RESC Retired Engineers & Scientists of Cincinnati

Luncheon Meeting -Tuesday, January 19, 2010 @ 11:30 am
Evergreen Retirement Community
230 West Galbraith Road, Cincinnati, Ohio 45215
visit us at www.resc.org

NEW GUINEA

By: Edward Daley*

New Guinea is the world's second-largest island (after Greenland), divided politically between Papua New Guinea (independent country, eastern half of the island) and the Indonesian-controlled western half. Little was known about the inland tribes, who speak literally hundreds of different languages, until after World War II.

"I have been to New Guinea twice, the first trip (2006) going into the interior and the second (2009) including a complete circumnavigation of the island. Since New Guinea was an important World War II theater, I'm also showing a bit of Guadalcanal and Rabaul, since these sites were closely associated with the New Guinea campaign."

The New Guinea campaign (1942–1945) was one of the major military campaigns of World War II. The island of New Guinea was split between the Australian League of Nations Mandate Territory of New Guinea (the north-eastern part of the island of New Guinea and surrounding islands), the Territory of Papua (the south-eastern part of the island of New Guinea, an Australian colony), and Dutch New Guinea. It was strategically important because it was a major landmass to the immediate north of Australia. Its large land area provided locations for large land, air and naval bases.

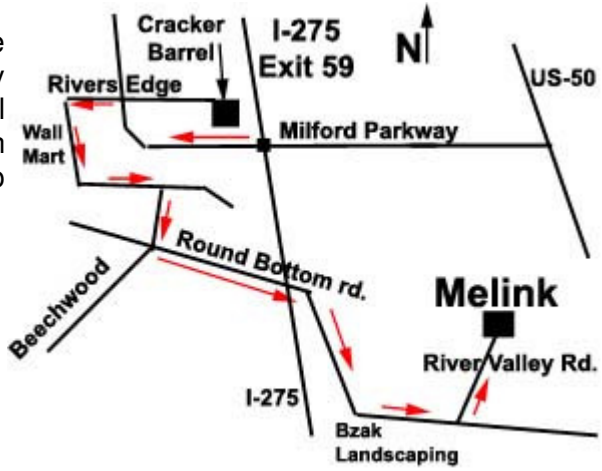
* Ed Daley, B.S. in chemistry, Rensselaer Polytechnic Institute, M.S. physical sciences, University of Illinois, retired from P&G, where he worked in product development for 35 years. He has extensively traveled to all seven continents including 49 states in the U.S. and all the provinces and territories in Canada with the exception of Prince Edward Island. He taught "Geology for Travelers," "Poles Apart," and "Islands" for ILR/ILE/OLLI. He has long been interested in Antarctica, having heard at age ten Admiral Byrd's lecture about his first two expeditions to Antarctica.

JANUARY 13th TOUR, Save-This-Date

The Green Scene

There is a Lot of talk about renewable energy these days but what is really deliverable and doable? You will see first hand actual solutions for using wind, solar and geothermal in addition to a tour of their building designed from the ground up to be energy efficient. A LEED Gold Certified Building

WHEN: Wednesday, January 13, 2010
WHERE: 5140 River Valley Road, Milford, Ohio 45150,
Ph: 513-965-7300
TIME: Meet at 9:45 am (tour begins sharply @ 10:00 am)
Lunch: Cracker Barrel, 475 Rivers Edge Drive, Milford,
Ph: (513) 831-6635 I-275 & US 50 Exit 59



Reservations: Call John Gilman, 513-541-1147

FUTURE PROGRAMS

February 16, 2010

All-Electric Saturn Sky Conversion

Ohio P.E. CPD Credit

By Tim Wieck, Chief Engineer

AMP™ Advanced Mechanical Products, Inc.

An all electric vehicle, the AMP power train delivers 150 miles per charge, and a complete "fill up" cost about the same as a gallon of gas. And best of all, it is fun to drive. The AMP is a true 100% electric car.

March 16, 2010

QUEEN CITY SQUARE PROJECT

Building the Future, Cincinnati's Tallest Building

Ohio P.E. CPD Credit

By: Bob Grace, Turner Construction

Mr. Grace is the project executive responsible for all operations on the project including contract negotiations, client services, project quality, schedule and profitability. He currently holds this role on the $250 million Great American Tower at Queen City Square, which will be Cincinnati's largest, tallest and "greenest" office building upon its 2011 completion.

April 20, 2010

Green Issues and Solutions

Ohio P.E. CPD Credit

By: Jack Clock CMfgE, Green Energy Ohio (GEO)

GEO is dedicated to advancing environmentally and economically sustainable energy policies and practices in Ohio. GEO promotes renewable energy (solar, wind, biomass & low-impact hydro) statewide by acting as a clearinghouse to inform Ohioans on sustainable energy.

May 18, 2010

Global Warming

Ohio P.E. CPD Credit

By: Dr. Marwan Nusair, Physicist

The data-driven view of global warming, where evidence of each source of climate change is considered and the various causes then compared, including human activity.

DESIGN OPPORTUNITY

The Cincinnati Observatory is looking for an engineer or two that would be interested in volunteering some design time toward recreating an operating Time Ball. See the article later in this newsletter. Design criteria will be provided by the Observatory. If interested please contact Lee Hite at (513) 677-0543 or email, RESC@fuse.net.

U of C Student Needs Help from a P.E. in Civil Engineering

Kevin Knollman, a Biomedical Engineering student from the class of 2013, is involved with the student chapter of EWB (Engineers without Boarders) and needs help with a project. Kevin has described his needs below. If you can help please contact him directly at knollmkm@mail.uc.edu or call Zan Smith at 513-520-4338 or smith.zan@gmail.com.

"I am currently leading a new project to construct additional classrooms for the primary school in Otho Abwao, Kenya (where we completed the water distribution system back in March). I've hit a little bump in the application process and am looking for advice. I cannot find a technical lead for the project. I had originally listed the Ministerial Works of Kenya, a government sector, as the technical lead, but EWB-USA notified me that the lead must be a civil engineer registered in the US. I've asked civil engineering professors here at UC, but all of them are too busy to pick up another commitment now. Is there someone who would be able and willing to help us out on this project? Any advice would be greatly appreciated."

FOR Friends of RESC

Suggest someone that would like to receive the newsletter but may not be able to attend meetings or may not want to become a member. We'll send it to them via email. Let us know at RESC@fuse.net

Dropping the Ball for Cincinnati Time

Have you ever been curious how accurate time was maintained in the Greater Cincinnati area prior to radio signals, and prior to electronic methods? Certainly, your answer would include the traditional sundial and maybe the pendulum clock. But the question is how did a clock registering noon on the west side of Cincinnati coincide with the exact same time as a clock on the east side? Many folks depended on railroad time, but how did the railroad determine accurate time?

Consistent with many locations across the country and especially along the coast line, the local astronomical observatory was the only source for accurate time. At the Birthplace of American Astronomy, the Cincinnati Observatory provided a time mark for exact noon in Cincinnati. This was not noon by Greenwich Mean Time or noon by Standard Time but rather Astronomical Noon* in Cincinnati.

When the Observatory was situated on Mt. Adams, from 1845 until about the 1870's, the astronomers determined the accurate time with the aid of the Robert Molyneux clock, pictured to the right. The clock was manufactured in London during the mid-1840's, and its temperature compensating pendulum and the weight were both filled with mercury. The clock was stored in a room adjacent to the observing room because the observing room was kept at the same temperature as the outside. As the pendulum would swing back and forth, a needle attached to the bottom of the pendulum would contact a pool of mercury, which would open/close an electric circuit. Hence, time was communicated back and forth to the astronomer and the clock. The astronomer would be viewing the stars through his telescope to determine the time.

The astronomer on duty in Mt. Adams would supply accurate time to four jewelry shops in the city below Mt. Adams. Then the citizens would bring their pocket watches and home clocks to the jewelry shops to see if their clocks were running fast or slow.

In 1873, when the Observatory was relocated from Mt. Adams to Mt. Lookout, the astronomers needed a different method of communicating time to the citizens. In the absence of radio signals that were used to transmit accurate time, a clever method used here and throughout the country was a visual notification to the residents of Cincinnati. A large, black ball mounted to a 60 foot pole attached to the Cincinnati Observatory building atop Mount Lookout, provided a visual time mark for exact time to anyone with line-of-sight to the top of the pole. At precisely noon the ball would drop, free-fall, indicating astronomical noon. About 15 minutes prior to noon the ball would be raised to half mast and at 5 minutes to noon the ball would be lifted to the top, providing the viewers with 15 and 5 minutes advance notice. At exactly astronomical noon at the Cincinnati Observatory the ball was dropped free-fall style. This method of dropping the time ball was used from about the mid-1870's to the mid-1880's. The Observatory's master clock at this time was a pendulum clock manufactured by Jas. Ritchie & Son, Edinburgh, Scotland.

In order to provide time to the citizens who lived in the city during the 1880's the Observatory arranged for a time ball to be dropped from the top of the Carlisle Building, which was on the corner of Fourth and Walnut Streets. There were repeated communication-transmission problems between

the Observatory in Mt. Lookout and the Carlisle Building. Eventually a downtown jewelry shop assisted with the raising and lowering of the ball. Then the downtown ball was replaced by a large clock outside of the Carlisle Building that was controlled by the Observatory. Transmitting of the time signal from the observatory to downtown was terminated because the President of the telephone company took down the telephone lines between the Observatory and downtown because he had a disagreement with the University of Cincinnati, the operator of the Observatory.

The Observatory also transmitted daily noon time signals to the local fire stations so that the citizens could check with their local fire station to determine the accurate time.


A time ball drops from the State, War and Navy Buildings in Washington, DC.

The first time ball in the United States was established at the U.S. Naval Observatory in Washington, D.C. around 1845. Before 1883 there was no standard time in the United States, but in the late 1800's most major cities had time balls. They were dropped at noon every day. People looked up from their work and checked their own watches. Everybody wanted to be "on time," and the time ball was a signal that the whole town could use. Jewelers had clocks in their windows or outside their doors, each one claiming to have the correct time. Observatories would even sell their time to various organizations like railroads and jewelry stores.

During the 1860's and 1870's as the railway system expanded, the trains were traveling through multiple, city centered time zones. Consequently, they encountered difficulty keeping their schedules on time that resulted in multiple accidents and loss of life. The railroads then started purchasing time from the astronomical observatories, and the whole railroad line operated on the time from the selected observatory. In 1883, the railroads established provisional time zones to coordinate their train schedules. Hence, Standard Railroad Time was established. Eventually, the railroads petitioned Congress who passed the Standard Time Act in 1918 to make the railroads' time zones into law for all of us.

In the late 1860's Western Union synchronized their clocks in the principal cities by telegraph with the U.S. Naval Observatory. Over time this practice was established across the country.

In 1939, Shillito's started using an automatic Audichron device to transmit time to Cincinnatians via the telephone. Customers were required to telephone PArkway 1700, and the feminine voice would provide a short advertisement for Shillito's and then tell them the time, hour and minute. The telephone time service (plus weather) still functions, sponsored by Cincinnati Bell; give it a try, call (513) 721-1700.

*Solar time is measured by the apparent diurnal motion of the sun, and local noon in solar time is defined as the moment when the sun is at its highest point in the sky (exactly due south or north depending on the observer's latitude and the season). The average time taken for the sun to return to its highest point is 24 hours.

A sidereal day is approximately 23 hours, 56 minutes, 4.091 seconds; corresponding to the time it takes for the Earth to complete one rotation relative to the vernal equinox. During the time needed by the Earth to complete a rotation around its axis (a sidereal day), the Earth moves a short distance (approximately 1°) along its orbit around the sun. Therefore, after a sidereal day, the Earth still needs to rotate a small extra angular distance before the sun reaches its highest point. A solar day is, therefore, nearly 4 minutes longer than a sidereal day. We govern our daily lives via solar time, but the Observatory's telescopes operate on sidereal time.

By: Leland Hite, RESC, with considerable input form John Ventre, Historian and former director for the Cincinnati Observatory Center, November, 2009.

LUNCHEON RESERVATIONS

Mail Label

Zan Smith
PO Box 30346
Cincinnati, OH 45230

Please make sure ALL lunch reservations
are Received ON or BEFORE Thursday, Jan. 14th

RESC Dues & Luncheon Reservation Form

Make check payable to "RESC" and Mail to the Treasurer:
ALL reservations must be on or Before Thursday, January 14th

Date of luncheon		January 19, 2010		
LUNCH	**Member name**		**$13.00**	
	Prospective Member		***$13.00**	
	Guest Name		**$13.00**	
	Ohio P.E. Name**		**$13.00**	
DUES ANNUAL	**Membership**		**$15.00**	
	Golf		**$ 5.00**	
*No charge when attending the first meeting and sponsored by a member			**TOTAL**	

Ohio P.E. Registration Number		**CPD Certificate (Y/N)**	
**Continuing education certificate included with the $13.00 lunch cost.			
Please list any CHANGE to your email, personal address, or phone number.			

MENU

Chicken Cordon Bleu
Fresh Mixed Vegetables
Rice Pilaf
Fresh Green Salad and dressings
Crusty Rolls
Ice Cream Sundaes with whipped cream and cherries
Beverages

TREASURER

Zan Smith
PO Box 30346
Cincinnati, OH 45230

Ph: 513-520-4338

---------- cut line ----------

SAVE A STAMP, REGISTER FOR LUNCH ONLINE

For those of you who prefer to write a check and mail in your reservation form, nothing has changed. However, if you already pay your bills online using the "Bill-Pay" from your bank, you can use that same method to pay for your lunch reservations. It's a two step process.

First, go to the RESC web site **www.resc.org** and complete the "E-mail Reservation Form" located on the home page. This will send your lunch reservation to the treasurer via email. You will receive an email conformation, if not, please call the treasurer directly. Zan Smith, Ph 513-520-4338

Secondly, using your online bill-pay feature from your bank, send the lunch reservation money to the treasurer. Send to: **Zan Smith - RESC; PO Box 30346; Cincinnati, OH 45230.**

That's it!

Famous scientific quotes

A philosopher once said “It is necessary for the very existence of science that the same conditions always produce the same results”. Well, they do not. You set up the circumstances, with the same conditions every time, and you cannot predict behind which hole you will see the electron.
Richard Feynman (1918 - 1988)

Not so famous scientific quotes *Said what . . . ?*

"If I had thought about it, I wouldn't have done the experiment. The literature was full of examples that said you can't do this.” (Spencer Silver speaking on the work that led to the unique adhesives for 3-M [Post-It] Notepads.)

THE OSHER LIFETIME LEARNING INSTITUTE (OLLI)

The Institute for Learning in Retirement (ILR) has around 120 courses per quarter from Computers to Photography to Wine Tasting taught by volunteers for seniors over 50 at UC Tangeman University Center, Raymond Walters College, Temple Adath Israel (on West Galbraith Road), Sycamore Senior Center, and a few other sites. Tuition is only $80 per quarter and you can take as many courses as you like.

Harold and Fae Audre Rice and Edwin Daley teach a travelogue course "Where in the World Have They Been?" every winter quarter at Raymond Walters on Thursdays at 1:00 p.m. This winter quarter beginning January 10, 2010, Edwin Daley, our January RESC speaker, will present in addition to New Guinea, the Dalmatian Coast of Croatia and Around the Black Sea. For details contact Harold Rice at haraudrice@juno.com or call (513) 573-9754

NACKES (North Area Counties of Kentucky Exposition of Science) held at NKU is looking for science fair judges. The judging will be Saturday, February 27, 8 am to 12:30 pm.
To sign up please contact Jerry Carpenter at **rhondac2@fuse.net**.
You can register on their web site at **nackes.nku.edu**.
Do not put “w w w” in front of the address.
Click on “Judges” in the lower left corner of the home page.

RESC NEWSLETTER
10266 Kingsport Drive
Cincinnati, OH 45241