

DECEMBER 2002 MINUTES

According to my records (which are not the official minutes), we had a few over 30 people in attendance.

The 2003 officer's election was held, and the new line-up is as follows:

- President - Jeff Koenig (Thanks! I'll do my best.)
- Vice-President - Vicki Taylor
- Secretary - John Caldwell
- Treasurer - Martin Meier (Thanks, Martin, for stepping up and volunteering for this position)

My first official act was to appoint Steve Rainwater as DPRG Webmaster, and Bill Boyer as DPRG Postmaster.

There are still two appointed positions to be filled, that of Librarian and Hardware Librarian. Does anyone want to volunteer for either of these positions?

Eric Yundt told the group that he is in possession of the long-dormant DPRG Library (of books and paper stuff). I'll try to get this from Eric and bring it to the next meeting.

We have been informed that we will no longer be able to use the Bill Priest Institute for our meetings. Alan Sosbe, who has been very helpful the last few years (Thanks, Alan!), said that we are simply too large a group for them to accommodate anymore. So, we have to move along...

Ron Palmer, of Probotics, Inc., demonstrated one of his company's Bike Bots and one of his four-bladed hover copters. The stability of the hover copter was incredible, and the Bike Bot's fluidity and animation was amazing to watch. The thing just came to life, and was a pleasure to behold.

Thanks to all who were able to attend!

Jeff Koenig

President

NOVEMBER 2002 MINUTES

There were 10 guests, 40 members, and 3 robots!

Ray Renteria did a demo with his robot, DAR1, on structured light vision processing. We will make available the Powerpoint presentation he did for those of you that were not able to attend. Very interesting information; I look forward to a follow up demo (especially for those of you that missed ;). Thank you Ray for coming up from Austin to present your ideas and knowledge. We hope to see you soon.

Michael Walsh, of Evolution Robotics, Inc., did a demo of ER-1. He can be reached at mwalsh@evolution.com for any further questions you may have. He also mentioned that there will be a discount for the club. We will have more info on the code and procedures for taking advantage of this deal soon. An invitation was extended to his group to participate in the next Roborama, and they accepted. It was motioned and approved that the club buy a video for Michael to take back to his colleagues to learn more about the contest.

BUSINESS: Due to the exciting presentations, no business was discussed. The vote for officers will be at the December meeting. we need nominations, enlistment of volunteers for next year's participation from the list. If there is anyONE interestED in being an officer please post to the email group. ALL volunteers are NEEDED!! One other note, some of us are going for drinks and robot conversing after the December meeting if anyone else is interested in joining us.

Bill James has volunteered his domain for our Christmas party. I enjoy the meetings, but they do not let everyone get to know each other on more personal a note as say the RPL does. If everyone will post if they would be interested in a "get together" say during the late afternoon, a happy hour, or evening time to let us get an idea of when more people can come. Bill lives in west Plano (if that helps make the decisions easier-directions later). I understand the meeting regiment is wanted; however if you have missed sitting down with members and relaxing over interactive robotic brainstorming and conversing... YOU ARE MISSING OUT!

I would like to also mention that it would be nice to participate in this event next year. This is the festival that Robert Caldwell brought up. See the following: <http://www.tech-fest.org> Perhaps we could do a special contest next year (11/2003), a commitment for the group to have everyone FINISH and PARTICIPATE in (Myself included! Gives added motivation for those of us that lag behind the regular contestants). Or even exhibit our first MicroMouse

competition to be then. We could check with the Science Place to see if they will support us in undertaking some sort of participation without the \$1200.00 exhibitors cost involved. I would like to propose a motion for us to participate in some way during this event.

At the end there was a "Show n' Tell" by Ron Palmer of [Probotics](#). He demoed his handmade prototype for the [Draganflyer](#) gyro-stabilized helicopter. This was very interesting and, for those that missed it, he will be bringing it to next months meeting.

Vicki Taylor
Vice President

OCTOBER 2002 MINUTES

The October meeting consisted of an outdoor BBQ and Table-Top Robotics Contest at John Drummond's house in Allen, TX.

SEPTEMBER 2002 MINUTES

Attending: 38 people

President [Jeff Koenig](#) started the meeting.

RoboRama is Saturday September 21. We discussed who would do what; the list will be put on our web site for use in spring 2003.

On Saturday, October 12 we're going to have a BBQ and TableTop Sumo at John Drummond's house in Allen.

Treasurer Clay Timmons said we have about \$2,000 in the bank.

Show and Tell

Ralph gave a detailed presentation about the AVR / Atmel 8012 and 9012 microcontrollers. They have a calibrated internal oscillator, clock options and can be set up with an analog comparator. The cost is between \$2 and \$20 depending on the features. They are available from Digkey and Arrow.

John Caldwell discussed how robots such as line followers can have a mechanical 'sweet spot', similar to a golf club or tennis racket. Performance can be improved by adjusting dimensions such as distance between right and left light sensors or the light sensors and front pivot wheel.

Earl Bollinger reviewed his \$69 Atmel microprocessor. It knows such languages as Basic, Java, Forth, Pascal and Assembler. Other versions include: AT90 with 128 ram, AT90s2313, and AT Mega with 128 ram and 16Mhz.

Dennis Draheim demonstrated his \$120 CMU camera and board. Its definition is 130 x 160 and it can be programmed to look for a particular color using Java. It should be calibrated before an event but does have an auto white balance and an optional spotlight. The color feature can be RGB or ?YCRCB?. It uses the Euclidean distance of the observed color from the reference color to find the best color match. The complete robot uses an Atmel 8535 as a servo output.

Several members discussed isopods.

John Caldwell
Secretary

AUGUST 2002 MINUTES

Attending: 39 people and 18 robots

President Jeff Koenig started the meeting

The DPRG is not a 501-3C nonprofit organization. Being a nonprofit has certain advantages. One possibility is to be an autonomous group under the Robot Clubs of America. Clay Timmons will research possible next steps.

The DPRG is supposed to have a parts library. If you know where it is, please tell Jeff.

The Trinity firefighting contest is the 3rd week in April 2003, so our contest will be in March 2003.

We no longer participate in the Pepsi Kid-Around.

Show and Tell

Steve Rainwater and Susan Chance-Rainwater are our new Webmasters. Welcome!!

Jon Williams of Parallax (Basic Stamp) brought 2 Sumo robots and talked about the new Javelin microprocessor. Its about as big as the BS2 and works with Java. Base memory is 4K but 32K can easily be added. It has 6 slots, D to A and PWM. Jon also showed a student oscilloscope with a USB port for \$175 from Altera. The language is object oriented and the processor is self-hosting. It processes an NSSB video signal with stereo processors.

James Kaufman showed his Parallax \$75 wireless transmitter and receiver. It has 5 channels, 5 LEDs and a range of 75 feet.

Bob Jordan showed his mini-sumo with a digital signal processor and reverse. The wheels are lids from Jet Puffed Marshmallow Cream jars with rubber bands for tires. It uses Isomax language.

David Martineau showed his "Robots Only" parking sign from txsign.com.

Brian Merritt had a TI MSP430 controller board for \$6. It has 5 amp capacity, 8 channels of A to D, can handle up to 8 servos, 16 bits, 4MHz, and a C compiler.

Frank Elia offered his wisdom on stepper motors: "If your spit doesn't boil, they're not too hot!"

John Drummond's robot had handles, an idea he got from DBA.

John Caldwell

Secretary

JULY 2002 MINUTES

41 attending including 7 guests.

Ed Okerson opened the meeting.

Much of the work preparing the course in the warehouse has been finished. We have spent \$418 of the \$500 allocated. the remaining work is to paint the plywood and put down the course. Bob Jordan offered to donate paint in exchange for dues; the motion was adapted.

Clay Timmons - Treasurer's report. We have about \$1,600. The web site should have all our active members. If you paid your dues and aren't on the list, see Clay.

We need a table-top can-can course.

Ed has accepted a position in Sacramento from Interactive Devices. He'll be a Sr. Engineer in their Video Conferencing area. Good Luck!! Jeff Koenig, who was VP, will be our new President.

Show and Tell

Big Bill distributed free plastic pieces.

Bob Jordan is working on a robot with 5 PWM servos. It has a Tanners \$2 gear box and 2 belt drives. The H-bridges use L83 and 289 transistors.

Earl B. is working on a line follower and a micro 2" sumo. The sumo has 8K of memory and a tiny motor controller. The Ztex H-bridges can take 6 amps peak and 2 amps continuous. The batteries have 80 M amp hours. He's working on the robot with a tiny drill press.

Earl the younger is also working on a line follower and sumo.

Frank Elia told about his project involving stepper motors, belts and pulleys. Good sources of belts and pulleys are old printers and electric typewriters.

Randy D. and Daniel S. showed an isopod robot named Fester with light detectors and modified servos. Fester can sense light and has 12 bits of resolution. It worked!

Jeff V. had a small robot with a turret. It featured a 298 based motor drive, 4 wheel drive and Basic Stamp 2.

Randy D. had a very elaborate Lynx Motion 6 legged isopod. It has 18 servos in the 6 legs, 2 in its head and has 12 PWM outputs. The isopod uses Isomax language and compiles on board.

Jeff Koenig showed his collection of robot parts. He hopes to transform them into at least one robot before the Fall RoboRama.

Clay Timmons told about his many line following robots. The different models were based on:

- 486 and camera
- 2 transistors
- Legos

His latest has an HC11 with 7 A to Ds. Kip helped with the design. It's line following path diverges on a straight line instead of converging. Clay asked for ideas to help him solve the problem.

David Anderson demonstrated his 2 wheeled balancing robot. The robot measures several elements:

- angle of robot with ground
- speed of robot
- change in speed of robot

If the robot is going forward and want to go backward, it must first speed up so its top is leaning backward.

Everyone should look at the new, improved web site.

John Caldwell
Secretary

JUNE 2002 MINUTES

The Minutes from Mays meeting were accepted as posted.

Visitors attending the June meeting were:

- Daniel Schmidt -- from Missouri
- Rick Martin
- Mitchell Kemp
- Charles Walden
- Ron and Carolyn Grant

Plenty of DPRG T-shirts still for sale-see Ed Okerson

Show-n-Tell

Kip's 10.00 kit--MAGNUM SABRE--very fast, but little control

Franks 1 wheel driven, 2 wheel follower. Still needs a little work.

Guest Speaker

The program was given by Randy Dumse
ISOPOD (a small hi-powered controller board) AND ISOMAX (a new programming language) from [NEW MICROS, INC.](#) were the subjects. Thanks Randy, it was very interesting.

It was decided to form a work crew to build a full size "Line Following" and "T-Time" course next Sunday. (JUNE 16)
FATHERS DAY The meeting time is approx 10 am at 610 WALNUT CIRCLE EAST, GARLAND 75040). Bring woodworking tools Remember, the building is air conditioned by nature. There is a working bathroom.

MIKE A. DODSON

MAY 2002 MINUTES

Ed Okerson opened the meeting.

There was a room full of people (don't know how many); a healthy showing of both members and guests.

Ed reported that clearing of Mike Dodson's warehouse for DPRG's use had gone well (a few weeks ago). The floor is a bit uneven and a little water can be found standing after a storm. There was discussion about building a platform to even and raise the course followed by a vote to spend about \$350 (of the clubs \$1,600-\$1,700 balance) for the

materials. The funds were approved and another club workday will be scheduled to build the platform. Anyone wanting to use the course should contact Ed Okerson to get the keys to the warehouse.

The Make-A-Wish Foundation has contacted Ed requesting assistance to build a robot for Robot Wars/Battlebots. Ed and Kip Moravec have volunteered and welcome others.

Cindy Rivers has videos of Robo-Rama 2002-A available.

The Table Top Contest commenced and included Quick Trip, Line Following and Mini-Sumo. (My apologies for not getting all of the bot builder's names to go along with the following results. Maybe one of the judges can get the right builders' names to go with the bots and resend the corrected minutes and/or post on our site.) The results, by Bot-Name, are:

Quick Trip

- 1st - Crystal
- 2nd - Master X
- 3rd - QU

Line Following

- 1st - Tiny Tank
- 2nd - Crystal
- 3rd - Master X

Mini Sumo

- 1st - The Bull Dozer
- 2nd - Max
- 3rd - Tye-Bot

Each contest was well represented. The Mini Sumo was extraordinarily exciting. All of the contestants did a Great Job!

Travis Trotman travistrotman@aol.com

APRIL 2002 MINUTES

Ed Okerson opened the meeting. We had 34 attending.

Jon Williams told about the Robo2 event in Colorado. The contests included an obstacle course, line following, maze solving, mini sumo, and fire. Over 1,000 children attended the 2 day event. Jon had a booth for Parallax..

Bill discussed the \$8.50 Sharp IR sensors

Clay discussed his 4 channel TIP motor controllers. It has a pic servo chip and uses L293 H bridges.

Keith's Can-Can robot uses lithium ion PC batteries, a speedometer cable for the grippers and 6 IR sensors with brass tubes to produce tight beams. The system measures the brightness with analog, then uses an analog to digital converter.

Jeff V. discussed his Can-Can robot.

A hot air gun can be used as a desoldering tool.

Lone Star in Garland does a good job a setting up prototype circuit boards. You can send in your requests with regular mail or e-mail.

<http://www.4pcb.com/> also does good work. You can send them Gerber files. The boards are \$33 each with a minimum of 2.

The rules for Table Top are on our web site.

Clay told about his wireless modem.

Teresa Trotman has the RoboRama A results in a file.

We're going to clean out the warehouse and set up the course permanently in Garland next Saturday.

An organization is trying to set up a robotics group for girls in Austin. See Ed.

Jon Williams is looking for someone to teach for Parallax in California. The position involves travel about 1/2 the time.

John Caldwell
Secretary

MARCH 2002 MINUTES

If you have a copy of the March 2002 Minutes please email to webmaster@dprg.org. Thanks!

FEBRUARY 2002 MINUTES

Guest Speaker

Sponsor - [New Micros](#), Owner Randy Dumse
Real Time Programming & Isostructures

Overhead notes will be posted on the DPRG website at a later date.

Misc

NOTE:DPRG members would like to give a big thanks to David P. Anderson and Randy Dumse for giving such excellent demonstrations at the Jan/Feb meetings. Thanks Guys!!!

EVENTS UPDATES:

FIRE FIGHTING CONTEST NEXT SATURDAY @ SCIENCE PLACE (2/16/02, 12:00 ? 2:00 pm) Motion for Late Lunch @ Dave N Busters @75.

Request for Rules- <http://www.trincoll.edu/events/robot>

ROBORAMA ? APRIL 6, 2002 @ SCIENCE PLACE

(4/06/2002, 12:00 ? 2:00 pm) Motion for Late Lunch @ Dave N Busters @ 75.

BOYSCOUTS ROBOT MEETING ? Need volunteers (please see John Caldwell)

(Not Mentioned) APEC 2002 MICRO MOUSE ? Adams Mark Hotel (Dallas) Monday - 3/11/02, 8:00 pm http://apec-conf.org/2002/APEC02_Entering_The_MicroMouse_Contest.html

Motions

MOTION (Eric Yundt): REQUESTS CONCERNING THE MAILING LIST ?

- Delete previous email threads when replying to list
- Update Subject Ref.
- Abstain from Complaining Threads
- Keep Mailboxes Clean to Eliminate Bounces with Full Boxes Notifications

MOTION (Clay Timmons): IDEA SUBMITTED TO DO A CONTEST PREP MEETING
Wants a meeting with courses from the contests to test our ROBOTS!;

MOTION (Roundtable): TO MAYBE ADD DIFFICULTY LEVELS TO THE QUICK TRIP COURSE.

- Suggestion to put obstacles into the course
- Investigate more Turnaround Point Values
- (Notes: At the expense of Video Time Limits)

OFF TASK MOTION: (RPL- lunch bunch)

There has been a request for munchies at the meetings again. We can enlist a sign up sheet at meetings on one of the tables in the back. To TEST: Everyone bring their favorite munchies at the March meeting. THERE WILL BE A SIGN UP SHEET ? we'll see where it goes.

KIP MORAVEC PRESENTED
MICRO MOUSE COURSE DISCUSSION:
SIZE: 10? X 10?
SUBMITTED: Examples of wall designs
MATERIAL: Painted MDF
HEIGHT: 2? WALLS

TREASURY REPORT ?
DEPOSITED: \$280.00
EXPENSES: \$150.00
BALANCE: \$1800.00

NOTE: DUES ARE DUE FOR 2002
Can be mailed to the following address:
Clay Timmons
DPRG/Club Treasurer
3788 Waterford Drive
Addison, TX 75001

NOTES: Members names will be kept updated regularly in an effort to work with vendors to verify members for discounts. In addition, a new column will be maintained that lists the years of membership. Check out the website's member list getting a new look.

ATTENDANCE: 45-50 Attending (No formal count)
A lot of new faces, mixed with the familiar Robots.
Welcome ladies who venture with their husbands ? 6 women attending!!

Vicki Taylor
Substituting for John Caldwell

JANUARY 2002 MINUTES

Greetings, fellow members. Here is a brief recap of the meeting's highlights. John Caldwell had to leave early, so I took over the recording of the minutes; so bear with me if anything is inaccurate or missing.

Show-and-Tell

David Anderson showed us an inverted pendulum balancing robot which balances a Nerf ball w/weights attached at the end of an approximately 3' wooden dowel. It swings back and forth on a 'nearly' frictionless bearing joint which is attached to a potentiometer that helps get angle feedback. He uses a PID algorithm along with an accelerometer; he can also change the derivative offsets manually. He hopes to add a R/C gyro to it to help him transform it into a two-wheel balancing robot (sort of like the Segway, but autonomous) David can also hook up a modified PC joystick to it, and control it manually, though it's harder to keep the weight balanced through turns.

Frank Elia told us he has discovered how to use interrupts in the Atmel 93S2313, which helps him 'bum' his code down to a more manageable level. He's looking for and accepting suggestions on how to split one PWM source to run two motors.

Kevin ? brought his "MegaRoach" 6-legged walker bot with 2 d.o.f. per leg. Unfortunately, it let the magic smoke out after assembly was complete. So he plans on using Parallax brains this time around. Kevin mentioned that when he figures out the right sequence for the servos, his bot will have a tighter turning radius than it does currently.

David Peterson brought a robot toy called "Mousie", available at 'GameStop' locations. Made to look like a mouse, it offers Internet downloading of behaviors, including: Line Following (black on white), Sumo, Obstacle Avoidance, and Random Movement & sound. Looks like a neat hack. He also brought a gold "I-Cybie" robot dog, available at most toy stores and on the 'Net, and he put it thru its paces for us, (a full demonstration mode, I believe.) He says they're normally 100 or 200 dollars, but he got his for \$50.

Bill Boyer, aka 'Rodent', shared his first attempt at fabricating and molding his own wheels. They're made to fit Tamiya gearboxes and R/C servo horns, and are made form 2-part urethane.

Kip Moravec showed us his Pittman gearmotor and wheel setup. He uses a pulley to reduce the Rpm's to a more manageable level. He runs it off of 24 volts and has modified a bolt at Barry's RBNO to act as an axle.

Randy Dumse was next with a Parallax hexapod employing 3 servos per leg, but is not made of the 'Sintra' type material we all know and trust. It includes an NiMH power supply, and a pan-and-tilt sonar system for Obstacle avoidance or wall-following.

Jeffery Valentine then caught our attention with a hacked R.A.D Robot base with two layers of round Plexiglas shelves to hold the guts - when he gets to those. He says line following is coming soon, along with hopes for Can-Can in the future. He plans on using a BS-2 for control.

David Martineau recently bought a 1st Ed. of TAB Books #1141 *How To Build Your Own Working Robot Pet* by Frank DaCosta © 1979. and is planning to hold on to it for a couple of months, this time. His birthday is the 19th this month, so Happy 25th, David!

Cindy Rivers would like to remind people she still has videos available for sale. Visit <http://www.goldleopard.com/video/> for more details.

That's all! See y'all next month!

--Electro--