

DECEMBER 2000 MINUTES

38 members 5 guests 5 robots

Meeting room has moved. For the next several months the DPRG meeting at Bill Priest Institute has been moved back to the open meeting area on the second floor.

Discovery Fest - Science Place is hosting a Discovery Fest January 27th, and has asked DPRG to participate. They will be giving us 2 adjacent booths 10x10 each. That should give us enough room to have several robots up and running. Sony and CompUSA are sponsors of this event which highlights technology.

New officers for 2001

President Robert Jordan

Vice Pres Bill James

Secretary John Caldwell

Treasurer Clay Timmons

Still need webmaster and e-mail list moderator.

Table top robotics - Robert Jordan has a portable course with two different layouts. One was a 1/4 scale firefighting maze, the other is a ??? Robert proposed a table top contest in Feb. Stay tuned for details.

New RoboRama Course - John Caldwell has designed and built a new course for RoboRama contests. The walls are 8" high wood painted white with supports that are attached with screws. The floor is black photo backdrop paper. Wall assembly took about 10 minutes. A method of attaching two pieces of paper needs to be determined. Also the way to mark the white line is TBD.

Portable 1/2 size course. David Anderson brought his 1/2 size T-shaped course made from cardboard. This is a cheap lightweight alternative to a full sized course.

Show and tell

David Anderson had a 68832 microcontroller board. Designed and build by a SRS member it looked like a great little controller board that is no longer available. David also had a Futaba controller designed to keep an RC aircraft flying straight. The controller was a light sensor that mounts on the belly of the aircraft. It senses the light under the plane and assumes that the ground is darker than the sky. When the plane tilts the sensor sees more sky and the controller compensates rudder/alierons as needed to correct.

Robert Jordan had a small suitcase full of table top sized robots. Including his skatebot, a BOE bot, and a modified BOE bot for SUMO with a metal bulldozer attachment.

Thank You Card - DPRG had a thank you card for Alan Sosbe, our Bill Priest Institute contact. Many club members signed the card thanking Alan for his support of DPRG.

Clay Timmons

NOVEMBER 2000 MINUTES

40 people 3 guests 3 robots

New Contest Course - John Caldwell brought examples of the floor and walls for the new contest course. The floor is a heavy paper material used by photographers for backdrops. It comes in black and is available in 9' x 36' rolls. The walls were made of 1/2" wood with a block attached to the backside for support. After some discussing a motion was made and a vote was called. The vote passed to purchase 3 rolls of the paper and the wood for the walls.

Club officers - Lack of nominations for voting has made me switch to appointing officers for next year. Stay tuned as I will be announcing the officers for next year as I get confirmation.

Show and Tell

Frank ??? had four wheeled robot made with motors/gears taken from Apple disc drives. All four wheels were driven and the bot moved fairly quickly. The chassis looked like it needed some alignment as someone noticed that not all of the wheels were touching the floor.

Bill James brought his mechanical masterpiece "BeerBot". Designed to fetch a cold beer from the refrigerator BeerBot looks much like a small R2D2. It has a domed shaped head that can rotate. Mounted on the head is a QuickCam camera and a servo for tilt. In the body is a PC power supply and an arm that can extend to grab a beer.

The DeVry team was back again after winning outstanding senior project. Their Robot SAINT has is a 6 legged walker. It stripped out the motors that move the legs back and forth. They replaced the motors just long enough to demo it for thier final project. The robot was no longer working but they had great stories of how they got it working just in time. It featured an onboard camera and remote control via a web page.

Swap meet - several people brought stuff for the swap meet. Much of the stuff was free give aways.

Clay Timmons

OCTOBER 2000 MINUTES

1. Meeting started late due to traffic delay from OU/TX weekend. Clay presided

2. Post-Contest Awards::

- T-Time Winners: Eric - Yundt
3 Can-Can winners presented with awards (Robot Store gave us gift coupons for prizes. Yea! Robot Store). If you were not there, contact Eric Yundt for your awards
- Club Robot Award: - Robert L. Jordan
A BoE-Bot kit from Parallax, Inc., via their App. Eng. Jon Williams, was made a club loaner robot. Custodianship was awarded to Travis Trotman for 2 months. Discussion suggested that the custodian period be until the next contest is over. We may have Table-top contest before Roborama B so the exact date will be determined by the date of the next contest the robot can be entered in but not to exceed the Roborama B date.

3. Contest Discussion: - Clay

- Review of contest rules for Can-Can
Some suggestions for tuning the rules discussed
- Contest time discussed to be 2 hours max. More efficiencies to be planned such as contest coordinator, staging events, multiple arenas, etc.
- Contest Committees:
One-Half and full size contest arena discussed. Committee appointed, Clay Timmons, Ed, and ?
- Table-Top Contest arenas re-proposed. Committee appointed, Robert Jordan & Frank Elia
- Contest committee reports due from both groups at next meeting.

4. Ordering New Club T-shirts was discussed. You have until next meeting to submit an artwork ready logo, otherwise we decided to use the last one by Jim Brown, on the back and the DPRG & web address on the front. Jim's logo is of two hands touching in the Sistine chapel format for one hand and a robot hand for the other.

We voted to get short sleeve shirts in a silkscreen style as above and in a monogrammed style with just the DPRG approved font & with the URL on the front chest.

Sam's Store offers monogramming and sells different shirts. We will look into the cost and to see if they will sew on our logo. That would make distribution, sizes issues, and quantities wanted easier. I guess if we do this and you want one from out of town, just bribe a local member to buy and mail you one.

We will work out the actual details by the November meeting. (First Saturday)

5. A call was made to submit nominations for or 2001 officers. Nominations will be elected into office in December for service starting January 1, 2001. Put your nominations on the list and have their names for us at the November meeting.

You can nominate yourself. We will need to verify with all nominees that they are willing to serve before they are voted on, so it might be a good idea to ask them before you nominate them.

The present officers have all served 2 terms. The by-laws state no more than 2 consecutive terms.

Show-&-Tell

- Mr. ?- Rug Warrior Pro demo-ed
- Robert Jordan - Skatebot with 5 IR pairs, 3 jointed finger (digit, mandible) "Little BoE Blue" HBridge BoE-Bot
- Did I miss somebody?
- Travis Trotman had a 3-wheeled R/C controlled, TBA pot., wheel, and encoder robot. This guy is embarrassing me! He has a new robot or two at every meeting. You can actually learn by just hearing his explanations of what he is getting his robot to do.

If you were not at the meeting, you missed another good one!

Robert L. Jordan

DPRG Secretary

SEPTEMBER 2000 MINUTES

We had a good meeting Saturday, September 09, 2000!

Clay Timmons, "The Prez." chose to play with his new daughter, Tara Eileen Timmons, so I got to host the meeting. 7 robots, 9 visitors, and just a few regulars for 24 people total.

We discussed the contest and setting up Friday night so the carpet (arena floor) could un-wrinkle. We'll get back to you on the time we'll start, if we can get into the Science Place Friday Evening.

Judges for the contest were asked for. Eric, Vicki, Gary, and Ralph? Are all we identified. We still need more and also time keepers. Clay has and will bring the stop watches I believe. The poll for robots in each contest event promised about 5 entries minimum in any event, more in several. This should be a pretty exciting upcoming contest Sept 16 2:00-?.

We setup a 5 foot folding table with walls and ran robots. I missed the owner's and robot names, sorry. There were two line followers preparing for the contest and my black line follower (backwards!). One line follower was all analog and looked fast and promising.

There were several show and tells, some robots, some TBA robots. Eric had "JEB" the RBNO resultant "caged" robot. It had gear motors with fine encoders and a changeable gearbox.

The room was hot but did not smell like paint as the rest of the Bill Priest Institute building did. Lots of chips and drink. Thanks to Alan Sosbe for all his efforts of the setup of food, room, and chairs.

Robert L. Jordan

DPRG Sec. '99 & '00

AUGUST 2000 MINUTES

27 people 3 guests 6 robots

Contest Course Committee

The committee has been discussing ideas but has no plans yet. With only a month to the contest a new course might not be a good idea. Especially considering it may change dimensions slightly. I asked them to work on the existing course to make it ready for the contest. Perhaps they can re-design and build new walls in one month.

Prize Money Allocated

A motion was made to allocate \$200 of club funds for prize money for the upcoming contest. The motion was seconded and the vote passed. Gift certificates to the Robot Store are planned. Also we will ask Robot Store if they can match and/or donate anything else.

Contest Judges

Jon Williams volunteered to be a judge. We still need two more judges, an assistant, and timekeeper.

Pepsi Kid-a-Round

Kip has a signup sheet for the labor day weekend event. Help is needed to man the booth DPRG will have there. Also we need robot related stuff to show/demo.

AAAI Conference in Austin

Clay and Eric were able to see some of the conference and gave descriptions of it. Eric has posted pictures on www.robotfun.com. Not sure what link to click.

Show and Tell

Kevin Carter has a nearly completed bot using a Tiny Tiger controller. It has a keypad, LCD display, and two sonar sensors. Hardware seems completed with only software to go for Quick Trip and T-Time.

Paul Florian has made improvements to his line follower since he last demoed it. His revision 3 line follower uses no microcontroller. I think we should have a special award for bots that can finish the contest without a microcontroller.

Frank ??? had an interesting looking walker made with two servos and wire legs. Not walking yet but he's working on it. He had some questions about CMOS flip flops and the group was able to help him out.

Jon Williams who writes the Stamp Application column in Nuts & Volts magazine had lots of products from Parallax. He previewed some of the new products from Parallax including some new BS2 chips. Jon now works for Parallax, works out of his home and gets paid to play with cool controller applications. Everyone seemed to envy his new job! He donated some shirts and BOE's to the club and hopes to donate more in the future.

Clay Timmons had made some improvements to his robot from the last contest. He needs to finish a gripper and write some more software to be able to collect cans.

James Koeffman had a neat lego tightrope walker. It used two motors driving pulleys to move along a tight rope, string in this case. It was working fine until it fell to the ground and came apart in a zillion pieces. Tightropes can be dangerous!

Dennis Draheim had his little 4-day robot from the last meeting. He had added code to fuse the data from the 5 sensors to compute the pseudo-force from obstacles. It moves in the direction of the least force. It worked quite well and a couple of kids had great fun boxing it in. It was quite musical programmed to make notes according to the amount of obstacle force it encountered.

Dennis also had a tele-operated electric car similar to the one last month but not as expensive. Using a cheap RC car from Radio Shack and a wireless TV transmitter from Fry's he went off driving around by watching the TV screen.

Dennis also had a GameBoy camera which are available for \$10 at toys-r-us web site (Wal-Mart also). The data sheet for the chip inside is available and much hacker information too.

Wow that was a lot of typing,

Clay Timmons

JULY 2000 MINUTES

27 attendees, 8 robots

Contest course committee - RoboRama course is being re-designed.

Pepsi-Kid-Around - Again this year DPRG will run a booth at this Fund raiser. Kip has sign up sheet for time slots.

RoboRama 2000b - Robotics contest in 2 months!

show and tell

Excellent turn out with some really cool stuff.

Ralph Tenny - Has an external zip drive for sale.

Eric ? - Is a new member with a new robot base. He used metal mounts for 2x4's for motor mounts. He is using a BotBoard II but having problems with PCBug.

Paul Florian - Has a new drive section for his line follower using right angle gear motors from [MPJA](#)

Tom Day - Had his modified Robot Commando toy modified to use a Basic-X controller. It was moving nicely with a slight veer to one side.

Kevin Carter - Had a really nifty Robot Bug built from a kit. It was a 6 legged walker made with laser cut plywood. Kit is from Mechatronics, Mr. Robot is the distributor.

Craig Reynolds - Had a bot made from the wooden ends of wire spools. It uses a laptop with a speech synthesiser capable of speaking in several different voices. Also it had wireless video using X-10 transmitter/receiver.

Dennis Draheim - Has his robot "Rover" from a past contest. It uses bump sensors and IR. He mentioned re-design work being done to Ortho of Borg so that the motor doesn't blow out. Dennis also had a cool little robot he built in 4-days! It had 5 Sharp GPD2??? sensor for obstical detection. The robot fits inside a red plastic housing from a rotating light.

David Martineau - Had a breadboard with a circuit to control RC - servos using a 555 timer. He also had Boxy-Roxy lego robot and Susan Calvin lego robot with a nice can gripper on the front.

Sanjay ? - Is working on a nifty idea to have 3 robots co-operate with each other. The robots will be light sensitive and will be programmed to clear out an area around the light. The robots will head to the light and push any obstacles away from the lighted area. He is using OOPic controllers.

David Anderson - Had his SR04 robot that is the clubs only robot truly capable of locating and retrieving soda cans. David also had a RC-car with a video camera and transmitter. Using a TV to see what the car's camera sees he was able to drive the tele-operated car around the room quite well. He had some video tape of the car driving thru his house at high speeds.

Standard Disclaimer - Sorry for any typos, incorrect information, omissions etc. It ain't easy to take accurate notes of the whole meeting.

Extra Disclaimer - Sorry for the delay. I usually try to have meeting minutes out in a few days but too many higher priority interrupts happend last week.

Clay Timmons

JUNE 2000 MINUTES

June 3rd, 2000 Bill Priest Institute

25 people 0 Guests 4 robots

(apologies if I missed your last name)

Ed Koeffman had a miniature color camera that has a digital interface. see <http://www.electronics123.com> Camera costs about \$80, evaluation board available also.

Barry Jordan had an example robot chassis cut out with his CNC machine. He also had a PCB that was routed out with CNC rather than chemical etching. Accuracy was good enough to get a trace between two DIP pins.

John Drummond had his robot moving around and detecting collision with bump switches. He used the motor/wheel assemblies from Tanners and drives them at 30volts for decent speed.

Tom ? had his Commando Bot reconfigured for direct control with a microcontroller. He plans to use a BasicX controller.

Frank ? had his IR transmitter working. It transmits DTMF codes from a keypad. IR reciever is next.

Paul Florian had a line follower built on a Tayima tank base. It had two sensors modulated at different frequencies. Amazingly he did the whole thing without a microcontroller. It was able to follow a white line on the grey floor.

The students from Devry (Shay, Jason, Emily, Joseph) were back again this month with thier senior project. Last month all they had was a linear actuator. This month they have all 6 acutators mounted to a chassis with batteries also. The walking robot will be controlled remotely via an internet web page.

RoboMow - The instructional video for RoboMow was shown. After that several people used the manual controller to drive it around. We even turned the mower blade on. The electric mower is much quieter than a gas lawnmover. What to do with the RoboMow is the big question now. Several ideas came up but no decision has been made yet. Using RoboMow requires installing a perimeter wire in your lawn. The perimeter wire installation makes sharing/renting/loaning RoboMow impractical. Ideas?

- Keep robomow for demos
- Sell raffle tickets
- Prize for next contest

In the mean time it would be great for every one to get a chance to see RoboMow in action. Several people were interested in volunteering to test it. We need someone who can host a DPRG RoboMow event at thier house.

Clay Timmons

MAY 2000 MINUTES

Robotics contest at Science place. Friendly Robotics, makers of RoboMow, asked DPRG to provied judges for a "robotics" contest for young, 8-10, kids. About 15 girls participated making robots out of boxes, construction paper, cardboard, etc. Ralph Tenny, James Vroman, Ed & James Koeffman, Kip Moravec, Clay Timmons, and Charlie Youngblood helped out. A \$250 prize was awarded to the best overall. Certificates were given for best dressed, best design, and most creative name.

RoboMow- in return for helping out with the robotics contest Friendly Robotics is supposed to be giving DPRG a RoboMow. They had one of these set up at the Science Place and it looked pretty cool.

Robot Zoo - The Science Place will be having another robotic (animatronic) robot exhibit for the State Fair. They will be needing volunteers again this year.

Show and Tell

Commando Bot (sorry I forgot who had it) Someone had a Commando Bot toy that responds to voice commands. It has a visor/microphone headset that provides wireless control of the robot. It shoots little missles on command!

Charlie Youngblood had another toy front loader with tracks he picked up at a thrift store. He plans to hack it into a robot for the next contest.

David M. had a redesigned lego bot named Susan. It used differential drive and two skids. It moves forward until collision is detected with a bumper switch then backs up a bit and turns a random amount.

Contest Discussion

Nearly everyone agrees that the carpet used as flooring for the contest course is marginal. Some alternative ideas were landscaping cloth, a frame to stretch the carpet, or press board. Ralph Tenny had the best suggestion - test the flooring before we build a whole course out of it.

Reminder - Tech Tools will be giving a 50% discount to people who participate in the next contest.

UMBmark test

At the end of the meeting Clay Timmons re-programmed his robot from the last contest to run a 4 meter (157 inch) square course. This is part of a test/calibration procedure developed by the University of Michigan called UMBmark. A drain in the floor made for a less than level surface. The course was setup to run around the drain to avoid the dip in the floor. Clay taped a large piece of graph paper to the floor to record the test results. The X and Y positions for each of 5 clockwise runs were recorded. (all values in inches to the nearest .1 inch)

	X	Y
run 1	+0.4	+6.0
run 2	-1.2	+8.9
run 3	-2.8	+10.6
run 4	-3.7	+9.3
run 5	-1.0	+4.3

Testing was not very rigorous but it will serve as an intial benchmark to compare with future improvments.

Clay Timmons

APRIL 2000 MINUTES

Attendance 17 people 2 guests 7 robots

Contest Flyers at Tanners, EPO Contest prizes, Tanners gift certificates, OOPicdevelopment kits, and several evaluations boards, coffee mugs, etc. from TI

Contest role call - 8 1/2 people raised hands for participating in the contest

A motion was made and seconded to revive the Quick Trip contest. A vote was called and the motion passed.

Rule updates - some minor rule changes were discussed a new contest committee of volunteers, Barry Jordan, Clay Timmons, and Bill James will update the rules and post them.

The \$1000 cash door prize was April fools however if you missed this meeting you missed a great one. Steve Lacy brought a bunch of quality freebies. Several 2gig laptop hard drive, laptop batteries, ethernet cards, and even a whole laptop. These all went quick!

Show and Tell

Ed Koeffman had some nice gear motors from MECI quiet gearbox with encoders.

Ralph Tenny has built a three wheeled robot. Tricycle configuration with a servo steering the front wheel.

John Drummond showed his new robot for the upcoming contest. He also had the new JackRabbit microcontroller board evaluation kit. Kit includes microcontroller board, carrier board, cables, and a C compiler for \$99.

Travis ? showed off his lego robot with bump sensors. Like many robots it was working great before the meeting but got stage fright and behaved a bit flakey.

David M. had a lego robot with bump sensors programmed to backup and turn a random amount after a collision. He also had his robot arm with limit switches and another "stubby" robot platform in the works.

Jay Curtis brought a life size R2D2 robot. Incredible craftsmanship, this bot is very realistic looking. So far it has no motors or electronics but that is what Jay plans to add next.

David Anderson had a lego robot and talked about the various options for programming it. Lego RIS which comes with mindstorms. NQC (Not Quite C) free download on internet or \$21 book with CD-ROM. RoboLab from LabView makers. Graphical like RIS but more capable. Costs about \$30 for a book however there are several books. Total about \$100.

Paul Florian brought a neat little walking robot. It walks forward then backs up and turns 90 degrees when it encounters an obstacle. Amazingly it only uses 2 servos and NO MICROCONTROLLER! It was called Walker Bot 5 and when I asked how long it took to develop Walker Bots 1,2,3 ... he said "don't ask". Obviously lots of time and effort to perfect this walker!

David Anderson also brought his mini-T course and set it up. Several of the lego bots ran around on the course

Clay Timmons

MARCH 2000 MINUTES

March 4th Bill Priest Institute

30 people, 2 guests, 3 robots, 2 courses

Our new firefighting Course looks great! Very nice job. Contest is next Sat 3/11 12-2pm at the Science Place. NOTICE: There may be signs at the gates for \$5 event parking. Do NOT pay for parking! Just tell them your going to the Science Place.

Ed Koeffman had his robot for the firefighting contest. He added magnets and hall effect sensors to count wheel rotations.

Ralph Tenny had a board to control voltage and current for testing optical sensors. He reported quite a large variation from sensor to sensor, probably a good idea to match sensors.

Charlie Youngblood had a toy Caterpillar front loader that would be great for picking up cans (with a little modification).

Clay Timmons has his platform for the firefighting contest. He demonstrated PWM and also PID motor control.

David Anderson had a new idea for a contest course. Made from regular brown cardboard and held together with strapping tape the course sets up in seconds. Portable, cheap, and easy to setup the course is 1/2 scale T shaped course. He had his SR03 robot running the course with various modes of navigation.

Sorry if I forgot anyone else, I wasn't taking notes like I usually do.

Clay Timmons

FEBRUARY 2000 MINUTES

Feb. 5th Bill Priest Institute

32 people, 3 guests, 7 robots

Dues - Annual dues, \$20, are due.

Please see Barry Jordan, the club treasurer.

Robert Jordan brought a 1/4 scale model of the firefighting contest. It fits on a table top and gave everyone a good idea of the course.

IR sensor workshop - At The Science Place before the regular meeting. 12 people attended.

The firefighting course is nearly completed. Several members worked Friday night trying to get it ready for the meeting but didn't quite finish. There will be a RBNO at Barry Jordan's this Tuesday to finish the course.

Ed Koeffman's son showed his lego robot which could be remotely controlled with a laptop via the lego IR module. They used NQC, not quite C, programming language which is available free on the internet.

Travis ??? had a lego robot which he built in only 30 minutes! Using bumper sensors it would detect obstacles, back up, turn around, and continue.

Craig Reynolds had two robots a large one, approx 2' tall, called Murphy and a smaller one he plans to finish for the next contest.

One of the guests at the meeting, Steve ???, said he came to the meeting because he had purchased a Sony Aibo robotic dog. Luckily he brought it with him and gave a demo! Whoa, this thing was cool! The first ever walking robot at DPRG. The dog is able to do many nifty things although it seemed like it had a mind of it's own and was hard to get it to do things on command. It is able to track a neon pink ball and then go get it. When it tips over it can get back up on it's legs. It can also do many things with it's legs (like stick all 4 straight out) that a real dog can't do. Way cool toy. No wonder Sony sold out all 3000 of them in only a few seconds even at \$2500 each. Steve said that due to the incredible demand, Sony will be releasing more. Dear Sony would you like to donate one to a robotics club?

David Anderson brought a nightscope IR viewer. This is useful to check the IR light coming from the sensors on your robot. He also had his lego robot navigating around a table top using Sharp GPD02? IR sensors to detect the edge of the table.

Robert Jordan had the Parallax BOE-bot doing some line following using a white board and black marker for the line.

Next month at our regular club meeting, 1st Saturday April 4th, we will have the completed firefighting course. This is an opportunity for testing before the contest. Firefight contest is scheduled for April 11th, 2nd Saturday, at The Science Place.

Clay Timmons

JANUARY 2000 MINUTES

Meeting Review Jan 8, 2000 at BPI

We had a great turnout. Lots of new people and new members I counted 5 visitors and 8 new or long lost members We had about 7 "robots" and lots of show and tell.

My estimate had total attending at about 50

Clay had an good and aggressive agenda so we accomplished alot.

The new officers were sworn in, a full repeat of '99

Clay Timmons President

Eric Yundt VP

Barry Jordan Treasurer

Robert Jordan Secretary

Workshops at The Science Place (TSP)

Servo workshop had 11 in attendance, lots of good fellowship.

Show and Tell

We had lots of robot related show and tell.

A limit switch circuit for reversing direction on a robot wrist, a LEGO drop sensor was shown off.

Robert (about 9 yrs) and his Dad showed off their LEGO basketball shooter.

Christopher Fielder had his BoE-Bot running after lots of "research".

Dennis Draheim showed his work on the "2X2" project boards several of us have been working on. He had R. Arricks 2 wire serial protocol talking to a servo and quadrature wheel encoder & lots of other little boards talking on the bus. Good work Dennis!

DPA stole the show with his development platform for his SR04 robot. It was constructed of LEGOS, tyewraps, and bolts. Wheel encoders, LEGO motors, tail wheel, and a clear bump shield made up a neat robot. He had several programs to wow us with. One ran 3 minutes in a 5 by 10 foot virtual area and returned to the starting place. WOW!

I think I missed someone, sorry.

Contest dates were announced:

Feb 20 TSP Contest demo for engineering week

Mar 11 TSP Regional Firefighting Contest

Apr 15 TSP Roborama 2000a

Sep 9 TSP Roborama 2000b

Next meetings

Feb 5: TSP 9:30-11:00 - IR sensors Workshop watch the list for more info.

Feb 5: BPI 12:00 - 2:00 - Regular meeting Firefighting arena update

Feb 20: TSP - Demo contest for Engineering week

Every Sunday afternoon at the Science Place we show off robotics stuff at our new "Robotman" booth. Contact James Vroman (James@Vroman.com) if you would like to help or man the booth. We had a large audience today! Lots of fun and good for your ego!

Robert L. Jordan

DPRG Secretary '99-'00