



**American Association
for Wind Engineering**

THE WIND ENGINEER

NEWSLETTER OF AMERICAN ASSOCIATION FOR WIND ENGINEERING

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*Americas Conference on Wind Engineering
to be held in beautiful Puerto Rico.*



HERB SAFFIR (1917 – 2007)

Wind engineering lost one of its stalwarts in convincing the public and policy makers that consideration of high winds is important for public well-being and safety. Herb Saffir, originator of the Saffir-Simpson scale to categorize hurricane intensity died in November 2007. Saffir will continue to be remembered, not only for his Saffir-Simpson scale, but for his promotion and implementation of the South Florida Building Code and for the Dade County building named after him.

Born in New York City in 1917, Saffir survived the burning of the cruise ship SS Morro Castle on 8 September 1934. The Ship was en route from Havana to New York when it caught fire and burned, killing a total of 137 passengers and crew members. He floated for nearly five hours before being rescued, according to the account he later related to friends (source: Wikipedia). He obtained his bachelor's degree in Civil Engineering from Georgia Tech in 1940. Right after World War II he moved to

South Florida and worked as an Assistant Civil Engineer in Dade County. In the 1950s he was instrumental in rewriting the wind-load provisions of the South Florida Building Code. Hurricane Camille of 1969 provided the impetus to develop a hurricane intensity scale to convey the message of hurricane threat to the public. Herb and Bob Simpson, who was Director of the National Hurricane Center (NHC) from 1968-73, collaborated to develop the Saffir-Simpson scale. "It spread through the emergency management community like a wildfire when it was introduced," says Miles Lawrence, who was a forecaster with the NHC for 40 years. "Dividing hurricanes into categories was an idea whose time had come. It was a wonderful way to collapse the information into a way that was easier to understand."

Herb Saffir had a small consulting office where he continued to work until the time of his death. He did not use modern information technology; he always responded by mail and
(continued on next page)



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(Herb continued)

did not use e-mail or have a web site, but he did not let that hold him back from continuing to make an impact in the consideration for hurricanes. He and Bob Simpson wrote a comment on an article written by Mark Powell and Tim Reinhold, "Tropical Cyclone Destructive Potential by Integrated Kinetic Energy"; the comment is published in the November 2007 issue of the Bulletin of the American Meteorological Society.

He was member of the ASCE committee on Wind Effects for many years and chaired a Task Group on Damage Documentation. He was on the wind-load task committee that produced ANSI

A58.1-1972 and continued on the committee that produced ASCE 7-05, a period spanning three decades. He was a champion of keeping wind-load criteria simple and stringent.

During his life he received many accolades, including a Distinguished Service Award from the Hurricane Conference, induction into the Hall of Fame at Georgia Tech, and having the Dade County Building named after him. The structural and wind engineering communities will miss him.

Kishor Mehta and Stephanie Weiss



SQUARE LIGHTING POLE WIND VIBRATION RESEARCH PROBLEM STATEMENT

Hapco, Abingdon, VA

Ray C. Minor

Some of our members may care discuss the issue outlined below and get involved with the Hapco research program. Ray Minor may be reached at:

ray.minor@hapco.com

BACKGROUND

Aluminum and steel square lighting poles manufactured by Hapco have experienced excessive vibration in moderate winds resulting in fatigue failure of some poles (see the video clip on www.aawe.org). The complaints of this nature involve approximately ten different installations. The same combinations of poles and light fixtures exist at several thousand other installations with no reported motion problems. Videos of the poles in motion have been provided for three of these installations. The videos showed that the poles were moving in a high amplitude first mode vibration. The poles are typically 30'(9.1m) in height, are 6"(150mm) square in aluminum and 5"(125mm) square in steel. The problem installations appear to be located where the terrain is flat and wide open with few wind obstructions. The light fixtures involved are usually small (approximately 1.2 sq. ft.(0.11m²) effective projected area and weight of 45 lbs.(20 kg)) and are side mounted near the tops of the poles.

Hapco developed an impact type vibration damper to reduce first mode pole vibration. These vibration dampers were supplied on three of the problem installations. Feedback strongly indicates that the vibration dampers reduced the motion of the poles to an acceptable level, however, a less expensive solution is needed.

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(Poles continued)

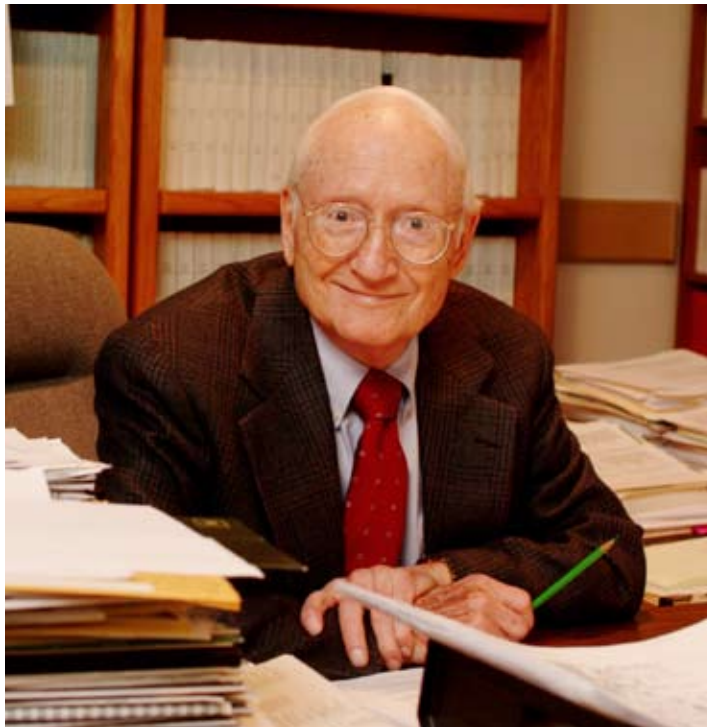
The poles are designed to meet the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1994. This specification minimally addresses vibration and fatigue. A new version of this specification was published in 2001 which includes extensive provisions for fatigue design of certain types of structures. The new version of the specification has not been widely accepted because of recognized faults in the allowable fatigue stresses. A considerable amount of research is underway to address these faults. Neither the fatigue provisions of the 2001 specification nor the research currently being conducted address the square pole motion problem identified above. The 1994 AASHTO specification uses a drag coefficient of 1.45 which is based on wind tunnel tests conducted at Virginia Tech for Hapco in 1982. This drag coefficient was raised to 2.0 with some allowable reduction for corner radius in the 2001 AASHTO specification. There is some controversy about the square pole drag coefficients that are in the 2001 AASHTO specification.

RESEARCH NEEDS

Research is needed to determine the causes of the excessive motion and what can be done economically to prevent it. In anticipation that this research will involve wind tunnel testing, it would be useful to also obtain new drag coefficient data.

OBJECTIVES

- Develop an understanding of the phenomenon that creates the vibration,
- Compare susceptibility of sharp corner versus a radiused corner pole,
- Develop guidelines for predicting at-risk installations,
- Determine the most economical means to prevent the excessive motion
- Obtain new drag coefficient data for square poles.



JACK CERMAK WINS THE OTTO FLACHSBART MEDAL

The wind-engineering societies of Austria, Switzerland and Germany, Windtechnologische Gesellschaft (WTG), have bestowed Prof. Jack Cermak from CSU and CPP in Fort Collins, Colorado, the prestigious Otto Flachsbart Medal. This is only the second time that the WTG has issued this honor. The first recipient was Prof. Alan Davenport from UWO in London, Ontario. The award is named after Otto Flachsbart, who was one of Ludwig Prandtl's scholars at the Kaiser Wilhelm-Institut in Göttingen where he performed pioneering work in wind-loading research. In 1932 he became a Professor of Structural Mechanics at the University of Hannover. In 1937 he was forced by the regime to give up his position. Shortly after, he became the director for research of a German steel manufacturer. In this position he survived and returned to academia immediately after the war in 1945. He served his university as a rector and his country as a Secretary of State for Science and Education. Flachsbart passed away in 1957. He is considered a scholar who stood for joining science and technology with true humaneness.

The WTG has honored Prof. Jack Cermak with this award for a lifetime of research work that has "laid major foundations for the science of wind engineering". A Cermak Lecture was held in his honor at the WTG Workshop held in Braunschweig, Germany, last November. The members of AAWE congratulate Prof. Cermak on being honored by the Windtechnologische Gesellschaft.

by Leighton Cochran

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THANKS TO HIGH VELOCITY INC.

It is very heartening whenever we see one of our Corporate Members step up and offer to help our Association beyond the generous membership each pays to be part of AAWE. In 2007 the AAWE Board was very pleased to receive the gift of a non-profit copy of the software package QuickBooks donated by High Velocity Inc. This relatively new member of AAWE is based in Naples, Florida, and manufactures high-quality storm shutters for condominium buildings in hurricane-prone areas (The Belize Condominium on Marco Island is shown above). These shutters are frequently motor and computer controlled and all more that satisfy the missile protection requirements of all Florida counties. This financial software has put AAWE on a more solid financial recording footing with regards to being able to be audited by potential donors and government agencies. Whilst this was a substantial contribution, the President of High Velocity, Steve Camposano, has recently donated the time of his company's accountant (Carrie Seeley) to input our financial transactions over time into the QuickBooks Software. This donation of his company's professional accountant is truly appreciated and the AAWE Board wishes to publicly thank him for his passion for AAWE.

by *Leighton Cochran*

President of High Velocity
Steve Camposano

TONY GIBBS WINS
UN AWARD

By **David O. Prevatt**

CCE Dept. University of Florida

I am pleased to share news that one of our colleagues, Caribbean engineer Tony Gibbs, Director and Partner of Consulting Engineers Partnership (CEP), was named one of two Laureates of the 2007 UN Sasakama Award for Disaster Reduction. Tony is well-known to many of us and he

served as an AAWE Director from 2000 to 2004. Tony shares this award with Professor Yoshiaki Kawata of Kyoto University. This recommendation for the Joint Award followed the Jury's assessment of the lifetime contribution of both individuals, and their outstanding commitment to disaster reduction efforts and related capacity building at the national, regional, sectoral and international levels. The award also recognizes the efforts of these individuals, - both trained as engineers - to communicate effectively on hazard and risk related issues with a wide range of stakeholders including natural and social scientists; journalists and the media; opinion shapers and decision makers, as well as the general public.

I first met Tony in 1990 while working on a research project titled "Cyclone-Resistant Housing (Caribbean) Project" in the Civil engineering Department of the University of the West Indies (UWI), Trinidad, led by Professor I.D.C. Imbert. Tony served as a member of the Consultative Committee to the project. That project documented several systemic problems with Caribbean low-income housing that made them vulnerable to hurricane winds. Tony was instrumental in formulating and conducting structural surveys that identified typical house shapes, conditions and structural materials in several English-speaking islands. Indeed the exposure of working with Tony in that project made it apparently clear to me that engineering solutions must be found to improve performance of the housing stock, and that set me along the path toward becoming a wind engineer.

Tony's high standards and commitment to development of the profession was reflected in his firm's annual sponsorship of an award to the best final year undergraduate civil engineering student at UWI. CEP which is a very reputable firm involved a large proportion of large structural engineering projects throughout the Caribbean, by and large was comprised of engineers from this program.

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(Gibbs continued)

There are many stories of Tony's travels into islands in the direct paths of on-coming hurricanes in small private planes hours before landfall just before the airports closed. The little we now know about how buildings perform we owe to Tony's diligence in collecting perishable data of wind and storm surge damage. His approach in the Caribbean is prescient to the research we currently perform today in deploying our wind towers and house instrumentation for scientific studies later.

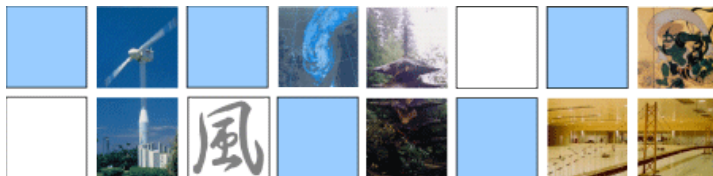
Engineer Gibbs is a graduate of the Queens University of Belfast and the University of Leeds and is Fellow of the Institution of Structural Engineering and the Institution of Civil Engineers (UK). He has practiced as an engineer in the wider Caribbean area for the last four decades and has consulted globally on wind and earthquake resistant design.

He has made a significant contribution to hazard awareness and disaster risk reduction in many developing countries particularly those of the Caribbean and has been closely associated with measures taken to increase the resilience of the health sector. He has also contributed to the field by assessing damage following severe events and ensuring that local standards and design manuals are appropriately updated based on lessons learnt. For several decades he has taken a leading role in sharing his knowledge, insights and expertise with the public as well as a wide range of professionals and researchers in training and in practice, through talks and lectures which have emphasized comprehensive risk reduction approaches as a comprehensive sustainability in island developing states.

Both laureates are being recognized for their lifetime accomplishment in the field, their dedication to the promotion of research based improved practices, their integrated and comprehensive 'joined up' approach and their significant contribution to the sharing and diffusion of ideas about Disaster Risk Reduction. The Jury understands that both laureates have proposed to utilize the award to advance capacity building.

About the UN Sasakawa Award for Disaster Reduction:

Together with the World Health Organization (WHO) Sasakawa Health Prize and the UN Environment Programme (UNEP) Sasakawa Environment Prize, the United Nations Sasakawa Award for Disaster Reduction is one of three prestigious prizes established in 1986 by founding Chairman of the Nippon Foundation, Mr. Ryoichi Sasakawa. The total approximate value of the Award is US \$50,000, shared between the Laureate and the recipients of Certificates of Distinction and Merit. In addition to the financial prize, the Laureate is presented with the valuable UN Sasakawa Award for Disaster Reduction crystal trophy. Administered by UN/ISDR (UN International Strategy for Disaster Reduction), the Laureate and Certificate recipients are agreed upon by the UN Sasakawa Jury, composed of representatives from five continents. The Award presentation ceremony takes place on the occasion of the International Day for Natural Disaster Reduction, the second Wednesday of October.



CONGRATULATION TO EMIL SIMIU

The 2006 Japan Association for Wind Engineering (JAWE) Award for the outstanding wind engineering of the year was awarded to Emil Simiu and Toshio Miyata for their book "Design of Buildings and Bridges for Wind: A Practical Guide for ASCE 7 Standard Users and Designers of Special Structures" (Wiley, 2006).

The award was presented on May 31, 2007 by IAWE President Professor Yukio Tamura during a ceremony held at the Kyushu Institute of Technology, Kitakyushu, Japan.

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AAWE WORKSHOP (20 TO 22 AUGUST 2008)

The AAWE Workshop Committee is pleased to announce that we have fixed the place and time for our Workshop in August this year. The presentations will be held during the days of the Thursday and Friday, 21 and 22, August 2008 at the Vail Marriott in Vail, Colorado. This is a very attractive location for us to meet next summer. Attendees will drive or fly to Vail. Those that fly may come via Denver International Airport and then use the road shuttle or rental car to travel up I-70 to Vail. Alternatively, some destinations (e.g. Chicago and Dallas) have flights direct to the local Eagle Airport. We expect many people will bring their spouses and lengthen their visit beyond the two days of the Workshop. Summer activities in Vail include mountain biking, hiking, rafting, horseback riding, llama trekking, ballooning, shopping, full spa services in the hotel and fine dining around the town. The famous Pepe's is available for a sports-bar meal, while a world class dining experience may be had at restaurants like Le Tour.

Thirty (30) rooms at the rate of \$149 per night have been secured by AAWE. This rate applies to rooms with one king bed or rooms with two double beds. Thus, students should nominate the latter when they book and so share a room to reduce costs. The hotel is happy to allow students to do this at no additional cost. Those with a spouse should nominate a single king bed so that there plenty of

two-bed rooms to be used by students. Since this is the low season in Vail more rooms are likely to be available. Of course, attendees are also welcome to explore other hotels in the area.

The foyer area has free wi-fi Internet access for anyone who brings their laptops. There is a fee in the rooms, but it is free in the public foyer and bar spaces. If attendees drive to Vail, there is free parking in a public parking structure nearby. If attendees wish to park at the hotel itself there is a fee of about \$15 per night.

A call for papers will be issued soon and we are expecting good technical papers from researchers and commercial groups, and it will be a fine opportunity for graduate students to present their research in a small congenial environment – without too much heckling! This will provide them with possible guidance for their future work and keep everyone else up to speed on what is happening in our field. We hope to have four keynote speakers (one each morning and each afternoon) who will provide longer, interesting, overviews of topics that will particularly benefit AAWE members from industry and students just commencing their studies. Financial assistance for travel, in the form of an applied for grant, will be available. In the meantime, mark your calendars for an educational and fun end of summer in the Rockies!



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ADVERTISEMENT



RWDI is an international consulting engineering company specializing in environmental engineering, wind engineering, microclimate, noise and vibration, acoustics and industrial processes.

RWDI is currently accepting applications for a Senior Project Engineer for our new office and boundary layer wind tunnel test facility in Miramar, Florida.

THE PROJECT ENGINEER'S ROLE INCLUDES BUT IS NOT LIMITED TO:

- Planning and coordinating the technical aspects of more difficult assignments
- Facilitating the acquisition of data ensuring that QA/QC procedures are followed
- Data analysis, interpretation, correction and document presentation for various assignments related to the dynamic response of structures subject to hurricanes and strong windstorms, cladding design pressures and the evaluation of wind on pedestrians
- Working to strict schedules and project milestones while maintaining product quality
- Writing of technical reports to present the methodology, results and recommendations
- Advises on technical problems and the appropriate QA/QC procedures
- Provides technical guidance to other team members and serve as the primary client contact in the Project Manager's absence
- We are accepting applications from candidates with the following qualifications:
 - Graduate Degree in Civil, Structural, Mechanical or Aerospace Engineering
 - 4-7 years related working experience with a strong focus on structural engineering studies for high-rise buildings, hotels, condominium structures, resorts, towers and other unique flexible structures or mechanical / aerospace engineering experience in aerodynamics, fluid-structure interaction, structural dynamics or related fields

- Possess or be eligible to obtain P.E. designation in the State of Florida
- An aptitude for practical problem solving and proven ability to successfully meet deadlines
- Ability to work on or manage a number of projects at once
- Attention to detail is required to ensure a high degree of quality assurance and quality control

CANDIDATES SHOULD ALSO POSSESS:

- Excellent written and verbal communication skills
- Strong people and team skills as well as being highly motivated
- An ability to work in a fast-paced team environment with minimal supervision
- Exceptional organizational capabilities, coordination and consultation skills
- Ability to relocate to the Miami, Florida area
- Ability to travel occasionally

Candidates may be required to temporarily relocate for 4-12 months to RWDI's head office in Guelph, Ontario, for training, before assuming full time responsibilities at the Miramar, Florida office.

PLEASE CONTACT:

Nanda Mohamed

Recruitment Coordinator

Recruitment Process Outsourcing

Ceridian Talent Acquisition Practice

P: 905.947.7248

Toll free: 1.866.313.2827

Nanda_Mohamed@ceridian.ca

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WIND ENGINEERING SOCIETY

8TH UK CONFERENCE ON WIND ENGINEERING

University of Surrey, Guildford, UK
14th-16th July, 2008

First Announcement

The 8th Conference on Wind Engineering (WES-08) will be held at the University of Surrey, Guildford, from July 14th to July 16th, 2008. The conference, co-hosted by the University of Portsmouth, will explore and discuss developments, projects and techniques applied to the field of wind engineering. Interest in these conferences is strong, typically attracting 60+ delegates, including some from overseas, reflecting the widespread expertise and interest in wind engineering.

Full details on travel to the University of Surrey Guildford Campus and additional local information can be found at:

www.surrey.ac.uk then select "Visitors" from the menu on the left hand side.

The UK Wind Engineering Society has organized biennial conferences since 1992, and they have developed a well-deserved reputation for being friendly and informative meetings. The conferences have a proudly held tradition of welcoming new delegates and speakers, especially encouraging young engineers, designers and scientists to take part and present new ideas. They provide a forum where information can be exchanged and advice sought freely, in a friendly and constructive atmosphere.

Call for papers

On page abstracts are required by 14th March, 2008; please state if a full paper or a poster is proposed. Please send your abstracts or requests for further information to: H.Supian@surrey.ac.uk

Notification of accepted papers and posters will follow in April and extended abstracts, four pages in length, for the proceedings will be required by 13th June, 2008.



PRESIDENT'S CORNER



In this issue of the Newsletter we are trying a slightly new look. It is hoped that you find this visually attractive and easy to use. It should also tie in better with the new AAWWE webpage that is currently under development with MediaTech Productions. You will find some technical discussion in this issue, along with several award announcements for some of our more well-known members for which we can all take a measure of pride – congratulations to Jack Cermak, Tony Gibbs and Emil Simiu!

Of course all these positive pieces of news are tempered by the sad loss of one of our leaders – Herb Saffir. As the co-inventor of the Saffir/Simpson hurricane scale he will always be remembered by the atmospheric-science and wind-engineering communities. Herb was born in New York in 1917, studied at Georgia Tech and, after serving in World War II, he served as a county engineer in south

Florida before creating the Saffir/Simpson hurricane scale. On a more personal note, I will miss his occasional hand-written notes to AAWWE or ASCE committees. It was a pleasant change, in these days of instant emails, to actually get a letter in the mail from Herb critiquing some issue with which he disagreed or to lodge his summary of the just-passed hurricane season.

Mark your calendars for late August when we will be having our two-day AAWWE Workshop in Vail, Colorado, at the Marriott Spa and Resort. We have contracted a good summer rate at this fine conference center, and I hope that many who come will stay beyond the 21 and 22 August 2008 to enjoy the Rocky Mountains. A call for papers will be issued soon, and some financial grants from AAWWE will be available for some students presenting papers. More on this in the next issue!

This newsletter continues to need articles from the members. Please send publishable items to me at lcochran@cppwind.com as Word files and image files for us to review and place in future editions. I would also ask the members to encourage others interested in wind engineering to join AAWWE, either as individuals or as a corporation. Pass this newsletter on to them so they can use the rear pages to join (note that the membership calendar year of 2008 now applies).

Leighton Cochran

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AMERICAN ASSOCIATION FOR WIND ENGINEERING

www.aawe.org
E-mail: aawe@aawe.org



**American Association
for Wind Engineering**

Membership Application/Renewal **Membership Year: 1 January - 31 December 2008**

Dues (Check appropriate category):

Individual Membership: \$50 ____, Student \$10 ____

Corporate Membership; \$500 or more: ____ . Corporate membership can include up to five individual members. Complete one form for each individual member.

Please make checks or other payments (in U.S. \$ equivalents only) payable to American Association for Wind Engineering and mail to:

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**American Association
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Objectives:

- The advancement of science and practice of wind engineering.
- The solution of national wind engineering problems through transfer of new knowledge into practice.

Established in 1966

Corporate Members of AAWE

Boundary Layer Wind Tunnel Laboratory, University of Western Ontario
www.blwtl.uwo.ca

Cermak Peterka Petersen, Inc.
www.coppwind.com

High Velocity
www.category5.com

Rowan Davies Williams & Irwin, Inc.
www.rwdi.com

Wind Engineering and Fluids Laboratory, Colorado State University
www.windlab.colostate.edu

Wind Science and Engineering Research Center, Texas Tech University
www.wind.ttu.edu

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