

Polar Expressions

A Monthly Publication of Alaska Mensa



Firearms are second only to the Constitution in importance; they are the peoples' liberty's teeth. George Washington

I am a firm believer in the people. If given the truth, they can be depended upon to meet any national crisis. The great point is to bring them the real facts. Abraham Lincoln

VOL. 35 NO. 2

FEBRUARY 2009



Editor
Polar Expressions
PO Box 143174
Anchorage, AK 99514-3174

**First Class Mail
Forward or Return
Requested**

If you have moved, send your change to the National address inside!

Polar Expressions is the monthly publication of Alaska Mensa. We reserve the right to edit for purposes of clarity and space, and to decide if or when a submission will be published. The deadline for submissions to the Mar. edition is Feb 17. All submissions should be sent to the editor at the return address on this publication. Please limit your letters/articles to not more than 250 words. Preferred media for contribution to Polar Expressions is on an IBM compatible disk, in MS Word for Windows 2, 6, 7, or higher, or Publisher 98. Legible hard copy is also accepted, however, the rougher your copy, the earlier the submission. Submit articles to the editor. Material not bearing a specific copyright may be reprinted by other Mensa publications, providing that it is credited to Polar Expressions. **The opinions expressed in this newsletter are the opinions of individual writers.**

OFFICERS & BOARD MEMBERS— ALASKA MENSA

| | | |
|---|--|---------------------|
| President | Denise Yancey | 907-243-7504 |
| | e-mail: yancey@alaska.net | |
| Vice President | Dan Gilman | 907-333-7311 |
| | e-mail: dangchilly@yahoo.com | |
| Sec-Treasurer | Norma Gertson | 907-338-5950 |
| | e-mail: nlg@alaska.net | |
| Member-at-Large | Nancy Welch | |
| | e-mail: mal@mensialaska.org.org | |
| Program Chair | Betsy Campbell | 907-677-7616 |
| | e-mail: program@mensialaska.org | |
| Scholarship Chair | Carol Schlitte | |
| Gifted Children's Main Proctor | Position available | |
| | CarolAnne MocarSKI | |
| | e-mail: proctor@mensialaska.org | |
| North Proctor | Joe Nava | 907-479-2340 |
| Newsletter Editor | Peter Marsh | |
| | e-mail: timan@cvinternet.net | |
| Webmaster | Dan Gilman | 907-333-7311 |
| | e-mail: dangchilly@yahoo.com | |
| SIGHT Coordinator | Position available | |
| | e-mail: sight@mensialaska.org | |

MEMBER HIGHLIGHTS

February birthdays include Rob Hensch, Scott Stohl, Gerald Brown, and Kurt Love.

(Editor's note: we are no longer able to get an updated birthday list from Nationals, so if you want to make sure your name is listed in the birthday column, please email your approval to Norma Gertson at nlg@alaska.net.)

The Alaska First Lego League Robotics Tournament was held in Anchorage on Saturday, January 10, 2009. Three members, Denise Yancey, Matt Taylor, and Norma Gertson, volunteered as judges and support staff for this event. This event was for the 9 to 14-year-old kids, and they are an excitable bunch. The theme this year was Climate Control, and besides having to program their robot to do specific jobs during the timed team to team matches, each group met with judges in the project research, teamwork, and technical design areas. The winning group with represent all of Alaska at a world-wide event in Atlanta, Georgia later this spring. Norma was named as the outstanding volunteer for this year's tournament. She's been a volunteer for this event for 5 or 6 years, and primarily been responsible for coordinating the teams' access to the judging areas. Congratulations to her, to Denise and Matt, and to all the wonderful kids, parents, and coaches who use after school time to prepare for this contest.

BITS AND PIECES

For those of you who recognize my style in the newsletter, rest assured, Peter did the articles throughout. I'm just pulling the articles into a readable format for him this first month. He's researching the best possible format for his style and comfort level. More information is available on our web site, so be sure to check there for footnotes and anything you may have missed here. That URL is www.mensialaska.org.

Until next time, travel safely. nlg

far, use about one ninth the energy of our hypothetical 5-star plus home. The actual standard is less than 15 KWh/meter/year, which converts to 4746 BTU/ft/year. So we're talking about a possible 90% reduction in energy losses from your average 70's vintage home. Are you impressed now?

We need to delve into all these measurements a little deeper. Please note that even though Design Heat Loss (per square ft) and Annual Energy Use have the same dimensions mathematically, they are completely different measurements. To reiterate: Design Heat Loss is the heat loss per hour (rate) per square foot of floor area at the Design Temperature for the locale; Annual Energy Use is a summation of total net energy loss for a (convenient) one year period, per square foot of floor area. And although Design Heat Loss per square foot allows comparisons between homes *in the same area*, one cannot use this metric to compare the performance of homes in Juneau and, say, Nome. It should be obvious that two such homes with identical floor area and the same Design Heat Loss will be constructed differently, due to the difference in the Design Temperature between Nome (-27) and Juneau (+1). And if these same two homes were built to have the same Annual Energy Use, they would be constructed quite differently again, due to the different number of Heating Degree Days at each location. So valid comparisons require some additional mathematical manipulation. See the sidebar.

TO BE CONTINUED NEXT MONTH.

MIND GAMES

APRIL 26-29, 2009 - CINCINNATI, OHIO

REGISTER ON-LINE AT AMERICANMENSA.ORG

INTRODUCTION TO THE NEW EDITOR

My name is Peter Marsh, and I will be accepting the role of editor for Polar Expressions, at least until my typing fingers wear out. (And there's only two – I'm a hunt-n-pecker)

First, a little information about myself: I'm 60, retired from Alyeska Pipeline, and have lived in Valdez since 1988. I came to Alaska in 1966, so that makes me part Sourdough. My career has been telecommunications and instrumentation, but I also do everything from mechanics to plumbing. I have always had a keen interest in science and technology, and read voraciously. (I am just finishing the Patricia Cornwell forensic mystery series which Norma was kind enough to lend me.)

My wife Sheila is the secretary for the First Baptist Church, and can out-fish me. We have two grown children, and three grandsons.

Perhaps you may remember Lorna Maupin, who used to do this newsletter. She worked at the Marine Terminal several years ago as an Autocad draftsman, where I met her. I asked her what she thought was the defining characteristic of a Mensan. Her reply: an insatiable curiosity about everything. However one chooses to describe intelligence, I feel her answer was right on. There are no bored Mensans. As editor, I wish to touch on a wide range of subjects, and delve into greater detail than one normally encounters. I also wish to tie the newsletter to our web site, and invite members to comment and expand on these subjects. References will be provided so you can explore more. I realize it will be impossible to not leave my imprimatur on the content, but I don't want the newsletter to degenerate into a personal blog. So I will need your input and advice. Let's get started.

Mailing Address for Alaska Mensa

(Individual's name or committee name)

Alaska Mensa

PO Box 143174

Anchorage, AK 99514-3174

Indications You Live in Valdez

- You can drive 600 miles and *still* save money on groceries
- Most of the real estate is vertical
- No one bowls: it's darts
- You have a bear skin rug on the floor and a halibut skin rug on the wall – or the other way around
- Summer consists of Red season, King season, Pink season, and Silver season. Fall begins with Moose season
- You want Honda to build a lawn mower with a snow blowing attachment.
- In the winter you need a ladder to get to your front yard
- The edge of the Continental Shelf is less than a mile from your front door
- By spring time, some of the snow piles around town are axle deep to a ferris wheel
- Highest ratio of front end loaders to people of any city in America
- The birds eat the cats

CONSERVATION

Whether you're a tree hugging Greenie or a slash & burn development supporter, there is something everyone agrees on, and that is the necessity for energy conservation. It is the pillar on the consumption side of any energy policy. I shall define two types of conservation. The most common aspect is the behavioral Jimmy Carter approach, where people choose to use less energy performing any particular task. This method is simple and produces immediate results, but soon begins to intrude on what we consider our "standard of living." After all, you can only turn the thermostat down so far before the wife complains or you run out of sweaters. (footnote – the US army actually did an experiment on cold adaptation by lowering the living

ence the structure must accommodate. Now we're ready to look at real world performance. If you divide the Design Heat Loss by the square footage of the home, you get a figure in BTU/hour/square foot. This is a handy measure because you can compare homes *in your area* with different floor areas. According to Cary Bolling at AHFC, the average Anchorage home built between 1980 and 2000 will rate at about 25 BTU/Hr/Ft. (Remember this is at -18 deg F.) A five star plus home built today would perform at 10 BTU/Hr/Ft or less. Such a home would require a Heart Recovery Ventilator due to the sealing of most air leaks. Nathan Wiltse of the Cold Climate Housing Research Center www.cchrc.org in Fairbanks was kind enough to run two simulations with Akwarm on an average sized two-story house, located in Fairbanks. This hypothetical home was first input with average construction assumptions for pre-1980, and rates at 71.8 points, which earns it a mid range 3-star rating. (According to Nathan, most homes of that age are scoring less than three stars in energy audits.) The heat loss works out to 28.9 BTU/ft/hr. Recall that this heat loss is at the design temperature for Fairbanks, which is -47 deg F. Next this hypothetical home was re-run with building techniques and materials that would be common in 5-star plus construction. The new heat loss figure? An amazing 9.1 BTU/ft/hr! This is better than 50%, and in fact is a reduction of \$68%.

Can we do even better? Why, yes, as a matter of fact. I first need to mention that Akwarm also provides a yearly summation of all the heating & cooling loads, with adjustments for solar gain & loss, and number of people living in the structure (each person adds about 100 watts). This figure is called the Annual Energy Use, and is expressed as BTU/ft/year. In the case of our hypothetical 5-star plus home, that figure came in at 44,524 BTU/ft/year. Google Passivhaus, which is a current German standard for low energy buildings, and check out the Wikipedia entry. A similar Swiss standard is MINERGIE-P. Homes built to these standards, and there are over 15,000 word-wide so

The Energy Efficient Home – Hype or Promise

Most folks realize adding insulation and stopping drafts saves energy, but how much improvement is really possible? Is the super-efficient home a chimera, with the actual energy savings always “just around the corner?” Are the recommended methods of improvement only snake oil, like the magnetic gizmo you can clamp on the fuel line of your suburban to make it get 65 mpg? As it turns out, if a home is carefully constructed following some well-understood guidelines, then yes, energy savings of over 50% are readily achievable. Let’s step back and discuss the metrics typically used to characterize heat loss from a structure. When an energy audit is done, all the physical data on your home – enclosed volume, amount of insulation, area and type of windows, heated floor area, and air leakage – is put into a computer program called AkWarm, which was developed by the Alaska Housing Finance Corporation and has been refined over the years. One of the results from this program is the “Design Heat Loss” in BTU/hour. This is the total amount of heat that escapes from the structure per hour at the “Design Temperature” while maintaining an inside temperature of 70 deg. The design temperature has been specified for your home’s location, and doesn’t represent the coldest outside temperature, but is a statistically derived low. For Anchorage that figure is –18 deg F. For Valdez, it is –2 deg F. For Fairbanks, the design temp is –47 deg! Youch.

The Design Heat Loss is a performance measure of the thermal envelope, which is everything in the structure that slows the loss of heat to the outside. It includes both direct heat loss from air leaks (remember that blower door test?) and a calculation of the conduction loss through the envelope’s average R value.

Notice we haven’t looked at what puts heat into the structure, like the furnace or boiler. We’ll consider that next month. The two important facts to note are these: first, heat loss is directly proportional to the temperature differ-

temperature for a group of test subjects, allowing them to become acclimatized to each reduction. No extra clothing was allowed. After several months, the test concluded at 32 degrees because the water would have frozen. We are far more adaptable than we assume.)

The second, and far more important type of energy conservation is due to the incremental improvements in infrastructure that goes on constantly (and invisibly) in any industrial society. Virtually everything takes less energy to make or do than it did ten or twenty years ago. For example, the advent of continuous casting for steel saves about one million BTU per ton cast compared to the older batch method. <http://www.princeton.edu/~ota/disk3/1979/7902/7902.PDF>

On that note, I wish to explore an energy conservation subject near and dear to many of you: your home. This offers a perfect scenario to elucidate the two different types of conservation, and will provide help to those seeking to make their home more energy efficient. I am well along in doing this myself. I have taken the Alaska Home Craftsman building classes almost since they were first offered in Fairbanks, and have managed to get an energy audit for the AHFC rebate program. Actually, our first audit was done several years ago, when the program was first introduced and before the legislature cut off funding. We have remodeled about half of our home, with a large part of the work devoted to improving energy efficiency. I will share some of my observations, hints, and research about this entire process with you, and ask that you pose questions, comments, or requests for information on the website.

**CHANGES OF ADDRESS GO DIRECTLY TO:
AMERICAN MENSA –**

**1229 CORPORATE DRIVE WEST –
ARLINGTON, TX 76006.**

Or, visit www.us.mensa.org/profile and make your changes there.

February 2009

There's white snow on the ground, but how long before it becomes covered in volcanic ash?

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--|---------|---|----------|--------|--|
| 1 | 2 | 3 | 4 5:30 PM - 7:00 PM Board Meeting -Village Inn - Sp- enard Road in Anchorage | 5 | 6 | 7 9:00 AM - 11:00 AM Breakfast - Doriol- a's -Tudor Rd bet- ween C and Arctic in Anchorage |
| 8 | 9 7:00 PM - 9:00 PM Eagle River Dinner - call Mary Rose for location 907-355- 6688 | 10 | 11 | 12 | 13 | 14 9:00 AM - 11:00 AM Breakfast - Doriol- a's -Tudor Rd bet- ween C and Arctic in Anchorage |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 9:00 AM - 11:00 AM Breakfast - Doriol- a's -Tudor Rd bet- ween C and Arctic in Anchorage |
| 22 | 23 7:00 PM - 9:00 PM Eagle River Dinner - call Mary Rose for location 907-355- 6688 | 24 | 25 | 26 | 27 | 28 9:00 AM - 11:00 AM Breakfast - Doriol- a's -Tudor Rd bet- ween C and Arctic in Anchorage |

| January | | | | | | |
|---------|----|----|----|----|----|----|
| S | M | T | W | T | F | S |
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

| March | | | | | | |
|-------|----|----|----|----|----|----|
| S | M | T | W | T | F | S |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

For changes to the calendar, please contact Betsy Campbell at 907-677-7616.