

Black Ice Software LLC

Demo version

Power Sails

Electrifying Source Maui with Clean Energy

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Source Maui 2011 Art Grant Proposal

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Demo version

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Physical Description: The power-sail is a new portable wind turbine system that charges batteries with clean electricity. Kite-like sails lift small wind turbines to higher altitude where stronger and more consistent winds prevail. The power-sail is an interactive wind power system that reduces the burning of fossil fuel. Go fly a kite and help the world with clean energy.

(See power-sail testing videos at [highwindhawaii](#) on Youtube)

Below, Dan Tracy demonstrates flight operation of a power-sail.



Power-sail Operation

Deployment

1. Position the carrying face up with the Arrow pointing into the wind.
2. Use a hammer to drive two stakes into the ground so they provide perpendicular bracing to the power base.
3. Remove the Lifting sail, Turbine sail and tethers
4. Unroll the sails and use the push pins to secure the frame parts
5. Carry both sails down wind
6. Position the Turbine sail into the wind so the main tether is tight.
7. Carry the lifting sail downwind until both tethers are tight.
8. Send the two sails up by releasing the sails into the wind, walking back to the power base with one hand on the tether allowing the tether to slide through your hand.

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Flight: The power-sail generates 12 to 20 volts that can be used to charge most 12 volt batteries. The power sail flies from a 200 foot long tether in 10 to 25 mph winds. If the wind drops below 10 mph the two sails will slowly come down to rest on the ground.

Retrieval: Use one hand to grasp the tether and slowly walk down wind allowing the tether to slide through your hand.

Bring both sails back to the power base and remove the 3 stakes. Remove the push pins, roll up the sails, coil the tethers and stow everything in the carrying case.

Cautions: Fly *power-sails* in wide, open areas, away from *power lines*

Philosophical Statement

The interactive power-sail operation at Source Maui 2011 will show how harnessing high altitude wind can generate clean electricity and charge batteries. The Source Maui demonstration will be a perfect stepping stone for larger events. The power-sail is safe and flies like a traditional kite in 10 to 25 mph winds.

In 2003, I woke up with a dream to develop an automatic kite-sail control system for boats. After years of building, testing and trying to start a kite boat business, I realized that operating a kite from a boat was too problematic for most marine vessels. I recently changed course to developing new land based power-sails. I look forward to my 1st demonstration at Source Maui 2011, Yay.

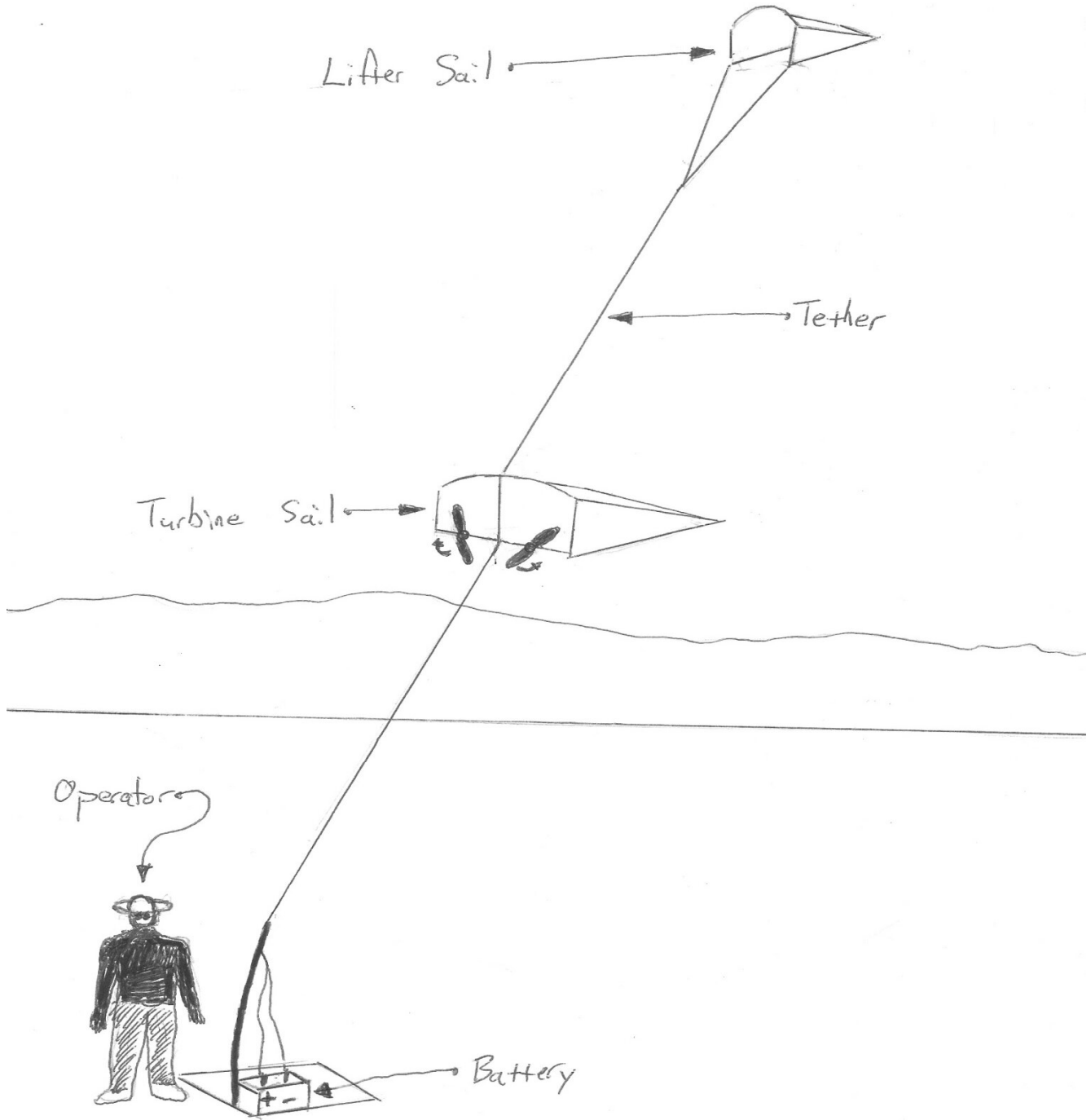
Helping The Community With Clean Energy

Charging: Batteries, Cell phones

Power: Lights, air pumps, small electronics

I propose that we charge the batteries for the Silent Rave headphones with the power sail system during the festival.

Power-sail Operation



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Budget

In Kind \$ Contributions

Power-sail development- \$3200

Other R&D costs- \$1000

Source Maui Art Grant Request

Power-sail lighting- \$75

AC to DC Power Inverter \$25

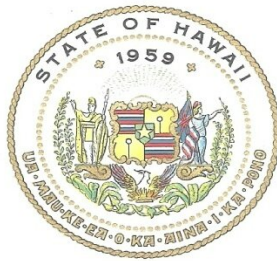
Special LED lighting will be turned on at night to use our clean electricity. If the wind is good at night we'll send it up with some cool flashers and glow sticks [. The power inverter will enable us to recharge the Silent Rave batteries with clean energy!

Total Request \$100

Dan Tracy

Since 2003, Dan Tracy has conducted hundreds of kite power demonstrations and has a perfect safety record. Dan Tracy grew up in Bar Harbor Maine, where he taught himself how to windsurf. After turning 18, he bought a van and headed west working construction jobs and windsurfing. In 1999, the island of Maui became home and through his wind power research and development he has become one of the world's experts in power kite technology.

In November of 2008, Dan Tracy's kite boat project was awarded an innovation award by the governor of Hawaii.



Commendation

presented to

KITE FOR SAIL GOVERNOR'S INNOVATION AWARD HONOREE INNOVATION BY AN ORGANIZATION NOVEMBER 2008

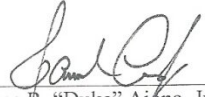
On behalf of the people of Hawai'i, we offer our congratulations on your selection as the Governor's Innovation Award honoree for the category of Innovation by an Organization. Your outstanding achievements in alternative transportation address our state's need to reduce its dependence on fossil fuels.

Innovation is not just about technology, it occurs across all sectors, especially in the business community. Innovative businesses make a difference by finding new ways to advance the economy, culture, technology and society around them. Your creative new propulsion system allows powerboats to enjoy the ocean with less of an impact on our precious environment. You are an exemplary model for the business leaders of Hawai'i.

Along with the 15-member Innovation Award Committee, we extend a sincere mahalo for your hard work and commitment to the people of Hawai'i.

Aloha,


Linda Lingle
Governor, State of Hawai'i


James R. "Duke" Aiona, Jr.
Lieutenant Governor, State of Hawai'i

Time Line

Phase A: Power-sail preparation for Source Maui 2011.

Source festival February 18th-21

Power-sail operation, weather permitting.

Phase B: Power-sail preparation for Burning Man 2011

April: Field Testing

June: System refinements

July: Field Testing

August: Power-Sail Operation at Burning Man 2011