bringing in power lines would have been even more costly, at nearly \$80,000.

A DC generator made the most sense to him, but commercial ones were too expensive so he built one, and then another, and another, each time increasing in power. Today he has two generators, a 6 hp direct drive system and a 9 hp with overdrive. All appliances are AC-powered with energy supplied by battery or directly from a generator through an inverter.

"They run the washing machines, central heating, welder, all the heavy loads," says

Davis. "When we want to charge the batteries, I just set the generator on idle."

Davis uses Robertson Subaru gas engines, though he would like to switch to affordable diesel engines. As it is, he estimates his average monthly fuel bill for producing electricity at only \$40 a month.

"If you have an AC generator charging the system, the most you can get out of it is about 35 amps, and it has to run at 3,600 rpm's all the time," says Davis. "Mine are at full output at 2,800 rpm's, and if I just want to maintain the system and keep it charged, I run it at 1,250 rpm's."

Davis says he can produce 45 amps for 2 hours and only burn a quart of gas with the 9

hp system. The secret, he says, is the overdrive. "It's just like a car you put in overdrive to save fuel," says Davis. "If I want more power, I just increase the throttle."

The difficult thing about building a generator system with overdrive was to find the right combination of pulleys. "I used trial and error and burned up quite a few belts before I got it right," he says.

Since Davis has gotten it right, he has built DC generators for friends and neighbors. Others hear about his generators by word of mouth. He sells the 6 hp system for \$2,500; the 9 hp system for \$2,850. Without their electric starters, they'd each sell for \$150 less. Contact: FARM SHOW Followup, Rob



Rob Davis started building generators because he didn't like what he found on the market.

Davis, P.O. Box 1109, Tehachapi, Calif. 93581 (ph 661 972-5540).

Solar-Powered Garden Creeper

Planting, maintaining and harvesting a big garden can be a pain in the back and elsewhere. Chris Juel's quiet solar powered creeper has made all sorts of garden jobs easier and pain-free.

"The 50-watt panel keeps the deep charge battery full, and the 12-volt, 1/6 hp motor gives me plenty of power, even on slopes," says Juel. "I can plant 100 strawberry plants an hour with it. Trays that hang underneath can be used to hold seedlings or to hold produce."

The 36-in. wide creeper measures 7 ft. long. The Naugahyde covered, 3-in. foam padded bed rides 18 in. above the ground. The axles for the 26-in. wheels are mounted about 5 in. below the bed.

"I made a jig to build the creeper," says Juel. "It is just a sheet of plywood with blocks screwed down to hold the lengths of square tubing. I lay them out and weld them in place."

The frame is 1-in. square tubing. For axle

bearings, Juel inserted a 3/4-in. pvc pipe inside a 1-in. steel pipe and runs the axle through it. A grease zerk inserted through the steel pipe and the pvc pipe holds the inner pipe in place and provides the once-a-year lubrication needed.

Juel fabricated the gears himself and used a bike chain to transfer power to the rear drive axle. A foot pedal controls forward motion with a top speed of 1 mph.

The solar screen and motor are all mounted on the front end of the creeper, which makes it easy to lift the back end. When Juel gets to the end of a row, he dismounts, picks up the rear end and walks it around for his return trip.

Slight steering adjustments are made with a rudder attached to the front axle. "I can adjust it about 10 degrees, which is plenty," says Juel.

The creeper is outfitted with an umbrella on the rear and can carry a radio or cassette player as well. Juel simply uses a cigarette



Garden creeper's 50-watt panel charges a battery that powers a 12-volt motor.

lighter adapter to connect them to the battery.

He's considering altering the headrest. Instead of laying the forehead on the pad, he is planning to build a net-style retainer to better distribute the pressure.

The creeper was not cheap. He notes that

the solar panel alone costs \$400, and the electric gear motor costs another \$300. He would be interested in building them for sale if there was enough interest.

Contact: FARM SHOW Followup, Chris Juel, Box 162, Scobey, Montana 59263 (ph 406 487-5014).

Floating Islands Dress Up Farm Ponds

Anyone with a farm pond will want to take a look at these new BioHaven™ Floating Islands – artificially produced mini ecosystems that benefit water, fish and wildlife, according to inventor Bruce Kania of Shepherd, Mont. Best of all, they can be a beautiful addition to any body of water.

Floating islands occur naturally in some lakes. BioHaven islands simply give nature a helping hand. Plants and trees growing on the islands draw nutrients and pollutants from the water, cleansing it and improving water quality – especially in waters where there is heavy contamination.

Fish nibble the roots which extend down under the islands, and they also find shady cover there. The additional plants bring with them insects that provide food to the fish, and increased microbial activity that helps cleanse the waters.

The many different benefits of real floating islands are what prompted Kania to develop his patented man-made version. He researched and tested the product for several years before recently putting the do-it-yourself islands on the market.

Besides enhancing water quality, the floating islands can be used to provide lake bird nesting sites, for wave reduction, erosion control or just to beautify the pond. Islands are available in a wide range of shapes and sizes. They're made from layers of recycled shredded plastic which is bonded together with adhesive marine foam. They're extremely buoyant, flexible, and can support a lot of weight, Kania says.

Installation involves covering the base with a special proprietary mix of soil and other ingredients, and adding plants of your choice.

According to Kania, it takes two people about 2 1/2 hrs. to completely plant and launch a 250 sq. ft. island.

Plant roots grow through the porous, filter-like material, reaching down to the water below.

"The islands can grow wetland or terrestrial plants like sod and conventional garden plants, which opens the door to many unique possibilities," he adds. "Vegetation is self-supporting and functional in any waterway. If you prefer islands that don't move around with the wind and water currents, they can be anchored or tethered in place."

Floating Islands International currently has two licensed manufacturers – one in New Mexico and one in Montana – however the company is in talks with more than 20 other potential licensees all over the world.

The floating structures can also be used to create walkways, piers, docks, jetties, or to provide support for picnic tables, floating stages or gazebos, Kania points out.

The suggested retail price for islands is \$29 per sq. ft., not including planting materials or vegetation.

Contact: FARM SHOW Followup, Floating Island International, LLC, 10052 Floating Island Way, Shepherd, Mont. 59079 (ph 800 450-1088; questions@floatingislandinternational.com; www.floatingislandinternational.com).

The Canadian distributor is Canadianpond.ca Products Limited, 513 Knowlton Road (Highway 104), Knowlton, Quebec, JOE 1V0 Canada (ph 450 243-0976; info@canadianpond.ca; www.canadianpond.ca).



Biohaven islands can be planted with almost any kind of vegetation. They can float freely on any body of water, or they can be tethered in one place.



Islands come in a wide range of shapes and sizes (left). Or they can be custom-built to nearly any size. Photo at right shows island used to support walkway across pond.



Plant roots grow down through island material to the water, providing "nibble" food for fish and other waterlife.