Prince Mohammad Bin Fahad Univirsity Students Chapter

NEWSPAPER

NOVEMBER 2011

PMU Students ASME is here and it is Active

Dr. Nader Nader
ASME/ PMU Chapter Adviser

Dear Students:

Welcome to the ASME student chapter at Prince Mohammad Bin Fahd University. As a faculty advisor of the society, I would like to inform you of the new upcoming events that will take place inside and outside the Kingdome.

Accomplished visits:

-Visit to Saudi Aramco Aviation on Dec 22, 2010.
-Visit to Al-Zamil Air conditioning plant on Dec 29, 2010.

Planned visits:

-A trip to Aramco drilling process offshore
-Visit to power plant generation at Algizlan
-Visit to desalination plant at Alkhobar

The plan is to achieve the following:

-Continue professional visit to many of the industries around us to improve learning and critical thinking on the practical field.
-Plan a district meeting for ASME to be held at PMU
-Publish a monthly paper reflecting all activities done by the mechanical engineering students and others under ASME Bulletin
-Participate in the world completion for the best project done by ASME student
-Host seminar and invite ASME professional to share their experience with the students at PMU
-Open house to introduce all mechanical engineering and especially the freshman to society, projects and other activities
-Hold an election for the ASME chapter positions to be filled by the students
-Sponsor or supervise activities outside PMU of charitable type to help the needy people such as marathon or food donations etc…
-Arrange trips to and outside the Kingdome to visit many of the world reputable manufacturing companies.

Best Regards,

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Dr.Nader Nader, Ph.D

Chapter Advisor

Maitham Al-khwaildi
Chair

Eiad Al-Habib
Treasurer

Najeb Al-Harbi
Vis Chair

Saqer Al-Ali
Secretary

Committees

Publicity

- Tayseer Al-Tarouti Chairman
- AliAlShaqab WEBMASTER
- Saqer Al-Ali
- Saleh Al-Zahrani
- Saleh Al-Marri

Recruitment

- Ahmed Al-Shahrani
- Ghazi Al Arfaj
- Mohammad Al Jureni
- Rayan Al-Otaibi

Tours / Field Trips

- Kumail Al-Zubail
- Hassan Al-Towailib
- Hamid Al-Rashidi
- Tayseer Al-Tarouti

Competitions and Awards

- Mohammad Al Jureni Chairman
- Eiad Al-Habib
- Rayan Al-Otaibi

Meetings/Programs

- Hamid Al-Rashidi
- Saleh Al-Marri
- Saleh Al-Zahrani
- Kumail Al-Zubail

Vision:
To be the leading organization for promoting the art, science and practice of mechanical and multidisciplinary engineering and related sciences to our diverse communities throughout the world.

Mission:
To promote and enhance the technical competency and professional well being of our members, and through quality programs and activities in mechanical engineering, better enable its practitioners to contribute to the well being of humankind.

Goals:
1- Making the Chapter Successful by:
A- Motivation for having a student chapter.
B- Creating an appropriate environment for the chapter.

2- Giving the Students the Opportunities to develop themselves by:
A- Networking and Socializing with other engineers, whether in the industry or in the academia.
B- Working on a team with other students for all tasks regarding the chapter.
C- Serving as a leader.
D- Competing for society awards.

3- Giving the students the chance to interact with the Industry to:
A- Involve in Fund raising.
B- Creating a networking with the industry, and all people related to the field.
C- To understand the real life in industry and what is really happening in the work.
D- To understand what the industry Employers really need from students and new employees.
E- To be familiar with engineering opportunities and careers.
F- To provide Volunteers.

4- Giving the faculty the chance to interact and grow their students professionally by;
A- Promote corporate relationships.
B- Further department's relationship.
C- Providing Volunteers.
D- Developing Graduate Students.

5- Contributing on Department's improvements by:
A- Giving the Chapter the chance to support Scholarships.
B- Giving the Chapter the chance to support Research.

6- Engaging with the Department to give the students a leadership opportunities by:
A- Meetings and Tours with corporate visitors.
B- Large numbers of leadership positions.
C- Office space.

ASME Innovative Members

First of all, I would like to thank the ASME newsletter's editor, Mr. Taiseer Al Taroty, for providing me the opportunity to talk about my study experience in New Zealand. I would like also to thank Nelson Aviation College's CEO and staff for their support and encouragement during my study at the college.

My academic goal is to specialize in Aeronautical engineering after finishing my study in mechanical engineering. I thought it is a good idea to learn how to fly an airplane. This idea, in my opinion, will push me forward in my study path.

I studied in Moutueka, New Zealand, which is a small town located in Nelson District in the south island. Nelson Aviation Collage has 11 fixed wings airplanes called [Cessna 152 and 172] in addition to 6 Helicopters.

To get a private pilot license you have to be at least 17 years old and hold at least a current class 2 medical certificate. In addition, you have to pass 6 theoretical subjects which are (General Aircraft Technical Knowledge, Navigation, Meteorology, Air Law, Human Factor and Aircraft Radio Operations). The minimum flight hour for PPL is 55 hours. I finished 70 hours and had good evaluation marks in the flying test and theoretical subjects.

I really worked hard and faced some difficulties to get this license within a short time. But what was more important is the experience that I have got. And I hope to extend this experience and get a Commercial Pilot License at Nelson Aviation College.

My name is Hamid N. Al-Rashidi I have an associated degree in Petroleum engineering (HND) from Adam Smith College, Kirkcaldy, United Kingdom in 2006. I'm currently a database manager in Petro physics Unit in EXPEC- Advance Research Center in Saudi Aramco. End of 2008 I have joined PMU as evening student in mechanical engineering. Currently I'm senior student in the fourth year.

During my work in Saudi Aramco and my study in UK I have granted many awards and recognitions as following:

AWARDS/GRANTS

- Outstanding Member 2001, Research and Development Center, Saudi Aramco (Save SR 333, 750).
- 2-years scholarship for higher education, 2004.
- Best Student Award 2005 and 2006, Adam Smith College, United Kingdom.
- Most productive technician in EXPEC- Advance Research Center 2009
- Most productive technician in EXPEC- Advance Research Center 2010
- SPE organizer award 2009

MEMBERSHIPS

- Member and organizer of the Society of Petroleum Engineers (SPE)
- Member and organizer of chemistry in industry (chemindex).
- Member of Department Safety committee.
- Unit Safety representative.
- Member of the society of young Saudi Engineers.
- Member of ASME PMU chapter 'Meeting and events chairman'

Finally I would like to thank our colleague and ASME newsletter editor Mr. Tayseer Al-Tarouti for his effort editing this newsletter.

Battle of the Ironclads: John Ericsson and the USS Monitor

October 2011

by Michael MacRae, ASME.org

The USS *Monitor* (right) in action with CSS *Virginia* (left), 9 March 1862. Image is a print of a painting by J.O. Davidson which was part of a collection of President Franklin D. Roosevelt. Courtesy of the U.S. Naval Historical Center.

View larger

Few chapters in Civil War history capture the imagination of engineers as much as the legendary naval battle between the USS. *Monitor* and the CSS. *Virginia* (nee, Merrimac) at Hampton Roads, Virginia, on March 9, 1862.

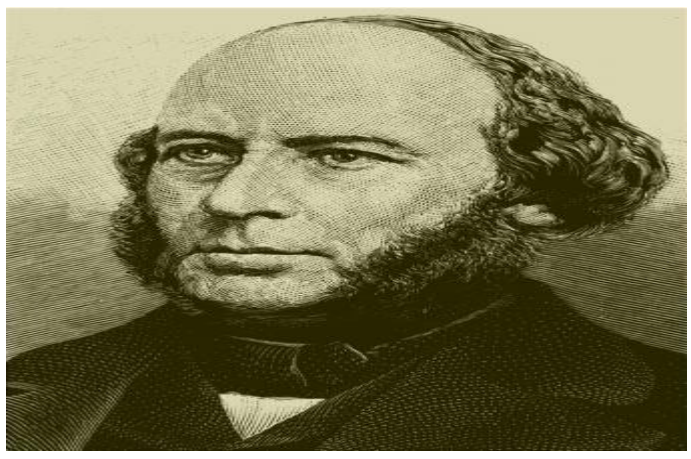
Most of that interest is focused on the revolutionary *Monitor* and its iconoclastic designer, John Ericsson (whose bust sits in the lobby of the ASME's New York headquarters to this day). Both the ship and the man were totally unlike anything else the world had seen. Yet as different as they were from the ships and men of their era, it is easy to see today that the bombastic engineer and his ironclad creation had a lot in common.

SMART

The ship: The *Monitor* was not the first ironclad—the basic idea of armored batteries goes back to the third century B.C. But this "cheese box on a shingle" was a complete departure from the prior 300 years of battleship design. From its rotating gun turret to its water-line-hugging deck to its below-deck steam engine to its sub aquatic toilet-flushing technology, the ship boasted more than 40 patentable innovations.

The engineer: Ericsson was largely self-taught in engineering, but his sharp intellect and natural gifts for technical drawing and machine design carried him far. By the time he came to the U.S. in 1839, he was already a bona fide star for developing the marine screw propeller, the caloric engine, and other revolutionary technologies.

STRONG, SMALL, AND STURDY



Portrait of John Ericsson. Ericsson was largely self-taught in engineering, but his sharp intellect and natural gifts for technical drawing and machine design carried him far.

The ship: The *Virginia* was a captured Union vessel originally known as the Merrimac, reconfigured as an ironclad battery. Traditional wooden ships of the time were no match for the *Virginia*, and the Union was terrified of the treat she posed to their naval blockade of the South. But the smaller, lighter, and far more nimble *Monitor* could easily outmaneuver the hulking ship, withstand everything she could shoot at her, and fire back with wicked precision from virtually any angle. Just as importantly, the streamlined *monitor* could also retreat to the safety of shallow waters inaccessible to the *Virginia*, where wounded could be treated, damage repaired, and ammunition replenished without fear of pursuit.

The engineer: At 5 feet 7 inches, Ericsson was a compact, robust man who worked out with barbells and watched his diet. He attributed his breakneck work style to his fresh-air fitness routine involving daily late-night walks around Manhattan regardless of the weather.

STUBBORN YET STRATEGIC

The ship: The famous battle at Hampton Roads was inconclusive. Neither ship's guns could penetrate the other's thick iron skins. But from a strategic perspective, the mere existence of the *Monitor* —and the 35 other Union ships later built on the same basic design during the war—was enough to ensure the integrity of the Union's blockade. At Hampton Roads, the Confederacy lost its last hope of victory by losing all chance of foreign intervention on its behalf.

The *Virginia*.

Despite several opportunities for a rematch, the *Monitor's* orders were to refuse engagement with the *Virginia* unless she attempted to sail out of Chesapeake Bay into open seas. The *Virginia's* crew taunted their Union adversaries for supposed cowardice, but the *Monitor* crew followed orders and refused to engage, conserving vital resources that would have been squandered in another inconclusive skirmish. Without firing a shot, the *Monitor* achieved its mission to secure the blockade.

The engineer: Ericsson's Type A personality did not endear him to the Navy Department. "He sees what other men do not, and cannot see plain things—he is a genius to be used, a man of sense to be followed—and yet so cranky and opinionated that doubt at his conclusions is an insult, or a proof of enmity, a gross stupidity unworthy of thought," said Navy Captain John Rodgers.

Previous expensive failures in steam battleship design made Ericsson persona non grata in some Washington, DC circles. Although his partners had the necessary clout to ensure Ericsson ultimately won a contract to build his *Monitor*, the terms of the deal were extraordinarily one-sided in the government's favor. Ericsson had no choice but to agree to deliver a finished, fully tested ironclad in just 100 days, and to guarantee the government a full refund if performance fell short of its expectations in any way.

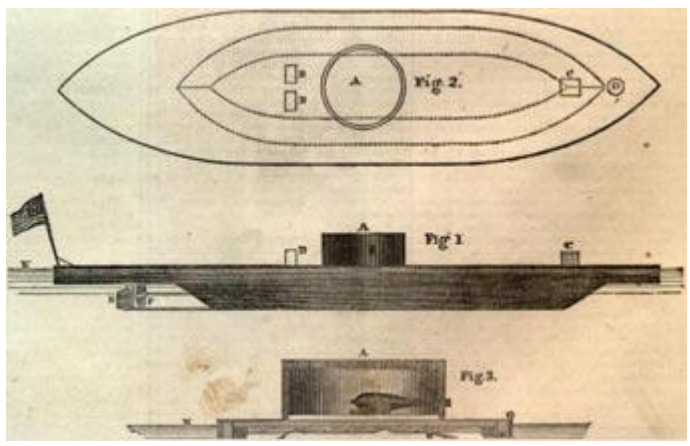


Diagram of the *Monitor*.

Ericsson was as determined to meet his contractual obligations as he was confident in his designs. Not a fan of compromise, Ericsson nonetheless accepted several critical design changes in order to deliver the ship on schedule. He had specified that the turret be built from two layers of four-inch iron plate, but learned it would take two months to retool the milling machinery to produce plating that thick. He agreed to go with eight one-inch iron layers instead.

He first envisioned a hemispherical turret instead of the odd-looking cheese box he ultimately agreed to for the sake of speed and simplicity. He designed a totally new form of artillery—a gun in which shot was fired not by explosives but by steam power. But for the sake of expedience, he went with two 11-inch smoothbore Dahlgrens instead. And his original plans called for another novel weapons system called hydrostatic javelins—the earliest torpedoes—but that idea was also left on the drawing board. Knowing that the *Virginia* was under construction at the same time in Hampton Roads, Ericsson was wise enough not to let his ego stand in the way of getting the job done.

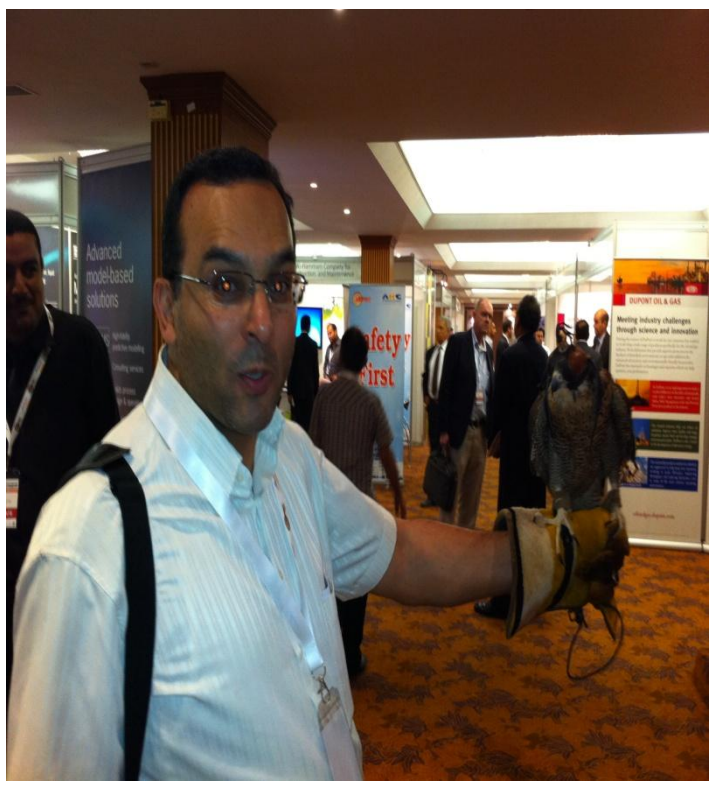
Many of Ericsson's history-making creations, including the turret, guns and other vital components of the wrecked *Monitor*, have been salvaged and are under restoration by the National Oceanographic and Atmospheric Administration. These artifacts are on display for people who want to learn more about the iron-willed man who changed the course of history with his ironclad ships.

MichaelMacRae is an independent writer.

ASME\PMU Chapter Conferences Coverage

Saudi Engineers Forum at Dhahran Hotel

MEPEC Conference at Kingdom Of Bahrain



Dr. Naser Al-Huniti

Previous Chair for the Mechanical Engineering Department

Dr. Naser Al-Huniti Farewell party

TO MY PMU MECHANICAL ENGINEERING STUDENTS

I was honored when approached by one of you asking me to write few words for your ASME chapter. It gives me a great pleasure to write to all of you and at the same time, it is very difficult for me to say goodbye as I am about to leave PMU.

I was lately wondering about what will be my answer if asked about my main achievement here as the first chair of the Mechanical Engineering Department at PMU. I could find no specific answer till last week, where two things happened and together gave me the answer: it's the students!

The beautiful surprise party you arranged for me to say thank you and to express your nice true feelings, in addition to the results and comments I received from the course evaluations, both made me reach the right answer that my main achievement was the help and contribution to the success of my students at PMU. In both occasions, I was overwhelmed by the nice worm words of true thank you and appreciation from your side.

I urge you to have a specific goal in life and a motive to excel in your future career. Work hard to achieve your goal and remember that your main weapons to achieve this are your faith, confidence and ethics.

I wish all of you a great success, a prosperous life and a bright future. I am sure that every one of you is capable of being a professional Mechanical Engineer and can contribute greatly to his community. You really represent the bright face of the young people in this country.

As I leave the place, I carry with me the very good memories and your good wishes for me. Thank you very much for your polite words, nice feelings and appreciation.

With my best wishes,,,,,

Dr. Naser Al-Huniti

General News

HPVC East to Go to Grove City

ASME'S international Human Powered Vehicle Challenge—a showcase for students to demonstrate the application of sound engineering design principles in the development of sustainable and practical transportation alternatives—will hold one of its 2012 events at Grove City College in Grove City, Pa., near Pittsburgh, on April 27-29.

Missouri University of Science and Technology's human powered vehicle.

ASME currently hosts three HPVC Events: in the Eastern and Western regions of the U.S. in the spring and in Latin America in the fall.

During the Human Powered Vehicle Challenge, student teams and their advisors work to design and build efficient, highly engineered vehicles for everyday use—from commuting to work to carrying goods to market. All participants in this event must be current student members of ASME and enrolled as full-time students in an engineering program of study.

The full set of contest rules are listed in the electronic document, http://files.asme.org/asmeorg/Events/Contests/HPV/25080.pdf.

Global Window

Duties Shrink on Automobile Imports

A decade of membership in the World Trade Organization has seen China's automotive tariffs plummet, even as the country's domestic automobile industry has thrived.

Wang Wei, director of the Tariffs and Taxation Department of China's Ministry of Finance, told a gathering in September that tariffs for automobiles have fallen to an average of 13.4 percent. The tariff rate had been in the triple digits when China joined the WTO 10 years ago.

China's auto industry grew tenfold in the decade through 2010. Pictured is the Chika, made by China Automobile.

Wang told the China Automotive Industry Development International Forum that he believes the country's auto tariffs in China are in the middle or low level among developing countries.

Wang said that lowering the tariffs coincided with the development of China's automotive industry. In the decade when tariffs fell, the value of the country's automotive industry output grew almost ten-fold, from 443.3 billion yuan in 2001 to 4.3 trillion yuan in 2010.

ASME/ PMU Chapter Web Page

http://www.asme-pmu.com

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