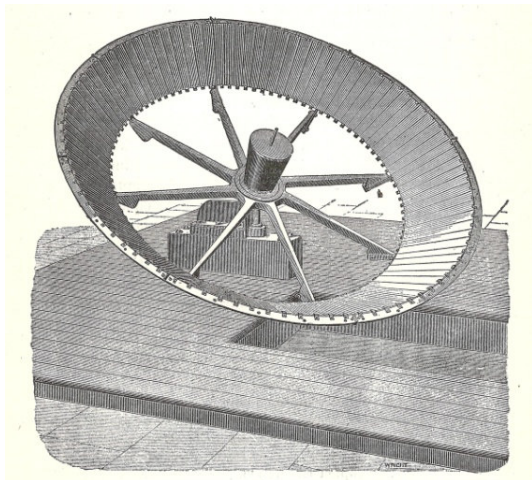




# NEWSLETTER

VOLUME 19 NO. 1 SPRING 2009



**CAPTAIN ERICSSON'S SOLAR PYROMETER,  
ERECTED IN NEW YORK, 1884.**

"A scientist records what is; an engineer creates what never was" (Theodore von Karman). This issue of the **Newsletter** reflects the legacy of John Ericsson as both scientist and engineer – investigating, recording, and creating; with attention to the "possibility of direct application to the purposes of human industry". He was that rare scientist/engineer whose inventions transformed an entire industry, forever changing its principal product and stimulating the development of technology. His inventions marked the turning point in shipbuilding and transformed the maritime industry. His research and innovations in propeller design, hot air engines and solar energy are relevant to 21<sup>st</sup> century issues.

Global warming, degradation of the environment, increased demand for fossil fuel coupled with concern for diminishing reserves are current issues that direct attention to his investigations of the sun as an energy resource. The craftsmanship of the engineer, "creating what never was" permitted him to design the instruments that he needed for his research when none existed.

*Leif G. Brisfjord*  
*President, John Ericsson Society, New York*



**JANUS (SEES THE FUTURE AND THE PAST)**

Born in 1803, John Ericsson showed an interest in solar energy for more than fifty years. In 1833, while living in England, he invented and patented a caloric engine, during the development of which he made inquiry into the nature of solar energy. He viewed the sun as a prime source of energy in the distant future when the supply of fossil fuel (coal, in his 19<sup>th</sup> century world) would be exhausted. He also mentioned the possibility of developing applications for current use in tropical areas of the earth. He maintained this interest throughout a busy period during which he emigrated to USA and produced some of his best known inventions including the ironclad ship *USS Monitor*. At the close of this period, with greater opportunity and financial means for independent investigation, he began systematic inquiry into the characteristics of solar radiation and the soundness of current theories concerning the temperature of the sun. He resolved to measure for himself "the intensity of that big fire which is hot enough to work engines at a distance of 90,000,000 miles". "I cannot omit adverting to the insignificance the dynamic energy which the entire exhaustion of our coal field would produce, compared with the incalculable amount of force at our command, if we avail ourselves of the concentrated heat of the sun's rays". Thus he set to work "to awaken to new life the regions of the earth now parched with solar heat, so that the desert might blossom abundantly".

*I. L. Brisfjord*

## Metalworking Craftsman of the Year 2009



**RICHARD CARLSTEDT**

**Richard Carlstedt** of Green Bay, Wisconsin is the 13<sup>th</sup> winner of the Joe Martin Foundation Award for Exceptional Craftsmanship. He demonstrated exemplary skills and dedication by building the most accurate working model ever produced of the steam engine of the *USS Monitor*.

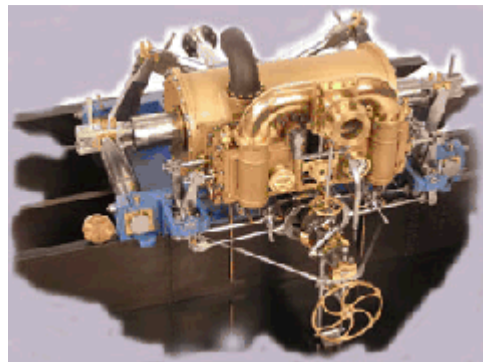
As a child he built model airplanes, once building six straight stick and balsa models of a WWI fighter biplane until he got it just right. At age 11 he built a powered model of the Union ironclad ship the USS Monitor. Interest in that ship continued through life. His early determination to get it “just right” has paid off in a world class project.

### Richard Carlstedt's career

He studied pre-engineering in high school in Chicago and worked as an apprentice machinist at Ford Aircraft aiming for an aeronautical engineering career. In college, at University of Illinois, he changed to mechanical engineering. He left college, married, worked in construction to support a young family, returned to the metal working trades. He worked from mechanic/machinist up to management. During this period, he continued to attend night school - working toward a degree. On assignment in Canada in 1971, he joined the Ontario Sun Parlor Lines steam club where he built his first steam engine - a Stuart Turner 7. He

returned to Chicago four years later and joined the Chicago Model Engineers where he continued to learn from experts, including his father-in-law, a retired tool and die maker.

After working for ten years in Northern California as a manufacturing engineer he went to Detroit, took the Society of Manufacturing Engineers examination, which he passed to become a certified manufacturing engineer. He continued working with metal dies and machinery. Later he was transferred to Wisconsin where he resides today.



**WORKING MODEL OF STEAM ENGINE OF USS  
MONITOR**

### Hobby Interest in Building Models

Over the years his hobby interests involved model airplanes and later, live steam engines. His Hypocycloidal Pumping Engine, based on an original on display in the Ford Museum, was selected as the featured engine at the 2005 North American Model Engineering Society (NAMES) show.

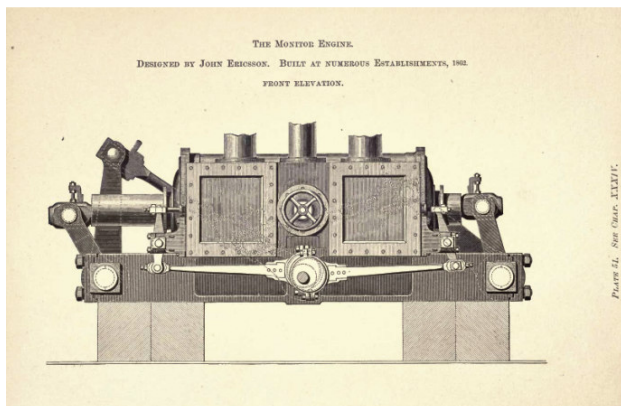
His early interest in the USS Monitor was rekindled in the early 1970's when he read in National Geographic magazine that the sunken wreck had been discovered and recovery was planned. He had seen a pattern model of the engine on a trip to England in 1977 and felt strongly that he would like to model the engine of the historic ship. In 1997 the US Navy started recovery of the ship, and he began years of research on the engine. This took him to many museums and archives in the US and Britain, and consultation with the Mariner's Museum in Newport News, VA. From this research he pieced together details of the original engine, no complete drawings of which had ever been published.

He chose a scale for the Monitor engine of 1/16. The engine was completed in 2007 and displayed at the show of North American Model Engineering Society. The extensive research involved in this unique engine and the uncompromising level of quality to which it was produced brought Richard to the attention of the Joe Martin Foundation resulting in the decision to name him the Foundation's "Metalworking Craftsman of the Year". The award will be presented at the North American Model Engineering Society Expo, April 18-19, 2009 in Toledo, Ohio. Several of Richard's models including the Monitor engine will be on display, and Richard will be there to discuss the project.

Richard Carlstedt plans to gather all the research data he prepared in producing the engine and publish a book on it to further the understanding among historians of this unique engine.

A page on Richard with photos of the engine, his other projects and his shop can be found at [www.CraftsmanshipMuseum.com/Carlstedt.htm](http://www.CraftsmanshipMuseum.com/Carlstedt.htm). A video of the engine running can be seen at <http://www.youtube.com/watch?v=VWn8gQ9Ykpk> (Be sure to select "View in High Quality" to better appreciate the fine workmanship.) The video is also linked from his museum page. For information about the Joe Martin Foundation and its goals, <http://www.CraftsmanshipMuseum.com>.

**One of John Ericsson's Original Drawings of the Steam Engine**



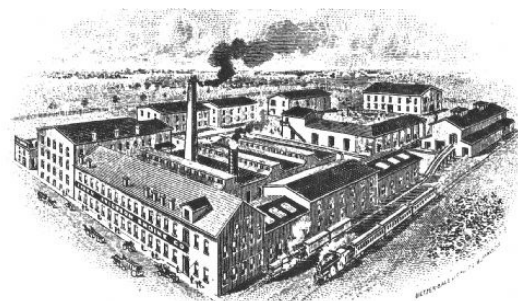
**THE USS MONITOR STEAM ENGINE**

**Rider-Ericsson Engine Co.**



**RIDER ERICSSON ENGINE CO., WALDEN, NEW YORK**

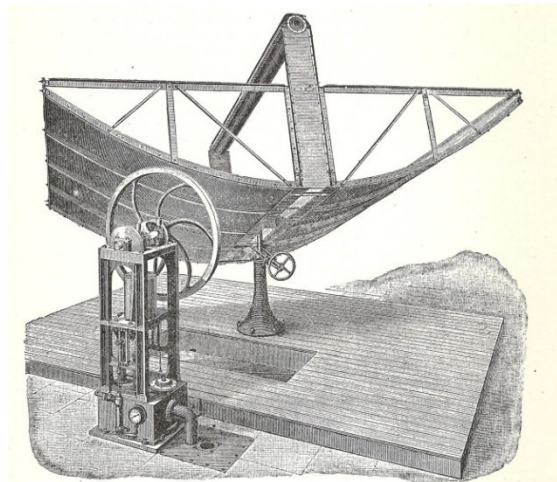
The 19<sup>th</sup> century shipyards and workshops in which were produced the ships and engines of Ericsson's design have long since disappeared. The Rider-Ericsson Engine Co. in Walden, Orange County, NY is the sole exception. It is the only industrial building for production of an Ericsson invention still standing in NY. Although its use has changed over time, its historic past remains visible. Over the years the Ericsson ties were maintained largely through the interest and efforts of Mr. Hy Hilzen, owner of Packaged Lighting Systems, the most recent occupant.



**RIDER-ERICSSON ENGINE CO.**  
 SUCCESSORS: DELAWARE BOILER WORKS, RIDER-ERICSSON CO.  
**WALDEN, N. Y.**  
 "RECO" RIDER HOT AIR PUMPING ENGINES. "RECO" ERICSSON HOT AIR PUMPING ENGINES.  
 "RECO" ELECTRIC PUMPS.

## Solar Energy

John Ericsson constructed a solar observatory on the roof of his home at 36 Beach Street, Manhattan, and built working sun engines. In 1876 he published "Contributions to the Centennial Exhibition" in which he described his scientific and technological research in solar energy.



ERICSSON'S SUN MOTOR, ERECTED IN NEW YORK, 1883.

## Solar Energy in New York – Yesterday, Today, Tomorrow

A colloquium was presented by John Ericsson Society, New York on November 18, 2008. The speakers were Chris Neidl and Johan Beyer.

**Leif G. Brisfjord** gave a multimedia presentation with musical accompaniment as an overview of John Ericsson's solar research. It included pictures of the instruments Ericsson created for his research and the working sun machines that he invented. His "house at 36 Beach Street", Manhattan with its roof-top solar observatory was highlighted.



36 BEACH STREET, MANHATTAN



JOHAN BEYER AND CHRIS NEIDL

**Chris Neidl**, Outreach and Advocacy Coordinator of **Solar One**, described the City's first solar-powered "Green Energy, Arts, and Education Center". It seeks to inspire New Yorkers to become environmentally responsible city dwellers. Through education, demonstration and various programs it reaches out to the New York City population in order to connect people to the urban environment around them. Located in Stuyvesant Park, **Solar One** is a project of the Community Environmental Center.

**Solar One** was awarded the Holicim Gold 2008 North America award for **Solar2**, a net-zero energy use building that will be constructed on the **Solar One** site. **Solar2** was praised for "bringing the eco-building vision into reality". The award recognizes the need for a building like **Solar2**, particularly in New York City where buildings account for 79% of CO<sub>2</sub> emissions. **Solar2** will permit expansion of the community education and demonstration program.

<http://solar1.org/>

**Johan Beyer**, of Terracastus Technologies, a division of AB Volvo, spoke of Cleaning and Upgrading Biogas. Terracastus Technologies has developed a unique technology to clean and liquefy biogas or landfill gas. The process can be used to improve independence from oil as well as produce a clean, local and CO<sub>2</sub>-neutral transportation fuel from landfill gas or gas produced in bioreactors. Thus, it contributes to reducing pollution in the urban environment. Production and use of biogas addresses the problems of global warming related to CO<sub>2</sub> emissions and the rising cost of fossil fuel. This technology may be viewed as a supplement, rather than an alternative to solar energy.

<http://www.terrecastus.com/>

## Sunwalk 2008

In May 2007 the John Ericsson Society, New York participated in the arrival ceremonies of **sun21**, the first boat to cross the Atlantic Ocean entirely on solar power. At the end of the voyage **sun21** was given to World Wildlife Federation/Spain for research and demonstration purposes and for transportation to maritime nature resorts.

Martin Vosseler, physician aboard **sun21**, walked across the United States, coast to coast, 1 January – 15 August 2008 to promote renewable energy. Along the route of **Sunwalk 2008** he gave talks and participated in a variety of local events related to the environment



**MARTIN VOSSELER**

<http://www.sunwalk2008.com/>

## The Loon Solar Boat in New York

At the arrival ceremonies for **sun21** in May 2007 members of John Ericsson Society, New York met Monte Gisborne and learned of **The Loon**, his solar powered boat for navigating inland waterways.



**THE LOON**

**The Loon** solar boat shown here will begin production in 2009 in Buffalo, NY. An earlier prototype was the first solar-powered boat to navigate the Erie Canal, having taken the Gisborne family from Ontario on that journey in August 2007. Previously, similar prototypes were used to traverse the Trent-Severn Waterway and the Rideau Canal in Canada, proving that photovoltaic energy can be harnessed in a sufficient manner to satisfy the needs of recreational boaters, a fact that John Ericsson knew only too well. The modern non-emitting vessel shown here is intended to replace heavily-polluting, gas-powered recreational boats such as pontoons, which have become very popular in the last 20 years. Thus, this novel boat presents investment opportunities. The company was recently successful in securing a \$500,000 grant for their development work in solar boating from NYSERDA, the New York State Energy Research and Development Authority.

<http://www.tamarackelectricboats.com>

*Monte Gisborne*

**In Memoriam**

The John Ericsson Society, New York recognizes Hy Hilzen for his faithful stewardship of an important part of the Ericsson legacy represented by the Rider-Ericsson Engine Co. building in Walden, NY.



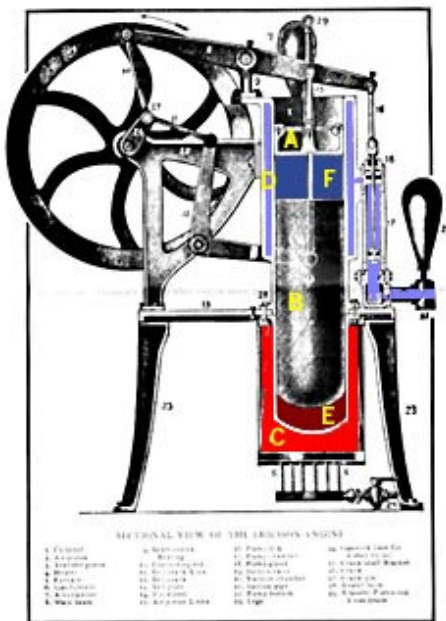
**HY HILZEN AND THE JOHN ERICSSON DESK**

He preserved historic markers, safeguarded souvenirs and documents, welcomed visitors, and graciously answered queries about the building.

John Ericsson Society, New York mourns his demise and offers condolences to his family and friends.

-oOo-

*The Ericsson Engine*



**A RIDER-ERICSSON HOT-AIR ENGINE**

**Important Memorial Events**

- **March 9th, Monitor Day** - Annual Celebration.
- **July 31st, John Ericsson's Birthday** – Annual Celebration at the John Ericsson Statue in Battery Park, New York.
- **November 23rd, John Ericsson's arrival in the US** – Annual Celebration.

**Membership**

The John Ericsson Society, New York offers members the privilege of participating in the use of 21<sup>st</sup> Century technology and methods to gather and provide access to evidence of the achievements of Captain John Ericsson, thus preserving for future generations an accurate record of his historic contributions and promoting the advancement of engineering science.

**Membership Dues**

Payment for annual membership is due January 31st each year. Kindly send payment (\$20/year or \$200/one-time life membership).

Make your check to "John Ericsson Society" and mail to **John Ericsson Society Treasurer:**

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 Cushman & Wakefield  
 333 Thornall Street, Suite 1A  
 Edison, NJ 08837, USA

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