

Schooner Made Entirely of Recycled Materials Will Take Conservation Message Around World

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Ship-shape, seaworthy and entirely made from scrap, Island Rover will take scientific voyages to demonstrate the possibilities of recycling.

Freeport, Maine -- What do cast-iron window weights, used plumber's lead, underwater cable shielding and the fittings from an old Friendly's restaurant have in common?

Instead of heading for the dump, they've been rescued, recycled and retooled by Harold Arndt, who is building a handsome, seaworthy 100-foot steel schooner from these and other discarded materials to show what industrial conservation can achieve.

Arndt has been building the Island Rover out of what others would call landfill scrap.

Sail Around the World

When complete in two more years, the ship will set sail around the world to raise awareness about the environmental impact of industrial waste and to demonstrate the possibilities of industrial reuse and recycling.

"The United States is going off on a tangent, with no regard for waste," says Arndt. "And many times the disposal of this waste is destructive disposal. We've got to rein in."

Building the Island Rover comes naturally to boat enthusiast Arndt, 59, who by profession is a waste minimization consultant.

Homes for Unwanted Stuff

He has been helping companies in Maine find homes for unwanted stuff for more than a decade. This includes sending surplus material in the making of Venetian blinds to Israel to become webbing in furniture manufacturing and redirecting leftover felting fabric to schools for art projects.

He discovered that the fluid used in long out-of-date duplicator machines was actually methyl alcohol, the same chemical used for windshield de-icer and engine coolant. A school in northern Maine uses the fluid for its bus fleet all winter.

What started as a personal project -- Arndt has wanted to build a boat since college -- has become a public enterprise with the creation of the Island Rover Foundation, which will support the building of the ship through to its launch, and then serve as an educational organization.

"I realized I had something to offer to people, that I could show them what you can do with other people's junk," says Arndt.

From Mast to Keel Everything's Recycled

On the Island Rover, the main mast's standing rigging, originally made for the schooner America in 1965, was purchased at an auction. The steel plating for the hull is made from Navy-surplus, torpedo-grade steel.

The deck winches came from a dry dock, the anchor chain from a boatyard, and the interior partitions and walls are Nomex, a product used in airplane bulkheads because of its light weight. A pair of watertight bulkhead doors is military surplus.

The engine room's gantry system comes from a hospital X-ray machine, and the sails are manu-

factured from "second-quality" cloth, which means little more than it may have a pulled thread or a dirty spot, says Arndt.

Obviously, something is needed to move all this stuff around. The crane Arndt uses was salvaged from a Chicago waterfront.

Melting Pot

The big keel is an industrial melting pot. The lead and other scrap metal poured into the keel come from window and elevator weights, a bulldozer track, a counterweight from a fork-lift, underwater cable shielding, tire weights, lead from bullets, lead from a printing shop, assorted plumbing pipes being dragged out of old buildings, and even the entire keel of another, smaller sailboat.

"Every scrap dealer in the state of Maine has been saving me lead to get melted down and into this keel," says Arndt.

Even a little counts. Arndt got a phone call from a woman who said she had "pounds and pounds" of lead fishing weights and other stuff from her late husband's fishing days. Arndt drove over to find only a coffee can's worth of lead. "I couldn't bear to tell her that this wasn't a big amount," he says. But her contribution made it into the keel, along with 39 tons of other scrap metal.

[Arndt took pains to protect himself and the environment during the lead melting process and a detailed account of the keel laying process is contained in a sidebar below.]

The Island Rover's 22 x 14-foot cabin saloon will seat up to 28 people on cloth seats constructed from surplus materials. The galley will be a reincarnation of a Friendly's restaurant kitchen bought at auction, from the dishes and pots to the grills and sink. An industrial-size ice cream machine, bought at a going-out-of business sale, will take care of desserts.

Seven-Year Global Cruise Planned

Once completed, the boat and Captain Arndt's crew will embark on a planned seven-year, round-the-world expedition, spreading the word about the need to conserve finite natural resources.

Arndt intends the Island Rover to serve as a kind of mobile exhibit whenever and wherever it comes into port. "People can come aboard and see for themselves what a beautiful thing can be built from people's unwanted stuff," says Arndt.

"We'll demonstrate to anyone who wants to listen that as a society we are throwing too much away that still has a useful life. We need more reuse, repair and remanufacturing in the United States.

"The average person can't see beyond tomorrow. A significant portion of the population has to accept a change and then go out and make an impact on the rest of society," he says.

Environmentally, We've Grazed the Pasture Dry

Arndt contrasts the U.S. consumption of natural resources to the common farming practice of putting cows to pasture until they have grazed the field bare, then moving the cows and letting the first area recuperate. "Using that analogy," he says, "this country has grazed our pasture dry and we don't have another to go to."

While he says many individuals have their heads in the sand when it comes to the issue of recycling, Arndt puts a lot of the blame for waste on the consumer market. "If it costs more to fix a microwave than to buy a new one, who's going to fix it?"

Platform for Scientists

The Island Rover will also be a platform for visiting scientists to conduct research, says Arndt. The Harbor Branch Oceanographic Institution, based in Fort Pierce, Florida, has already expressed interest in the Island Rover as a "vessel of opportunity," says Arndt.

The Island Rover will have the ability to "go where scientists want to go" because it will have no fixed sailing schedule, says Arndt. He expects this to appeal to a new and growing category of scientists called marine archeologists, who study everything from shipwrecks to sunken cities.

Other interested in the Island Rover include research scientists who study whale communication and require a silent environment to conduct their work.

Passengers will include eco-vacationers, people who like to spend their vacations doing more than lying on the beach or shopping. They will be accommodated alongside the scientists, gaining an up-close look at the deep sea and making ports of call in places like the Galapagos Islands, Tahiti, the Aleutian Islands, New Zealand, Bali, the Azores and Iceland.

Arndt isn't waiting for the ship to sail to start getting his message out. In October, he held a reception at his home in Freeport, Maine. He hoisted a 100-foot banner -- made of recycled sackcloth, naturally -- that reads "Setting sail to spread the word." The ceremony marked the inception of the Foundation.

"The message is not being spread via the same old methodology," says Arndt. "The boat is there to experience."

When visitors get a close-up look at the way the Island Rover is being constructed, says Arndt, "it's evidence and proof of the message that this boat is being built from what others may consider to be trash. But trash is only trash if you throw it away."

Sidebar:

Environmental Caution While Laying Island Rover's Keel

CIN asked Arndt if he had taken any special precautions in recycling the lead for the Island Rover's keel. Here is his reply:

"Yes. Lead is one of the EPA's Toxic Heavy Metals. It is a very 'recycled' metal at this time and is relatively stable in the solid state.

"It is also still very common in the general population and frequently traded in the local metals market, especially seven years ago when I was doing the keel.

"For the Island Rover's keel, I purchased lead from every metal junk dealer in the state of Maine, who had any, was dealing (buying and selling) in it, or knew where there was any.

"To protect my Dad and myself, we were the only ones involved, we wore gloves when handling it. We worked with it outside in a well-ventilated area. We minimized our contact (with the metal) as much as possible. We had respiratory equipment, if we wanted to wear it on occasion.

"To minimize the impact on the environment, we melted the lead in small quantities, 600 pounds at a time, in a crucible which was enclosed in a covered smelter in order to:

"One, minimize the time that any quantity of lead was in the liquid state which is when it is most volatile. We fueled the smelter with wood so we never got the lead very hot into the liquid state to accelerate that volatility.

"Two, the covered, enclosed crucible minimized the opportunity for vapors to escape, and the vapors being at the lower temperature were not highly active.

"Three, because of the relatively short time that the lead was in the molten states, vapor creation was minimal.

"All things considered, since there was only one way to get molten lead around all the cast iron used in the keel, that was to melt the lead, we considered that we did the job with the minimum amount of personal exposure and environmental impact.

"One additional point. While there was about a third of the keel lead melted, there were big chunks laid in un-melted when the opportunity allowed, plus all the cast iron used as ballast was a substitute for additional lead not used.

"The amount of lead actually melted was really about the minimum that could get the job done. It was not like a situation where the entire 39 tons of ballast was all melted at one time in order to pour a single unit which became a keel. The Island Rover keel is a steel box into which is first laid as much loose chunks and blocks of lead and cast iron as possible, and then molten lead was poured around those pieces to achieve a relatively solid unit structure with minimal voids."

Story researched and written by Carol Hammond

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[Community Innovation News at www.solutionsnews.org is an independent news service covering social action.]

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Website: www.islandrover.org

* Maine Materials Exchange (M2X) Web site (with links to other regional and national waste exchanges): <http://home.gwi.net/~m2x/>

Background Contacts on Reducing Waste and Conserving Resources:

* Alliance for Environmental Innovation, Boston, Mass.

617-723-2996 or 617-723-2999

A project of Environmental Defense, a national nonprofit environmental advocacy group, the Alliance works with businesses and foundations to promote innovative strategies that conserve resources and link business success with environmental sustainability.

E-mail: Alliance@environmentaldefense.org

Web site: www.environmentaldefense.org/Alliance/

* Center for a New American Dream, Takoma Park, Md.

301-891-3683 or 1-877-68-DREAM

The Center works to promote responsible consumption and the voluntary simplicity movement, a national grassroots campaign to reduce reliance on material goods for personal satisfaction. The searchable Web site has information and links on reducing consumption and cutting waste.

Web site: www.newdream.org

* Environmental Protection Agency WasteWise Program

toll-free helpline: 1-800-EPA-WISE (372-9473)

Administered by the U.S. EPA, WasteWise is a national voluntary waste reduction program working in partnership with more than 1,200 businesses and agencies. Its searchable Web site includes information on reducing waste and conserving resources organized by topic, region and business sector.

E-mail: ww@cais.net

Web site: www.epa.gov/epaoswer/non-hw/reduce/wstewise/

* Inform: Strategies for a Better Environment, New York, 212-361-2400

INFORM, Inc. is an independent nonprofit research organization studying the effects of business practices on human health and the environment, and working to develop innovative business strategies. Web site resources include "Waste at Work," a comprehensive online business handbook for reducing waste.

Web site: www.informinc.org/wasteatwork.php

* National Waste Prevention Coalition (NWPC), Seattle, Wash., 206-296-4481

Administered through the King County Solid Waste Division, NWPC's goals are to prevent waste and reduce resource consumption. Its members are primarily local governments, state governments, nonprofit organizations, universities, and consultants.

Web site: <http://dnr.metrokc.gov/swd/nwpc>

* Waste Prevention World, 916-341-6615

Operated by the California Integrated Waste Management Board, WPW's Web site includes a searchable waste prevention database, information on waste prevention at home and for businesses, and topically organized information with Web links about recycling and reuse.

Web site: www.ciwmb.ca.gov/WPW/