

JULY 1997 ISSUE OF THE DPRG NEWSLETTER

Another month has come and gone, and DPRG just seems to be getting better and better. We have grown to expect over 30 in attendance at the meetings lately. We're talking about adding new challenges to the robotics contest, and still keeping our current contest. And, people who never before found time to do robotics have kicked into gear and built things they thought they never would. With the Mars Sojourner recently making headlines, the whole world is becoming more interested in robotics. It's as though a robotics boon has occurred. Who, but can only dream, the exciting creations that will come out of DPRG in the days ahead. Stay tuned to find out.

A rerun of the May RoboRama Robotics contest will be run during the August Meeting. Bring yourselves and your robot. A good time to be had for sure.

The Dallas Personal Robotics Group is one of the nation's oldest special interest groups dedicated to the development and use of personal robotics and has been around since 1984. Currently the DPRG has about 35 members.



Look at the huge crowd at the June meeting. Officially we had 33, but a few more came in later pushing to total to over 38!!!

RoboRama Robotics Contest to be held in August

For more information on the upcoming RoboRama, see the [February 1997 Newsletter](#)



Kip shows a \$99 DSP development board

Kipton Moravec brought a TI DSP board that he purchased with a development kit for only \$99. The board uses the TI 32050 DSP. He mentioned that the board would be perfect for robotics and would be very powerful. Kip plans to use the board in an upcoming project.

Philips Semiconductor Gives a Presentation

The large part of the June meeting was the presentation by [Brian Harris](#) the Richardson based Philips Semiconductor representative. They are located at: 1801 Gateway Blvd., Suite 217, Richardson, TX 75080. The presentation consisted of a quick review of 8051 parts and derivatives, and then a full presentation on their 16bit 8051 style XA part. The XA boasts at least 10 times faster execute speeds. It is a 68 pin PLCC part (Brian mentioned



that he would give samples and a 68pin socket if you ask). Brian was quick to point out that there's a design contest for the XA part where one lucky winner will win a BMW Z3. Following the XA presentation Brian also went into detail about the I2C bus. The presentation on the I2C bus was my favorite part of his presentation. Basically the I2C bus is a two wire bus and can run at 100k bps. It usually runs as a master/slave setup, but also can run as dual master setup. It can allow up to 127 parts to be hook up to it such as I/O parts, EEPROM parts, Real Time Clocks, etc. Brian mentioned that much of the data and even some source code is on their web page.



Roger Brings Sonars

Thanks go to Roger Arrick for bringing sonars and servos to sell at the last meeting. These were a one time only deal for members of DPRG. The servos were the Polaroid 6500 with the controller board. These parts are perfect for robotics and may have helped a few of the members get into the next step of robotics - sonar ranging.



Clay Gives Robotics Presentation to Middle School

Clay Timmons took some time off of work and did his good deed for the day when he gave a robotics presentation to a local middle school. It all started when we received email from the Highland Park Middle School requesting that we bring a presentation about robotics to two of their middle school classes. Clay had the teacher video tape the presentation and from what I saw, his presentation brought a few "cool!" exclamations from the crowd. Clay brought an industrial robotic arm from his work, his hero robot, and a couple of robots from the DPRG group that ran in the last contest. The picture shown doesn't give it justice, that was only the front row of many, many rows of teenagers. The video show Clay's cool handling of the class like he was a pro. He also brought some videos to show of the BEST contest that he also took part in in the past.

Low Rider: My First, Line-Following Robot

John Wadley's article, originally published in this issue of the newsletter, may now be found in the DPRG articles collection.

More on Robotics Contests

These specs, provided by the Contest Committee and penned by Eric Yundt, can be found in the [December 1997 Newsletter](#).



Little YaTu's Robotic Journey to Splendor



Little YaTu had been on my mind for well over five years now *and I still didn't even know it*. Then one day as I wandered through Happy Pockets (a local thrift store,) there he sat -- at least a piece of him did. Inert in his box (battery drain), Little YaTu sat, no heart and no brain.

His box showed a Racer with super-grip tread, hardened steel axles, but missing a head. Twin Mabuchi motors and screaming-hot paint, pictures of stunts that made lesser 'Bots faint.



I cradled the box, continued my stroll, looking for treasures in each little hole. Down an interesting aisle, all cluttered with toys, I noticed the top shelf untouched by the boys. Up poked my head to see what was there. A forgotten toy with no one to care? A snarling muscled head, grand dorsal on top, the shark latex skin made my eyes almost pop!

"Belongs to Little YaTu," with a whisper I said. And that being that, he now had a head.

Little YaTu Birth of a Robot Family

May 17th, 1997

Four o'clock in the morning and the lab had settled into the quiet stillness of slow methodical trial and error... Over an

hour-and-a-half of "tweak the program, download the code, reset the board and watch" had a dampening effect on the excitement generated by the first controlled pulses such a short time ago.



Port motor ran fine, all under control. Starboard worked great, I thought he would roll. But when trying both motors at synchronized spin, neither would work! No way we could win! "It beats diggin' ditches..." I said to the wall. But who was I kidding? No one at all. **Aaaarrgh!**

At 10 minutes plus, on the edge of a dream, a tip from a buddy wafted slowly upstream. "Gotta make a common ground. Connect it up real good. It'll keep your circuits happy and working like they should. Now, separate power's fine, and usually what you need, but makin' common ground, that makes it all succeed." Three minutes later my iron got real hot, I stripped off some black wire and found a good ground spot. As I connected up the ground between my H-bridge and the brain, it started making good sense and now it all seemed plain. My drowsy mind awakened thinking now here's something new. I gently rubbed my weary eyes as my excitement slowly grew.



I quickly loaded my last code, stuff that should have worked, and pressed the little reset switch and swear I must have smirked. Slow blinks... Fast blinks... and then a subtle whirr... Oh, how sweet it finally was as things began to purr! Both Little YaTu's wheels spun madly on my command, running an imaginary course in my imaginary land. Going very slow at first, then going very fast. Little YaTu quickly left our troubles in the past. Left turns, right turns, forward and reverse, everything we tried just worked! Our smiles nearly burst. I knew then and so did he, that now we could compete. A few short hours still remained until our Robo meet.

And that's really when Little YaTu was.