KREEG Newsletter 12-09

Attendees		
Doyle Maleche	Mike Cambra	Chris Stone
Charlie Johnson	Emelia Cambra	Luke Stone
Braxton Brown	Wendy Cambra	Blain Stone
Wayne Cazier	Jeff Quast	McLaren Stone
Karl Kirchhofer	Aaron Shaw	Jerry Holaway
Katheryn “Kat” Leonard	Nel Straub	Forrest Carlson

GREETINGS ALL!

KREEG members

Thanks to **Wayne Cazier** for bringing his camera to capture this ‘Kodak moment’!

Our new guests for this week:

Jeff Quast. Retired Navy Chief Machinist Mate (Submarines). Jeff brings a wealth of mechanical knowledge and experience in welding, metal working, lathe, plasma cutting, and fishing to the group. Jeff is one whose ideas are endless and an out-of-the-box thinker. Tim-the-tool man-Taylor is no match for what Jeff can do with motors and structures!

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle’s house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

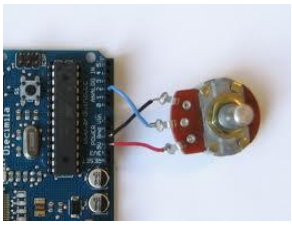
Forrest Carlson. Forrest is currently and student at Olympic College studying Mechanical Engineering and wants to pursue Reusable Energy applications and technologies. He is a perfect fit for this field, since he lives off the grid! His home has solar energy panels and various green foot-print technologies.

Kat Leonard. Kat is Nel's mother and also interested in technology and Arduino programming.

McLaren Stone, at 7 months old, is our YOUNGEST member to attend. A quiet little Ewok, but that won't last long.

Luke (5) and his side-kick brother, **Blain (3) Stone** were real troopers. Luke showed us his R2D2 toy robot and chatted up a storm! Way to participate Luke! Both Blain, Luke, and their Ewok brother McLaren are a great addition to the KREEG family.

If you missed this meeting, you missed a good time and introduction to Digital/Analog and Pulse Width Modulation (PWM) for Arduino programming by **Doyle**! Plan on seeing these and other topics for download on the KREEG web site.



Charlie Johnson brought his Tektronix color DSO Oscilloscope so we can view the perfect PWM waveform coming from the Arduino. **Nell** played 'Vanna White' and demonstrated how the wave forms changed as she turned the potentiometer which varied the pulse width.

Since the last meeting, a few KREEG members made great progress on a few of their projects and items they had lying around needing repair, so they went to Doyle's shop and learned a few troubleshooting tips and some programming concepts.

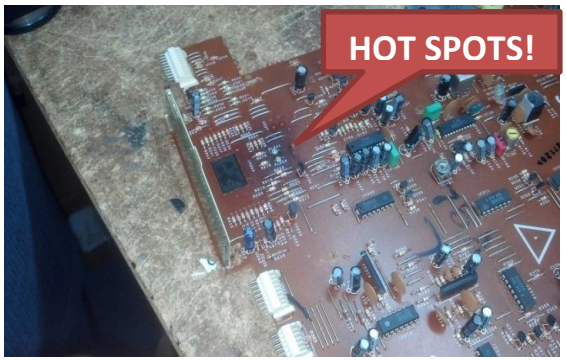
Jerry Holaway had a nice 22 inch LCD computer monitor he purchased used that had an intermittent power button problem, and a stereo with a failed front panel illumination – he could not read what radio station or input was selected. Jerry arrived at Doyle's shop last month with both items to learn about how they work and wanted to see if they were repairable. Starting with the computer monitor; they removed MANY panel screws of various sizes and shapes. Doyle showed Jerry a way to organize the screws to ensure they are properly re-installed. Sometimes screws are like socks in a dryer – you either loose one or you end up with three 'extra' – go figure. Typically, computer monitors and LCD TVs have a common problem with power-up. They can be intermittent due to bad capacitors as a result of power surges or 'dirty' (noisy) AC house power. Most often, bad capacitors are easily recognized by a BULGE at the top compared to a flatter surface. The "X"

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

indentations provide a built-in weak point to allow expansion and prevent violent explosion from AC power line surges (not fire and brimstone, just firecracker – POP). This however, was not a symptom of Jerry's monitor. His power switch worked after a couple of pushes, but felt 'mushy' compared to the other buttons which had more of a 'click' feel. Using a multimeter set to the OHMS scale, we measure between the two contacts of the power switch and noticed a 50 ohm to 120 ohm reading. This should have read a SHORT or zero (0) ohms. When testing the same type switches next the power switch (Mode, Up, Down, Menu), we the meter read 0 ohms. Doyle did not have any spare switches that matched this brand so Jerry unsoldered both the power switch and the rarely used mode switch, swapped and soldered them in place. Before reinstalling the panel and screws, a quick test revealed that the monitor's new power button was working every time it was pushed – problem solved!

Jerry's next project was to fix the illumination panel on his stereo. After removing all the screws and setting them down in a fashion so not to lose them, we removed the top and back cover to expose the circuit board. A quick visual investigation showed discoloration (hot spots) on the board in close proximity to the illumination panel and lighting.



Two small incandescent light bulbs were bad and required replacement. We needed to know the voltage tolerance of these bulbs, so Jerry unsoldered the bulbs, installed the board back into the stereo, applied power, and measured the voltage at the solder point where the lights were. This reading showed 18 volts DC. Again, not having replacement bulbs for this model stereo, we decided to retrofit it with Light Emitting Diodes (LED), replacing the incandescent bulbs and making it more efficient using less power!

To allow the LEDs to properly illuminate the front panel, Jerry soldered five yellow LEDs on an electronic hobby board in an array fashion. Mounting the LEDs in Series was the best option because each LED dropped voltage by 0.4 volts for a total of 2 volts. Placing a 50 ohm – 5 watt resistor provided adequate heat dissipation and ample illumination. Jerry soldered the wires to the new board then routed them to the stereo bulb solder points. We placed the new board in position close to the front panel and had to Hot-Glue it at the correct angle and position. This worked very well!

Testing the board before reinstalling the panel, sides and screws, showed that the yellow LEDs worked, but blue would be better. Jerry may upgrade the LEDs later. GREAT JOB JERRY!

NEXT MEETING:

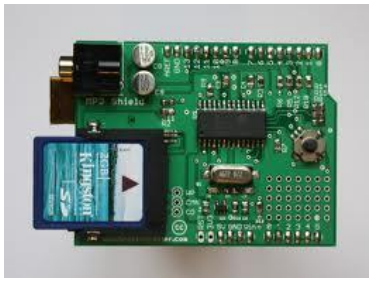
Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

Karl Kirchhofer is at it again with his project named 'Hank – Heron'. He designed a large Heron figure to actually flap its 5 foot wing span and play random MP3 files of sounds and voices when the structure detects movement.

Hank-Heron

Passive Infra-Red Sensor

A pyroelectric sensor called Passive Infra-Red (PIR), detects a moving heat source through the dome-shaped fresnal lens and triggers a logic state on the output pin. This output is sensed by the Arduino and takes action based on the programming. PIRs are commonly used for motion detection and found in outside security lights and Kiosks.



MP3 Arduino – Adafruit.com

To provide sound, Karl is using an MP3 sound board which attaches to his Arduino. Various sound bites are recorded in MP3 or WAV format and saved to the small SD Memory Card.

The memory card is inserted into the holding slot on the sound module and the sound bites are played randomly or when and external event occurs, such as detected movement from the PIR module, or button is pushed. Karl is working on the Arduino code to detect the motion, activate the sound, AND control the wing's motor controller! This is a great project that encompasses everything from initial structural design (mechanical), electronic interface (PIR), Sound (MP3), and motor control! We hope to have a video to post on our KREEG web site (soon). Thanks Karl! Great imagination and perseverance!

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

Doyle was invited by the Kitsap Regional Library, Assistant Branch Manager, Ms. **Leigh Ann Winterowed** to demonstrate robotics and introduce technology ideas to enhance the library portfolio. We hope to have KREEG meetings there if an agreement can be arranged. Doyle brought two of his robots to demonstrate; the *Garden Bot*, which autonomously follows a bright orange Home Depot bucket, and will eventually pull a garden wagon of dirt while following the gardener carrying the bucket. No more heavy lifting of dirt and tools. A video of the robot is on Doyle's YouTube channel at "Scruffman2001" or at this link http://www.youtube.com/watch?v=r-ZiGQP2G9s

The GardenBot (Prototype)

Remote SecurityBot (same chassis as GardenBot but different functions)

The kids at the library were very excited and able to control the other robot using a wireless RC remote control. This robot has a video transmitter capable to 3000 feet and transmitted real-time video feed to the overhead projector inside the library while the kids controlled the robot to explore outside.

Lots of people stopped and asked questions when they saw this robot wondering outside in the parking lot and grassy area. Doyle will soon modify this robot with a mechanical arm and manipulator like the ones used by bomb squads, military, and scientists.

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

The Kitsap Library offers a Nintendo Wii, Game-Play session for after-school (A.K.A. “Latch-Key-Kids”) interested in role-play, network games, and console gaming events.

Doyle is working with Leigh Ann to start a Game Programming class for those interested. The library is working a potential budget and sustainment program to make this idea a reality. The software called “*The 3D Gamemaker*” is very popular in Europe and is part of the 6th through 9th grade curriculum. Programs developed are royalty free (you don’t pay the software company royalties for programs YOU develop using their software). Basically, you don’t need a background in programming to make a distributable 3D game. It is drag-and-drop format. Take a look at this website for more information and watch the video at http://www.thegamecreators.com/?m=view_product&id=2126

If you are interested in this idea, KREEG can support teaching Game Development or, in the near future, you can attend the sessions at the Kitsap Regional Library. Let us know your thoughts!

Doyle is also offering Android App programming to those interested. We think this will be popular in the Fall and Winter season.

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle’s house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

ITEMS FOR SALE

In pursuit of funds for our web site, Doyle has the following items for sale:

4 Castle SIDEWINDER V2 - Motor (Brushed and Brushless) controllers Plus extras $220 (KREEG members only)

- Lot of four (4) Castle 10th Scale SIDEWINDER V2
- Plus Castle Link Programmer with USB Cable
- 3 sets of 4 CC Bullet High Current Connectors (6.5mm) for a total of 24 connectors

The above items are on eBay for $250 at http://www.ebay.com/itm/290737782148?ssPageName=STRK:MESELX:IT&_trksid=p3984.m1555.l2649

Doyle is willing to sell them to KREEG members for $220 for all

RoboClaw 2x24 motor controller. Dual brushed motor controller up to 24 amps per channel! $90

4 NEVER USED - Parallax HB-25 (25 amps each) motor controllers. $200 for all!

Parallax price is $55 each plus $20 shipping.

http://www.parallax.com/Store/Accessories/MotorServos/tabid/163/CategoryID/57/List/0/SortField/0/Level/a/ProductID/64/Default.aspx

I'm just starting to consolidate items to sell for this venture. Let me know what you might need.

NEXT MEETING:
Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)

We have established a common date and time for all KREEG meetings. The date is now the LAST FRIDAY of EACH MONTH. See the foot note for directions. Don't hesitate to email if you have question.

Make it a goal to bring a friend to KREEG. We want to expand the knowledge base and skill sets. If they're breathing – they're members!

In closing, please let me know if I need to make corrections for misspelled names and I will fix them.

Until next time…

Best,

Doyle Maleche

Maleche1@comcast.net

NEXT MEETING:

Date: Friday, 26 October 2012
Time: 6:30pm – 8:00pm
Location: Doyle's house 16979 Clear Creek Rd. Poulsbo, 98370. Directly across the street from the Poulsbo Sportsman Club (shooting range)