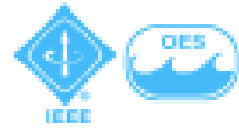




HPS 2004



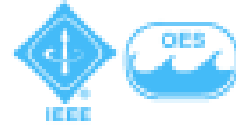
Human Powered Submarine Contest



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Purpose

In today's world, good engineers require more than just technical knowledge. They need to be able to produce innovative designs, with knowledge of manufacturing techniques, and learn to appreciate the complex environmental and safety issues. They also need to be a team player and be able to use skills of financial management and time management.

The **HUMAN POWERED SUBMARINE CONTEST** is one of those projects that develop a lot of these skills. But an open-ended project becomes pointless if there is no final goal. A contest with other teams is a good motivator.

The San Diego Section of the American Society of Mechanical Engineers (ASME) and the Institute of Electrical & Electronics Engineers (IEEE), as two of the largest engineering societies, are providing this opportunity. It is held in San Diego because we have the facilities here in Escondido. The contest was also held in 2000 and 2002.

Who is involved?

The San Diego Section of the ASME and the San Diego Section of the IEEE represent more than 4,500 mechanical and electrical engineers throughout the San Diego region. We are engineers employed in local industry; by government agencies, or are self-employed. Our organizations are professional societies designed to foster and promote good, safe, and innovative engineering solutions and to further advance the science of engineering.

The **Human Powered Submarine Contest** is to be held from July 29th to Aug 1st, 2004 in Escondido, California. The contest is open to students and universities, colleges, and high schools that can meet the minimum design and safety requirements as delineated in the rules of the contest. Schools that have expressed interest include:

- High Tech High
- University of California at San Diego
- San Diego State University
- Virginia Tech University
- École Polytechnique de Montréal
- Texas A&M University - College Station





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How can you **help** us?

A financial plan is shown at the end of this document. Our biggest expense was insurance. It took almost half of our budget. We are working on reducing that. The next highest expense would be the rental of the Offshore Modeling Basin for four days. We have been very fortunate to get a team of volunteer safety divers for the event. Finally we would like to sufficiently reward the contestants. If you like what we are doing, we would like your financial help in supporting this event.

How can we help you?

- This contest would be full of young and highly motivated engineers. It is a good opportunity for you to recognize and possibly recruit for future.
- When the engineers graduate, they will be aware of your company and its vision.
- We expect to have news media people covering this event. Previous such event was recorded into a documentary film and has been shown on a number of occasions on the public broadcast station.
- Depending on the sponsor's preferences, we can have your company logo on tee shirts, program brochures, and any other relevant publicity media. At the sponsor's request, we can also reserve space at the Basin to set up a canopy and display the company products. There is also room on side-walls at the facility to hang company banner. In short, depending on the sponsor's needs, level of sponsorship and availability of space, we will try and accommodate everyone.

Where is this event?

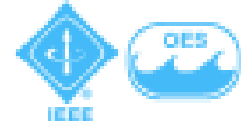
The contest is to be held at the Offshore Modeling Basin in Escondido, California. The basin is an R&D facility used in development and testing of small- and full-scale underwater/surface models of submersible devices, vehicles, and structures.

Located just north of San Diego, the Offshore Basin facility offers all the necessary equipment and pool necessary to conduct our contest.





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When is this event?

The contest will be held from July 28th through Aug 1st, 2004. The first day will be mostly registrations and design presentations. The trials would take place at the Basin from Thursday through Sunday.

Why are we doing this?

The intent of the contest is to provide an extracurricular activity that will foster a real life engineering and competitive spirit amongst young engineers. The contest will also be recognized in The Guinness book of Records as a World Speed Record, the fastest propeller driven and non propeller driven human powered submarine. The Event committee will document and submit to the Guinness Publishing Company any record claim exceeding current speed records, consistent with the established methodology.





HPS 2004



Contest Details

Safety

Safety is first and foremost on our minds. This contest is aimed at fostering good, safe, and reliable design. The rules of the contest stress the need for safety. A large portion of the design contest will award the participants for their design and implementations of safety devices.

As part of the contest rules, we have stipulated that any submarine that we deem unworthy by the panel of judging engineers or any of the safety divers will be unconditionally disqualified.

We will also have a number of certified Master Divers, Safety Divers and paramedic personnel available in the unlikely event of any emergencies.

Engineering Design

The race itself is important, but we are giving special attention to the designs that are innovative and have used special construction methods. This will all be judged during the design presentations on Wednesday.



Financial Planning

We have tried to keep the costs to the minimum by asking for a lot of volunteer help. We have been very successful with getting the divers and timing equipment at no charge and reduced fees for the OMB facilities.

Publicity

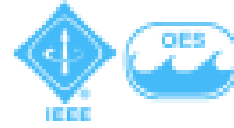
Last time we had very good media coverage. We are hoping that we will have better this time. The Guinness Book of Records will also be available.

Awards

We have four awards for the speed aspect of the race. This time we are stressing the engineering aspect of the race as well. For that we have six other awards for Safety, Design Presentation, Innovation, Design, Construction, and Operation. Finally there would also be an overall Best Engineering award.



HPS 2004



Financial Plan

In the table below, the actual expenses occurred during the HPS 2000 and HPS 2002 are listed along with projections for HPS 2004. The expenses were for 9 teams and three days of trials.

| Expenditures | 2000 | 2002 | 2004 |
|-----------------------------------|----------|----------|-----------|
| Description | Actual | Actual | Projected |
| Facilities, Off shore Basin costs | \$3,254 | \$3,500 | \$3,500 |
| Emergency Response Team @ | \$1,875 | \$2,550 | \$3,000 |
| Insurance | \$2,678 | \$9,768 | \$10,000 |
| Lunch for 200 people for 4 days | \$2,363 | \$2,555 | \$5,000 |
| Tee shirts | \$2,712 | \$1,386 | \$1,500 |
| Trophy's | \$1,739 | \$749 | \$1,000 |
| Supply of air bottles to teams | \$500 | \$189 | \$500 |
| Marketing and advertising | \$0 | \$355 | \$500 |
| Miscellaneous equipment | \$2,568 | \$6,284 | \$5,000 |
| | \$17,689 | \$27,336 | \$30,000 |

The sponsors for HPS2000 and HPS2002 were:

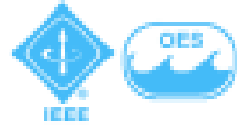
| Income | 2000 | 2002 |
|------------------------------|-----------------|-----------------|
| Name Of the Sponsor | Actual | Actual |
| Beginning Balance - HPS 2000 | \$0 | \$4,965 |
| Registration | \$4,700 | \$4,500 |
| ASME Regional | \$2,400 | \$5,487 |
| ASME Local | \$500 | \$500 |
| IEEE - Section | \$900 | \$1,000 |
| IEEE - OES | \$2,000 | \$3,000 |
| UCSD | \$5,000 | \$5,000 |
| Hamilton Sundstrand | \$2,000 | \$1,000 |
| Orincon | \$2,000 | \$1,000 |
| Todd Gutshaw (private) | \$700 | \$750 |
| Sempra (SDG&E) | \$750 | \$0 |
| Sale of TEE shirts | \$1,017 | \$670 |
| Total | \$21,967 | \$27,872 |

We need your help to be a sponsor for HPS2004.

Additional information is also available at our web site:
www.asme.org/sections/sd/hps2004.htm



HPS 2004



Sponsor's Form

Yes, my Company/Organization would like to make a monetary donation to the HPS2004 program. Please contact me as soon as possible for details.

Yes, my Company/Organization would like to donate services or talents to help. Please contact me as soon as possible for details.

| | |
|-------------------------|--|
| My Name | |
| My Company/Organization | |
| Street Address | |
| City, State, Zip | |
| My Phone Number | |
| My Fax Number | |
| My E-Mail Address | |

| | | |
|---|--|---|
| Please send to : | -Or- | -Or- |
| Dr. Nip Shah 12756 Cijon Street San Diego, CA 92129 | Call 858-627-6251 Fax 860-660-4303) | E-Mail: nip.shah@hs.utc.com |